Determinants of Firms' Acquisition Ability and its Impact on Cost Efficiency, Operational Hedging and Returns of Acquirer Firms in Pakistan

(A doctoral dissertation PhD-Finance)

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FORWARDING SHEET

The thesis entitled "**Determinants of firms' Acquisition Ability and its impact on cost efficiency, operational hedging and returns of acquirer firms in Pakistan**" submitted by Tahira Awan (34-FMS/PHDFIN/S11) in partial fulfilment of doctor of philosophy degree in Management Sciences with Specialization in Finance has been completed under my guidance and supervision. After receiving two positive reports from foreign evaluators, required changes have been incorporated. The suggestions advised by internal and external examiners have been incorporated. I am satisfied with the quality of student's research and allow him to submit this thesis for further process as per IIU rules and regulations.

Date: Signature: _____

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DECLARATION

I hereby declare that this dissertation, neither as a whole nor as a part thereof, has been copied out from any source. It is further confirmed that I have written this thesis entirely on the basis of my personal endeavour, made under the valuable guidance of my supervisors. No portion of work, presented in this dissertation has been submitted in support of any application for any degree or qualification of this or any other university or institute of learning.

Tahira Awan

PhD (Finance)

Faculty of Management Sciences

DEDICATION

I dedicate this dissertation to **Holy Prophet Muhammed** (P.B.U.H), my loving parents, my family, my husband, my son and to my all respected teachers, especially my supervisors for their excellent guidance and support, without which I would not have been at this juncture today.

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Abstract:

The capital markets witness phenomenal shifts of corporate control. With the shift of world economy into a global one, there has been a rapid increase in the volume of acquisitions. The previous studies shed light on the motives behinds acquisition and its impact on both bidding and target firm. Less effort has been placed to check the ability of a firm dealing in market of corporate control. This study is bridging in the gap in literature by exploring the factors affecting the acquisition ability of the firm. The study has analysed the role of financial strength, corporate governance related variables and regulatory influence on acquisition ability of acquiring firm. Later on, impact of such acquisition ability has been tested on various firm characteristics like cost efficiency, returns and operational hedging of acquirer firms. Data has been analysed with respect to Pakistan stock Exchange for a period of 2004 to 2012. Empirical analysis indicates that firm specific variables are important determinants in firm's decision to acquire. Chief Executive Officer duality and institutional shareholders presence on the board contributes to this important phenomenon in the life of the acquiring firms. Bidding firm's financial strength is also another important considerations. The empirical results indicate the better acquisition ability for firms characterized by minimum capacity utilization, lower level of intangible assets, lower debt levels and lower advertising expenses. Acquisition announcement is an important event in the capital markets. The event study technique indicates the significant abnormal returns after 3 days of acquisition announcement. Cost efficiency has been analysed for bidding firms three years prior to the acquisition and three years post acquisition. Overall results suggest an improvement in the efficiency of financial firms after acquisition. Non-financial sector is indicating opposite results where most of the firms are showing declining trend in efficiency. The percentage change in operational volatility is accounted for as operational hedging. The empirical results show a large level decrease in the operational income volatility after the takeover deal. It shows that combined firm after acquisition bring the benefit of diversification thus reducing volatility and increasing operational hedging which may ultimately reduce financial hedging. So acquiring firms should analyse their strength before going for acquisition deal as acquisition impact their short term and long term performance.

Key Words: Corporate Control, Acquisitions, Event Study, Data Envelopment analysis, Operational Hedging, Cost Efficiency, Abnormal Returns

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List of abbreviations

AAR Average Abnormal Return

CAR Cumulative Abnormal Return

CAAR Cumulative Average Abnormal Return

CEO Chief Executive Officer a

DEA Data-Envelopment Analysis

DMU Decision Making Unit

EBC Equity Based Compensation

FCF Free Cash Flow

INED Independent Non-Executive Director

LBO Leveraged Buyout

M & A Merger and Acquisition

MNCs Multi-National Companies

MPS Market Price per Share

PSE Pakistan Stock Exchange

NPV Net Present Value

SECP Security and Exchange Commission of Pakistan

SEC Securities and Exchange Commission

SBP State Bank of Pakistan

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CHAPTER 1

INTRODUCTION

1.1. Introduction:

Capital markets provide a platform for trading in shares of companies. These shares can be purchased by investors for varying objectives. Sometimes, a firm purchases a large number of shares through tender offer or open market purchase etc. if a firm acquires more than 51% shares, it becomes a controlling shareholder.

With the shift of world economy into a global village, every sector of the economy was affected at large. Internationalization and deregulatory framework led the government towards more relaxed economic policies. This environment supported emergence of new competitors in many industries. Fierce competition and new market dynamics forced firms to either merge or to gain more power through takeover attempts.

Possible consequences of shift in control of the firm can be to replace existing management, elect new board of directors, and reap benefits of synergies or to combine the expertise level of both firms. “corporate control can be defined as the right to determine the management of corporate resources—that is, the rights to hire, fire and set the compensation of top-level managers” [Fama and Jensen (1983; 1983)].

The 1980s is famous for its wave of mergers and acquisitions and corporate restructuring. Most of the cases in this era are examples of hostile takeover and are majorly financed by leverage. Leveraged Buyout (LBO) is a name known to everyone in the industry. During 1984 to 1990, US $ 500 billion worth shares were repurchased through borrowed funds and resulted in LBOs. Capital structure of such firms was so extreme with 80 % of debt. It is interesting to note that

every second firm was receiving a takeover offer in this time period (Mitchell and Mulherin, 1996).

There had been a significant development in the merger and acquisition (M & A) activity since the last decade of twentieth century. The total investment in market of corporate control showed a 50% growth rate in 1998 as compared to previous year and almost double of investment in 1996. The approximate investment in 11,300 mergers in 1990 was half a trillion dollars which increased to 2.4 trillion dollars for 26,200 mergers in 1998 (Gupta, & Gerchak, 2002).

Firms surviving from takeover were led towards corporate restructuring as a tool to safeguard takeover threats. Later on in 1990s, corporate governance mechanism was improved to decrease hostility and fierce threats of shift of corporate controls (Holmstrom & Kaplan, 2001). Such activities may include more bonding among shareholders and board of directors through giving stock options to top management teams

Asian economies also witnessed a rapid growth in the merger and acquisition market. India witnessed a record number of such deals during first decade of 21st century. Total volume of such transactions exceeded US$25.6 billion on annual basis. This wave of mergers and acquisition was a result of market confidence as per Reserve Bank of India. (Bombau, *et al*., 2007).

Pakistani capital market has also witnessed this phenomenon of acquisition since last decade of 20th century. This topic has got the attention of various parties like bidding firms, regulators dealing with stock market operations and economic growth as well as researchers. Mergers and acquisitions transactions are regulated by the competition regulation act 2007. This corporate control market grow up to 86% in 2012 and almost 59% of such deals belong to the oil & gas, food & beverages and financial sectors. Recent movement in this area has risen the need to study impact of such deals on potential risk management in firms.

Traditionally, this wave of acquisition and control of corporation is considered as a tool to gain monopoly or concentration of economic power. These twin problems have caught much attention of academicians. However, financial regulations result in strict antitrust laws to protect the issue of monopoly. Another long debated objective is the economies of scale. Increase in a firm size may reduce the fixed cost portion allocated to units of productions so overall cost reduction is observed (Bittlingmayer, 1998).

If the greater size of the firm can bring the benefit of economies of scale and scope (a single large firm can have cost advantage in producing products as compared to smaller size firms), then big firms may opt for acquisition to expand and can use the pricing strategy to set entry barriers for the new and small firms in the industry. However, in absence of scale economies, firms opt such merger and acquisition deals just for creating their monopoly power (Bittlingmayer, 1998).

Stigler's (1950) research is against the economies of scale motive for mergers and acquisition. He propose the **'survivor principle'**. He discusses that growth in capital markets acts as a catalyst for monopoly power seekers so firms start to acquire or merge with other firms. The managers can implement their knowledge across different businesses by such deals through setting strategic aims, increasing financial synergies in form of higher use of leverage or diversification. These activities may provide an apparatus to new owners for creating discipline on managers as the managers may use their money in satisfying their own power appetite.

Along with the widely discussed negative motive of M&As i-e, managers' ego and hubris, some researchers have discussed positive economic benefits of such deals. These include the improvement in both operating as well as financial synergy, greater diversifications, better strategic fit and realignment, higher efficiency levels, and very importantly a means of new entry for bidding firms into industry (Hirshleifer, 1993, 1995, Weston *et al.*, 1998).

Manne (1965) has focused on the role of mergers and acquisitions as a tool for improving management performance. A firm may go for mergers or direct purchase of shares or proxy fight to gain control over target firm. He is convinced that **"control of company"** is itself a valuable asset. And market price of the share (MPS) is also affected by managerial efficiency. That is the reason for increase in target market price of share is linked to anticipated increase in managerial efficiency. The possible reason is that acquirer firm is going to replace inefficient management with efficient one.

Muslumov (2002) has highlighted many advantages of takeover deals. Firms may enjoy the benefit of lower cost of productions and distributions termed as synergy due to scale economies, improvement in technology and other shared resources, control on supply chain, lower agency costs through combine ownership of assets and better management teams supervising business. Financials of the firm may also improve due to lower bankruptcy risk, tax shield creation, improved debt levels and other tax related motives. Most importantly, the takeover may replace incompetent management teams for the target firm.

Another benefit of merger is that it provides a channel for successful implementation of innovations across the firm (Telser, 2005). So mergers can transfer information more efficiently as compared to the other methods. So now focus is changing towards managers thrust for more control by focusing on benefits of mergers and acquisitions.

All such activities for corporate control are not always fruitful. This decision is taken by management of firm and then approval is granted by shareholders. Sometimes managers fall victim of Managerialism. "**Managerialism**" means that managers maximize their utility by controlling large firms. So they go for these transactions for maximizing their personal utility even at the cost of ignoring the synergistic gains. **Free cash-flow** theory (Jensen, 1986) indicates the chances of accepting lower or negative NPV projects by companies with abundant

cash resources available. One of such projects can be acquisition of other firm. It is evident in oil and gas industry wave of mergers and acquisition.

1.2. Theoretical Background:

Acquisition is an important strategic decision in corporate world. For developed economies like USA and Europe, many studies are conducted on this phenomenon. However, much attention has been given to the aftermath of acquisition performance. Very limited past work has been conducted on finding the variables involved in this delicate decision of acquisition. This gap in the literature has given need of conducting a thorough analysis of firm specific factors in determining acquisition decision. Acquisition decision may be derived from a series of complex motives which cannot be explained by a single approach. This decision may be the result of shareholders interest or manager's interest or due to disagreement between both interests (Trautwein, 1990). Following theories explain the dynamics of acquisition decision.

1.2.1. Theory of Corporate Control

If management teams of any firm become flop in availing the opportunities of the market by creating the synergies and to make the performance of its resources efficient, then problem may arise. Another firm may seek the opportunity and can acquire such firm and removes the old management. So transfer of corporate control is beneficial for shareholders of both target firm as well as bidding firm (Bradely *et al*., 1983).

Target firm shareholders enjoy increase in their wealth due to expectations that new management is bringing positive breakthroughs in firm. Bidding firms' value increases for its shareholders due to synergies. Efficiency theory runs the corporate control theory. Only value increasing managers are preferred by the shareholders for their firm (Weston and Weaver, 2004). They continue to pay premium price until target shares confer control.

Basic theory lying at the base of mergers and acquisitions is the **theory of corporate control.** Bradley (1980) discusses inter-firm tender offers to acquire stocks. Such offer means managers of one company propose to buy a substantial number of shares of another target firm. They make this offer in the best interest of their shareholders to shareholders of the target firm. A merger proposal is essentially a bid for all outstanding target shares. If the acquisition is successful, all target shares will be exchanged for either cash or shares of the acquiring firm. This theory is supported with empirical evidences in response to tender offers.

As a result of tender offer, capital gain is accrued to shareholders of both the firms. The consolidation of corporate control of firms results in a value added investment for shareholders of both firms. It increases shareholders wealth. Target shareholders are better off due to capital gains irrespective of the result of offer or their tendering of shares or not. They enjoy premium price offered in tender offer plus the increase in share price.

However, acquiring firm suffers a capital loss on purchased shares of target. Another interesting fact is that the capital gain enjoyed by acquiring firms is not due to appreciation of share price of target. The reason being that it has already paid at least expected increase in MPS of target as offer price otherwise the target firm's stockholders will not tender their shares. Whole profit comes from securing control of the target resources, synergy or some other reason.

The overall benefit of the acquisition is increase in target firm share prices. These securities may show the claims on bidding firm resources triggered through better investment options. It may advocate the rising share prices of the acquiring firms itself which ultimately is beneficial for the target firm too. This study has been aimed at exploring this relationship by calculating the abnormal returns earned by the acquiring firm.

1.2.2. Efficiency Theory

Efficiency theory says that mergers and acquisitions make operations of both firms efficient due to expected synergy gains. Three types of synergies may occur due to shared resources including operating synergy, financial synergy and managerial synergy. Synergy in firms operations can help in realizing economies of scope and scale. Banerjee and Eckard (1998) provide a positive impact of operating synergies on gains accrued to the firms.

Such large scale benefits may be a results of pooling sales force of both firms and reduction in cost of production or transfer of technology and knowledge to produce unique goods and services (Porter, 1987). Type of acquisition is important in this connection. Such operational synergies are higher in case of vertical and horizontal integration deals (Seth, 1990; Singh & Montgomery, 1987). Reduction in the cost of capital is an important benefit of financial synergies. So result is decrease in firms' investment portfolio market risk. Financial synergies are normally achieved if both firms belong to different industries (unrelated M&A) (Singh & Montgomery, 1987). Similarly acquisition of another entity permits a firm to have better access to capital market due to increase in firm size.

Third important gain of acquisition is managerial synergies. These can be achieved as a result of better managerial skills possessed by acquiring firm's manager so his planning and monitoring can bring improvement in performance of acquired firm. However, cash flow argument of Jensen (1986) argued negative role of managers in acquisition deals. They go for this transaction of corporate control change to reduce ample cash reserves of firm even at cost of shareholders wealth maximization. So instead of promoting efficiency of both firms, managers just increase their control of the firm.

Several studies on efficiency gains of acquisitions provide mixed results. Ravenscraft and Scherer (1989) indicate positive reaction by market on merger and acquisition announcement. Seth (1990) disprove the creation of value increasing synergies in both related and conglomerate M&A. firm size plays a significant role in value creation through acquisitions. Singh *et al.* (1987) confirms through event study analysis that related acquisition of firm results in higher returns as market assign value to such combinations. One objective of this study is to find the impact on the operating efficiency of the firm. So this theory is underlying that relationship.

1.2.3. Empire Building Theory

This theory describes that managers are motivated to diversify in mergers and acquisitions so that the firm size can be increased and minimum profit requirement can be meet (Marris, 1963; 1964; Ravenscraft and Scherer, 1989; Rhoades, 1993; Black, 1989).

This motive of building corporate empire by managers has been a focus of research. The managers are using acquisition for their value maximization rather than protecting shareholders' interests. They pay premium prices for targets due to their overconfidence and ultimate loss is born by the investors. Ravenscraft and Scherer (1989) and Roll (1986) also confirm managerial overconfidence in acquisition deals. Managerial theories (Baumol, 1959; Marris 1964, Williamson, 1969) explain this phenomenon.

This theory is at the back of long term relationship between past higher performance and announcement of merger or acquisition. Bidding firms with better operating performance prior to acquisition shows a decrease in performance afterwards. The research also supports the idea of having insider directors as they help in removing negative insight about acquisition performance and over-confident CEOs (Baker et al, 2012).

1.2.4. Managerial Discretion Theory

Increase in liquidity of companies may demonstrate the efficiency of firms and their management teams and they may indulge in large scale tactical decisions. It may give more confidence to managers and they make poor economic decisions like inefficient acquisition Those acquisitions have been observed to be profitable as indicated by higher returns in which more stake of managers is involved. It means personal gains of managers force them to choose the target firm in a careful way and they are less concerned about rest of the deals. So result is higher agency cost (Jensen, 1986).

Jensen's (1986) free cash flow hypothesis advocate that one of possible usage of free cash flows available with the firm is to choose for value-reducing acquisition deal instead of paying to shareholders in form of dividend. This may bring short-term gains to the managers. Morck, Shleifer, and Vishny (1990) present various types of acquisitions that look very attractive and can bring many gains for managers while prove value destroying for the managers. A supportive empirical analysis has been provided by Lang, Stulz, and Walkling (1991).

1.2.5. Agency Theory:

Corporate governance has an important role in the strategic decision making for a firm. If a firm has a good governance mechanism in form of the board size, Independent and Non-Executive Directors, board meetings frequency and ownership concentration etc, the decision making power of firm is enhanced. The corporate governance improves the decision making through its link with Agency Theory.

If a firm has high agency cost, it means more chances of being acquired by other firms. Agency cost arises to resolve the agency problem. The relationship between managers and shareholders is called agency relationship in which managers are acting as agents of the principal i-e, shareholders. When controlling managers have shareholders to bear the burden of their

decision, they may involve in some activities to maximize their wellbeing even at the cost of shareholders wealth (Jensen and Meckling, 1976). They may engage in enjoying more perquisites and engage in negative NPV (Net Present Value) projects as this high risk borne by shareholders. It may guarantee them high returns in case of success hence agency problem arises.

There are three costs connected with resolving the agency problem i-e, bonding costs, monitoring costs and residual loss. **Bonding costs** involve the costs borne by shareholders to develop long term interests of the managers into the firm e.g., stock ownership plans for managers to make them involved in the decision making process**. Monitoring costs** are those costs incurred to have a check and balance on the managers in the firm. And apart from these two types of costs, the difference in interests of both the parties may ultimately result in form of **residual loss** for the shareholders. So in such model, the corporate governance mechanism provides a monitoring mechanism to improve the quality of one of the very delicate decision i-e, mergers and acquisition.

The agency problems can be controlled through a combination of market level and firm level factors. Fama and Jensen (1983) work on separation of ownership and management and hypothesized that in such a firm decision making process is also contributed in two parts i-e, decision management (commencement and application) and decision control (sanction and checking). Control functions are delegated to a board of directors by shareholders who retain important strategic decisions like mergers and new stock issues etc. so corporate governance mechanism may improve the quality of decision making process.

One of the largest and important type of corporate investment is acquisition of target firm. In large public companies, these investment may increase the agency problem between owners and management teams (Berle and Means (1933) and Jensen and Meckling (1976)). So need

of good governance mechanism is intensified to protect shareholders rights. The empirical literature has shown the link between corporate governance and acquisition decision. Few researchers have linked CEO equity incentives and its impact during transactions of mergers and acquisitions. A firm may enjoy significant pre-bid announcement return if it is offering equity based compensation (EBC) package to its managers (Datta *et al.,* 2001).

EBC is defined as "the value of stock options and restricted stock grants". While some other studies indicate contradicting results, i-e, CEO incentive measures have no positive effect on the abnormal returns of the bidder. This is evident for public pension funds used by Cremers and Nair (2005) & Wahal (1996). Activism in public pension funds does not increase shareholders value as provided by Gillan and Starks (2000), and Karpoff, Malatesta, and Walkling (1996)).

1.2.6. Semi Strong Market Efficiency Theory

One short term approach to assess the success of acquisition deal is the increase in bidding firm's share price. It shows the stock market efficient response to announcement of acquisition information. The shares of acquiring firms catch the attention of investors and their trading volume increases around the event. Their stock prices reflect all public information so no chance to earn abnormal gain for speculators and arbitragers. The market efficiency level is important determinant in this regard. If market is inefficient and may over- or under-reacts to acquisition announcements and prices converge to mean values after a time lag, then capital gains are due to inefficiency of market and not due to synergy benefits.

1.3. Critical Appraisal and Research Gap

There has been no single theory in area of corporate control transfer which may cover this phenomenon completely. The critical analysis of previous studies helps in finding the holistic

approach of both theoretical and empirical findings. Following conclusions have been reached upon.

1. An important limitation of existing acquisitions paradigm is the lack of a comprehensive theory on determinants of acquisition activity. So it is not possible to explain the existing empirical results with sound theoretical rationale. The studies either focus on motives behind mergers and acquisition (Bittlingmayer, 1998, Muslumov, 2002) or post acquisition performance of firms (Muslumov, 2002). Another important study on efficiency role of acquisition transactions by Worthington (2001) emphasize the need of determining acquisition ability on large sample of firms. The study proposes that these techniques can be used to analyse the determinants of merger and acquisition activities and outcomes in related industry sectors from both financial and non-financial sectors.

2. There has been no consensus among researchers regarding generalized factors across different markets and eras. This gives rise to a dire need to investigate these models in different setting due to varying nature of governance mechanism, regulatory framework and economic conditions (Lebedev, et al., 2014).

3. Cremers & Nair (2005) propose to discuss the role of CG in determining acquisition decisions. There is a need to highlight the role of shareholder activism in the market for transfer of corporate control. The study suggests for the balancing relationship between acquisitions deal and active shareholders.

4. Weston et al., (2004) emphasize the need of finding nature of acquisition determinant and direction of relationship. Bernad et al., (2005) while working on performance of acquisition highlight the need of correct specification of determinants of acquisition performance variables.

5. Literature on acquisition deals shed light on two types of studies. Ex-ante studies examine the acquisition announcement and its resulting reaction from stock market. These are focussing

on the event study methodology as announcement of acquisition is an important event in life of the bidding firm. Ex-post studies weigh the effect of acquisition on the performance of the acquiring firms through comparing pre-deal vs. post-deal performance. Traditional ratio analysis is a normal way of such comparison. This study combine these two types of studies in a single model.

5. There is a long debate on role of acquisition in improving cost. However, empirical work is needed to apply latest and sophisticated techniques (DEA, data envelopment Analysis) in determining cost acquisition of firm. This gap in research is indicated by Liu and Li (2014) who worked on cost efficiency of Chinese internet companies and suggest that the proposed model may be extend for the international data to check the generalizability of results.

6. Most of the work is limited on the acquisition of financial sector (Resti, 1998, Rezitis, 2007). So it requires the need of exploring determinants of acquisition ability of non-financial sector.

7. There is lack of empirical research on acquisition as a tactic for operational hedging. Hankins (2009) highlights one hidden motive of acquisition as reduction in the cash flow/earnings volatility of acquiring firm.

8. No long term measure of acquisition performance has been used along with calculating post-announcement price increase. Just short term event study method has been used in previous studies.

9. The research work in Pakistan indicates progress on theory of corporate control in this emerging country. Researchers have focused on pre vs. post mergers comparison of firm performance ((Mehmood and Loan, (2006) and Kouser and Saba, (2011)). Only the ratio analysis has been done to find the firm performance after the acquisition decision. No detailed study is shedding light upon multifactor determining the corporate control.

Most of the above findings are derived from developed economies perspective which cover acquisition mechanism in those economies. Less attention has been paid to the emerging and developing economies. Therefore the existing study has been based on Pakistan, one of emerging economy.

1.4. Problem Statement:

Existing empirical research indicates failure of many acquisition deals. The main reason is that acquiring firms do not have required capabilities of acquisition at that time. So firms in the market for corporate control face the problems due to lack of identifiable elements in their acquisition ability. There is a need to find role of such determinants from financial strength, governance mechanism and regulatory point of views. Secondly, there is a need to develop a framework for the role of such acquisition ability on the post-acquisition success of the acquiring firm. As the motives behind mergers and acquisition are varying in nature so accordingly varying measures of success of acquisition. There is lack of combined empirical research on acquisition ability on cost efficiency, operational income volatility and on returns of the bidding firms. So this is the concern of present study to resolve this issue.

1.5. Research Questions:

The main objective of this study is to examine and appraise traditional motives for acquisitions and propose new multifactor model for assessing the acquisition ability. This study is addressing following questions

1. What are the factors to effect acquisition ability of acquiring firms in Pakistani market?
2. What is the role of corporate governance factors in determining acquisition ability of the acquiring firm?
3. Does the financial strength of the firm contribute to its acquisition ability?

4. What is the impact of regulations on bidding' firms ability to acquire target firm?
5. Do the acquiring firms enjoy abnormal returns after completion of acquisition deal?
6. Is acquisition a way to go for operational hedging, a technique to replace costly financial hedging?
7. Is successful acquisition of targets giving the benefit of cost efficiency to the bidding firm?

1.6. Objective of the study:

This research study is aimed at finding the following concerns.

1. To provide insight about the features of the bidding firms in Pakistani market of corporate control.
2. To find the role of corporate governance variables in determining acquisition ability of acquiring firms
3. To explore the function of financial strength of firms in the acquisition deals
4. To check strength of already tested factors such as cash holdings, ownership structure and profitability in acquisition strategies in new emerging economies settings and time periods.
5. To find the influence of regulation on a firm's decision of acquisition.
6. To find the impact of acquisition on cost efficiency of bidding firm
7. To check the effect of acquisition on operational hedging (decrease in income volatility) of bidding firm
8. To find the impact of acquisition on post-announcement period market returns of bidding firm.

1.7. Theoretical Contribution:

1. The current study links three different dimensions of corporate governance, ownership structure and financial strength in a single model for acquisition ability of a firm. This is

one of the key input of the study. The model provides strong implications for market makers and regulatory authorities.

2. The previous studies shed light on the post-acquisitions performance of both firms (Bradley, 1983). But they only focus on either comparing firm performance before and after acquisition through accounting ratios or returns earned by shares. These studies ignore the investigation into the firm specific and regulatory factors in this strategic decision of the firm. Thus current study focused on this gap and thus adds to existing theory.
3. **Agency theory** (Jensen and Meckling, 1976) describes the nature and problems in agency relationship between managers and owners. This study is adding a unique dimension to the agency theory by adding its linkage with the monitoring role of board of directors in delicate decisions of acquisitions. Corporate governance mechanism provides a check on managers to take decisions in the best interests of shareholders. Similarly, threat of hostile takeover attempt also creates a kind of check on managers to limit managerial discretions.
4. This study also considers sample firms from non-financial sector. The results signify interesting findings in comparison to traditional studies on financial sector.
5. Acquisition market has got less attention of researchers in Pakistan due to perception that most of such deals are a result of strict regulatory pressures and not due to market forces. Thus, true factors to affect acquisition could not be dig out here. This study also used important variable of regulation along with firm specific determinants.
6. Another dimension of this research is the post-acquisition improvement in the cost efficiency for acquiring firms. This is a long term measure of the successful acquisition deals. It may be achieved due to scale economies and learning curve effect. So acquisition decision has been linked with cost efficiency from both financial and non-financial firms. The results are different in both these sectors implying varying nature of structures and regulatory pressures.

7. A new dimension of change in operational hedging has also been studied in context of Pakistani economy. Hankins (2009) has used this variable and this study extends his work by applying in an emerging economy on both financial and non-financial sectors.

1.8. Practical Contribution:

The empirical findings of the study highlight various variable and their role in acquisition ability of firms. This ability, later on, can be source of successful completion of transfer of corporate control. It also brings the synergy gains in form of returns, reduction in cost and increase in operational hedging. The findings may contribute to the practitioners in the following manner.

1. Top level management of the firm can use the findings of the study in improving the strategic decision of restructuring. They can assess various financial variables and can ensure the good governance practices as antitakeover tactic. They can also expect possible improvement in risk and return, costing and income smoothening through acquisition decisions.
2. The findings of the research may improve quality of regulation devised for this market. Regulators should be cautious as acquisition wave can bring more market power to few hands through cartelization and can risk true competition in the market. These findings may lead the way for future legislations particularly in financial sector where banks have to meet number of branches and paid up capital requirements.
3. The study has analyzed various governance based factor in acquisition deal. CEO duality and institutional shareholding is significantly affecting acquiring firms in the acquisition deals. The findings can help in setting rules regarding governance mechanism.

4. The detailed analysis of acquisition helps in finding success factors for acquiring firms. It means whether they are acquiring a firm just due the acquisition wave or due to "**heat of hunt**" or the firm has ability as determined by factors internal to the firm. Findings can be used by other firms too to find the point when they can expand through such deals.
5. Another important implication is for the foreign investors involved in foreign direct investment. When a business is going to penetrate into foreign markets, they start from export, licensing, franchising and ultimately towards joint venture and acquisitions of local businesses. This study may guide foreign investors regarding key features of their financial and governance mechanism to ensure the success of such deals.
6. The findings of the study are guiding government authorities who act as regulators in policies on cartelization, antitakeover defenses and competition.
7. With regard to cost efficiency, the findings are of special interests to the internal management. If it is horizontal acquisition, the economies of scale can be achieved through the acquisition so result is cost reduction. So a firm needs to analyze its cost and production process along with target firm before proposing such offers.
8. Authorities of stock exchange can also use the empirical results of the current research. Post-acquisition stock market reaction towards acquirer and target firm share price and trading volume give important insight about market informational efficiency.
9. The internal management can design acquisition to reduce the costly income volatility as results of the study guide the decrease in income volatility and increase in operational hedging through acquisition. It is particularly important if both bidding and target firms belong to different industries.

1.9. Organization of the Study

This study is organized as follows; chapter 2 discusses the prior literature of determinants of acquisition ability and association between acquisition and various performance measure, followed by chapter 3 that describes the variables, model and methodology used. Chapter 4 presents the findings of the study followed by chapter 5 concluding the results along with future direction for the researchers.

CHAPTER 2

LITERATURE REVIEW

The merger and acquisition is a topic which has attracted the attention of the researchers since long. There has been a long debate regarding motives behind these activities as well as on the consequences. Most of the past research is focused on the issues of performance comparison only. On the basis of past studies reviewed, following factors have been identified to play a key role in the acquisition ability. After conducting a thorough study, few hypotheses have been formulated.

2.1. Corporate Governance and Acquisition Ability:

Corporate Governance provides a mechanism to efficiently direct the firm. It deals with the rules regarding how to govern rights and responsibilities of board of directors. The efficient governance of the board helps in the efficient working of the firm. It also affects the ability of the firms to acquire other firms through its various characteristics. Board of directors performs three major functions (i) recommending, checking, appraising, and, in case of need, changing managers (ii) planning compensation for top management, and (iii) approval of important strategic decisions for the firm like acquisitions.

Many failures of the firms and scandals in corporations result in the need of corporate governance reforms by regulators and lawmakers. In 2002, the **Sarbanes-Oxley Act** was passed in the same connection. These reforms bring positive economic benefits for the firms so more reforms may be proposed in the future and shareholders wealth maximization goal is linked with this.

Acquisition can be a beneficial instrument of bringing synergies in a firm through the mechanism of corporate governance. The acquisition can bring positive returns if acquiring

firm is bringing improved governance practices to a target firm of inferior corporate governance (value increasing theories). These gains are accrued to the firm due to protection of investors' rights in bidding firm. So ultimate benefit is shared between both firms in form of capital gain (Wang & Xie, 2009).

Just like the shift of firm control from target to acquiring firm, the shareholders rights are transferred in the same fashion. Improved shareholders' rights in bidding firms can benefit the shareholders of acquired firm after completion of transfer of control. So governance mechanism of target improves thus leading towards value creation.

Wang and Xie (2009) studied 396 US acquisition in local market from 1990 to 2004. Their study links corporate governance index with the value weighted portfolios of acquiring and acquired firm. Empirical results show that portfolio enjoys the abnormal returns after acquisition announcement in case of varying nature of shareholders rights between two firms. This change in governance leads towards "valuation effects". The comparison of pre-deal operating performance of two firms and post-deal performance of joint firm also confirm the increase in synergies for such firms.

Information asymmetry in the market of corporate control gives much discretion in the hands of managers in decision making. Shleifer and Vishny (1997) also highlight the active role of managers' motive in acquisition as compared to passive role of shareholders. The management and controlling shareholders can join hands on annual acquisition scale and can approve overpayment at expense of shareholders wealth loss (Chao, 2011)

An important study in this connection has been presented by Peng, Kiang & Jiang, (2013) who have worked on sample of Chinese public limited companies. They postulate the role of corporate finance and corporate governance structures of the firm in determining its acquisition ability. Chinese firms represent concentrated ownership with government acting as major

shareholder. So institutional shareholders and Independent Non-Executive Directors are not effectively monitoring the board activities and decision making due to collaboration with strong management teams and decide as per their motives.

They have determined acquisition ability as an outcome of financial and governance factors. Five step specification model advocates significant positive impact of cash-holdings, capital expenditures, leverage and Tobin's Q on annual acquisition scale. No important role is played by the sales, intangible assets, firm size and cash dividend in acquisition decision. With respect to the corporate governance variables, significant positive impact has been exerted by size of the board, independency and meeting times of directors on its acquisition decision. If board size increases irrationally it will negatively affect acquisition scale and independent directors on board even cannot help in this problem. If one person holds both the positions of Chief Executive Officer and board chairman, it will enhance acquisition chances. No important influence is observed due to difference in ownership structure of the board.

Chen *et al*., (2008) link the acquisition scale with economic conditions in the country. Masules, Wang & Xie (2007) have checked acquisition and governance mechanism of the firm along with profitability measures (Field & Karpoff (2002), and Bebchuk *et al*., (2002, 2003)). The announcement period abnormal returns are lower for those firms in which more anti-takeover provisions are protecting the managers. Less threat of takeover can give more power in the hands of the managers and they can engage in value destroying acquisitions for shareholders. The firm can earn better returns in case of CEO duality and industry level of competition.

Fu, Guay & Zhange, (2016) provided that acquirer firms get higher returns after announcement of acquisition in case of firms avoiding approval by managers. This is not due to traditional agency conflict or managers hubris. It may be due to higher costs of shareholders' approval

especially in case of higher information asymmetry, time constraint and transaction cost. So role of corporate governance in form of balanced board is much suggestive in such cases.

2.1.1. Board Size:

Board of directors should be a balanced one, both in size as well as in its characteristics. Its **size** is very significant in the decision making process and acquisition is very important decision in the life of a firm. If board members are too many, it may lead towards decrease in performance due to many issues.

Hermalin and Weisbach, (2001) & Wu, (2000) provided the reduction in the size of board of the directors. The smaller boards are observed in Leveraged Buyout firms as compared to other firms (Gertner and Kaplan, 1996); and such boards are linked with higher value of the firm as per Yermack, (1996). He documented an opposite relationship between size of the board and value of the firm. As decision making is enhanced by small boards, they may be better in analysing the acquisition decision.

Hypothesis 1: Larger size of the board reduces the acquisition ability of the acquiring firm.

2.1.2. CEO Duality:

A very important dimension of corporate governance is the duality of Chief Executive Officer and chairman. One person should not wear both hats. Separate chairman and CEO will create effectiveness due to mix of skills and a formal check on CEOs activities (Baliga et al., 1996). As per Goyal and Park (2002), this separation is also necessary to maintain the independency of board which may lead towards its effective functioning.

Another study provides linkage between CEO compensation with duality of two positions (Core, Holthausen, and Larcker, 1999). It also decreases chances of CEO turnover due to firm's bad performance (Goyal & Park, 2002).

Hypothesis 2: Bidding firms with CEO duality have better acquisition ability.

The level of competition in the industry is also very important decision for acquisition decision along with separation of two posts. Product market competition can play its role as corporate governance tool to keep a check on managers while dealing with corporate resources. And present market scenario asks for removal of duality of both CEO and chairman (Masulis, Wang and Xie, 2007).

Similarly debt holdings of CEO make him much careful in going for risky deals. A study by Phan (2013) indicates that firms take less risks in case of CEO holding inside debt in the firm. If CEO holds inside debt, it will affect the announcement period abnormal returns for bonds and long-term performance in a positive manner. However, the share prices may fall after the acquisition announcement in this situation.

2.1.3. Independent Non-Executive Directors:

Independency is a key feature of a balanced board to ensure the protection of minority shareholders. A higher percentage of independent non-executive directors among total board members may improve emerging issues in firm like CEO compensation, CEO turnover, hostile takeover attacks and antitakeover tactics (Hermalin and Weibach, 2003). The presence of INEDs also helps in resolving agency problem as they may able to protect rights of minority shareholders who do not have board representation.

Although, researchers have mixed views on role of independent board in better performance of companies (Hermalin and Weisbach (2003) and Bhagat and Black (1999)), they have consensus on the improvement in the decision making. Weisbach (1988) related CEO turnover to firm performance in presence of INEDs. Brickley, Coles, and Terry (1994) provide that the antitakeover defence in form of poison pills in presence of independent boards give positive

signal in the market. Byrd and Hickman (1992) provide that board independency can fetch premium bidder returns using a sample of tender offers.

Hypothesis 3: presence of independent non-executive directors on the board positively affects the acquisition ability.

2.1.4. Institutional Shareholders:

Institutional shareholders are very important element of a board for its best governance. They have power to be present on board as well as expertise to monitor the actions of board members. Their presence is positively related to the quality of board decisions. Previous studies are majorly focusing on developed economies like America. (Brickley et al. (1988); Hartzell and Starks (2003); Almazan et al. (2005); Smith (1996); Gillan and Starks (2000); and Cheng et al. (2010). However, this rule does not stand still in case of concentrated ownership structures and countries with low investor's protection.

Here agency problem is the conflict of interest between majority and minority stockholders instead of conventional agency conflict between managers and shareholders. The institutional shareholders just like minority shareholders may suffer losses in fight with management teams and controlling shareholders. The result is that they start following powerful controlling shareholders as they do not feel capacity to go against them.

Role of institutional investors in protection of shareholders rights has been manifested in many studies. Monitoring of managers by balanced board is very important concerns of shareholders and one of the main pillars of balanced board is the representation by institutional investors. Their presence is significant in mergers and acquisitions. Moving from decade of 1980's to 1990's, professional investors have remarkably increased their market share from 30 to 50 percent (Gompers and Metrick, 2001). This increase of market share means overall increase of

monitoring of companies by such professional shareholders through their presence on the board.

Another breakthrough is the regulatory action of SEC in USA in 1992. Securities and Exchange Commission reduced the transaction cost of proxy contest which displeased the management teams. Previous rule restricts free communication among shareholders as one needs to file a detailed proxy statement to SEC in case of negotiation with more than 10 shareholders. New rule allows the shareholders to communicate among themselves freely and just to inform SEC later regarding their communication theme. Introduction of this rule leads the way for shareholders activism and that may be the best reason for strong opposition by CEOs and management teams for this new ruling.

Shareholders activism has emerged in second last decade of twentieth century and got viral afterwards. However, its impact on firm value and shareholders wealth are mixed. Only small effect is seen in case of value enhanced for shareholders as per research by Karpoff (2001) on 20 firms. A main reason may be the measurement problems of shareholders activism due to being communicated verbally and no documentation maintained (Russell Reynolds Associates, 1995).

The new trend includes the strong corporate governance structure as an alternative to costly anti-takeover tactics as advocated by proxy activists and shareholders are also increasing trust on board of directors on strategic decisions. So the result is elimination or no renewal of shareholder's right plan by many firms and removal of anti-takeover defences like staggered board.

Strong evidence in support of good internal governance mechanism is provided by Cremers and Nair (2005) that it helps in better acquisition decisions. They used ownership concentration of the firm as a way of judging internal corporate governance. Ownership concentration has

been measured through institutional shareholdings and pension funds ownership in bidding firms.

On firm level effects, Gompers and Metrick (2001) have shown higher returns accrued to those firms having institutional ownerships. As institutional ownership means more monitoring on managers so result is improvement in performance through increase in share price. Practically, it is observed that corporate governance mechanism, if good, can fetch premium prices form the institutional investors (Felton et al., 1997). On basis of good corporate governance, directors are demanding an increase in remuneration. Their rates increase from 25 to 39 percent during 1992-95 time period (Perry, 1999) and Russell Reynolds Associates (1998**).**

A recent study by Andriosopoulos, and Yang, (2015) worked on the impact of institutional investors in market for mergers and acquisition in UK. Their results suggest increase in chances of large sized deal, full control and over the borders of a country acquisition in presence of institutional investors. Their presence in company may encourage more such deals and at larger scale due to their expert opinion and better understanding of such financial transactions. Their results also favour negative relationship between announcement of such deals on abnormal returns of the firms particularly if deal is cross-border one.

Hypothesis 4: Presence of institutional shareholders positively contributes to the acquisition ability of the firm.

2.1.5. Ownership concentration:

If the shares of a company are concentrated in few hands, it gives more discretionary power to the management in making the acquisition decision. The reason is that it is easy and less costly to coordinate few shareholders rather than numerous minor shareholders with different preference structures.

Hypothesis 5: Higher shareholders concentration increases the acquisition ability of the firm.

2.1.6. Ownership structure:

Globalization is leading towards wide spread growth of the MNCs throughout the world. Companies are penetrating to the foreign markets through the vehicle of acquisition of local firms. In Pakistan, this trend is readily observant in telecommunication and pharmaceutical industry. Affiliation with a foreign MNC gives the edge of technological advancement, brand name and intangible resources thus leading towards higher growth and investment by the firm. This hypothesis is supported by the research work of Narayanan (2004) who provides that foreign equity participation increases growth rate of firms due to technological differences.

Some studies have linked the concept of mergers & acquisition and corporate governance in the light of cross borders transactions. Two of such important studies include the work of Starks & Wei (2004) and Bris and Carbolis (2008). Their results are different due to varying hypotheses, selection of sample and methodology. Bris and Carbolis (2008) provide that takeover premium in cross country deals are directly proportional to the shareholders defence and eminence of accounting standards and vice versa for target. This result is holding only when the nationality of target firm changes. Starks and Wei (2004) worked on a sample of US firms' acquisition by foreign bidding firms and worked on the governance mechanism of the country. The results show that the firms pay less takeover premium in case of good governance mechanism of the foreign firms.

One of the mode of penetrating foreign market is the merger with and acquisition of local firms. This is hypothesized and proved in the study of Danzon et al. (2007) on pharmaceutical industry. Beena (2008) also supported these results along with advocating the improvement in the performance of such firms after the acquisition is completed.

Hypothesis 6: Foreign affiliation of acquiring firm increases its acquisition ability.

Zhu, & Jog, (2012) worked on the emerging economies market of corporate control particularly cross-border deals. The risk level of the target firm is decreased after the acquisition due to change in shareholders base at international level and better and protected shareholders rights of the bidding firm.

Gleason et al. (2014) relate the family ownership structure of the firm with its post-acquisition performance. In case of medium level of shares held by family members, the market reacts strongly to bidding firm share price on the news of acquisition. If target firm is also family owned, the result is loss of share price of bidder. Even in long run, the returns become more negative.

2.2. Corporate financial factors in determining acquisition ability:

There has been many news in business world regarding failure of acquisition deals. The reason may be the inability of the firm to acquire another firm at that time which it failed to anticipate. Acquiring firms must have the financial resources and strength before going for such takeover attempt. Vyas, Narayanan and Ramanathan (2012) studied the important contribution by the firm specific factors in assessing acquisition ability. They worked on the Indian pharmaceutical industry for 2001-2010. Firm size and foreign affiliation of acquiring firms increased its acquisition related investment. Similarly, high-R&D and excess capacity firms were consolidating and restructuring themselves through the acquisitions deals.

Financial strength in turn is determined by interaction of a number of factors like firm size, Tobin's q, leverage, and intangible assets, etc.

2.2.1. Size of the firm:

First important variable to gauge financial strength is the ownership of financial resources which can affect its acquisition ability. Size of the firm is a key of its financial health. It can be measured through annual sales and cash holdings of the firm. (Fazzari et al., 1988).

Size of firm can affect its investing decision in numerous ways. Size of the firm gives it different capacities to achieve the economies of scope and scale (Majumdar, 1997). Firm size may act as double-edge sword in acquisition market. Large size through the improved capabilities can increase profitability and making investments possible. It may also bring more market power and overconfident managers leading towards inefficient firm (Shepherd, 1986).

A non-linear relationship exists between size of the firm and export volume. Firms can increase its profit margin through exporting more sales volume thus having better investment opportunities in market for corporate control (Kumar and Siddharthan, 1994). Another interesting study relates size of the firm with motive behind the acquisition. Based on the sample of pharmaceuticals and biotechnological firms, Danzon et al. (2007) argued that smaller firms may opt for the acquisition decision to achieve the economies of scale while empirical results are opposite. And this market is dominated by large scale firms.

Moeller *et al*., (2004) showed the impact of firm size on post-acquisition gains for the firm. Small firms show much better performance after announcing the takeover intention while large firms suffer decrease in shareholders wealth after acquisition announcement. They could not provide explanation for non-linear relationship between size and gains of acquisition. The results are in line with managerial hubris hypothesis which advocate that large firms receive decrease in synergy due to over-paying for the targets.

Motives of acquisition does change with respect to the size of the acquiring and acquired firm. Firms take acquisition decision for growth motives irrespective of its size (Duflos and Pfister, 2008). Large size of the firm may give them the benefit of large stock of gathered knowledge so they are more active in acquisition deals (Dessyllas and Hughes, 2005). This is particularly important for high-tech firms. Large size of the firm can increase market power and can decrease the cost of capital due to lower risk as per Lubatkin (1986). The work of Kaplan

(2010) negates the impact of firm size on acquisition deals. Relative size of both the firms and amount of deals are directly related indicating that acquisition is a tool for size improvement and not always to optimize the value of the firm (Diaz and Azofra, 2009).

Size effect leads the managers towards more hubris behaviour, resulting in overpayment of purchase consideration and loss of synergy **(managerial hubris hypothesis** (Roll, 1986)). While the size of the target firm may provide natural anti-takeover defence as now acquirer becomes cautious while involving huge outlay in purchasing big giants.

Hypothesis 7: **size of the acquiring firm affects its acquisition ability.**

Janse, Sanning & Stuart (2015) showed in their study that such size effect is much evident in small firms showing better gains and synergies as compared to big firms characterized by lower synergistic gains and overconfident deals. So the bidder size and the post-announcement abnormal returns are negatively related. Fich et. al., (2016) showed that large size of acquirer as compared to the target firms results in larger wealth gains for shareholders at announcement of the deal. The previous studies shed a light on this impact of firm size on acquisition decision but the linearity of relation is still debatable.

Another important variable is the availability of cash holdings to the firm. If a firm is having ample cash reserves, it can indulge into number of strategies like redemption of bonds and debts, paying cash dividends, repurchase of stocks or acquisition of other entities. So the firm becomes better able to acquire other firms even through method of cash payment.

Hypothesis 8: Presence of large cash holdings increase the acquisition ability of the bidding firm.

In absence of capital rationing, chances are that firm may become less cautious and may accept value-reducing acquisition. Presence of free cash flows may give more power in the hands of

managers so they may choose poor economic decision by accepting low NPV projects (Jensen, 1986). One of such projects can be acquisition of other firm. It is evident in oil and gas industry wave of mergers and acquisition. Ample cash reserves give more discretion to the managers in corporate empire building due to improved resources.

Higher cash and cash equivalent can have positive impact on firm through signalling better recent performance. This may signify the good quality management teams making acquisitions in the interest of the firms. So cash flows can have both positive and negative impact on acquiring firms' performance proceeding the acquisition.

2.2.2. Age of the firm:

Age of the firm is an important consideration in the decision making procedure through enhanced experience and capacities. Thus firm is better able to make investment decision and can compete with other firms effectively. Older firms enjoy the benefit of learning curve impact on important strategic decisions like mergers and acquisition. However, the newer firms are more flexible and responsive to changes in economic and market dynamics. There are less bureaucratic practices and fewer layers in their structure (Marshall, 1920). Duflos and Pfister (2008) supported this view of higher involvement of younger firms in acquisition market. Younger firms want to grow and one way to achieve growth is through mergers and acquisitions. Age of the firm is related to the stock of patent rights and the level of patents may reduce incentive for innovation and acquisitions (Lin et al., 2010)

Hypothesis 9: Increase in age of the acquiring firm reduces its acquisition ability.

Another important research by Arikan, & Stulz, (2016) was aimed at finding the relationship between firm age and its performance in acquisitions. Agency theory shows that age factor is related to lower values as older firms give benefits to the managers. Whereas, such firms can increase shareholders wealth due to utilization of resources as per Neo-classical theories. This

study shows that acquisition rate is a U shaped curve along with firm's life cycle. Younger firms make acquisition in same line of business. The theory also supports that acquisition can bring better growth options and efficient performance. However, the market response is negative for acquisition announcement deals by older firms.

2.2.3. Intangible assets:

Similarly, some item of financial strength may not appear on books of account but their presence does influence the merging and acquisition ability. This is formulated in a model of investment expansion by Rubin (1973). So if a firm has excellence in any particular area like production, research & development etc., it may expand its skills by acquiring other firms. And most suitable proxy for such off-balance sheet item is the intangible assets owned by the firm.

Hypothesis 10: presence of intangible assets on balance sheet of acquiring firm increases its acquisition ability**.**

2.2.4. Tobin's Q:

Tobin's Q is the ratio between the market value and replacement costs of total asset (James Tobin 1969). It shows the linkage between capital markets value and the book values of assets. Tobin's Q can be used to differentiate between firms having investment opportunities with those not having such opportunities. Lang et.al, (1991) find that the value creation can be ensured through acquisition of low Tobin's Q firm from high Tobin's Q firm. So Tobin's Q is an important proxy of acquisition ability.

Investments through acquisition and mergers increases the growth pattern of the firm in form of Tobin's Q. If firms have investment opportunities available, it may increase their internal rate of return as compared to the cost of capital. So firms have higher Tobin's Q and it may decide to go for acquisition as per Andrade and Strafford (2004). High Q values leads to better investment opportunities while lower Q value leads to lower investment activities.

A contrasting result is presented by Duflos and Pfister (2008) that acquiring firms have lower performance depicted by Tobin's Q and they do not enjoy higher growth rates. Similar results of lower Tobin's Q are drawn by Danzon et al. (2007) while working on pharmaceutical and biotechnology firms.

Another stream of literature discusses the significant positive association between firms Tobin's Q and its acquisition chances. The acquiring firms with high Tobin's Q should acquire lower Tobin's Q target firm so result is synergistic gains to both the firms ((Jovanovic and Rousseau (2008), Blonigen and Taylor (2000) and Dessyllas and Hughes (2005)). So it can be concluded that Tobin's Q plays an expansionary role in acquisition transactions.

Hypothesis 11: Higher Tobin's Q of the acquiring firm increases its acquisition ability.

2.2.5. Capacity Utilization:

Another significant variable in acquisition decision is the capacity level of acquiring firms. Acquisition can be a tool to increase capacity level if the firm is at maximum level of capacity so it may acquire another firm to use its capacity. In this sense, merger and acquisition can expand as well as contract firm production capacity. Acquisition can play the expansionary role in form of positive association with capacity of the firm. It will act as contractionary agent if have negative impact on capacity level.

Andrade and Stafford (2004) at firm level analysis indicate the opposite but significant effect on acquisition. It thus proves that firms with excess capacity can use acquisition transactions for consolidation and restructuring. However the opposite results have been obtained if the samples are analysed after the financial liberalization (1990).

These results are mostly observed in those industries where products are protected by patent rights like bio-tech and pharmaceutical industries. Gap in expiration of patent right and new

drug discovery results in excessive capital in form of physical resources and human capital. Thus firms can restructure their assets through acquisitions (Danzon et al., 2007). These two variables i-e, drug age (represented by percentage of firm's drug that are old and at risk of losing patent protection) and acquisition probability are positively related with each other. So firms enter into market for corporate control after patent expiration and resulting effect on profitability and labour productivity. Firm's investment decision and capacity increase are directly associated in technology acquisition (Pandit and Siddharthan, 1998)

Hypothesis 12: Lower capacity level of the firm increases its ability to acquire other firms.

2.2.6. Advertisement Intensity:

When a firm is going for product differentiation, its allocated budget for adverting expense increases accordingly. The acquisition of another entity helps firm to achieve economies of scope and product portfolio is enhanced. The combine entity brings diversification in product portfolio and improvement in advertising and marketing skills, thus leading to competitive advantage of the firm. Advertising intensity also significantly increases the acquisition behaviour of large firms as evident from Indian economy (Pandit and Siddharthan, 1998)

Hypothesis 13: firm's higher advertisement intensity shows better acquisition ability.

2.2.7. Leverage:

Debt is traditionally thought as a burden on firm due to its fixed cost. But it is good in the sense that it creates a check on the managers to perform well. In order to pay to debt holders timely, managers have to perform well and debt covenants may reduce the chances of over investment in negative NPV projects (Jensen & Meckling, 1976, Jensen 1986). Higher debt levels also decrease future free cash flows thus limiting the managerial power (Lang et al. 1996). So presence of leverage may also be beneficial while making acquisition decision. It will increase returns to the firm.

Relationship between acquisition activity and the financial leverage is negative and significant as per Andrade and Stafford (2004). Same negative but insignificant relationship is provided by Dessyllas and Hughes (2005). Other studies on factors of corporate investment decisions also provided the negative association between these two variables (Bopkin and Onumah, 2009). On the acquired firm's side, increased leverage may protect the firm from takeover (Garvey and Hanka, 1999).

Hypothesis 14: higher debt level reduces acquisition ability of the firm.

Brune, Lee & Miller (2015) show the performance of acquiring banks which are facing problems of capital constraints as compared to non-constrained banks. The results indicate that such banks are conscious in payment to their target and favours cash as mode of payment. Result is better performance and cost efficiency for such banks after acquisition deals.

2.2.8. Dividends:

This variable is related to cash holdings. If a firm is using cash holdings for payment of mergers and acquisition, the shareholders may not get benefit of cash dividends. Low pay-out ratios may result in accumulation of cash which ultimately enhance the merging and acquisition ability. Jensen (1986) and Hoshi et al. (1991)

Hypothesis 15: Low pay-out ratios lead towards higher acquisition ability.

Easterbrook, (1984) & Jensen, (1986) show the opposition of managers for dividend disbursement as dividend pay-outs decrease the amount of cash available at will of managers. This agency problem is evident in previous studies on CG mechanism and dividend disbursement policies. Francis, et al., (2011) provide that if management teams are more protected by antitakeover laws and tactics, they will pay less dividend to investors. This is more observable in small sized firms and firms with bad CG mechanism.

It is interesting to note that almost identical factors act as determinants of being acquired by another frim. Irfan, Saba & Singh, (2016) provide empirically that chances of acquisition by another firm are higher in case of older, bigger target firms having higher expenses on Research & development and advertising expenses. Theses chances are lower for profitable and levered firms.

2.3. Regulations and market for corporate control:

Another long debated outcome of merger and acquisition deals is the creation of monopolies and cartels so regulators need to pay attention to approval of such deals. Regulatory authorities may control such deals through rules regarding voting power and proxy fights, improving code of corporate governance and antitakeover tactics available with target firms. Federal laws restrict antitrust actions through disclosure requirements for trading in share (particularly transactions exceeding 10% shares), and particularly for highly sensitive financial sector firms.

Such regulations on free trading of shares has been criticized as well by investors as it may add up their transaction cost for disclosing every important deal in capital market. It also gives a red signal to potential target management teams and they may start actions to avoid such threats of acquisition. They may devise antitakeover defences in form of poison pills and other strategies that make the target firm less attractive. However, these actions also pose cost to the shareholders of target firms (Wier (1983) and Eckbo (1983), Ellert (1976)).

Regulations has also empowered shareholders in form of voting rights and process of proxy voting. As a result, majority of the firms are adopting majority voting in electing board of directors. New York Stock Exchange in October 2006 suggested a rule to remove the discretion of broker in director's election. This rules gives more discretion to institutional investors instead of brokerage firms to actively participate in the voting.

Securities and Exchange Commission also changed rules for director's elections and proxy fights. These rules allowed the shareholders to nominate their own new directors and to include his name in company's proxy statement. All these rules creates the possibility for more proxy fights and antagonistic competition (Bombau *et al.*, 2007). These improved rules are improving the involvement of investors in delicate decision of firm. All such changes in regulations show the important and sensitive nature of acquisition decision.

Hypothesis 16: Highly regulated firms have better acquisition ability.

Another study concludes that Sarbanes-Oxley Act could not bring changes in quality of earnings before mergers and acquisition transactions. Managers have reduced earnings management in events like major accounting frauds and end of booming technology stock prices. So the managers actions are more responsive to market behavior as compared to regulations by government (Gavious,& Rosenboim, 2013).

2.4. Stock-Price Effects of Corporate Control Transactions:

Most of the previous research on issue of corporate control has been done in this area. Stock prices of target firms are responsive to the acquisition activities. Target firms share prices show a sharp increase and bidding firms shares normally show less response. The US-based evidence collectively suggests these results. Such market responses are studied in the short run. Less effort has been put to find the long term effects on variables like managerial efficiency.

The traditional view of these acquisitions activities is to acquire the resources of target firm or to increase economies of scale. In 1980s, Bradely has presented a different view of these activities and linked it to the transfer of control of the firm. The theory of corporate control lies at the heart of acquisitions. Shares are acquired in bulk in order to gain the control of target firm. That control on assets of target firm is such a valuable asset that bidding firm is ready to

pay premium price for target stock (Bradely, 1983). They continue to pay premium price until target shares confer control.

Bradley (1980) discussed inter-firm tender offers to acquire stocks. Such offer means managers of one firm propose to buy a significant number of shares of target firm. They made this offer to the shareholders of opposite firms on part of their own investors. If the acquisition is successful, all target shares will be exchanged for either cash or shares of the acquiring firm. This theory is supported with empirical evidences in response to tender offers.

As a result of tender offer, capital gain is accrued to shareholders of both the firms. The consolidation of corporate control of firms results in a value added investment for shareholders of both firms (Dodd and Ruback, 1977). It increases shareholders wealth. Target shareholders are better off due to capital gains irrespective of the result of offer or their tendering of shares or not. They enjoy premium price offered in tender offer plus the increase in share price.

However, acquiring firm suffers a capital loss on purchased shares of target. Another interesting fact is that the capital gain enjoyed by acquiring firms is not due to appreciation of share price of target. The reason being that it has already paid at least expected increase in share price of target as offer price otherwise the target firm's stockholders will not tender their shares. Whole profit comes from securing control of the target resources, synergy or some other reason.

The acquiring firm's share price increases as a result of acquisition due to the reason that now they also represent claim on bidding firms' resources. So anticipation of synergies bring gains and maximize shareholders wealth. So the benefit of the acquisition is realized in form of capital gains due to better investment in bidding firm.

Tender offer is made in open market and at least 10 trading days are there between offer and its execution. So it comes in knowledge of competing firms as well as target firms management. Hence the shares of target firm flow to that firm which makes the best offer for controlling share. This high premium price restricts acquiring firm to enjoy capital appreciation of target firm. Share price of target firm after acquisition deal is higher than pre-acquisition level, but quite lower than the price paid in acquisition deal.

Inter-firm tender offer affects the shares of those firms that have been targets of unsuccessful offers. These firms experience increase in share price more than the offered price. Thus the shareholders of target firms may not accept each and every tender offer and will select value maximizing investment offer as rational agents and reject all other offers.

Synergistic gains from mergers and acquisitions and their partition between both firms are also discussed by Bradely, Desai & Kim (1988). Both firms are better off by transfer of corporate control. Regulatory and other pressures on tender offers have been a zero sum game: the higher gains to the target firms investors means the equivalent losses to the acquiring firms' investors.

Roll (1986) has suggested the 'Hubris Hypothesis'. He propose that target shareholders are not benefited due to synergistic gains, rather by transfer of wealth from shareholders of bidding firms. Problem lies in accurate measurement of such synergistic gains. Whenever bidding firms value the target stock, result is not always an accurate assessment. If calculated intrinsic value lies below the current stock price of target, it means that target firm is overvalued already. Thus biding firm should not pay premium for a stock, already overvalued. Rational response should be withdrawn of bid; however, it is not always the case.

Due to hubris, managers didn't withdraw the bid even if it is not feasible. Loss is born by the shareholders of acquiring firm because of inaccurate measurement of target firm. So some researchers blame managers for consciously leading the shareholders at a wealth loss.

However, if this is the case so in large samples of M&A, shareholders can use their voting powers to stop managers against such practices. As it not largely observed in the market for corporate control, so hubris does not reside at the core of M&A activities.

Interfirm tender offers have no implicit impact on other stake holders like bondholders and creditors. This fact is proven by Kim and McConnell (1977) and Asquith and Kim (1982). Bradely, Desai, & Kim (1983) show the increase in target firms' shareholders wealth as a result of a fruitful tender offer. These capital gains can be attributed to signalling effect about future prospects of new firm (**information hypothesis**) or expected synergy benefits (**synergy hypothesis**).

When resources of both firms combine, it changes the valuation of target shares as a result of synergistic gains. It may not be the result of new share price reflecting all information about true value of firm as per information efficiency. So synergy hypothesis provides better explanation of capital gains as compared to information hypothesis. But the results are mixed with regard to returns for unsuccessful deal. The synergy crated through combination of both firms also affect the bidding firm and gives it a competitive advantage as compared to unsuccessful bidder (Joint hypothesis).

Jensen and Ruback (1983) gave a new idea of market for corporate control. This market is often referred as takeover market. Traditional view of takeover market is where shareholder, either alone or in groups, are actively buying shares of the firm. Their motive was thought to gain control of firm to loot the assets, replace existing management in order to increase their wealth. Jensen & Ruback presented takeover market as a place where management teams are competing for valuable resources and one of such resource is the corporate resources of target firms. So it can be considered as labour market of managers as discussed by Fama (1980).

So this **"managerial competition model"** assumes active role of management teams in process of merger and acquisition. Shareholders are playing a relatively passive and clever role in final decision making. As managers have better information in market, so they can look for better firm to be target for takeover. The shareholders of target firms are value maximizing investors. So they are not bound by so called loyalty to management teams. They hand over the control of firm to that management team which is more efficient, proactive and promising them premium prices.

Share Prices of acquired firm increase on merger announcement and afterwards. If the markets are efficient, then this increase in price is a result of anticipated increase in profitability due to acquisition. While in case of acquirer stocks, their market prices either remains unchanged or have shown the declining term. One possible explanation can be that acquirer firm's manager overpaid the purchase consideration in the heat of hunt. So it can result in decrease in share price. Even much disturbing consequence is studied by Mitchell and Lehn (1990), in their interesting study entitled as 'Do Bad Bidders Become Good Targets?' The firms that experience decline in prices after bidding are susceptible to become targets of bids.

Another interesting factor is that market for corporate control may act as double-edged sword. It can foster as well as harm the pace of acquirer firms. It results in downfall of firm as managers put them at difficulty of managing a new type of business, for which they have paid premium too. On the other hand, it may lead to correction in return as well in long run.

The bidding firms experience lower returns in case of diversifications, pre-acquisition poor performance and when target firm has high growth rate (Morck, Shleifer and Vishny, 1990). Similarly, another reason for negative and lower return can be low Q ratio and higher cash reserves (Lang, Stulz and Walkling, 1991)

With a sample of more than 1,900 Canadian corporate acquisitions over the period 1964-83, Eckbo (1983) shows first evidence on the valuation consequences of merger activity in Canada and concludes that these investments indeed create momentous gains to stockholders of both bidder and target firms.

An interesting fact about less benefits accruing to the bidder firm lies in measurement problem of the benefits. It may be possible that noteworthy gain to bidder firm is already incorporated in its share price due to anticipation about deal well before proper announcement. Another interesting study by Eckbo (1983) sheds light on the role of competition among rivalry firms if one competing firm is facing takeover attempt by its rival. The result may be positive gains for bidding firm, however, these results are contrasting to most of the other empirical studies.

Shaver (2006) has given a new idea about firm value destruction as a result of acquisition through mechanism of contagion effect and capacity effect. **Contagion effect** is shown in case of negative shocks (competitive or environmental) of one firm being threat for another firm due to their integration and interdependence. Secondly, the combined firms can use maximum utilization of all tangible and intangible resources, resulting in slack resources. So firm may become unable to capitalize on any new opportunities offered by system. This is called as **Capacity Effect.** These two effects may explain the loss of value to bidding firm after acquisition deal.

Capron and Shen (2007) has related the concept of acquirer returns with ownership structure of target firm i-e, being public or private. The acquirer firms decide about target based upon characteristics of deal as well as target firm. Their decision favours private targets in similar nature of business while preferring public targets with high intangible assets when exploring new industries. On average, high abnormal returns are accrued to the firm as a result of acquiring private firm as compared to acquiring a public firm. This phenomenon can be termed

as 'the private firm discount'**.** The acquirer firm can purchase private firm at a considerable discount price thus enjoying higher returns.

Zaremba and Płotnicki, (2016) compared the post-acquisition performance of bidding firms in both short-run as well as long-run. The results clearly indicate that both firms are benefited in terms of value creation in short time period after take-over announcement. Even in long run, the acquisition is having no negative influence for acquirers' value after controlling for size, value and momentum effects in portfolios. This study is a detailed one in context of European sample.

Another research study by Sabet & Heaney, (2016) checked the impact of the acquisition announcement in oil and gas property and reserves on the share price of US listed oil and gas companies. The empirical results provide a statistically significant market reaction after event announcement as indicated through event studies. However, difference exist between two types of these acquisition in oil and gas industry.

Hypothesis 17: Acquisitions can bring abnormal returns for the acquiring firms' shareholders. Another study conducted on Indian banking sector compares the performance of banks before and after acquisition through event study and ratio analysis. However, empirical results fail to show any improvement in performance of acquiring firms as a result of acquisition (Pahuja et al., 2016).

2.5.Impact of Acquisition on cost efficiency:

A very important synergistic gain of mergers and acquisition is to improve on cost efficiency. Farrell (1957) is the pioneer researcher in the field of efficiency. If a firm's actual point of production exactly lies on the benchmark frontier production function, it is the case of perfect efficiency. If it lies below the frontier, then firm (Decision Making Unit, DMU) is said to be

less efficient. Two main components of efficiency includes technical and allocative efficiency. Technical efficiency is defined as "ability of a firm to obtain a maximal output from a given level of inputs". Allocative efficiency, on the other hand, mean "ability of a firm to use inputs in optimal proportions, given their price and production technology". (Fiorentino , Karmann and Koetter, 2006). These two measures combine to form total efficiency. This may be named as overall cost efficiency from input perspective or overall revenue efficiency from output side.

Cost efficiency phenomenon is tested mostly in the financial sector particularly in banking sector. Researchers have applied both parametric and non para metric tests to evaluate the bank mergers efficiency. Rhoades **(**1993) studied a large sample of US financial sector mergers. The results of this research could not support the improvement in cost efficiency as a result of merger. Favero and Pepi (1995) appraised the efficiency of a sample of Italian banks in 1991. They used a comprehensive technique to compute scale efficiency and technical efficiency through the data envelopment analysis (DEA) model along with traditional regression model.

Some studies link banking mergers with the factor of location. Rose (1996) studied 84 large U.S. bank holding companies undertaking inter-state bank mergers. Results indicate that due to mergers, the operating activities of banks diversified due to different locations thus limiting the cost of operations and chances of bankruptcy. Some studies empirically analyze the cost efficiency through the technique of SF (the stochastic frontier) cost function, on a sample of 492 European credit unions for 1988-92 time period (Vennet, 1996). The results fail to show improvement in economies of scale but a significant cost reduction has been observed for large scale mergers. Similarly, Peristiani (1997) provide the creation of economies of scale but no efficiency after the merger of US banking sector mergers during the 1980-90 decade.

Another stream of research has analyzed the profit analysis of banking sector mergers in 1980s. The findings reveal improvement in cost and profit efficiency after mergers (Akhavein, Berger, and Humphrey, 1997). Both DEA and parametric test show similar results about the operating efficiency of acquisition deals (Resti, 1997). The difference lies just in properties of two approaches.

Bauer, Berger, Ferrier, and Humphrey (1998) measure the efficiency score of US banking sector during 1977-88 by using four different techniques (DEA, stochastic frontier cost function, thick frontier analysis, and distribution-free approach). The other three techniques give better and consistent efficiency scores as compared to data envelopment analysis. These three techniques show consistent scores of efficiency as indicated by efficiency scores. And the results are higher as compared to Data Envelopment Analysis scores. DEA technique is used to determine cost efficiency in health sector by Yu (2011).

Researchers have also highlighted that positive effect on economies of scale and scope are observed only if new branches are working in future and new setup has been established (Lang and Welzel, 1999). These findings are again on a sample of financial firms. Lin (2005) checked the allocative and technical inefficiency along with cost inefficiency in Taiwan. Empirical results indicate that banking sector merger improves cost efficiency as well as allocative efficiency.

Lin (2005) worked on a sample of banks in Taiwan to determine mergers and their effect on cost efficiency. Banking sector witnessed a high growth rate of M&A activities after Asian financial crisis of 1997. This study works on 46 banking mergers from 1997 to 1999. The results are quite interesting. The effect of mergers on cost efficiency is dependent upon culture

of banks. In case of same nature of banks, no improvement has been observed after the banking mergers. However, the impact is positive in case of different cultures of banks. The possible reason may be the more chances of innovation in case of heterogeneous banks. Size factor also affected the efficiency and small banks outperformed large banks in this scenario.

Jeziorski (2014) while working on radio industry consolidations provides support for resulting cost efficiencies for the firms based upon synergy and economies of scale. The biggest gain of used estimator is its ability to identify the cost curve just from merger decisions, without even using data of cost savings. On basis of previous studies, we may hypothesize that

Hypothesis 18: There has been a significant change in pre-vs. Post-acquisition cost efficiency of acquiring firms.

2.6.Impact of M&A on operational hedging:

Risk management is one of the key functions of financial managers to increase value of the firm. Its importance cannot be denied in the current area characterized by cut throat competition, changing economic conditions and technological advancements. The firms are facing various risks in their operations as well as financial risks (exchange rate risk, interest rate risk, political risk and investment risk) thus reducing the firm value. “The process of trying to hedge the effect of these risks exposure on firm value” is called as the risk management. Large firms are using these techniques to create value in imperfect market conditions (Mayer & Smith, 1982) and Shapiro & Titman, 1986)

Miller & Modigliani (1958) provided this hedging decision to be irrelevant for a firm but their assumptions of perfect market are just idealistic instead of realistic. In real world, managers and accountants are actively engage in risk minimization tactics. Most common way of hedging is the use of costly derivative and money market instrument. But another risk of the firm

through its operation may not be tradable in capital markets. So operational hedging is also need of the day. This type of hedging is relevant in many fields like finance, strategy and international business and operational management. Operational hedging can serve best in combination with financial hedging.

Operational hedging refers to the reduction in risk level in firm's operations. It includes those actions that minimize risks exposures by using non-financial instruments especially the operational activities of the companies. Smith & Stultz, (1985) argued that decrease in cash flow volatility can increase value of the firm (Operational hedging theories). This smoothening of cash flows is very beneficial for shareholders. The volatility in cash flow creates problem in obtaining external funds and firm's investment policies. Thus it is costly for shareholders (Minton & Schrand, 1999). It also enhances probability of the negative cash flows in future and perceived risk of default. So firms managers strive to smooth their earnings (Truman & Titman, 1988).

Along with other hedging strategies, acquisition can also be a way of achieving operational hedging. It helps in reducing costly income volatility. Acquisition provides the channel of taking control of another entity with diversified business practices, assets base, technology, human skills and projects base. Berger et al., (2005) provide empirical support for use of hedging techniques as per business structure. The acquisition of target reduces cost of income and cash flow volatility. They focus on operational hedging as its vivid changes may substitute costly financial hedging.

Acquisitions are considered a tool for reduction of risk especially evident in case of conglomerate merger wave of 1960's and 1970's. In such mergers economies of scale and monopolistic gains cannot be achieved so acquirer is left with other motives like risk

management. This view faces much criticism. Opponents believe that risk can be reduced by less costly diversification strategies rather than going for costly mergers and acquisitions.

The shares of acquiring firms may be trading at lower than their intrinsic value in the market (Kraakman, 1988). So the improved share price might not actually indicate the expected benefits in efficiency. Similarly, some studies argue that gains of mergers may be the result of reduction in current expenses in research and development and physical investment and plant and due to middle management experience. The lower level of such expenses may deceive the shareholders and market makers as they overvalue short-run gains and ignore the future gains which may derived if such expenses has not been cut.

Hypothesis 19: There has been a significant decrease in income volatility after acquisition of target firm.

2.7. An Overview of Pakistani Market:

Wave of mergers and acquisition affects all the economies and all the countries. And Pakistan is no exemption to this phenomenon. Most of such examples are observed in the financial sector especially in banking sector. The reason is strict regulations in this sector. But regulation is not the only determinant of market for corporate control. There are so many other firms and banks too which are lead into mergers and acquisitions due to factors other than regulation.

Basel Accord II, executed by state bank of Pakistan, can be an important reason for mergers and acquisitions. One condition imposed by this accord (2005) on all banks was to meet the paid up capital requirement of 23 billion Pakistani rupees till 31 December 2013. As per market situations, this requirement had been reduced to only 10 billion rupees later on. But banking sector faced difficulties in meeting this capital requirements through traditional methods of shareholders equity and retaining profits in banks so they opt the mergers and acquisitions

(Rehman, et.al.,nd). Previous studies in this connection has been conducted on the impact of M&A transactions on bank profitability. These results are supported by Mehmood and Loan (2006) whose studies showed the increase in bank profitability as a result of cost efficiency.

To analyse the impact of merger and Acquisitions on profitability of Pakistani banks, a study has been conducted. In this analysis, researchers have taken the sample of ten commercial banks listed in PSE and evaluated its results through various ratios test analysis of pre and post deal and they conclude that all the ratios confirm a negative correlation between Mergers and acquisitions and profitability (Kouser and Saba, 2011).

Another study has been conducted on banking sectors mergers (Khan, Kayani, & Javid, 2011) to check resulting impact on interest rate spread and market power of firms. The results are quite interesting as indicating threshold level of market concentration as measured by Herfindahl-Hirschman Index. However no improvement has been observed in profitability and interest rate spread as a result of mergers.

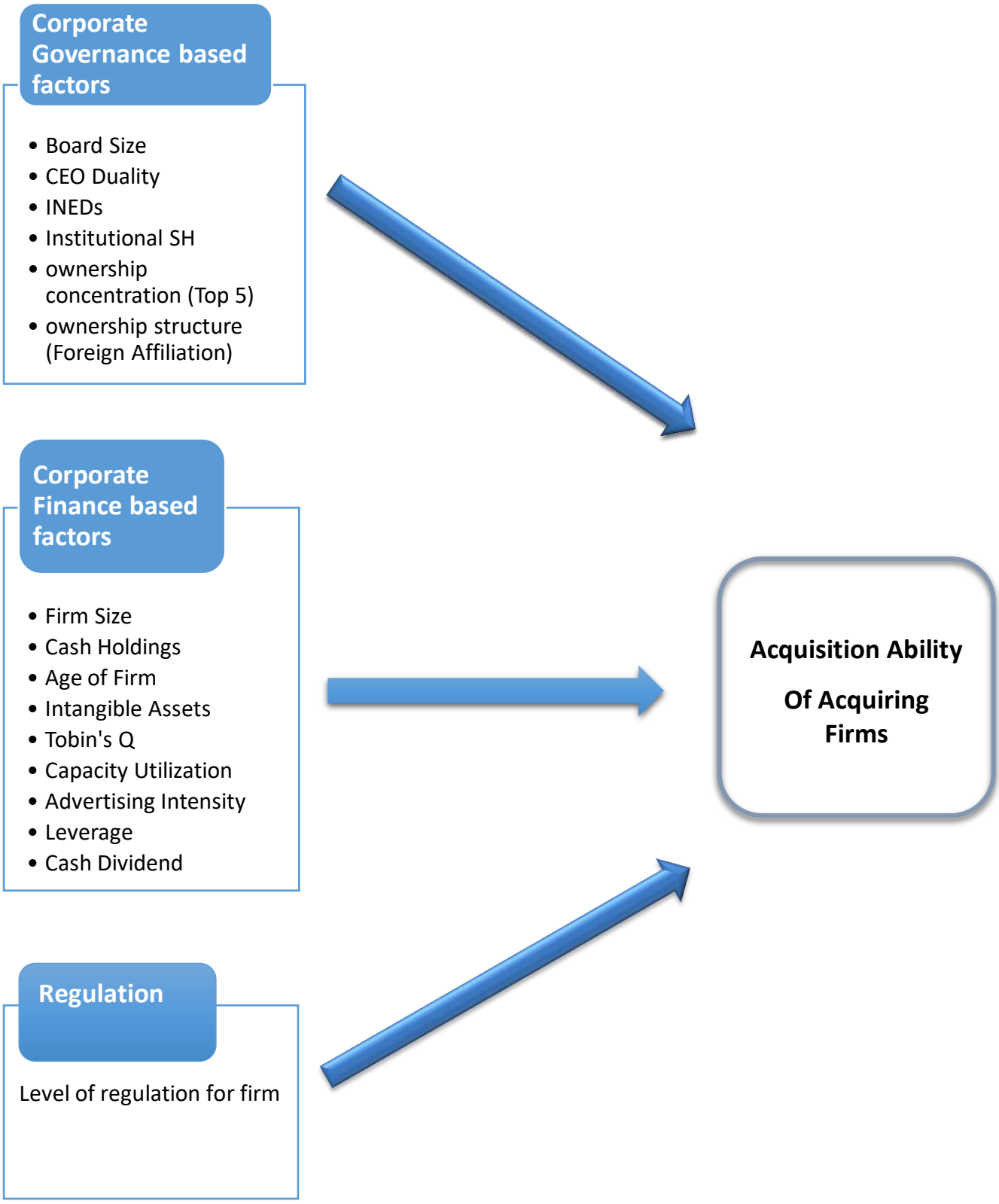
Irfan *et al*. (2014) have worked on banking sector of Pakistan. They used various ratios to test whether mergers and acquisition improves bank performance or vice versa. Profitability, liquidity, solvency and investment ratios are used to gauge the improvement of bank performance. Results indicate an inverse relationship between acquisition and performance. Banks going through shift in corporate control have experienced a negative impact on their performance.

A similar study has been conducted on banking sector of Pakistan to check financial performance after merger and acquisition (Abbas et al. 2014). Based upon profitability, efficiency, liquidity and leverage ratios, no improvement has been observed as a result of such deals in sample data.

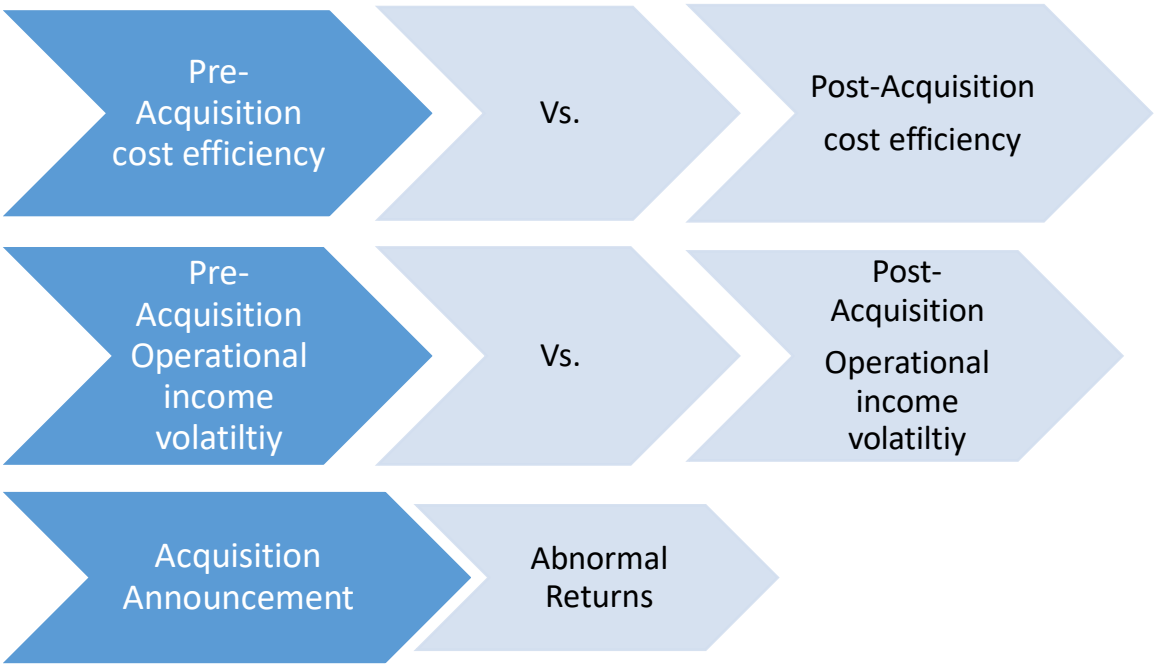
With the passage of time, now focus of researchers has been shifted to other unaddressed issues. Akhtar, Javid, & Abbasi, (2014) in a working paper worked to determine the factors affecting the deal amount and mode of payment in Pakistani acquisition deals. Results indicate a significant effect of ownership structure in mode of payment for such deals. Financial variables of bidder also determine mode of payment. More chances of cash payment in case of non-listed target firm. Deal amount is influenced by size of both firms. Bidder firms pay less for non-listed target firm as compared to public limited listed firm.

2.8.Modeling Framework:

2.8.1. Model 1: Determinants of Acquisition Ability



2.8.2. Model 2: Effects of Acquisition on acquiring firms:



CHAPTER 3

DATA DESCRIPTION AND METHODOLOGY

3.1. Research Design:

This research is aimed at finding various firm specific and regulatory determinants of acquisition ability of the acquiring firms and the ultimate impact of acquisition on post-deal performance of the firm. So the data has been collected and empirically analysed from a sample of acquisitions in Pakistan.

3.2.Data and sample:

This study has employed data of all the acquisitions deal finalized in Pakistani market from 2004-2012. Only these years are taken due to the data availability issues. One of the variable corporate governance is reported after 2004 so could not find data before that. Similarly, in order to analyse 3 years post-acquisition performance of acquiring firms, the researchers have to limit it till 2012.

List of acquiring companies and detailed information on such deals have been obtained from the competition commission of Pakistan (annexure). This study consider only those acquisitions where

1. The acquisition transaction is completed.
2. The acquirer controls less than 50% of the target's shares prior to the acquisition announcement and owns above 51% of the target's shares after the transaction.
3. Company is listed on Pakistan stock Exchange
4. Sample has been decided on matching basis i-e, both financial and non-financial acquiring firms and their equivalent firms but not involving in such deals. The sample firms are compatible on the basis of firm size.

5. Variables of corporate governance have been taken from the annual reports of these companies one years prior to the date of acquisitions as recommended by Vyas, Narayanan and Ramanathan (2012).
6. The annual financial statement information of the acquirer has been obtained from the annual reports and balance sheet analysis published by state bank of Pakistan.
7. Stock prices of the companies have been obtained from website of Pakistan stock exchange and business recorder.

3.2.1. List of Variables:

Variable	Abbreviation	Description
Acquisition Ability	**AA**	Dummy variable, it takes value of 1 if firm has acquisition ability and 0 if it does not.
Board size	**LBS**	Log of board size (the number of directors of a company present on board of directors)
Board Independency	**INED**	proportion of independent Non-Executive directors among total directors
CEO duality	**CEO**	Representing leadership structure of board (0 represents the situation that CEO holds the position of Chair of the board of Directors, while 1 refers to splitting two positions between two different individuals).
Ownership concentration	**Top5**	Ratio of Shares held by top 5 shareholders to total outstanding shares.

Institutional shareholders ownership	**Inst**	Ratio of Shares held by institutional shareholders to total outstanding shares.
Ownership structure	**MNEA**	MNEA=1 if foreign affiliation exists, 0 otherwise
CORPORATE FINANCE		Corporate finance variable is constructed by taking the variables like log form of annual sales, annual cash holdings and intangible assets of the firm, age, foreign affiliation, capacity utilization, advertising intensity, leverage, dividend payments and tobin's Q.
Size of firm	**LS**	Log annual sales.
Cash holdings	**LCash**	Log annual cash holding, including cash and tradable financial assets.
Log Age of the firm	**LAge**	Log of firm age (Difference between the year in the study and the year of incorporation of firm)
Intangible Assets	**Int**	Ratio of intangible asset of the firm divided by total assets
Tobin's Q	**Q**	Tobin's' Q ratio (book value of total assets deflated by market value of total assets, indicating the growth opportunity).

Capacity Utilization	**CU**	Total sales of the firm /Total assets of the firm
Advertising Intensity	**Adv**	Advertisement expense /Net sales of the firm
Leverage	**Leverage**	(Book value of total debt deflated by the book value of total asset).
Cash dividend	**DPO**	Annual cash dividend payout ratio
regulation	**Reg**	a dummy variable representing the regulation (1 as highly regulated company and 0 for all others)
Cost efficiency		Pre-merger vs. post-merger comparison of Improvement of cost
Operational hedging		Pre-merger vs. post-merger comparison of Decrease in operational income volatility
Abnormal returns		Cumulative Abnormal Returns are calculated for the acquirer firm.

3.2.2. Computation of variables

Corporate governance:

This variable is showing a number of characteristics of board of directors and ownership structure. It includes; Board Size, independency of board, CEO Duality, Top5 shareholding, and ownership by Institutional shareholders.

Financial strength variable involves following firm specific financial variables; Sales, cash holdings, age of firm, capacity utilization, advertising intensity, intangible assets, Leverage, Capital expenditures, Cash Dividend payout ratio and Tobins Q.

Regulation variable is a dummy variable. Financial sector is the highly regulated sector in Pakistan and other countries due to its important role in economy. In order to continue the confidence of the public in banks and other financial institutions, Govt. and regulatory authorities pay much attention to this sector. e.g, there is strict regulation regarding number of branches or paid up capital requirements so the variable of regulation takes value of 1 for financial sector and 0 for non-financial firms.

Acquisition ability:

This dependent variable of the acquisition ability is a dichotomous variable. It takes a value of 1 if firm has acquisition ability or 0 otherwise. In literature, 3 proxies have been used for capturing acquisition ability.

1. Peng, Kang, and Jiang (2013) proposed an underlying variable of acquisition ability (AA) for Chinese firms which depends on its characteristics of corporate finance and governance. Acquisition ability cannot be measured directly, but we can observe the characteristics of corporate finance (Fin) and governance (Gov) and expect acquisition ability as its outcome. Better financial condition and more efficient corporate governance would increase corporate acquisition ability: $AA_{it}/Fin_{it} > 0$, $AA_{it}/Gov_{it} > 0$.

Thus, the rational expectation on acquisition ability should be equal to the expected acquisition scale in long run equilibrium.

$$\boldsymbol{E}(\mathbf{AS_{it}}) = \boldsymbol{E}(\mathbf{AA_{it}}|\mathbf{Fin_{it}}, \mathbf{Gov_{it}}))$$

$$\frac{\partial E(\mathbf{AS_{it}})}{\partial \mathbf{Fin_{it}}} > 0$$

$$\frac{\partial E(\mathbf{AS_{it}})}{\partial \mathbf{Gov_{it}}} > 0$$

Here acquisition scale is determined by the majority voting in favour of the acquisition decision by the board of directors. Unfortunately, such information is not publically announced in Pakistan and secondly, here the acquisition scale is not so large like developed countries. So this proxy may not be used here.

2. Acquisition ability of the firm can be measured through presence of annual cash holding, including cash and tradable financial assets. If a firm is having ample cash reserves, it can indulge into number of strategies like redemption of bonds and debts, paying cash dividends, repurchase of stocks or acquisition of other entities. So the firm becomes better able to acquire other firms even through method of cash payment.

   "If firm is having excess cash holdings, it increases the acquisition ability".

In absence of capital rationing, chances are that firm may become less cautious and may accept value-reducing projects. One of such projects can be acquisition of other firm. It is evident in oil and gas industry wave of mergers and acquisition. Managers of such firms have more resources at their disposal to build corporate empires for them.

But this is not always the case. Firms better past performance also results in increase in free cash flows. This may indicate better management teams with better ability of decision making. So both positive and negative effects are observed in case of cash flows on acquiring firm performance.

3. Vyas, Narayanan and Ramanathan (2012) worked on in the Indian pharmaceutical industry to determine factors of mergers and acquisitions. They have used a matching sample of firms and assigned acquisition ability to the firms who are involving in acquisition and 0 to non-acquiring firms but of same assets size.

Current study uses this third approach by assigning 1 for acquiring firms and 0 to matching firms. So value of this dependent variable will become 1 if firm has acquisition ability and 0 otherwise.

3.3. Multifactor Model:

This study employs a variety of sources to uncover factors that will be valuable for developing a model of acquisition ability of the bidding firm. Following the generic model of Peng,Kang, and Jiang (2013), acquisition ability is determined by the following equation;

$$\mathbf{AA_{it} = \alpha + \beta_1 Gov_{it-1} + \beta_2 Fin_{it-1} + \beta_3 Reg_{it-1} + \varepsilon_{it}}$$

Where

$\mathbf{AA_{it}}$ = Acquisition ability of the firm during time t

$\mathbf{Gov_{it-1}}$ = corporate governance variables of previous year

$\mathbf{Fin_{it-1}}$ = corporate financial variables of previous year

$\mathbf{Reg_{it-1}}$ = whether firm belongs to a highly regulated sector in last year

$\boldsymbol{\varepsilon_{it}}$ = random error.

The equation may be written in the following form by incorporating all variables.

$$AA_{it} = \alpha + \beta_1 LBS_{it-1} + \beta_2 CEO_{it-1} + \beta_3 INED_{it-1} + \beta_4 TOP5_{it-1} + \beta_5 INST_{it-1} + \beta_6 LS_{it-1} + \beta_7 CASH_{it-1} + \beta_8 LAGE_{it-1} + \beta_9 CU_{it-1} + \beta_{10} INT_{it-1} + \beta_{11} LEV_{it-1} + \beta_{12} ADV_{it-1} + \beta_{13} DPO_{it-1} + \beta_{14} REG_{it-1} + \beta_{15} MNEA_{it-1} + \beta_{16} TQ_{it-1} + \varepsilon_{it}$$

Where

AA_{it} = Acquisition ability of the firm during time t

LBS_{it-1} = log of number of directors present on the board for previous year. Lower size of the board increases the acquisition ability of the firm so expected sign is negative.

CEO_{it-1} = a dummy variable representing leadership structure of the board during previous year. CEO duality increases the acquisition ability of the firm so expected sign is positive.

$INED_{it-1}$ = Ratio of number of independent non-executive directors to total directors present on the board for previous year. If board is more independent, it may increase the acquisition ability of the firm so expected sign is positive.

$TOP5_{it-1}$ = Ratio of shares held by top 5 shareholders to total shares outstanding for previous year. Higher ownership concentration may increase the acquisition ability of the firm so expected sign is positive.

$INST_{it-1}$ = Ratio of shares held by institutional shareholders to total shares outstanding for previous year. Higher ownership stake by institutional shareholders may increase the acquisition ability of the firm so expected sign is positive.

LS_{it-1} = log of sales of the company for previous year. Higher level of sales increases the cash level, profits and ultimately acquisition ability of the firm so expected sign is positive.

$LCASH_{it-1}$ = log of cash holdings of the company for previous year. Higher cash level may give more discretion to managers and may increase acquisition ability of the firm so expected sign is positive.

$LAGE_{it-1}$ = log of firm's age last year. New firms are better able to acquire target firm due to higher growth rate but older firms have better resources and cash. so expected sign can be both positive or negative.

CU_{it-1} = Capacity utilization of the company for previous year. Lower capacity level may lead towards more acquisition of the firm so expected sign is negative.

INT_{it-1} = intangible assets of the company for previous year. Higher level of such assets increase acquisition ability of the firm so expected sign is positive.

LEV_{it-1} = leverage of the firm for last year. Higher level of debt reduces acquisition ability. So expected sign is negative.

ADV_{it-1} = Advertisement intensity of the company for previous year. Higher advertisement level may show more products and more acquisition of the firm so expected sign is positive.

DPO_{it-1} = dividend pay-out ratio of the bidding firm for previous year. Higher dividend payments reduces the acquisition ability of the firm so expected sign is negative.

$REG5_{it-1}$ = if firm belongs to a highly regulated sector, it leads towards more acquisition. So expected sign is positive.

$MNEA_{it-1}$ = if firm belongs to a foreign group, it increases the acquisition ability of the firm so expected sign is positive.

TQ_{it-1} = Tobin's Q of the company for previous year. Higher level of sales increases the cash level, profits and ultimately acquisition ability of the firm so expected sign is positive.

Acquisition ability of a firm depends upon its financial strength, soundness of its governance mechanism and its regulatory framework. By calculating the financial variables and governance related variables, researchers have tested that whether a firm is having ability to acquire or not.

3.4. Methodology:

The data has been analysed empirically by using cross-tabulations and logit analysis. The cross-tabulations explain the mean and standard deviations of some of the firm characteristics against the combination of firm's decision to acquire or not.

Logit regression is the most suitable model for such analysis because it is specifically designed to analyse the determinants of discrete dependent variables (Gujarati, 2007 and Andrade and Stafford, 2004). In this case, the dependent variable is a dummy variable with value of 1 for firms acquiring other firms and 0 otherwise.

The study has used parsimonious model of moving from general to specific while testing the above relationships statistically. So initially all the independent variables have been used to determine their impact on the acquisition ability. Then few variables have been removed to bring significant results. And final analysis have been presented for only those variables which are present in final logistic regression.

3.5. Impact of acquisition ability on firm:

In second part of the research, the impact of acquisition has been checked on various variables. For that purpose, the impact of acquisition ability has been tested on variables of stock returns, cost efficiency and operational hedging. The literature guides that such impact can be observed

through comparing pre vs. post-merger performance of these variables. The below mention techniques has been used for these calculations.

3.6. Acquisition and stock market reactions:

In next step, acquisition ability has been linked with earning abnormal return as the result of such event. Theory of corporate control says that acquisition announcement bring abnormal returns for both bidding firm as well as target firm due to synergy benefits. So event study methodology is used for calculating Cumulative abnormal returns for the bidding firm (Bradely, 1980). The largest group of studies between 1970 to 2006 (36, or 41% of the total) used the short-term window event study method (Zollo and Mei, 2008)

The impact of event is studied by estimating a 2 weeks window centered on each announcement of 33 acquisitions in our sample. The day of announcement is considered as 0 and the day prior to announcement is considered as -1, -2 and up to -7. Similarly, day after acquisition announcement is considered as 1, 2,...., 7. We begin to cumulate CAR seven days before the announcement of the initial bid in order to capture any anticipatory price behavior (leakage of information) that may occur before the actual public announcement Bradely *et al*., (1988).

Average Return model is used for this event study. Thus the share prices are used to calculate daily returns of all acquiring firms in the sample.

$$\boldsymbol{rate\ of\ return\ (Ri) = \ln (P_t/P_0)}$$

P_t refers to price at time t and P_0 refers to the previous price. Then the average rates of return of stock are calculated. For this purpose, researcher has taken 150 days estimation window before the event of acquisition. And average returns of each firm are computed. Then abnormal rate of return is calculated by subtracting the average return from actual return of the company.

$$\textbf{Abnormal rate of return (AR)} = \boldsymbol{rate\ of\ return\ (Ri) - Average\ rate\ of\ return}$$

Then t-statistics is calculated by the following formula:

$$t - statistics = \frac{\textbf{Abnormal rate of return (AR)}}{\sigma / \sqrt{n}}$$

Sigma **σ** refers to the standard deviation and **n** is the number of observation. T-statistics tells us about the impact on rate of return due to the event. Then cumulative Abnormal rate of return **CARs** are calculated (the AR are added one to the next both for pre-event and post event window) to find the Impact in aggregate.

The calculated values of t statistics are compared with the tabulated value i-e absolute value of t test should exceed 1.96. It means there is significant impact of that event in earning abnormal returns. This step is repeated for all acquiring firms in the sample.

The Abnormal returns are averaged. So we can generalize the event by calculating Average Abnormal return **(AAR)** and then calculating T-statistics on the basis of this AAR. So we can comment on the efficiency of market.

$$t - statistics = \frac{\textbf{Average Abnormal rate of return (AAR)}}{\sqrt{\textbf{Sum of squared Standard error of estimate/n}}}$$

Ideally, researcher would like to extend CAR window until the day just before the offer is executed. Reliable execution dates are not available, however, for most of the offers in our samples. The post-announcement interval of seven trading days is consistent with the industry practice that tendered shares can be withdrawn within seven calendar days (five Trading days).

In finance literature, use of short-term or long-term windows in event studies has been a long-standing and indecisive debate. Healey et al. (1992), report a positive correlation between both short term and long term post acquisition abnormal returns of operating cash flows. Some studies advocate the use of daily returns data because they allow abnormal returns to be

calculated over short time period (e.g. 150 days before an event). Shorter time period will reduce the probability of biased returns by other events and shocks on firms. So daily return data is more effective in finding an event impact on firm in isolation (Brown and Warner, 1980)

However some recent studies emphasize use of long term event window due to erroneous conclusions pointed out by short term results (Barber & Lyon, 1997; Loughran & Vijh, 1997). Since short term event studies show the cognitive biases of deal rather than shedding light on real economic value addition to firm ((Harrison et al. (2005), Duhaime, (1985) Schwenk, (1985), Tversky & Kahneman (1974).

This study could not employ the market model of event study due to very lower values of R^2 and no significant t statistics for acquisition announcement.

3.7. Acquisition ability and cost efficiency:

Another long debated objective of acquisition is the achievement of economies of scale. If a firm increases in size, it gets benefits of decrease in average fixed cost. As more number of units are getting divided on fixed cost so average total cost decreases (Bittlingmayer, 1998).

Efficiency level of the firm means the better allocation of the resources. It does not always guarantee top position and becoming the market leader but the efficient utilization of resources in the best combination (Kumar and Galati, 2010).

3.7.1. Measurement of Firm Efficiency:

Varying nature of techniques can be used to measure the efficiency level of the firms. Some common techniques used in literature are financial ratios, Analytical hierarchal Process, Data Envelopment Analysis, Deterministic Frontier Approach (DFA), Stochastic Frontier Analysis (SFA) and Thick Frontier Approach (TFA). It is better to check the efficiency level after acquisition due to two reasons (Zheka, 2005). First is that some firms do not have freely trading

shares due to restrictions in the stock market and secondly, the efficiency check of the firm also tells about the governance mechanism of the firm and may indicate problems in case of insufficient and inefficient utilization of resources.

This study is based upon collected data for pre and post years of acquisition and applied DEA to calculate cost efficiency of firms respectively. The population targeted in this study consists of all the financial and non-financial firms which have pursued for acquisition of shares of target firm above 51% that are mentioned by the competition commission of Pakistan.

Three year pre and post-acquisition data of 24 firms has been collected of each acquirer firm from the period of 2004 to 2012. Li et al, (2007) and Ang (2010) investigated that firms with negative equity leads to financial distress, so those firms are also excluded from the sample. The data of various financial and non-financial firms required for data envelopment analysis (DEA) is obtained from annual reports of the firms published each year, financial statement analysis available at State Bank of Pakistan (SBP) and balance sheet analysis available at Karachi stock exchange. Input and output variables' data was extracted from that same source to calculate the firm technical and scale efficiency.

As this study investigates the cost efficiency of both financial and non-financial firms, there are different input and output variables for each. For calculating the cost efficiency of financial firms, the intermediation approach of Sealey and Lindley (1977) has been used. A bank is basically involved in transferring funds from surplus units to deficit units. So it deals with deposits at a given interest rate and give advances at high interest to earn its profit/spread by cost minimization.

In financial sector, in line with literature three **inputs** are used, total deposits, number of employees and total assets. Input prices are derived for each bank as interest expense relative to total deposits, salaries expense relative to number of employees and other operating expenses for total assets. The **outputs** are defined as Total loans and total investments. For non-financial

sector, three inputs are used, total assets, common shareholders equity and fixed assets. Input prices are derived for each DMU as other operating expenses for total assets, profit after tax for equity and depreciation for fixed assets. The outputs are defined as operating profit and sales.

In this study researcher estimate the cost efficiency of consolidated firms by means of Data Envelopment Analysis (DEA) approach, a non-parametric approach based on convex combinations of firms. According to Charnes et al., 1994; Berger and Humphrey, 1997, DEA technique has been widely used for estimating efficiency in diverse industries. There are two main reasons due to which we have adopted DEA approach; firstly it is the easiest method to decompose cost efficiency into technical and allocative efficiency and technical efficiency into pure technical efficiency/scale efficiency components. Secondly, the Malmquist approach is known as a standard technique used over the period of time to measure the progress of productivity and efficiency, based upon DEA. Therefore, DEA approach is used as a methodology over and over again throughout the researches. To perform the analyses of the investigation, MaxDEA software has been used to calculate cost efficiency scores of sample firms.

3.7.2. Data Envelopment Analysis (DEA):

This technique was developed by Charnes, Cooper and Rhodes in 1978 to measure efficiency of the firm. They used the assumption of constant-return to scale initially and later on, variable return to scale assumption has also been used by Banker, Cooper and Charnes in (1984). The basic difference between these two models is free variable (Uo). Data Envelopment Analysis works on a company called as decision making unit (DMU) by using different inputs, outputs and their prices. The result is a single measure of efficiency based upon how efficient the inputs are used for producing outputs for the firm.

3.7.3. Assumptions of DEA:

This study runs DEA on annual basis (long run) to avoid the short term behaviour of the data that leads to noise of data. DEA has base on the following few assumptions and this study consider the below assumptions to run DEA.

- DEA cannot run on negative values so all the values must be positive.
- DEA cannot run if there is noise in the data set.

Previous studies shed light on the roe of DEA for checking efficiency of firm from both non-financial and financial sector. Different weights can be assoigned to both input and output measures. The resulting efficiency score ranges from 0 to 1. 0 means company (Decision Making Unit) is inefficient and 1 means it is at maximum level of efficiency. In this research study, the researcher consider the input oriented cost efficiency with variable return to the scale.

To calculate the cost efficiency, the following cost minimization DEA model is being estimated (Coelli et al., 2005).

$$\text{Min} \sum_{i=1}^{m} \text{Cioxio}$$

St

$$\text{xio} \geq \sum_{j=1}^{n} \text{xij}\lambda\text{j}, \ (\text{i} = 1, \ldots., \text{m})$$

$$\text{yro} \geq \sum_{j=1}^{n} \text{yrj}\lambda\text{j}, \ (\text{r} = 1, \ldots., \text{s})$$

$$\sum_{j=1}^{n} \lambda\text{j} = 1$$

$$\lambda_{\text{j}} \geq 0$$

where

j =1,…,n are the number of DMUs

i= 1,…, m are input quantities

r = 1,…. , s are output quantities

C_{io} are input prices used .

The cost efficiency of DMU unit is defined as

$$\text{C Eo} = \frac{\text{cox} *}{2coxo}$$

So this study empirically considers whether acquisition brings any change in the cost efficiency for the acquiring firms or not.

3.8. Acquisition ability and operational hedging:

Another benefit of the acquisition of another firm can be diversification of the operational activities of the firm. So this lower volatility of cash flows leads towards operational hedging. This higher level of operational hedging after acquisition may help the company in reducing costly financial hedging through derivatives and money market instruments (Hankins, 2009). So acquisition reduces volatility of cash flows leading to more operational risk management and thus lowering costly financial hedging. Use and amount of financial hedging used by our sample firms could not be checked due to less developed derivatives market. So researchers could only compare operational hedging of the acquiring firms before and after the acquisition of the target firm. The operational hedging is calculated by using the change in operational income with respect to total assets.

The current study has focused on operational hedging in the spirit of Smith and Stuqlz (1985) and Van Mieghem (2007). Acquisition can be a tool to reduce volatility of cash flows without using expensive derivatives or money market instruments. In fact, this trade-off between use of derivatives or reduction in cash flow volatility is beneficial if firms can manage total risk in aggregate. So current study is measuring change in firm's volatility as a result of acquisition. as per Rountree et al. (2008). Operational income volatility is checked rather than cash flow volatility as income figures are better depicter of financial smoothness.

Operational income volatility has been calculated for three years pre-acquisition and 3 years post-acquisition. To bring more precision in estimates for the impact of acquisition on acquirer's income volatility, quarterly data has been used for analysis. This check of volatility before acquisition provides an idea about possible impact of acquisition deal on volatility.

$$\boldsymbol{OV\ Pre-Acquisition = std.deviation\{\frac{OIA}{TAA}\}}$$

Where OV Pre-Acquisition is the operational volatility of the pre-acquisition period, OIA is the operational income of the acquirer while TAA stands for total assets of acquirer. This is calculated for 12 quarters before year of acquisition.

$$\boldsymbol{OVPost-Acquisition = std.deviation\{\frac{OIA}{TAA}\}}$$

Post-acquisition Operational volatility is calculated for 12 quarters after the year of acquisition.

Change in $\boldsymbol{OpHedge = (OVpost - acquisition - OV\ pre - acquisition)/OVpre - acquisition}$

Change in operational hedging is calculated as a percentage change in the operational volatility of acquirer between two time periods. Where change in Operational Hedge is the expected percentage change in operational volatility due to the acquisition (the measure of operational hedging).

CHAPTER 4

DATA ANALYSIS

4.1. Determinants of Acquisition Ability:

This section presents empirical results by using tables for descriptive statistics and logit analysis to describe the determinants of the acquisition ability of acquiring firms in Pakistani capital market.

4.1.1. Descriptive Data Analysis:

Table 1 depicts the mean, standard deviation, minimum and maximum values of the non-dummy variables for the sample. The mean size of board is 6 directors in our sample firms with maximum number of 16 directors on board. With respect to the independency of the board of directors, acquiring firms on average have 1 independent non-executive director on board with few firms having no independent director. The standard deviation is quite high for both these measures indicating firms with large disparity in values.

On average, the top 5 shareholders hold 63% shares of the firm which may reach to 99 % as indicated by maximum value. It may indicate that few shareholders own the majority of shares and high shareholders concentration in sample firms. The mean value of institutional ownership is just 9.48 % indicating low ownership by professional institutional shareholders. The standard deviation is quite high for sales implying that sample contains firms from both high and low sales volume. The mean value of cash ratio indicates that firms have 11 percent cash out of total assets while its just 0.02 % at its minimum level. So majority of the firms are not having access cash available with them. Firms in sample are on average three decades old while some firms exceed 100 years of age. Firms have very few intangible assets out of total assets with maximum value of just 15 percent.

Table 1: Summary statistics

All firms in sample

	Mean	Standard Deviation	Minimum	Maximum
BS	8.4	1.8989	6	16
INEDs/Total Directors	1.4857	1.8708	0	8
% shares held by top 5 SH	0.6394	0.1895	0.144879	0.9918
Institutional Shareholding percentage	0.0948343	0.0987	0	0.5489
Sales (in thousand Rs.)	30083427	43063973	111875	249213991
annual cash holding/total assets	0.1186	0.2720	0.0002	0.7069
Age (years)	34.0429	30.6705	1	150
intangible assets/ total assets	0.0094	0.0254	0	0.1561
Tobin's Q	4.3214	24.637	-1.7536	207.2190
Capacity Utilization	0.9910	1.3438	0.0046	6.1434
Advertising Expense/total sales	0.0112	0.0355	0	0.2920
Leverage ratio	0.6941	0.2352	0.1068	1.1321
Dividend Pay-out ratio	5.2351	42.3724	0	354.6744

It is evident that firms in sample are at maximum level of capacity with maximum utilization by any firm may go as high as 614%. Firm's profitability is quite well as indicated by Tobin's Q values. Firms are spending just 1.12% on average with regards to advertising expenses. On average, firms are quite heavily debt-financed as debt ratio is almost 69%. Most of the firms in our sample are paying dividend to the shareholders.

Table 2 depicts the comparison of mean and standard deviation between acquiring firms and non-acquiring firms. There has been significant differences among both firms. Annual cash holdings as a percentage of total assets are much higher for bidding firms as compared to their matching firms not entering into such deals. It may be considered as a tool to strengthen their decision of acquiring another firm. Tobin's Q is much lower for bidding firms as compared to

other firms in sample along with less deviation. Bidding firms are less efficient in terms of capacity utilization in comparison to their counterparts. So they may go for acquisition to improve their capacity level. Leverage ratios are also lower for acquiring firms. It is also interesting to note that acquiring firms are paying less amount of dividend to the shareholders. However, in respect of board size and independence, ownership concentration, sales, age and advertisement intensity, both samples share almost identical mean values.

Table 2: Comparison of different determinants for acquiring and non-acquiring firms

Variables	Acquisitions		No Acquisitions	
	Mean	Standard Deviation	Mean	Standard Deviation
BS	8.371429	2.1156	8.428571	1.68533
INEDs	1.4286	1.6678	1.542857	2.077086
shares held by top 5 SH	0.6507	0.1874	0.628142	0.1936
Institutional Shareholding	0.105743	0.1215	0.083926	0.0692
Sales	27807657	31403122	32359198	52599779
annual cash holding	0.1629	0.3709	0.0743	0.0924
age	31.5429	30.06106	36.54286	31.50382
intangible assets	0.0126	0.0325	0.006221	0.0151
Tobin's Q	1.4903	1.480231	7.152601	34.8299
Capacity Utilization	0.8525	1.1343	1.1295	1.5293
Advertising Expense	0.0056	0.0083	0.016804	0.0492
Leverage	0.6463	0.2846	0.7418	0.1630
Dividend Pay-out	0.1822	0.2586	10.288	59.9251

Below is the correlation matrix of the variables used in the research study presented in table 3. Institutional shareholders are positively associated to board size, INEDs, sales and dividend pay-out ratios. It means presence of institutional shareholders on the board positively affects the board independence and its sales volume. Age of the acquiring firms is positively correlated with the board size, INEDs, sales, capacity utilization and advertisement intensity. It shows that older firms are better utilizing their resources and their advertisement budget is bigger.

Sales and Tobin's Q are positively correlated showing the role of firm size in attracting better investment opportunities.

Table 3

Correlation Matrix

	BS	INEDs	Top 5	Inst	Sales	Cash	age	intan	tobins q	CAPACITY	ADV.	LEVERAGE	DPO
BS	1												
INEDs	0.1363	1											
Top 5	-0.038	0.0795	1										
Inst	0.3497	0.1414	-0.23	1									
Sales	0.5195	0.2094	0.2307	0.0772	1								
Cash	0.06	-0.1551	0.1977	-0.003	0.2103	1							
age	0.2538	0.2676	-0.009	-0.009	0.4653	0.1069	1						
intan	-0.078	0.0706	0.3068	-0.066	-0.047	0.0345	-0.157	1					
tobins q	-0.014	-0.0242	0.1663	-0.11	0.0396	-0.048	-0.111	-0.034	1				
CAPACITY	0.2014	0.2356	0.1173	-0.034	0.6243	-0.065	0.3138	-0.153	0.02396	1			
ADV.	-0.019	-0.1385	-0.052	-0.05	-0.127	0.0507	0.146	0.018	-0.0423	-0.18899	1		
LEVERAGE	-0.08	-0.0564	0.198	-0.087	0.0524	-0.186	-0.37	0.127	0.15007	-0.06746	0.0189	1	
DPO	-0.087	-0.0966	-0.149	0.0769	0.0044	0.0168	-0.091	-0.042	-0.0177	-0.08122	0.0161	0.131361	1

Ownership concentration in form of top5 shareholders is positively associated with majority of the variables. It may indicate that if more shares are in few hands, it may improve decision making. Presence of intangible assets positively contributes to the board independence, ownership concentration, cash holdings, and leverage and advertisement intensity. However, it is evident from above table 3 that there is no problem of multicollinearity among the independent variables.

4.1.2. Logit Results and Interpretation:

The acquisition ability is a binary variables acting as dependent variable so research study has used logistic regression analysis whose results are depicted in the following table. The log-likelihood value is high and chi-square is statistically significant, so results can be explained in a meaningful way. Initially, study used 16 variables of corporate governance and financial strength but final analysis includes only 14 variables to present meaningful results using general to specific parsimonious model.

Table 4

Results of Logit estimation for acquisition ability determinants

Variables	Symbols	Coefficients estimates	z-Statistic	Prob.
Constant		288.0192	1.235207	0.2168
Log Board size	LBS	-2.72897	-1.36851	0.1712
CEO Duality	CEO	-3.7576	-2.30606	0.0211
Independent Non-Executive Directors	INED	-0.97276	-0.63183	0.5275
Top 5 shareholders	T5	2.652963	1.246921	0.2124
Institutional Shareholders	INST	7.247079	1.752986	0.0796
Log sales	LS	10.06293	1.257821	0.2085
Log Cash holding	LCASH	-157.023	-1.21333	0.225
Log age of the firm	LAGE	-0.46435	-1.28207	0.1998
Capacity utilization	CU	-1.0763	-2.69255	0.0071
Intangible assets	INT	-0.09153	-1.74569	0.0809
Leverage	LEV	-4.94474	-2.52323	0.0116
Advertisement intensity	ADV	-87.7103	-1.88514	0.0594
Dividend pay-out ratio	DPO	-1.94735	-1.40417	0.1603
Regulation	REG	-0.16117	-0.16773	0.8668
No. of Observation	70			
Log Likelihood	-33.67373			
LR statistic	29.69315			
Prob(LR statistic)	0.005213			

4.1.2.1. Corporate Governance and Acquisition ability:

A number of variables have been used from corporate governance mechanism like Board size, CEO duality, INEDs, Ownership concentration, and institutional shareholders. The logit regression analysis indicates that only CEO duality and institutional shareholders are statistically significant in determining the acquisition ability of the acquirer from area of corporate governance. The coefficient of CEO duality is negative and statistically significant at 5% and 10% levels, indicates that the company with the departure of CEO and chairman would have lower acquisition ability than firms with no difference of CEO and chair. It possibly advocates that the CEO duality mechanism woks in reducing overconfident acquisition. These results are in line with Peng, Kiang & Jiang, (2013) who also report a negative relationship

between CEO duality and acquisition ability. So the results may prove our **Hypothesis 2** that CEO duality decreases the acquisition ability of bidding firm.

The presence of institutional shareholders as owners of the firms is positive and significant in the determination of its acquisition ability. Institutional shareholders may improve the decision making for the firm due to their experience and expertise. The results are in line with a recent study by Andriosopoulos, and Yang, (2015) who worked on the impact of institutional investors in market for mergers and acquisition in UK.

Their results suggest increase in chances of large sized deal, full control and over the borders of a country acquisition in presence of institutional investors. The presence of institutional shareholders in company may encourage more such deals and at larger scale due to their expert opinion and better understanding of such financial transactions. The institutional shareholders bring shareholder activism in the firm. So it may prove our hypothesis 4 that presence of institutional shareholders positively contributes to the acquisition ability of the firm.

The coefficient of board size is negative but statistically insignificant. It means that firms with few members on the board are having better acquisition ability as compared to firms with more number of directors present on the board. Previous studies by Gertner and Kaplan, (1996) also shows smaller board of LBOs firms as comparison to their similar firms. Yermack (1996) concluded from his study that higher valuation of firms is observed in case of smaller boards.

Lipton & Lorsch (1992) also showed that board may suffer from dysfunction if its size is too high. The acquisition is a strategic decision and sometimes it requires very quick response from the decision makers. This timely response may not be achieved in case of bigger board. So the results may prove our **Hypothesis 1** that there is a negative relationship between size of the board and acquisition ability. However, the relationship is not significant statistically.

The logit analysis indicates that presence of independent non-executive director is negatively related to the acquisition ability of acquiring firms and the values are statistically insignificant. This is contrasting to our **hypothesis 3** that presence of large no. of independent non-executive directors on the board increases its the acquisition ability. However as per Peng, Kiang, Jiang, (2013), results are mixed with regards to this variable in existing literature.

There may be an explanation with respect to the Pakistani capital markets. In order to bring the element of independency, the board does have presence of 1 or more INEDs but they are not truly independent and are mostly with majority shareholders and top management rather than protecting shareholders right so they are not contributing to the important decision of acquisition.

The coefficient of top 5 is positive but statistically insignificant as indicated by table 4. It shows that acquisition ability of bidding firms is enhanced by shareholders concentration in form of shares held by top 5 shareholders. If the shares of a company are concentrated in few hands, it gives more discretionary power to the management in making the acquisition decision. The reason is that it is easy and less costly to coordinate few shareholders rather than numerous minor shareholders with different preference structures. (Peng, Kiang, Jiang, (2013)

So it shows statistically weak results to prove **hypothesis 5** higher shareholders concentration increases the acquisition ability of the firm. While mean values of shareholder concentration in our sample firms is 60% and this variable is positively related to the acquisition ability of the firm but insignificant.

We could not test hypothesis **6** about role of ownership structure in form of foreign affiliation as this variable has been removed from final analysis to bring meaningful results.

4.1.2.2. Financial strength and Acquisition ability:

Out of 8 variables of financial strength, only four are statistically significant in determining the acquisition ability of the bidding firm as per table 4. These include intangible assets, capacity utilization, advertising intensity and leverage. While firm size, cash holdings, firms' age and dividend pay-out ratio are not determining firm's ability to acquire statistically.

Off-balance sheet resources owned by the firms in form of intangible assets may influence the ability to acquire another firm. The coefficient of intangible assets to total assets is negative and statistically significant at 10% level. It means that presence of intangible assets reduces the acquisition ability of the acquirer. So tangible assets are important in acquisition ability determination and not intangible assets. These findings are in line with (Peng, Kiang., Jiang, (2013) and failed to prove our hypothesis 10 that intangible assets increases the acquisition ability of firm.

The variable of capacity utilization is significantly affecting the acquisition ability in an opposite manner. So companies undergo acquisition for restructuring and consolidation (Andrade and Stafford, 2004). Same results are showed by Vyas, Narayanan and Ramanathan (2012), Duflos and Pfister (2008) and Danzon et al. (2007) that firms go for acquisition to grow and become competitive through excess capacity utilization. So it may prove our hypothesis 12 that lower capacity level of the firm increases its ability to acquire other firms.

Leverage ratio has a significant negative impact on acquiring firms' acquisition ability. The higher amount of debt on firm's balance sheet reduces its acquisition ability. Such negative relationship are also proved in the previous studies by Bopkin and Onumah (2009) and Dessyllas and Hughes (2005). Their empirical findings were insignificant while Andrade and Stafford (2004) proved significant negative effect of the leverage on the acquisition. So these results prove our hypothesis 14 that higher level of debt reduces firm's acquisition ability.

The variable of advertisement intensity is negative and significant determinant of acquisition ability of acquirer. Advertisement intensity is can be substituted for product differentiation as firms are allocating more budget on the product promotion. In order to achieve economies of scope and scale and to produce new products, firms may engage in transfer of corporate resources. Better portfolio of the products and improved promotional skills make way for a firm to become market leader. The results are in contradiction to Siddharthan and Pandit (1998) who found positive and significant impact of advertisement intensity on investment behaviour of MNCs and large corporate firms in India. So our hypothesis 13 could not be accepted.

The coefficient of firm size is positive but statistically insignificant, inferring that firms with large size are better able to acquire as they have resources as well as ability to realise synergies of economies of scale and scope. results are similar to the studies of Lubatkin (1986), Mishra and Chandra (2010) and Dessyllas and Hughes (2005) where large size firms were observed to be more in market for corporate control as size increases the acquisition ability. Dessyllas and Hughes (2005) worked on determinants of acquisition in high-tech industries and results indicated the size of firm is an important variable due to past knowledge of the business and learning curve effect. So the results prove our hypothesis 7 that large size of the firm affects the acquisition ability of the bidder but statistically relationship is weak.

The coefficient of cash holding is negatively related to the acquirer's ability of acquisition and statistically insignificant. The presence of ample cash reserves enables a firm to indulge into number of strategies like redemption of bonds and debts, paying cash dividends, repurchase of stocks or acquisition of other entities. In absence of capital rationing, chances are that firm may become less cautious and may accept value-reducing acquisition. Free cash flows give discretion in hand of managers to build larger corporate empires for them. So our hypothesis **8** is not proved that if firm is having excess cash holdings, it affects the acquisition ability in an opposite way.

The variable age have negative coefficient showing that firm's experience does not affect the investment decision but again the results are statistically insignificant. Older firms enjoy the benefit of learning curve impact on important strategic decisions like mergers and acquisition. However, the newer firms are more flexible and responsive to changes in economic and market dynamics. There are less bureaucratic practices and fewer layers in their structure (Marshall, 1920). Duflos and Pfister (2008) research supports this view of higher involvement of younger firms in market for corporate control. Younger firms want to grow and one way to achieve growth is through mergers and acquisitions. So the results prove our hypothesis 9.

Dividend pay-out ratio is negative and statistically insignificant in determining the acquisition ability of the firm. Low pay-out ratios may result in accumulation of cash which ultimately enhance the merging and acquisition ability. Jensen (1986) and Hoshi et al. (1991). Managers dislike dividend pay-out due to reduction in cash levels by the firm (Easterbrook, 1984; Jensen, 1986). So results favour hypothesis 15 that low pay-out ratios lead towards higher acquisition ability. However, relationship is quite weak statistically.

We could not test hypothesis **11** about role of performance measure in form of Tobin's Q as this variable has been removed from final analysis to bring meaningful results.

4.1.2.3. Regulations and market for corporate control:

Another important variable in acquisition ability determination is the role of regulation. This variables is a dummy variables representing 1 for highly regulated (financial sector) firm and 0 otherwise. The logit results shows a negative and statistically weak impact of regulation on acquisition ability of the firm. The presence of regulatory pressures may reduce the chances of acquisition due to more disclosure requirements and approvals. So it may leave less discretion in the hands of the acquiring firms' managers to go for negative NPV projects and acquisition.

Managers are more restricted by market trends and norms as compared to regulatory pressures (Gavious and Rosenboim, 2013).). So the results could not support hypothesis 16 that regulated firms have better acquisition ability.

4.2. Acquisition and stock market reactions:

One goal of this research study has been to find whether acquirer firm shareholders enjoy abnormal returns as a result of acquiring another firm. The data has been analysed by applying the event study technique. For a period of 2004-2014, total 33 acquirer firms have been studied. The abnormal returns are calculated for acquiring firms and then average abnormal returns. The results are presented in the following table.

TABLE 5

Average Abnormal Returns & Cumulative Average Abnormal Returns for a sample of acquirer firms

days in event window	AAR	t statistics	Significance	CAAR
-7	0.015492	6.310516	Yes	0.015492
-6	-0.00595	-7.94323	Yes	0.009544
-5	0.000988	1.1095	No	0.010532
-4	-0.00507	-5.23788	Yes	0.005463
-3	0.000849	0.756177	No	0.006313
-2	0.003167	4.42575	Yes	0.00948
-1	0.004368	4.419149	Yes	0.013848
0	-0.00595	-5.19938	Yes	0.007895
1	-0.00018	-0.16202	No	0.007716
2	-0.00156	-1.04396	No	0.00616
3	-1.4E-05	-0.01299	No	0.006146
4	0.00976	8.40846	Yes	0.015906
5	0.001381	1.546742	No	0.017288
6	-0.00472	-5.3254	Yes	0.012566
7	0.005846	8.298112	Yes	0.018412

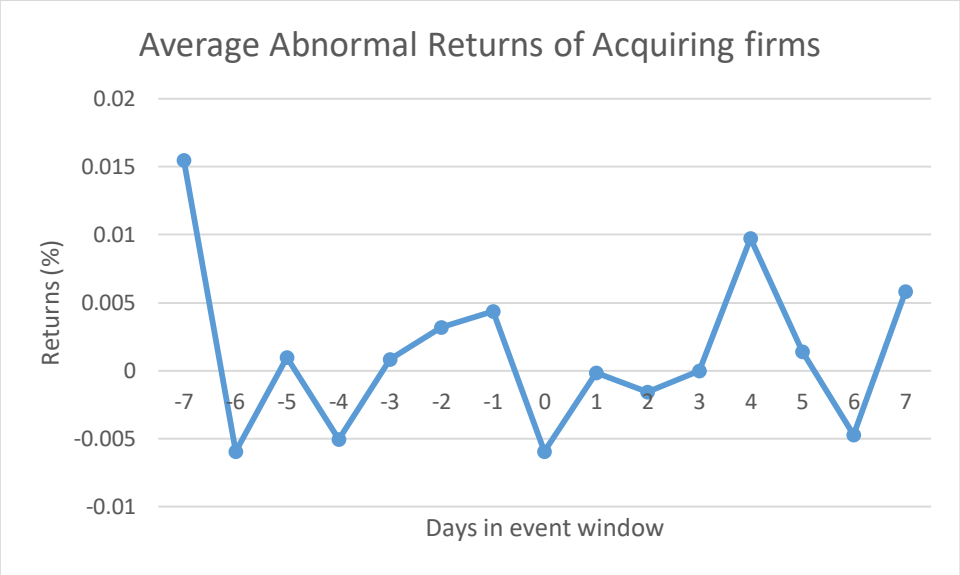
There is less significant impact of firms' announcement of acquiring a target firm on the value of its shares and returns. The stock earns positive abnormal return 3 days after the acquisition announcement. The t-statistics is significant as it exceeds 1.96 on 4th day of the event so there is an impact of acquisition announcement on acquirer firms' stocks. And this impact is relatively stable as it dies away in following day but become significant on 6th day again.

Pre-event window indicates interesting results. Five out of seven days prior the acquisition announcement earn abnormal return. And this is important to note because pre event window might show the market reactions of the investors about acquisition based upon rumors even before proper announcement in market for corporate control. As previous studies indicate that public limited firms' bids information may be dispersed even before announcement. (Capron & Shen, 2007).

Another study also supports that the 74% of the announcement dates in formal databases are proceeded by event-related signals like rumors, target search of other buyer and early stage negotiations so market reacts twice to such news as compared to formal dates of announcement (Arslan & simsir (2016). The results of event window favors hypothesis 17 that acquisitions can bring abnormal returns for the acquiring firms' shareholders.

Average Abnormal Returns (AARs) of the acquirer firms are graphically depicted in the figure below. It shows that acquisition announcement get the positive response from the stock market three days after the returns. The slow response of market for such acquisition deals may be due to the information dissemination about public targets may take place before the announcement. The graph also shows pre-announcement downwards shift in the acquirer returns. It may be the result of insider trading.

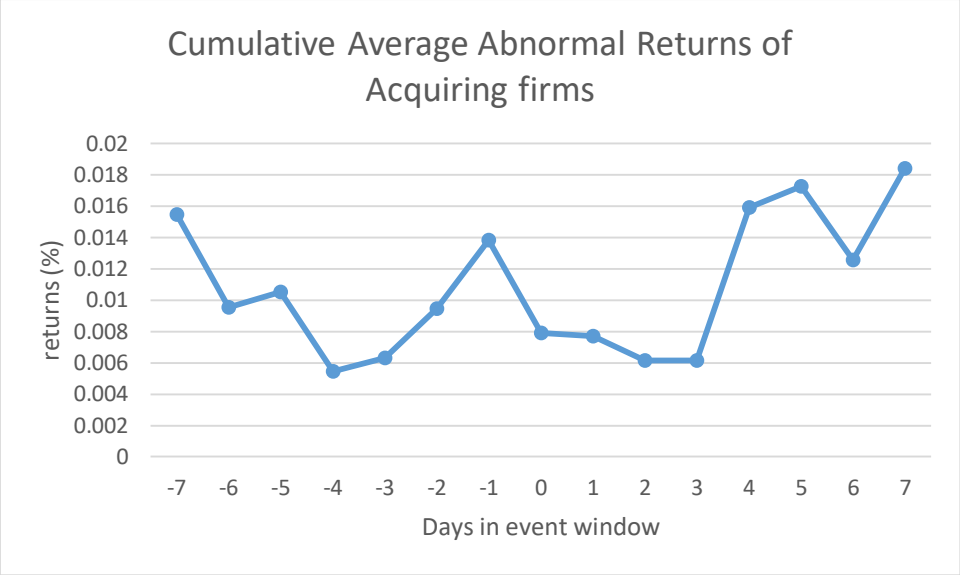
Fig 1



The AAR is negative on the day of acquisition announcement. However, 39% of the sample firms shows positive abnormal return on the day of acquisition announcement. A positive effect on returns is observed on the preceding days before announcement of acquisition. It indicates the market knowledge about acquisition prior to announcement date given by competition commission of Pakistan.

Cumulative Average Abnormal Returns (CAARs) of the acquirer firms are graphically depicted in the figure below. After acquisition announcement firstly the CAARs are showing downward trend indicating decrease in AAR. However it starts upward trend from 3 post-announcement days onwards. The CAAR increases to 0.25 per cent from day -7 through day 7.

Fig 2



The less significant results may be interpreted as there is mixed results in the existing research. The acquirer firms may enjoy synergy and its shareholders may enjoy abnormal gains (Dodd and Ruback, 1977). Sometimes, it had already paid the premium price for the company and the shareholders does not enjoy gains on acquisition announcement (Bradely, Desai, & Kim (1988).

These results also indicate the efficiency level of the financial markets. These results show that normally less abnormal returns are being enjoyed in Pakistani market of corporate control so it may indicate the market is comparatively efficient so that's why less chances to earn abnormal gains for the investors.

4.3. Acquisition and cost efficiency:

The event study analysis of returns indicate the short term effects of acquisition announcement for the acquirer firm. It is required to estimate the long term effects of acquisition for the acquiring firms that whether firm improves its efficiency or not as a result of owning a new firm. So this research study has been conducted to determine changes in the firms' cost efficiency level for a period of 7 years. It includes 3 pre-acquisition, year of acquisition and 3

post-acquisition years. DEA technique has been used to calculate the cost efficiency scores for firms in the sample.

Cost efficiency has been calculate for both financial and non-financial sector separately due to varying nature of both input and output units.

4.3.1. Descriptive Statistics of variables used for Cost Efficiency

Table 5 shows the mean, standard deviation and minimum and maximum values of output and input variables used in the measurement of cost efficiency of the acquiring firms.

Table 6. Descriptive Statistics of Inputs/ Outputs Variables for Cost Efficiency of Financial Sector

Variables	Category	Financial Sector acquiring firms variables used for cost efficiency				
		year	Mean	Standard Deviation	Minimum	Maximum
loans in million Rs.	output	-3	5840609.69	18066060.07	1564.608	57255979.5
		-2	133453.2712	141303.4567	6687.46	376480.024
		-1	143587.3803	147510.2617	10707.012	382115.775
		0	164906.017	166981.6056	18543.633	460244.672
		1	174331.3331	170110.0208	20880.638	463385.462
		2	190156.7027	182433.6449	27933.829	514282.72
		3	198905.3723	179165.2499	38932.046	518583.004
investment in million Rs.	output	-3	44377.819	47662.77432	1730.868	137734.578
		-2	61402.9195	72664.4674	5019.525	231717.214
		-1	76033.8993	94017.6801	5094.613	301106.877
		0	96115.8516	112924.2559	12446.033	381245.903
		1	126093.4043	136223.769	20204.357	458846.198
		2	146195.2535	165045.0645	28994.462	519602.007
		3	209748.486	236751.8266	31429.302	747598.627
total deposits in million Rs.	input	-3	8768395.919	27224786.21	2526.271	86249762
		-2	173276.454	196437.932	9464.785	567611.258
		-1	199157.8737	219275.9854	16616.466	633889.416
		0	234555.1438	251728.5607	31307.488	755264.264
		1	277159.0342	289740.5206	50568.785	889525.603
		2	302462.0035	321812.6332	8055.276	951902.296
		3	362067.4735	379450.7629	75225.869	1119953.064
interst expense/T. deposits	input price	-3	0.056836891	0.041501312	0.00922664	0.137056897
		-2	0.060668906	0.03714909	0.02666072	0.135882246
		-1	0.07185015	0.037087691	0.03501327	0.142217075

		0	0.069336258	0.031699465	0.03946622	0.137195843
		1	0.068990271	0.025324962	0.04069563	0.104663916
		2	0.116804171	0.15757307	0.04080972	0.560199427
		3	0.061361569	0.01981024	0.03546145	0.104663916
no. of employees	**input**	-3	5075.9	5565.969207	192	16314
		-2	5287.9	5243.063406	319	14572
		-1	5564.9	5375.513091	541	14552
		0	5439.3	5056.947016	615	14123
		1	5461.5	4760.492814	1340	13270
		2	5581.5	4783.875492	1410	13382
		3	5930.8	5030.87911	1520	14623
salaries/no.of employees	**input price**	-3	475981.2594	187196.5262	212578.125	816230.813
		-2	625037.8175	236816.558	273097.414	1034314.113
		-1	652461.582	194246.0939	361271.924	945819.7845
		0	706600.5345	144979.63	446816.63	871005.2929
		1	812979.7841	261145.3692	543596.685	1420808.443
		2	843460.2574	240394.9602	549274.256	1390634.921
		3	856741.7118	254732.448	603918.1	1353291.69
total assets in million Rs.	**input**	-3	204095.3029	227998.6569	5696.379	640421.911
		-2	235822.2221	251256.1851	18120.786	726422.551
		-1	266835.8116	278285.9824	24802.817	807204.788
		0	316648.8648	314771.5951	38173.375	960210.415
		1	360811.7912	352908.9423	58821.314	1083632.716
		2	403258.6441	387249.6316	74236.03	1182453.113
		3	490944.919	481788.8765	86800.938	1486186.813
other OPEX/T.assets	**input price**	-3	0.026612592	0.008741502	0.01587693	0.045433373
		-2	0.031020458	0.014081287	0.01223531	0.053866287
		-1	0.029372069	0.012990477	0.00497322	0.04727916
		0	0.031595836	0.008438647	0.02009994	0.046953531
		1	0.032060911	0.005977002	0.02160892	0.039135063
		2	0.031304676	0.004666866	0.02416523	0.039712793
		3	0.028186821	0.004674939	0.02260307	0.036817437

The data in above table indicates that average loans values over the number of years is showing a steady trend with a wide spread among various firms as indicated by minimum and maximum values. Same is the case with the investment level by these firms. Over number of years, there has been increase in the scale of deposits and number of employees are also increasing along with total assets. One observable fact is in case of input price of total assets which has shown

a declining trend after the year of acquisition. It may indicate the chances of cost saving due to share processes and improved learning curve effect.

Similarly, mean size in both input and output dimensions changes over number of years. It may be attributable to the firm's dynamic decision of acquisition. One thing has to be considered in case of Pakistan that our financial sector is the most regulated one so banks has to make disclosure of every important change made. Table 6 shows descriptive statistics of output and input variables used in the measurement of cost efficiency of the acquiring firms from non-financial sector.

Table 7. Descriptive Statistics of Inputs/ Outputs variables for cost efficiency of Non-financial Sector

Variables	Category	Non-Financial Sector acquiring firms variables used for cost efficiency				
		year	Mean	Standard Deviation	Minimum	Maximum
Operating profit in millions Rs.	output	-3	7180.39799	11837.43063	97.334	41908.42
		-2	6806.31989	10643.15511	139.859	34528.207
		-1	9283.41557	14278.19784	143.154	48364.644
		0	11447.1573	19459.72393	182.003	64528.686
		1	13456.0262	20223.3574	232.561	62627.743
		2	14372.997	22921.12659	111.157	74546.759
		3	14083.4626	21328.09119	76.18	64707.691
Sales in millions Rs.	output	-3	19568.6582	22273.56348	1529.772	61580.072
		-2	23140.5378	23190.87654	1931.459	59961.616
		-1	28737.3475	27271.46589	2578.533	78252.395
		0	37297.1413	36043.60507	3349.788	97177.443
		1	42708.0692	38401.74781	3628.873	111111.91
		2	50638.6948	43975.49604	4334.85	122251.58
		3	57109.2498	48732.96275	5163.496	130432.6
T. assets in millions Rs.	input	-3	35185.0279	43676.36682	1153.109	154048.08
		-2	33214.4533	44765.91851	1303.162	150767.73
		-1	38830.7828	48286.73413	1847.474	152519.86
		0	48212.1945	59122.62669	2036.587	170551.19
		1	60428.0465	69370.9445	2904.612	212901.22
		2	67285.4692	75930.58265	4010.501	236343.04
		3	76307.4579	83442.7961	3933.246	252414

other OPEX/t. assets	input price	-3	0.2077992	0.55166948	0.0023473	2.1164578
		-2	0.07441003	0.053660969	0.0064513	0.1914838
		-1	0.06799284	0.040296805	0.0056212	0.141238
		0	0.07516524	0.052020858	0.0046058	0.1767865
		1	0.07790269	0.05322579	0.0046021	0.167199
		2	0.07927529	0.053046513	0.0039576	0.1741617
		3	0.07050323	0.052814751	0.00366	0.174248
Equity	input	-3	19587.4118	29309.23823	416.938	99389.559
		-2	21789.3236	31657.11849	505.021	99758.711
		-1	23929.3735	33434.87185	590.314	98261.881
		0	31009.346	40150.52416	725.964	126384.19
		1	33863.5259	45648.61553	900.499	149354.34
		2	37806.5417	52645.43549	1148.488	181917.36
		3	39578.7576	58660.74722	1444.724	193269.45
EAT/Equity	input price	-3	0.16443625	0.111556435	0.0120877	0.4402864
		-2	0.18250637	0.119286253	0.0096935	0.4919872
		-1	0.14741402	0.086266908	0.0125345	0.3091161
		0	0.42306192	1.009196062	0.0065422	3.921936
		1	0.15851239	0.080500262	0.0095162	0.2804876
		2	1.21099152	4.049288402	0.0032823	15.277904
		3	0.21398934	0.416336377	0.0083784	1.6405956
fixed assets	input	-3	36240.6896	83596.0568	466.8	321339.32
		-2	38845.0029	87270.12771	667.294	335810.87
		-1	42981.3391	92825.33136	868.915	357309.19
		0	49489.7196	101016.7957	946.953	388847.04
		1	55412.1747	109087.5412	936.692	420269.55
		2	62651.4114	118884.3287	987.911	458684.32
		3	57595.5455	87913.99061	987.911	335159.24
Depreciation/fixed assets	input price	-3	0.05053435	0.015389379	0.0225561	0.0687661
		-2	0.05116716	0.015588564	0.0311477	0.0734429
		-1	0.05176982	0.01857912	0.0257863	0.0868364
		0	0.04769472	0.016316659	0.0288834	0.0850879
		1	0.05345175	0.013305058	0.0344312	0.0830946
		2	0.05473151	0.016177465	0.0314724	0.0848239
		3	0.0586882	0.024097746	0.0271345	0.1251112

The descriptive statistics for acquiring firms other than banks indicate that operating profit, total assets, fixed assets and common shareholders' equity values over the number of years is showing a steady trend with a wide spread among various firms as indicated by minimum and maximum values.. Over number of years, there has been increase in the input prices like

depreciation and other operating expenses. One observable fact is in case of input price of total common shareholders' equity which has shown a declining trend after the year of acquisition.

4.3.2. DEA Cost efficiency scores:

The researcher has calculated cost efficiency scores for a sample of acquiring firms for both sectors and table below indicates the average results.

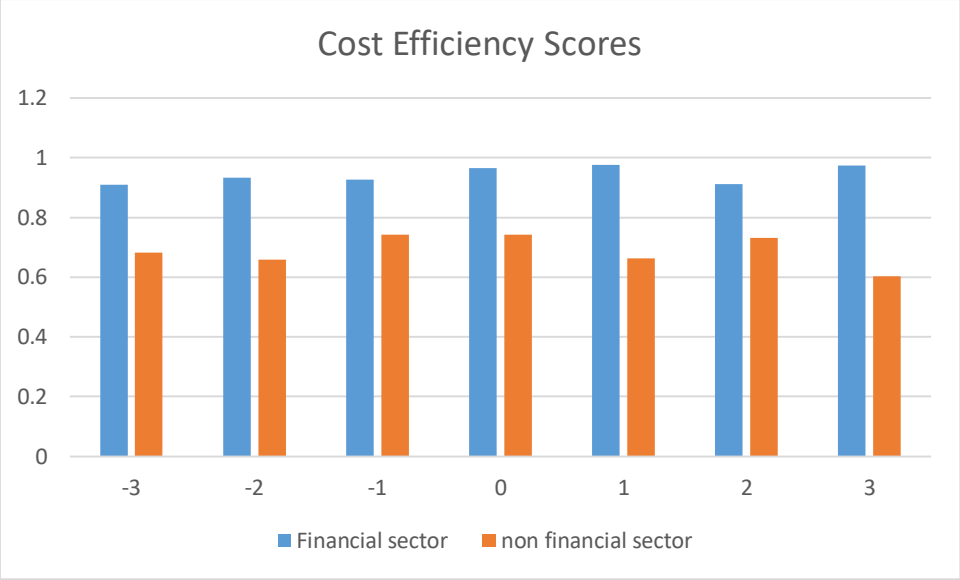
Table 8

Cost efficiency Scores for Acquiring firms

years of acquisitions	Cost efficiency Scores for Acquiring firms	
	Financial firms	Non-financial firms
-3	0.908611	0.682314
-2	0.934238	0.659361
-1	0.925783	0.743405
0	0.964882	0.743405
1	0.975502	0.662808
2	0.91068	0.730998
3	0.973471	0.602651

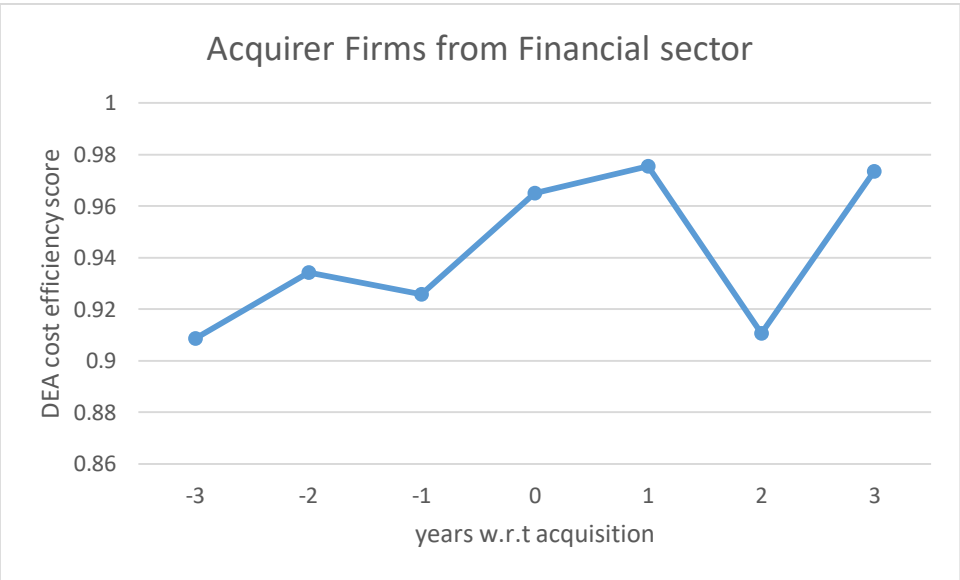
Overall, the financial sector is more efficient as compare to the sample of non-financial firms. The financial sector is almost above 90 percent efficient in all years as compared to 60-70% efficiency in case of non-financial firms. The reason may be more stringent requirements of disclosures and reporting for such banks. So it keeps a check on their efficiency. The graph below indicates the comparison between cost efficiency of two sectors.

Fig 3



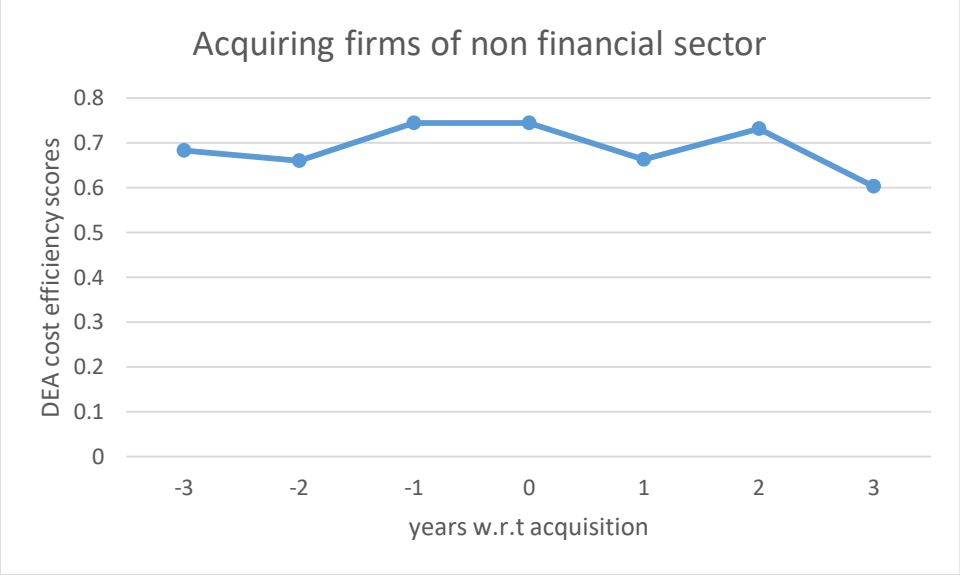
However, as per this study objective, there has been less significant improvement in cost efficiency due to the acquisition. For financial firms, a bit improvement has been observed right after the year of acquisition. However, the firms become less efficient in 2nd post-acquisition years although it regains it in next year. The reason may be that acquisition is not bringing cost advantage to the production process of the firm.

Fig 4



Mixed results has been observed in case of non-financial firms. And no obvious trend has been observed which may suggest improvement of cost efficiency of firm as a result of acquisition. It rather indicate the decline in efficiency in the first year after the acquisition. Firms' efficiency decreases from 74% to 66 % i-e, it is almost 10 % decrease in efficiency.

Fig 5



The major conclusion lies that after acquisition, there has been less significant improvement in the bidding firm cost efficiency for the sample firms in case of Pakistani market for corporate control. In the current study, the common deviation n cost efficiency scores may be the outcome of some important characteristics of financial system in that time period. Higher efficiency level of financial sector may show the strong and strict regulatory pressures on these banks. This sector is specially admired for remaining even strong during the financial crises 2008-09, and this feature had increased amount of FDI. Another important feature is the cut throat competition among commercial banks has led towards the improvement in efficiency over time. Even most of the acquisition deals in this sector are due to the regulatory pressures regarding paid up capital and number of branches requirements.

4.3.3. Cost Efficiency for Non-financial sector acquiring firms:

When the research has analysed the individual firm based results of efficiency scores, the following situation has been observed.

Table 9 Cost Efficiency Score firm-wise (Non-financial Sector)

No.	Decision Making Unit (DMU)	Cost Efficiency Score						
		-3	-2	-1	0	1	2	3
01	Nishat Chunian Limited	0.8074	0.5805	0.6752	0.6752	0.23521	0.2332	0.23837
02	Thal Limited	1	0.9116	0.9645	0.96453	0.61403	0.8087	0.63186
03	Millat Tractors Limited	1	1	1	1	1	1	1
04	Hub Power Company Limited	0.2043	0.2245	0.3888	0.38884	0.85085	0.9754	0.5408
05	Pakistan Petroleum Limited	0.9802	1	1	1	0.51894	1	1
06	Exide Pakistan Limited	1	1	1	1	1	1	1
07	International Industries Limited	0.9009	0.4382	0.67	0.67002	0.4913	0.5352	0.38383
08	Fauji Fertilizer Company Ltd.	1	1	1	1	1	1	1
09	JDW Sugar Mills Limited	0.2634	0.5952	1	1	1	0.4922	0.48184
10	M/s. Murree Brewery Company Limited	0.2599	0.2847	0.2727	0.27267	0.35441	0.535	0.53839
11	Indus Dyeing & Manufacturing Co. Limited	0.4148	0.7205	0.9211	0.92108	0.50684	0.7946	0.35307
12	Pakistan Petroleum Limited	1	1	1	1	1	1	0.49196
13	Lucky Cement Ltd.	0.3996	0.2923	0.3243	0.32433	0.46528	0.638	0.40422
14	Pakistan Telecommunications Company Limited	0.322	0.1837	0.191	0.191	0.24246	0.2217	0.37277
	Average	0.6823	0.6594	0.7434	0.7434	0.66281	0.731	0.60265

There are fourteen firms in our sample from non-financial sector who has undertaken acquisition during 2002-2012. On average, the sample firms are showing a fall in their cost efficiency scores after the years of acquisition. On average, efficiency has dropped from 74 percent in the year of acquisition to almost 66 percent indicating a 10 percent decrease in cost

efficiency and it is interesting to note that firms are performing better in years prior to acquisition.

According to the table above regarding cost efficiency scores, only Hub Power Company Limited, Murree Brewery Company Limited, Lucky Cement Ltd. And PTCL are showing improvement in their cost efficiency after the acquisition years. Pakistan Petroleum Limited, Exide Pakistan Limited and Fauji Fertilizer Company Ltd. Companies are efficient well before the acquisition and no change in their efficiency after the acquisition. The post-merger cost efficiency of the remaining seven companies dropped significantly after the year of acquiring another firm. It shows that cost efficiency has dropped in case of taking a new firm on board and no synergy is gained in terms of cost minimization.

The results shown in the below Table indicates the distribution of firms in various levels of efficiency.

Table 10

The Overall Efficiency of the bidder Companies (Non-financial Sector)

The Overall Efficiency of the bidder Companies								
Year	**The overall efficiency**		**0.0-0.2**	**0.2-0.4**	**0.4--0.6**	**0.6--0.8**	**0.8--0.9**	**0.9--1**
t-3	**Sample Number**		0	5	1	0	1	7
	Proportion (%)		0%	36%	7%	0%	7%	50%
t-2	**Sample Number**		1	3	3	1	0	6
	Proportion (%)		7%	21%	21%	7%	0%	43%
t-1	**Sample Number**		1	3	0	2	0	8
	Proportion (%)		7%	21%	0%	14%	0%	57%
t	**Sample Number**		1	3	0	2	0	8
	Proportion (%)		7%	21%	0%	14%	0%	57%
t+1	**Sample Number**		0	3	4	1	1	5
	Proportion (%)		0%	21%	29%	7%	7%	36%
t+2	**Sample Number**		0	2	3	2	1	6
	Proportion (%)		0%	14%	21%	14%	7%	43%
t+3	**Sample Number**		0	4	5	1	0	4
	Proportion (%)		0%	29%	36%	7%	0%	29%

It is evident that almost half of the firms were quite efficient in the years prior to the acquisition. For example, 7 out of 14 firms were 90-100 % efficient in the third year prior to the acquisition. While 57 % of the firms in maximum level of efficiency in year of acquisition which suddenly dropped to the 36 percent in the first year after acquisition. After acquisition, most of the firms are lying n the area of 40-60% efficiency. This fall in cost efficiency scores indicate the failure of synergies in terms of reduction in cost. These firms may have achieved short term effects in stock market reaction to acquisition announcement but such deals have not brought long term efficiency gains particularly for non-financial firms. The results of t-test statistics are presented in the following table to indicate any changes between two time periods i-e, pre-acquisition and post-acquisition.

Table 11

T-statistics analysis (Non-financial Sector)

Parametric test(t-test)				
	mean values	t(prob>t)		
name of company	Pre-acquisition	Post-acquisition	t value	P
Nishat Chunian Limited	0.687677	0.235581	6.91851	-0.02025
Thal Limited	0.958694667	0.684858	3.1525	-0.0875
Millat Tractors Limited	1	1		
Hub Power Company Limited	0.958694667	0.684858	-2.7959	0.107659
Pakistan Petroleum Limited	0.993411	0.839646	1	0.42265
Exide Pakistan Limited	1	1		
International Industries Limited	0.669720667	0.470123	1.30871001	0.320801
Fauji Fertilizer Company Ltd.	1	1		
JDW Sugar Mills Limited	0.619512	0.658008	-0.104305009	0.926445
M/s. Murree Brewery Company Limited	0.272417333	0.475929	-3.723145927	0.065168
Indus Dyeing & Manufacturing Co. Limited	0.685437667	0.551497	0.616967236	0.600134
Pakistan Petroleum Limited	1	0.830653	1	0.42265
Lucky Cement Ltd.	0.338754333	0.502517	-1.797822497	0.21403
Pakistan Telecommunications Company Limited	0.232219	0.278978	-0.61885617	0.599106
Average	0.695026714	0.665486	0.480211264	0.67847

The empirical findings show less significant differences in efficiency between time period before vs. after the takeover as indicated by t statistics. Table clearly depicts that there is a remarkable change in the mean efficiency scores after the takeover deal. Although results are mixed. Some companies are showing declining trend and others showing improvement in efficiency. The average results are showing a declining trend.

These results are consistent with the previous studies. On average, very little improvement (5 % or less) in cost efficiency has been observed by most of the studies Berger and Humphrey,1992;Rhoades, 1993; and Peristiani, 1997). Possible benefits from consolidation of two enterprises may not be actualized due to managers' ineffectiveness or integration problems. So results are mixed in nature.

4.3.4. Cost Efficiency for Financial sector acquiring firms:

Table 12

Firm-wise Cost Efficiency Score (financial sector)

No.	Decision Making Unit (DMU)	Cost Efficiency Score						
		-3	-2	-1	0	1	2	3
1	Bank Islami Pakistan Limited	0.76146	0.77374	0.6136	0.8233	1	0.7925	1
2	Faysal Bank Limited	1	1	0.9807	1	1	1	1
3	JS bank limited	0.74843	0.84133	1	0.9733	1	1	1
4	M/s. Habib Bank Limited.	0.81696	1	1	1	1	1	1
5	MCB Bank Limited	0.75925	0.95089	1	1	0.97087	1	1
6	NIB Bank Limited	1	1	1	1	1	0.9169	1
7	Standard Chartered Bank Limited.	1	0.87962	0.7942	0.8522	0.8214	0.8416	0.8178
8	Summit Bank Limited	1	1	1	1	1	0.9034	0.9892
9	Summit Bank Ltd.	1	0.89681	0.8693	1	0.96275	0.6524	0.9277
10	United Bank Limited	1	1	1	1	1	1	1
	Average	0.90861	0.93424	0.9258	0.9649	0.9755	0.9107	0.9735

There are ten banks in our sample from financial sector who has undertaken acquisition during 2002-2012. On average, the sample firms are showing an improvement in their cost efficiency

scores after the years of acquisition. However overall the financial sector is better in terms of efficiency.

According to the table above regarding cost efficiency scores, Bank Islami Pakistan Limited and JS bank limited are showing improvement in their cost efficiency after the acquisition years. United Bank Limited is efficient well before the acquisition and no change in their efficiency after the acquisition. The post-merger cost efficiency of the Summit bank limited and Standard Chartered Bank Limited dropped significantly after the year of acquiring another firm. Remaining banks show increase in cost efficiency in years prior to acquisition then reaching 100 % on years and acquisition and no further change in coming years.

In the time period t-3, (three years prior to acquisition) six out of 10 banks are at maximum 100% efficiency indicating 60% of the target sample. And this number has increased to 90 percent after the acquisition. It indicates improvement in cost efficiency of financial sector as a result of acquisition. **Table 13**

The Overall Efficiency of the bidder Companies (financial sector)

The Overall Efficiency of the bidder Companies					
Year	**The overall efficiency**	**0.4--0.6**	**0.6--0.8**	**0.8--0.9**	**0.9--1**
t-3	**Sample Number**	0	3	1	6
	Proportion (%)	0%	30%	10%	60%
t-2	**Sample Number**	0	1	3	6
	Proportion (%)	0%	10%	30%	60%
t-1	**Sample Number**	0	2	1	7
	Proportion (%)	0%	20%	10%	70%
t	**Sample Number**	0	1	2	7
	Proportion (%)	0%	10%	20%	70%
t+1	**Sample Number**	0	0	1	9
	Proportion (%)	0%	0%	10%	90%
t+2	**Sample Number**	0	2	1	7
	Proportion (%)	0%	20%	10%	70%
t+3	**Sample Number**	0	0	1	9
	Proportion (%)	0%	0%	10%	90%

Above results also indicate that on average banks are 92.57% cost efficient before acquisition implying that the banks can produce 7.71% more output at same level of cost. However, in the post-acquisition time period, the average bank shows an improvement of 3.82% in cost efficiency.

There can be numerous reasons for this improvement with respect to cost efficiency. Already banks are almost near maximum level of efficiency by making full utilization of resources so less chances of enhancement in efficiency. Another reason may be the motive behind acquisition was not to achieve economies of scale or scope, rather it was a regulation based intent of the bank.

Table 14

Pre and post analysis of cost efficiency

Parametric Paired sample test (t-test)- (financial sector)

Parametric test(t-test)				
	mean values		t(prob>t)	
name of company	Pre-acquisition	Post-acquisition	t value	P
Bank Islami Pakistan Limited	0.716271	0.930825	-2.00873	0.182321
Faysal Bank Limited	0.993561	1	-1	0.42265
JS bank limited	0.863253	1	-1.86192	0.203664
M/s. Habib Bank Limited.	0.938986	1	-1	0.42265
MCB Bank Limited	0.903379	0.990289	-1.35916	0.307067
NIB Bank Limited	1	0.9723	1	0.42265
Standard Chartered Bank Limited.	0.891284	0.826942	1.07542	0.394696
Summit Bank Limited	1	0.9642	1.170768	0.362308
Summit Bank Ltd.	0.92204	0.847619	0.832964	0.492494
United Bank Limited	1	1		
Average	0.922877	0.953218	-1.10274	0.38509

The empirical findings show insignificant differences in efficiency between time period before vs. after the takeover as indicated by t statistics. Table clearly depicts that there is a remarkable

change in the mean efficiency scores after the takeover deal. Although results are mixed. Some companies are showing declining trend and others showing improvement in efficiency. Overall financial sector is improving with respect to cost efficiency.

These interesting academic results for banking sector are not surprising due to historical regulation in Pakistan. Geographic and other restrictions have constrained competition in banking over decades so inefficiencies were present in addition to this, nonbanks are not allowed to acquire banks so market for corporate control for banks was limited. But now both restrictions have been removed so fierce competition and threat of takeover has made this sector an efficient one. Relatively detailed reporting requirements has also made banking industry quite vigilant about maintaining firm efficient.

The above analysis is in favour of hypothesis 18 that cost efficiency of firm before acquisition change after the acquisition decision.

4.4. Acquisition ability and operational hedging:

Another long term impact of the acquisition on bidding firm can be the change in the operational hedging of the firm after the acquisition. The acquisition of target firm may reduce the volatility in operational income and cash flows and it will increase operational hedging of the firm. The increase in operational hedging can minimize the risk for the firm as a whole. Thus acquisition brings positive effects for the bidding firm.

The researcher has used 12 quarters data for the acquirer firm for both pre-acquisition as well as post-acquisition time periods. The OI/TA ratio has been calculated for all the quarters. Due to the unavailability of the quarterly data for the most of the firms in our sample, results have been presented for only few firms. Then operational volatility is calculated by taking standard deviation of OI/TA ratio.

Operational volatility figures are depicted for both time periods. Change in operational hedging shows the impact of acquisition on income volatility of the acquirer firm. If this change in operational hedging is negative, it depicts the decrease in operational income to assets ratio for the acquiring firm after the acquisition. Thus the acquisition has been successful in reducing operational income volatility. Lower volatility refers to operational hedging benefits related to lower costs of convex taxation, potential financial losses or external capital. Following results have been obtained as presented in the table below.

Table 15

Operational Hedging due to acquisition

		Operational Volatility		
	Acquiring firms	**Pre-Acquisition**	**Post-Acquisition**	**Change**
1	Lucky Cement Ltd.	0.013251454	0.011102841	-0.1621417
2	United Bank Limited	0.016083637	0.000583557	-0.9637173
3	Pakistan Petroleum Limited	0.270414528	0.013914959	-0.9485421
4	M/s. IGI Insurance Limited.	0.037527605	0.020061156	-0.4654294
5	JS Bank Limited	0.010008595	0.002381778	-0.7620267
6	Summit Bank Ltd.	0.014183903	0.004910651	-0.653787
7	Fauji Fertilizer Company Ltd.	0.012977039	0.024667431	0.90085207
8	Byco Petroleum Limited	0.0807696	0.02723173	-0.6628468
9	Bank Islami Pakistan Limited	0.003063839	0.000875773	-0.7141582
10	Summit Bank Limited	0.008803761	0.010805594	0.22738386
11	M/s. Habib Bank Limited.	0.002546742	0.000571993	-0.7754019
	Average	0.0426937	0.010646133	-0.7506393

The table indicates that on average the acquiring firms have 4.27% operational volatility before the takeover deal which reduces to 1.06% after the deal showing a 75% fall in the volatility. Thus firms on average achieves the operational hedging through the transfer of ownership in acquisition transaction. The reasons may be due to mix of resources, knowledge, manufacturing processes, services and expertise level in the firm as a result of acquisition.

United bank limited is showing the maximum results of change in operational volatility as depicted by 96% reduction. So the bank has been quite successful in its acquisition of the target firms. Similarly, Pakistan Petroleum limited, JS bank limited, Bank Islami Pakistan limited and Habib bank limited are among those firms showing high percentage reduction in operational volatility. IGI Insurance Limited, Summit Bank Ltd., and Byco Petroleum Limited are those firms where change in operational volatility lies between 40-70%. Lucky Cement Ltd. Shows 16% reduction in operational volatility as a result of the acquisition.

Few firms are showing no improvement in volatility implying that acquisition is not bringing operational hedging for these firms. Fauji Fertilizer Company Ltd. Is showing 90% increase in operational volatility after the acquisition deal. The results are in line with the Hankins (2009) who also showed acquisition can bring the benefit of operational hedging. These results prove our hypothesis 19 by showing decrease in income volatility.

CHAPTER 5

CONCLUSION & RECOMMENDATIONS

5.1. Conclusion:

This study has focused on the determinants of the firms' acquisition ability from the corporate governance, financial strength and regulation based factors. Another objective addressed here is to check the short term effect of acquisition on the acquirer firms' returns as well as long term effects on cost efficiency and operational hedging.

The analysis of firms' acquisition ability determination has revealed interesting result. The study has used firm specific governance and financial strength variables along with regulatory variable. Empirical analysis indicates that firm specific variables are important determinants in firm's decision to acquire. CEO duality and institutional shareholders presence on the board contributes to this important phenomenon in the life of the acquiring firms. Separation of seat of CEO and chairman reduces the acquisition ability due to problems in decision making and that too on time. It may be due to the fact that if one person is wearing two hats, he is quick in responding timely to the strategic decision of takeover and may convince the board of directors accordingly. So as per Managerial Discretion theory, they may go for important decision of acquisition.

Whereas, the institutional shareholders ownership improves the firms' performance in takeover deal. It may be due to their ownership and presence on board does bring the expertise and skills to protect shareholders rights through reducing agency problem. It also reduces agency problem as per agency theory. The other governance related variables like board size, independence of

board and ownership concentration have statistically insignificant impact on the acquisition decision of the firm.

Bidding firm's financial strength is also another important considerations while going for corporate control transfer transactions. The empirical results indicate the better acquisition ability for those firms with minimum capacity utilization, lower level of intangible assets, lower debt levels and lower advertising expenses. It means those firms will go for acquisition which want to increase their capacity level by taking control of another firm.

Hidden resources of firms in form of intangible assets like patents etc. reduces the acquisition ability of firms. Presence of more strict watch-dogs in form of creditors reduces the chances of acquisition by reducing cash resources and more stringent conditions on firms and higher bankruptcy risk. The advertising intensity related to product development also reduces resources available with the firm for the acquisition. It means the firms with higher budget allocated for advertisement expenses leave less cash for takeover deals. No significant relationship could be observed by firm size, cash holdings, firms' age and dividend payment ratio on the dependent variable. Empire building theory may be at back of this relationship.

The difference among firms on the basis of regulatory pressures does not change their acquisition ability in a significant way. Logit results indicate a negative and statistically weak impact of regulation on acquisition ability of the firm. The presence of regulatory pressures may reduce the chances of acquisition due to more disclosure requirements and approvals. So it may leave less discretion in the hands of the acquiring firms' managers to go for negative NPV projects and acquisition.

One possible explanation for these insignificant results can be the very small volume of acquisition in our local Pakistani market. The analysis is based on very limited sample due to non-availability of data and less developed market for corporate control. Secondly, many other

market based and behavioural factor can play their role in decision making which have not been explored in this research. Third important reason is that market offers for acquisition are random in nature and having higher transaction cost due to uncertainty.

Acquisition announcement is an important event in the capital markets. It may signal about the future prospects of both acquirer and target firms. This study has checked whether acquisition announcement can fetch abnormal returns for shareholders of bidding firm thus increasing shareholders wealth. The event study technique indicates the significant abnormal returns after 3 days of acquisition announcement. However pre event statistics indicate abnormal returns for 5 days out of 7 days before acquisition announcement. These results may be interpreted as showing market reactions prior to formal announcement due to rumours about acquisition. These results may also indicate the efficiency level of market so no chance to earn abnormal returns for the investors. So results are in line with theory of corporate control.

Researcher has calculated the cost efficiency scores for a number of acquiring firms for Pakistan. Cost efficiency has been analysed for bidding firms three years prior to the acquisition and three years post acquisition. The results have been presented for both financial and non-financial sector separately due to difference in nature of input and output variables. Overall results suggest an improvement in the efficiency of financial firms over time period. However, this sector is quite efficient even before acquisition and is improving even after taking control of another firm. This sector has been highly regulated in Pakistani economy due to its important role in the financial growth as well as the trust element of people in monetary system. That may be the reason of its better scores in case of DEA analysis. Acquisition of target may reduce cost of banks due to shared processes and technological advancements.

The average bank shows an improvement of 3.82% in cost efficiency after taking over another firm. Too high efficiency in pre-acquisition period may leave less chances for improvement in

efficiency. Al-Sharkas et al (2008) worked on cost efficiency for merged banks and the results were almost similar. Acquisition of another firm brings market power for the firm which may result in increased prices by exploiting customers. Or it may pass benefit of synergy to customers by charging lower prices. Non-financial sector is indicating opposite results where most of the firms are showing declining trend in efficiency after the acquisition. It means they were not successful. So overall results favour efficiency theory.

Another important problem addressed in this research study was whether acquisition can bring any change in the operational volatility of the firm. The study has analysed quarterly information for three year pre-acquisition and three year post-acquisition to calculate operational volatility. The percentage change in operational volatility is accounted for as operational hedging. This proxy of operational hedging is quite innovative as being based on theory rather than less precise categorical proxies like diversification and flexibility.

The empirical results show a large level decrease in the operational income volatility after the takeover deal. The acquisition of the target reduces volatility significantly in the majority of the acquisitions. It shows that combined firm after acquisition bring the benefit of diversification thus reducing volatility and increasing operational hedging which may ultimately reduce financial hedging. So efficiency theory is being supported here.

5.2. Contribution

This study contributes to the acquisitions literature by adding a unique mix of pre vs. post-acquisition approaches in the market for corporate control. The study has focused on firm based variables of acquisition ability from its governance rules as well as its financial strength and regulation. These results are important for company management to consider while going for taking over another firm. It may improve the chances of their successful acquisition later on.

Our empirical findings are in line with the previous studies by Peng, Kiang and Jiang (2013), Andriosopoulos, and Yang (2015, and Hankins (2009). This study is not focusing only on acquirer returns at the announcement period but is also showing long term performance comparison of acquirer firms with respect to cost efficiency and changes in operational hedging through operational income volatility. Comparison of long term vs. short term performance is a key contribution of the current study.

5.3. Prescriptive implications

The current research has many implications for the managers of both firms. As per normative perspective, it is critical to determine the factors of acquisition ability and then their performance in terms of synergy, efficiency and decrease in volatility. Managers should keep the information about the acquisition deal very secret before its formal announcement and should evaluate the target very carefully. Managers should be clear about information asymmetry when choosing a deal. Otherwise their returns would suffer as a result of acquisition deal. The results of acquisition should not be increase in burden of the firm rather than the improvement in efficiency and synergy.

The current study has identified certain firm specific governance and financial variables which affect the acquiring firms' acquisition ability. These factors should be taken care of before going for such deals. Presence of institutional shareholders on the board of directors and single person acting as both CEO and chairman increases chances of better acquisition deal. Managers should also assess the existing capacity level, capital structure, intangible resources and new product advertisement budget before signing takeover deals.

The study also provides insight about market efficiency level through abnormal returns earned by investors. A negligible increase in cost efficiency in post-acquisition in financial sector of Pakistan has been observed. Regulators, policy makers and antitrust authorities should keep in

mind these factors for approving any acquisition in financial sector. The results are contradicting for non-financial firms so their dynamics are quite different from highly regulated financial sector. Those acquisition applications should not be approved which increases the market share and give more monopoly power to market leaders as this power may exploit customers by charging high prices. The improvement in operational hedging provides insights for risk management.

5.4. Limitations of study:

These empirical results are not free of limitations. Haleblian *et al*. (2009) have argued the limitations of using short term event study methodology particularly in emerging economies. As this may evaluate the value of the decision at cost of idea implementation. So long term measure will be better to be used (Peng & Beamish, 2014).

Sample size is limited in Pakistani capital market as compared to previous studies in developing countries. So it may reduce the generalizability of the results. The findings may be replicated with larger sample data and alternative techniques to check the external validity of our results. Many firms have been dropped out of sample as they were private and no data was available for such firms.

This study considers only acquisition after 2004 as variables of corporate governance have not been reported before that. The study may incorporate market based as well as behavioural factors. Due to difference in nature of these variables, this study is not incorporating these factors. Only public limited companies of Pakistan dealing in acquisition deals.

Most of the previous studies have been conducted in developed economies where markets are assumed to be informationally efficient. Such markets are characterized by the capital being channelled to the most profitable projects and assorted information spreading idiosyncratic

risk. However, the current study has been conducted in Pakistani capital market, one of emerging economy characterized by relatively inefficient markets. So our arguments should be revised in scenario of a developed financial market scenario.

5.5. Future avenues for research

The current study may advocate various future directions for the investors. A comparison can be conducted among bidder and target based upon various criteria like public vs. private etc., ownership structure, etc. More detailed analysis is required to dig out other market specific, behavioural and regulatory factors for the acquisition ability of the bidding firms. The future studies may explore in detail the number of factors affecting the acquirer returns through value creation or they may use variance of acquirer returns within the sample and relate it with various firm specific factors and management features.

Future research could also check post-acquisition management across targets to comprehend the role of target ownership on integration efforts and outcomes due to changes in culture and governance mechanism of both acquired firm and acquiring firm.

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APPENDIX

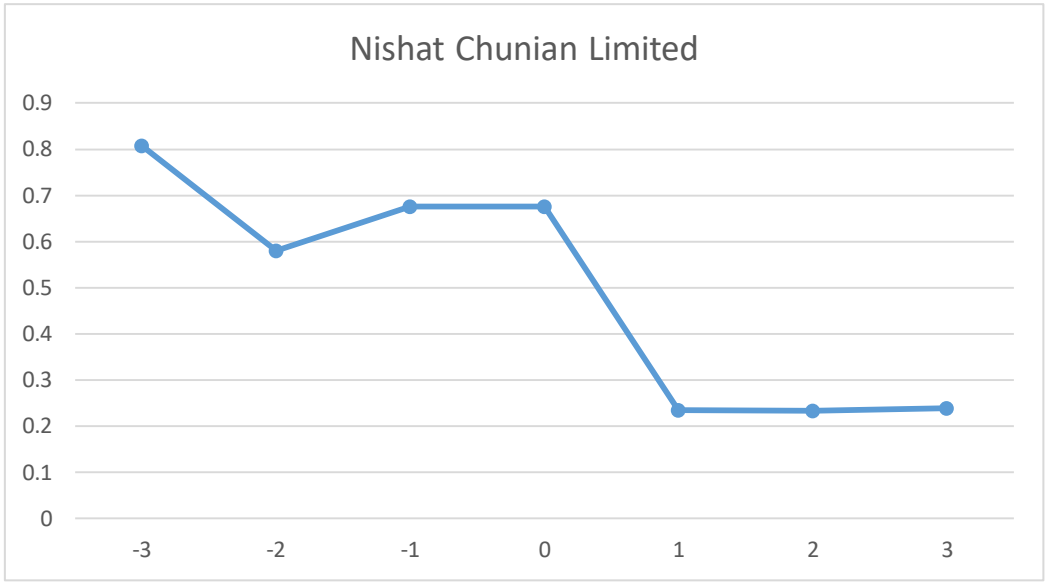
Sample firms along with Date of Acquisition

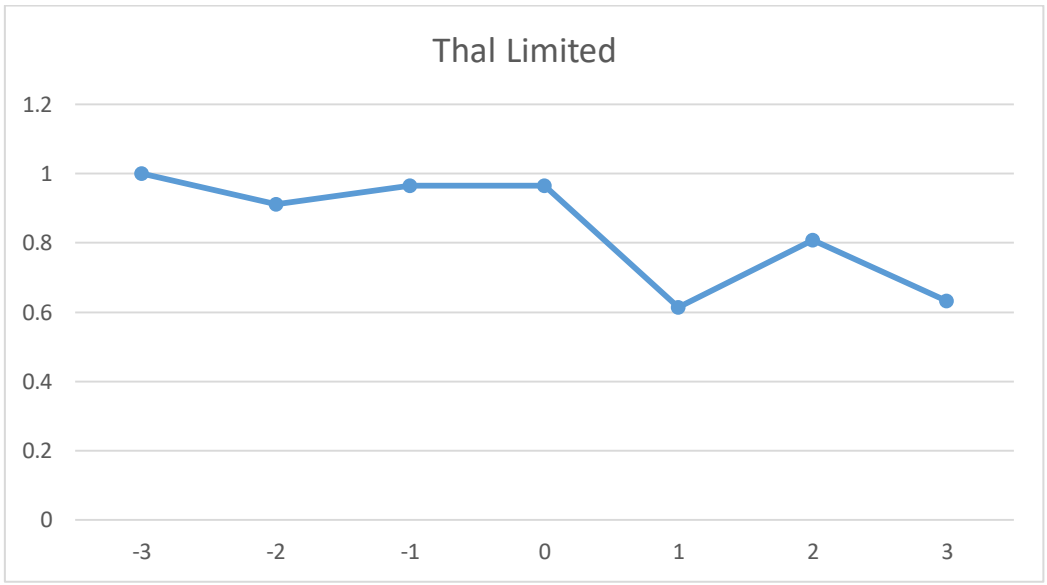
	Acquiring firm	Target firm	Date of Acquisition
1	Hascol Petroleum Limited.	Pakistan Refinery Limited	2014-09-02
2	Din Textile Mills Limited.	Ihsan Raiwind (Private) Limited	2013-04-03
3	IGI Insurance Limited	American Life Insurance Company Limited	2013-05-24
4	Fauji Fertilizer Company Limited.	Al Hamd Foods Limited	2013-07-16
5	M/s. Masood Spinning Mills Limited.	M/s. Tritex Cotton Mills Limited	2013-12-06
6	Pakistan Petroleum Limited	MND Exploration and Production Limited	2012-12-13
7	Pakistan Telecommunications Company Limited	Rozgar Microfinance Bank Limited	2012-07-16
8	Indus Dyeing & Manufacturing Co. Limited	MIMA Cotton Mills Limited	2012-01-31
9	Pakarab Fertilizers Limited.	DH Fertilizers Limited	2012
10	United Bank Limited	Khushhali Bank Limited	2012-05-11
11	Lucky Cement Ltd.	ICI Pakistan Limited	2012-07-27
12	Byco Oil Pakistan Limited	Byco Petroleum Pakistan Limited	2011-03-18
13	M/s. Murree Brewery Company Limited	M/s Sparkletts (Pvt) Limited	2011-08-03
14	M/s. IGI Insurance Limited.	M/s. Sanofi-Aventis Pakistan Limited	2011-10-31
15	JS Bank Limited	JS global capital limited	11/03/2011
16	Summit Bank Ltd.	My Bank Ltd.	2011-04-05
17	Faysal Bank Limited	The Royal Bank of Scotland	2010-08-10
18	Fauji Fertilizer Company Ltd.	Agritech Ltd.	2010-01-04
19	Byco Petroleum Limited	Bosicor Pakistan Limited	28/01/2010
20	M/s. JDW Sugar Mills Limited.	Farruki Pulp Mills Limited	15/11/2010
21	Bank Islami Pakistan Limited	citibank housing finance business portfolio	24/12/2010
22	Shahzad Textile Mills Limited	Shaheen Cotton Mills Limited – (SCML)	02/08/2010
23	Summit Bank Limited	Agritech Limited	09/08/2012
24	MCB Bank Limited	Royal bank of scotland	31/08/2009
25	Pakistan Petroleum Limited	Chahchar Gas Field	04/06/2009
26	Exide Pakistan Limited	M/s. Automotive Battery Company Limited	04/05/2009
27	Crescent Steel and Allied Products Limited.	M/s. Shakarganj Food Products Limited	06/03/2009
28	Hub Power Company Limited	M/s. Laraib Energy Limited	03/07/2008
29	First Capital Securities Corporation Limited	Pace Barka Properties Limited	19/06/2008
30	Byco Industries Incorporated	M/s Bosicor Chemicals Pakistan Limited	20/02/2008
31	M/s. Habib Bank Limited.	M/s.Saif Power Limited	15/09/2008
32	standard chartered bank	american express bank ltd.	25/06/2008
33	NIB bank ltd.	Agritech Limited	09/08/2012
34	NIB bank ltd.	M/s. Global Securities Pakistan Limited	31/12/2007
35	Nishat Chunian Limited	M/s. MCB Bank Limited	19/01/2005

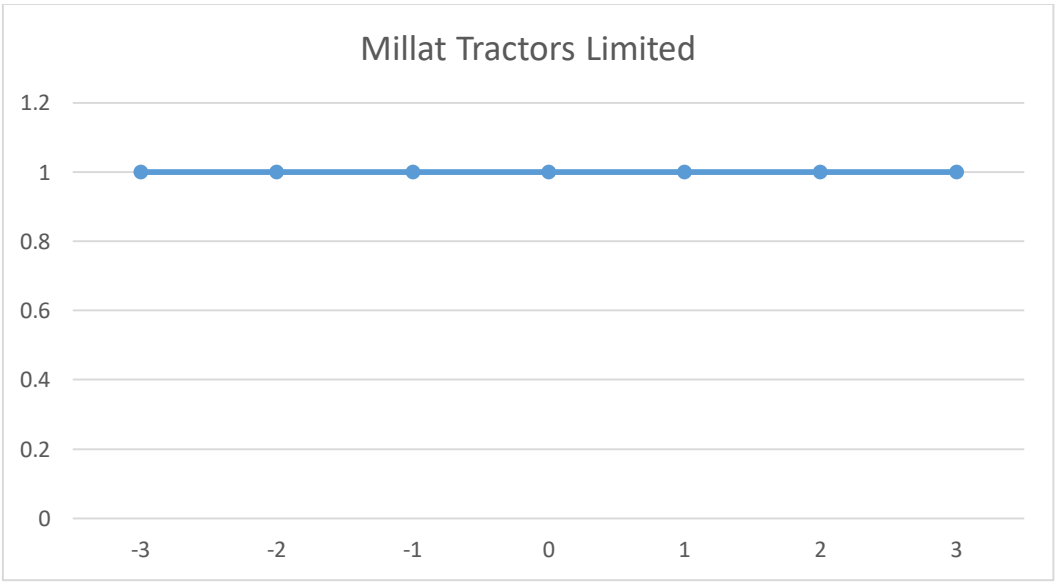
	Sample of firms on matching sample basis
1	Shell Pakistan Ltd.
2	Ahmed Hassan Textile Mills Ltd.
3	Fatima Fertilizer Co. Ltd.
4	Kohinoor Textile Mills Ltd.
5	E.F.U.General Insurance Co. Ltd.
6	Byco Petruleum (Bosicor Pakistan Ltd.)
7	Wateen Telecom Ltd.
8	Gadoon Textile Mills Ltd.
9	Fatima Fertilizer Co. Ltd.
10	MCB BANK LIMITED
11	mapple leaf cement ltd.
12	Attock Petroleum Ltd.
13	Rafhan Maize Products Co. Ltd.
14	E.F.U.General Insurance Co. Ltd.
15	BANKISLAMI PAKISTAN LIMITED
16	SILKBANK LIMITED
17	Fauji Fertilizer Bin Qasim Ltd.
18	Shahtaj Textile Ltd.
19	THE BANK OF PUNJAB
20	Shakarganj Mills Ltd.
21	JS BANK LIMITED
22	Shell Pakistan Ltd.
23	Atlas Battery Ltd.
24	JS BANK LIMITED
25	BANK ALFALAH LIMITED
26	Shell Pakistan Ltd.
27	Dadex Eternit Ltd.
28	United Bank Ltd.
29	pakistan refinery limited
30	J.S. Investments Limited
31	Faysal bank limited
32	MEEZAN BANK LIMITED
33	KAPCO
34	MEEZAN BANK LIMITED
35	QUETTA TEXTILE MILLS LIMITED

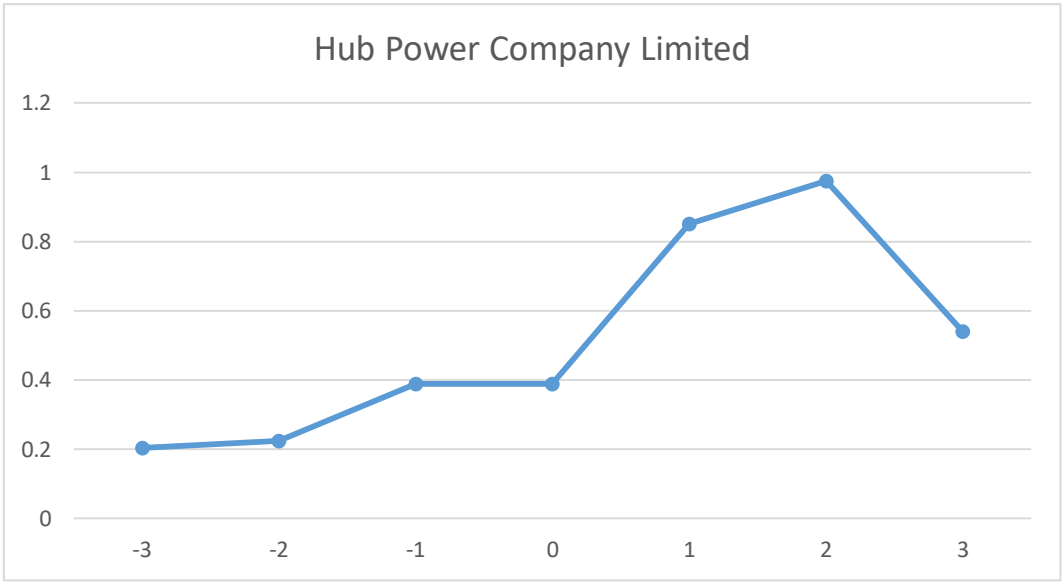
	Acquiring firm	Target firm	type of Acquisition
1	Hascol Petroleum Limited.	Pakistan Refinery Limited	Related
2	Din Textile Mills Limited.	Ihsan Raiwind (Private) Limited	Related
3	IGI Insurance Limited	American Life Insurance Company Limited	Related
4	Fauji Fertilizer Company Limited.	Al Hamd Foods Limited	Unrelated
5	M/s. Masood Spinning Mills Limited.	M/s. Tritex Cotton Mills Limited	Related
6	Pakistan Petroleum Limited	MND Exploration and Production Limited	Related
7	Pakistan Telecommunications Company Limited	Rozgar Microfinance Bank Limited	Unrelated
8	Indus Dyeing & Manufacturing Co. Limited	MIMA Cotton Mills Limited	Related
9	Pakarab Fertilizers Limited.	DH Fertilizers Limited	Related
10	United Bank Limited	Khushhali Bank Limited	Related
11	Lucky Cement Ltd.	ICI Pakistan Limited	Unrelated
12	Byco Oil Pakistan Limited	Byco Petroleum Pakistan Limited	Related
13	M/s. Murree Brewery Company Limited	M/s Sparkletts (Pvt) Limited	Related
14	M/s. IGI Insurance Limited.	M/s. Sanofi-Aventis Pakistan Limited	Unrelated
15	JS Bank Limited	JS global capital limited	Related
16	Summit Bank Ltd.	My Bank Ltd.	Related
17	Faysal Bank Limited	The Royal Bank of Scotland	Related
18	Fauji Fertilizer Company Ltd.	Agritech Ltd.	Related
19	Byco Petroleum Limited	Bosicor Pakistan Limited	Related
20	M/s. JDW Sugar Mills Limited.	Farruki Pulp Mills Limited	Unrelated
21	Bank Islami Pakistan Limited	citibank housing finance business portfolio	Related
22	Shahzad Textile Mills Limited	Shaheen Cotton Mills Limited – (SCML)	Related
23	Summit Bank Limited	Agritech Limited	Unrelated
24	MCB Bank Limited	Royal bank of scotland	Related
25	Pakistan Petroleum Limited	Chahchar Gas Field	Related
26	Exide Pakistan Limited	M/s. Automotive Battery Company Limited	Related
27	Crescent Steel and Allied Products Limited.	M/s. Shakarganj Food Products Limited	Unrelated
28	Hub Power Company Limited	M/s. Laraib Energy Limited	Related
29	First Capital Securities Corporation Limited	Pace Barka Properties Limited	Unrelated
30	Byco Industries Incorporated	M/s Bosicor Chemicals Pakistan Limited	Unrelated
31	M/s. Habib Bank Limited.	M/s.Saif Power Limited	Unrelated
32	standard chartered bank	american express bank ltd.	Related
33	NIB bank ltd.	Agritech Limited	Unrelated
34	NIB bank ltd.	M/s. Global Securities Pakistan Limited	Related
35	Nishat Chunian Limited	M/s. MCB Bank Limited	Unrelated

Non- financial firms cost efficiency scores





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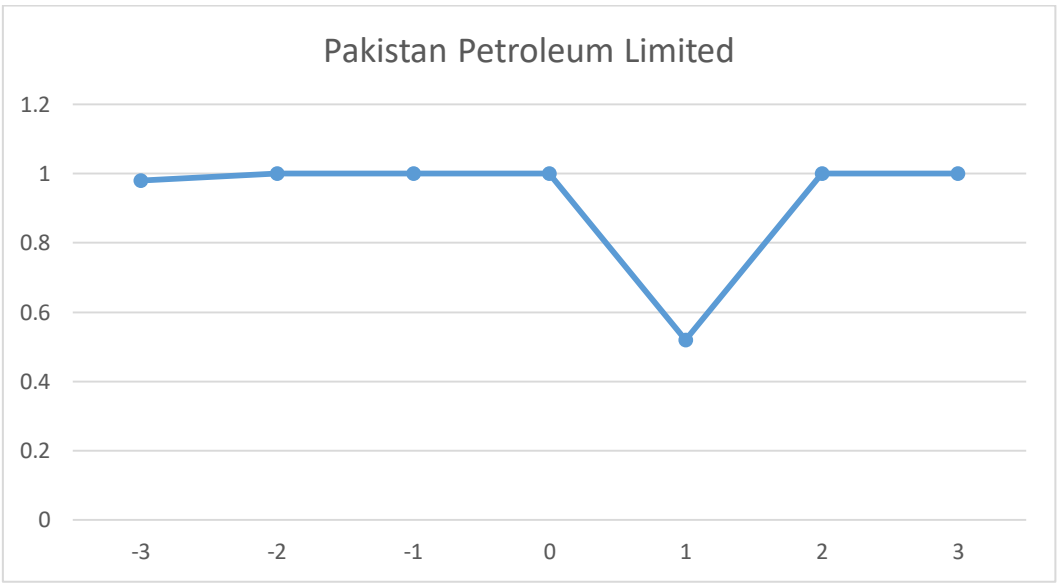
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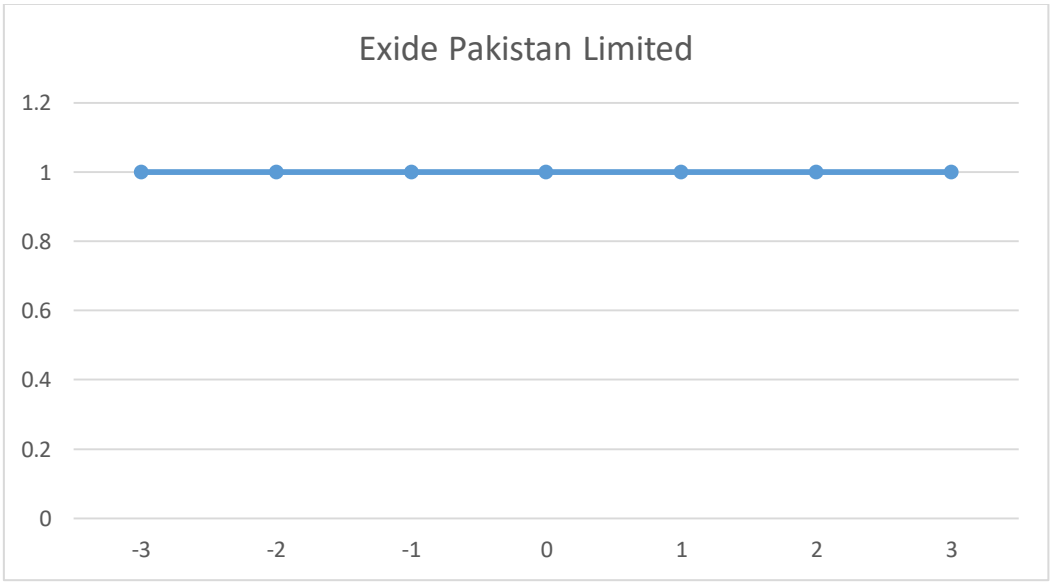
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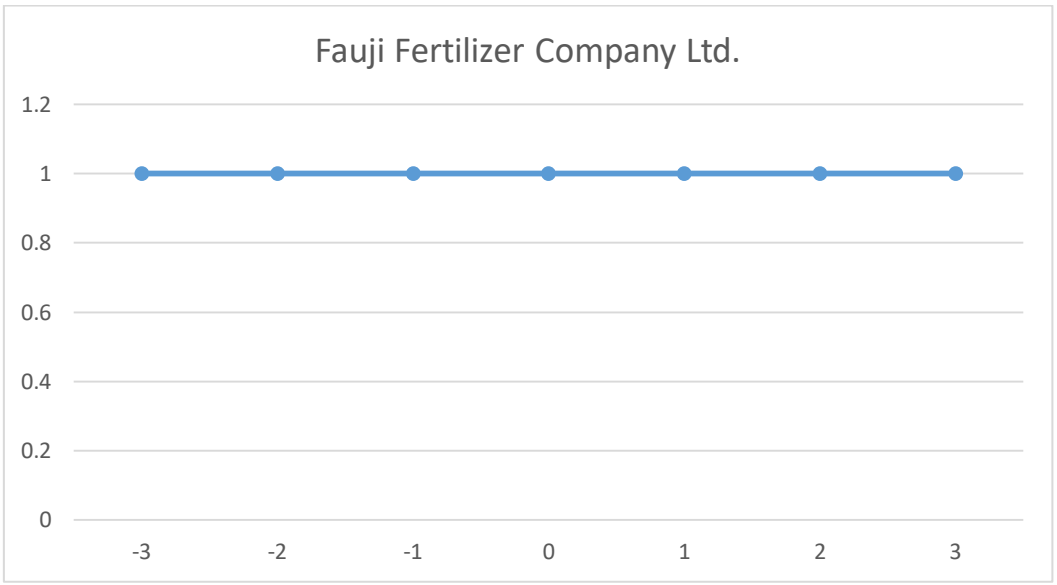
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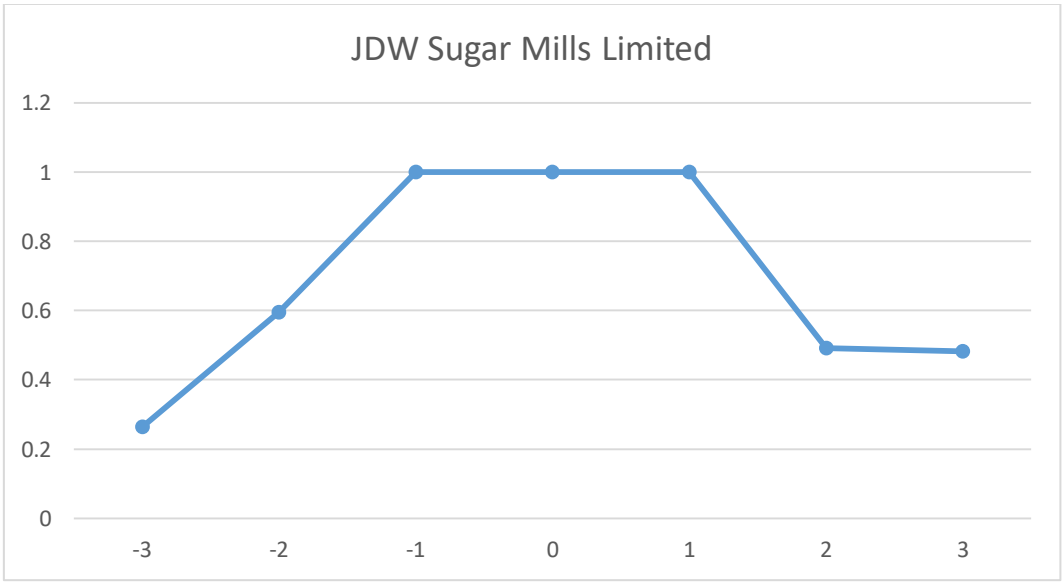
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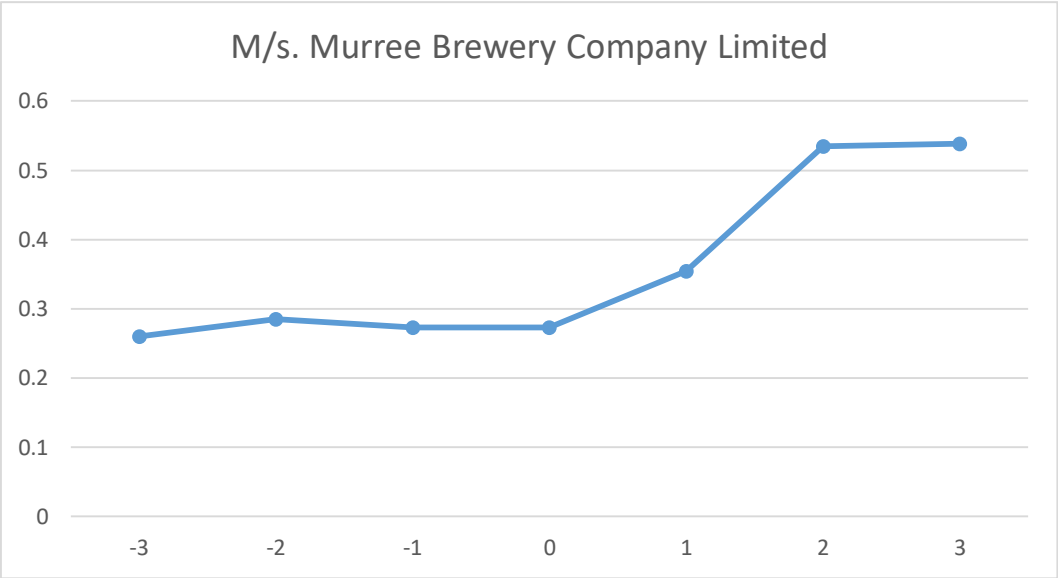
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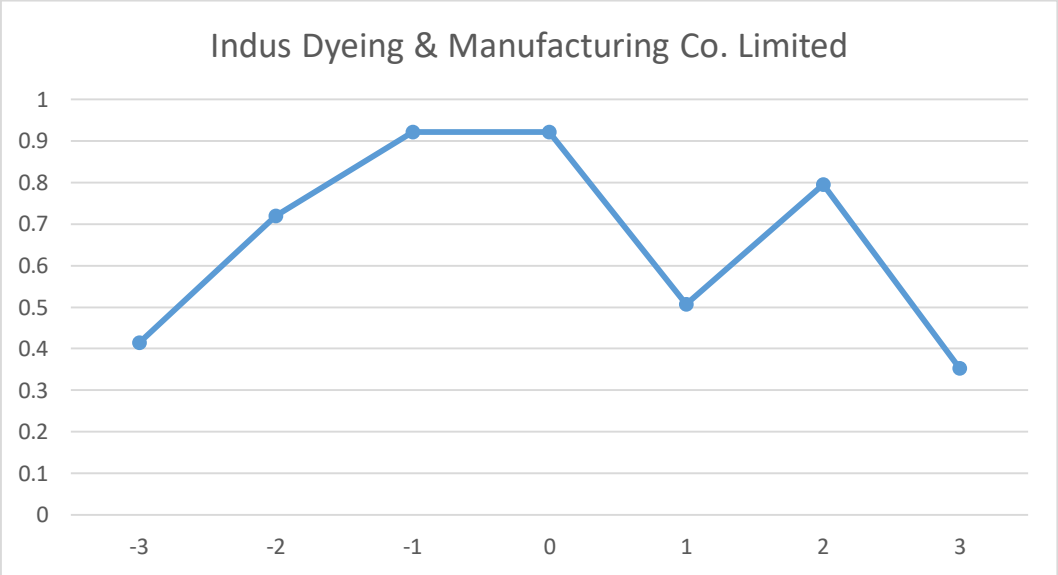
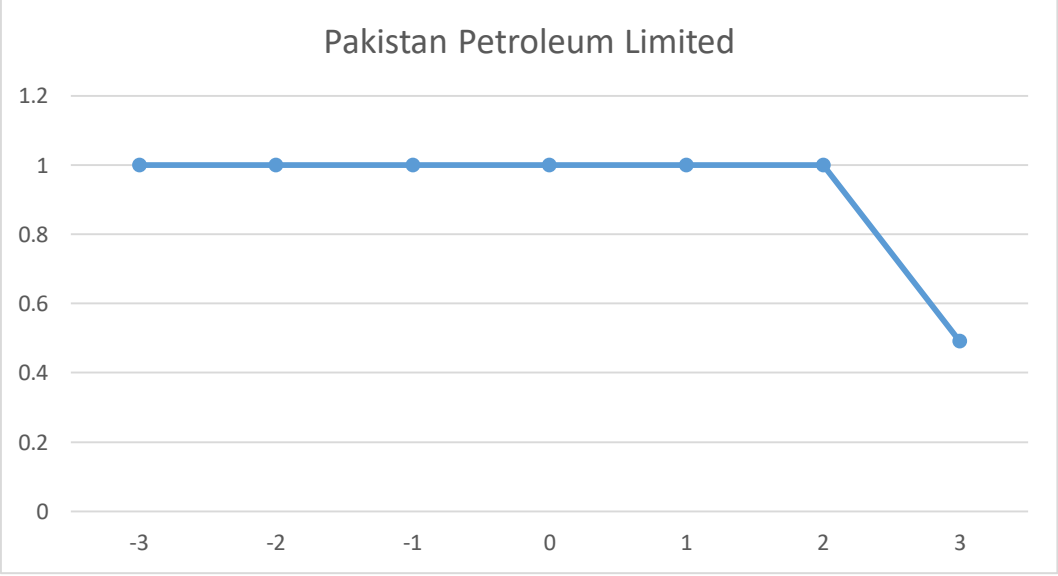
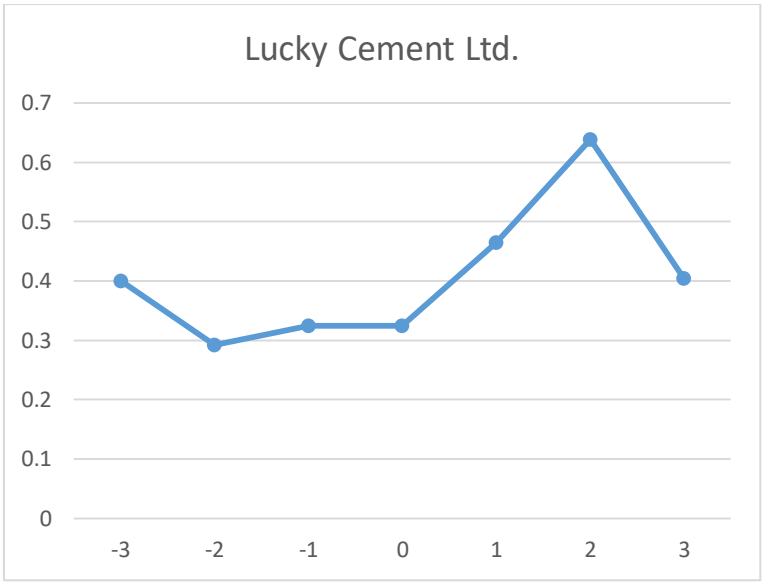
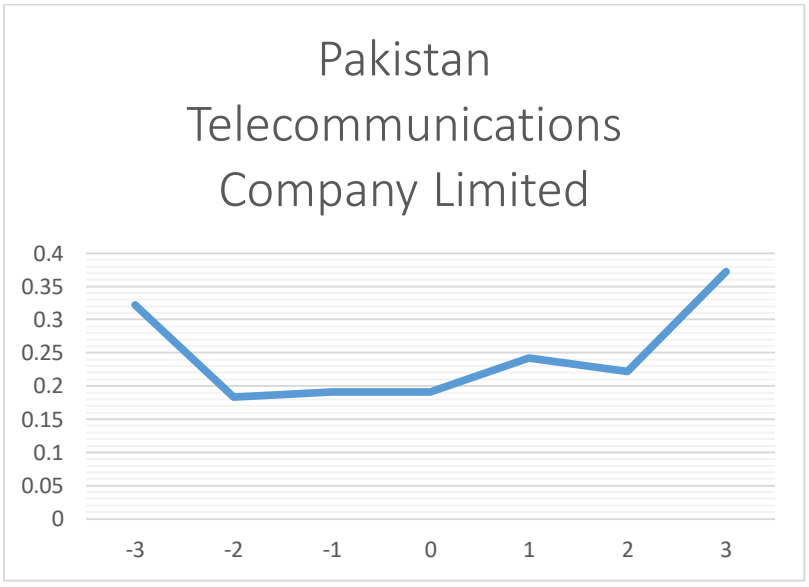
2
3

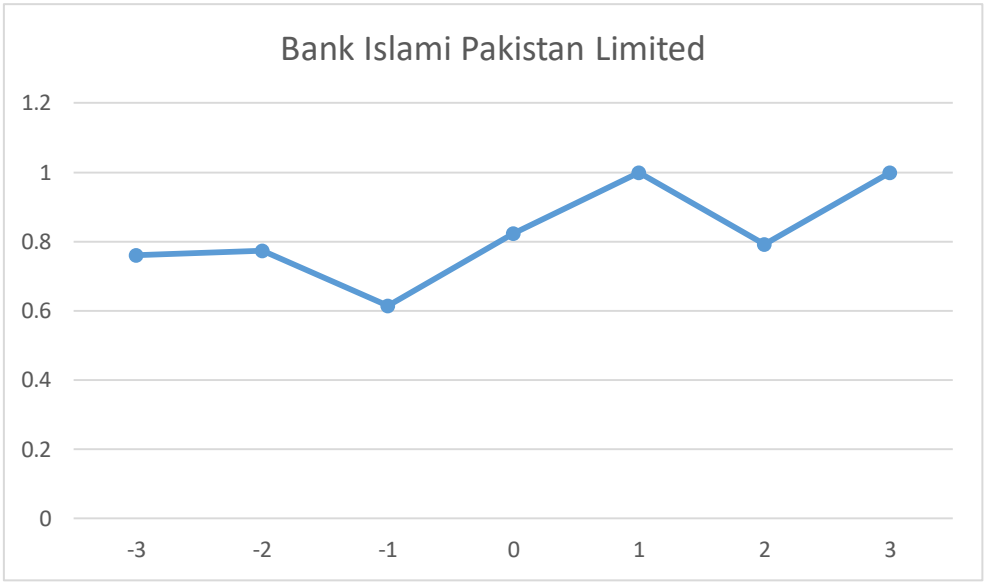

Indus Dyeing & Manufacturing Co. Limited
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-3
-2
-1
0
1
2
3

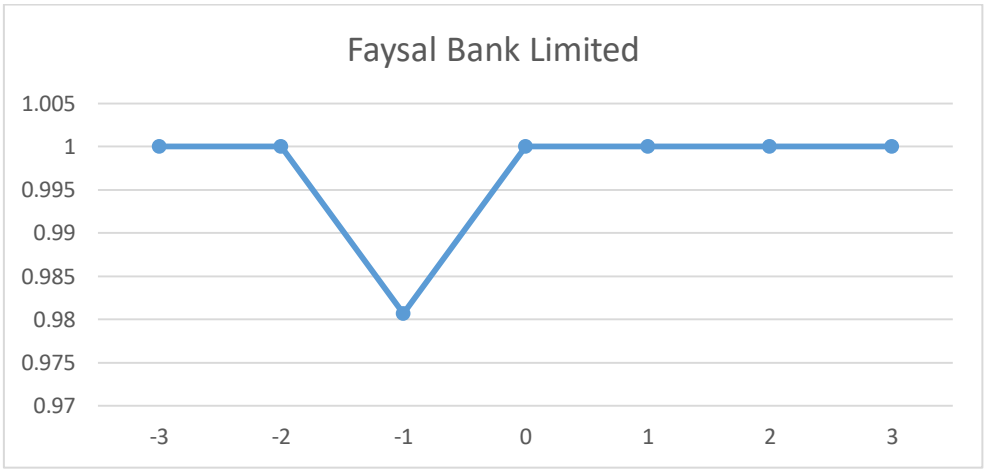

Pakistan Petroleum Limited
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3

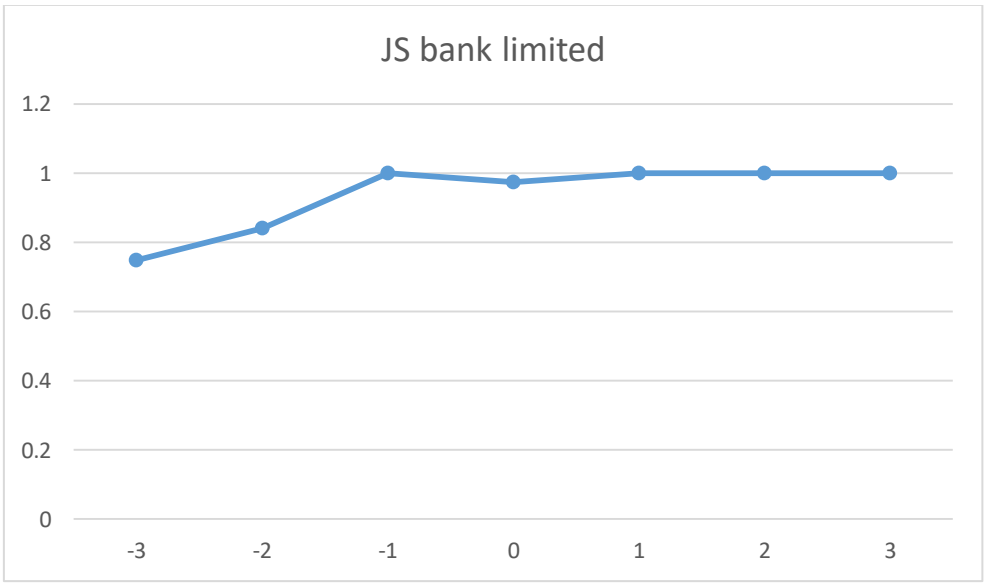

Lucky Cement Ltd.
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-3
-2
-1
0
1
2
3

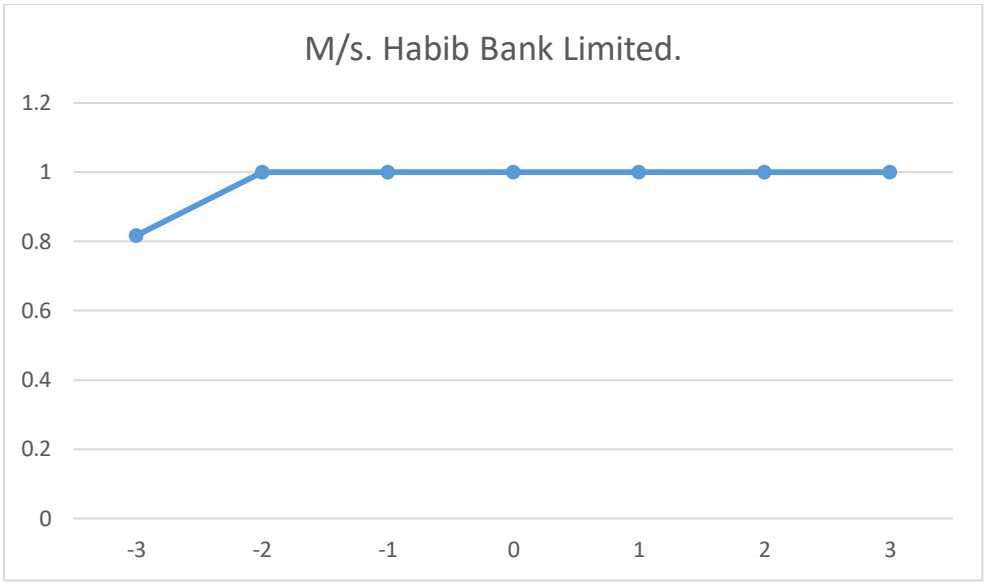

Pakistan Telecommunications Company Limited
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-3
-2
-1
0
1
2
3

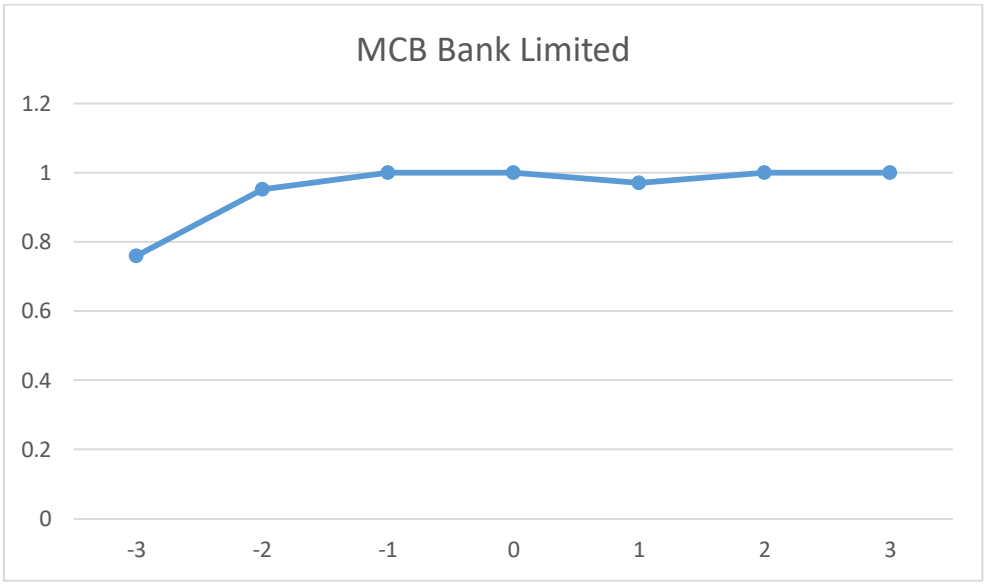
Financial firms cost efficiency scores

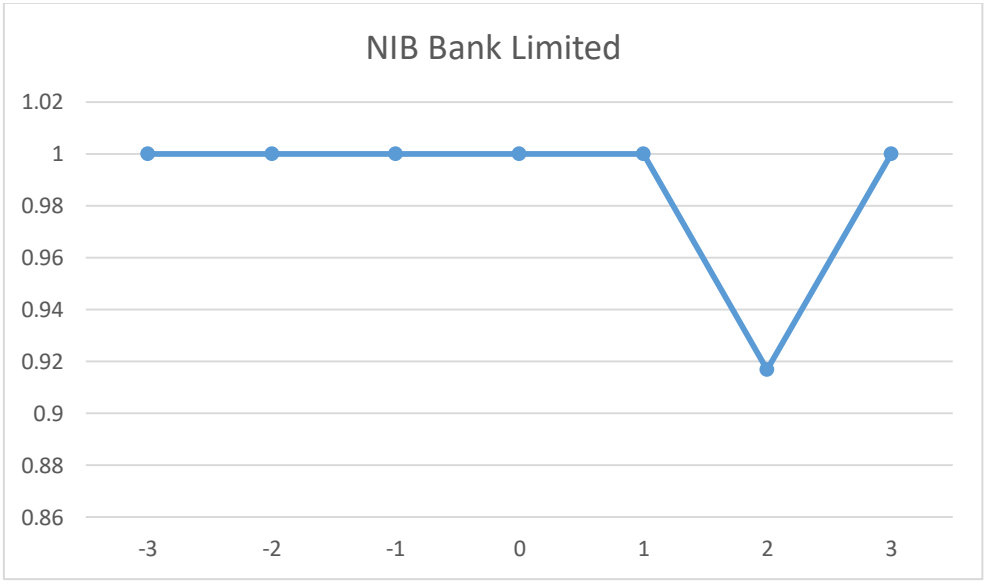


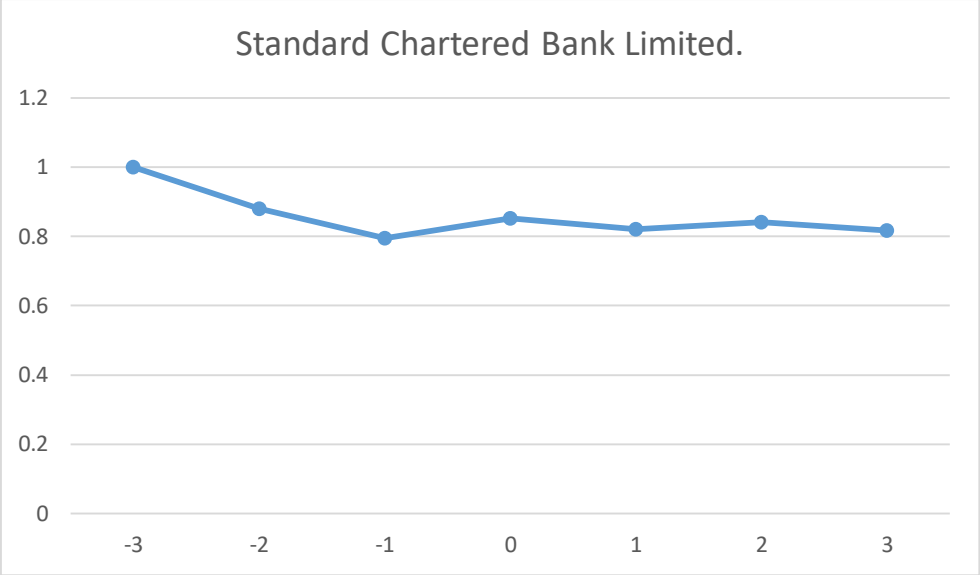


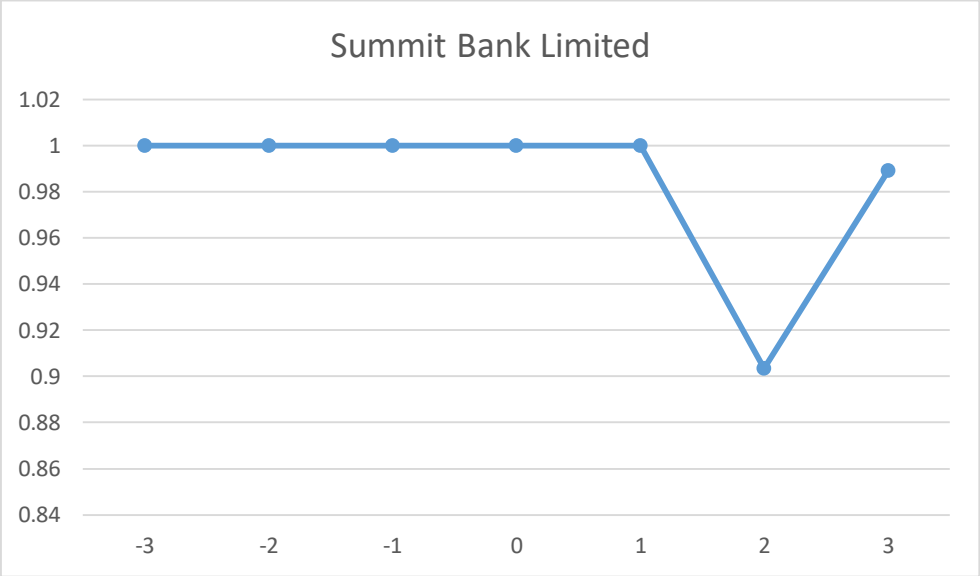


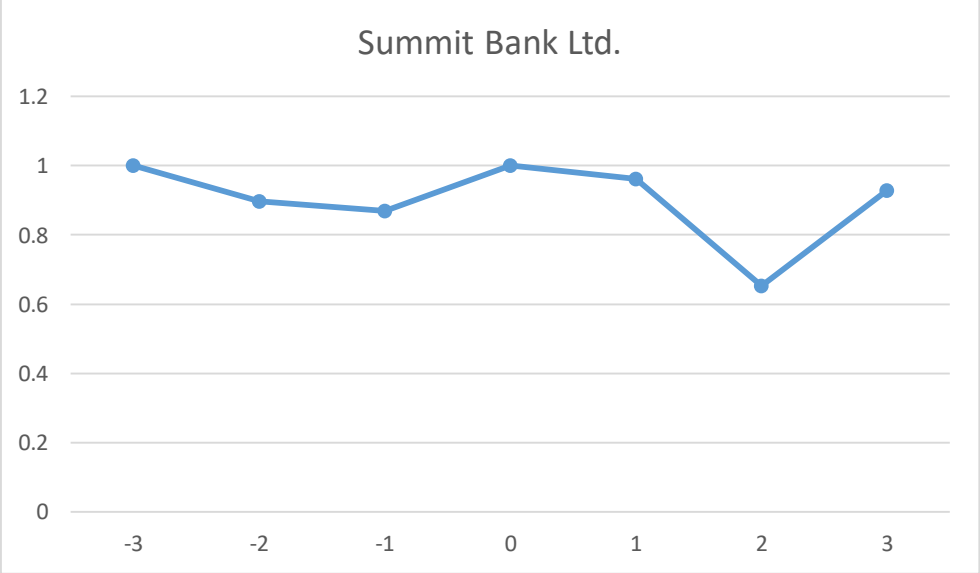

M/s. Habib Bank Limited.
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3

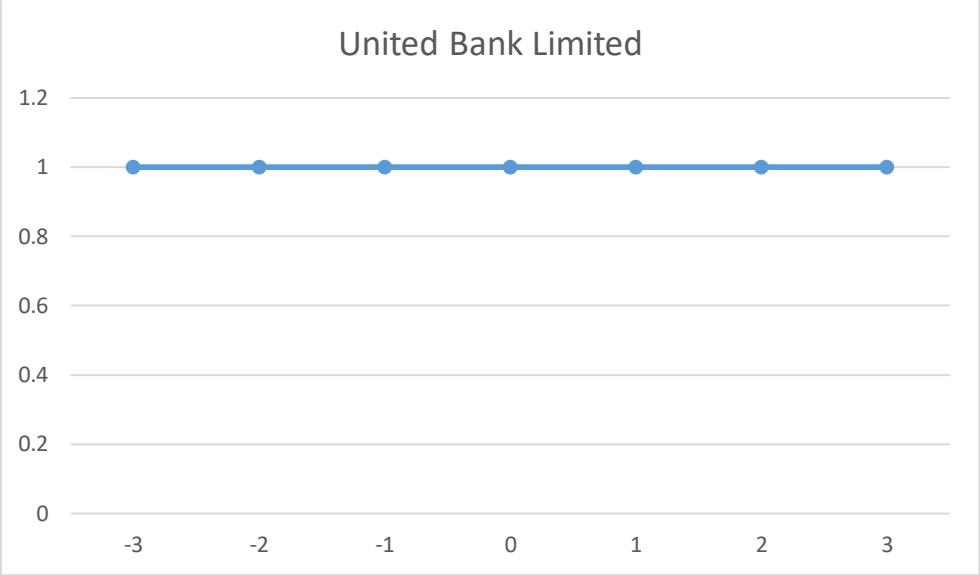

MCB Bank Limited
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3


NIB Bank Limited
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
-3
-2
-1
0
1
2
3


Standard Chartered Bank Limited.
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3


Summit Bank Limited
1.02
1
0.98
0.96
0.94
0.92
0.9
0.88
0.86
0.84
-3
-2
-1
0
1
2
3


Summit Bank Ltd.
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3


United Bank Limited
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3