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Impact of Merger and Acquisitions on Firm value in Financial Sector Firms of Pakistan

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ABSTRACT

Mergers and acquisition are not only related to accounting measures of performance of firms but it also affects the wealth of shareholders either positively or negatively. According to Hubris hypothesis, the merger and acquisition announcement brings negative effect to shareholders wealth and decreases the abnormal return in post period. The present study took this analysis separate for long and short run period. To capture immediate effect on shareholders return study used Market Model to calculate abnormal returns and employed the t-test on it to check the significant differences in two sample data set. Out of 12 cases of M&A eight mergers showed negative abnormal returns for post period with statistical significance at 1% level, two at 5% and two acquiring firms reduced returns were not statistically significant. Overall on the basis of most M&A results, the study concluded consistent results with earlier studies. The long run analysis employed by using Ohlson (1995) model for firm value with introducing dummy variable for the pre and post period. The results indicated coefficient of dummy for merger was -0.52 with statistical significance at 1% level which is demonstrating negative effect on share price which ultimately reduces the returns. The study concluded that merger and acquisition announcement bring negative effect on shareholders return either for short run or long time period.



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Introduction

Introduction

Merger and acquisitions are common in now a days' corporate world. Acquisition of one company by another means that company A will take over the company B, in this way identity of company A, only, will remain. Second is the establishment of a new company by the merger of two different companies. In which no company will remain with his identity, but a new company C will come in existence. The rationale at the back of these M&A (mergers and acquisitions) stands upon synergy affect that value of merged company is more than sum value of those two separate

companies. To cope with scarcity, companies use to merge together for some benefits, most common are: economy of scale, economy of scope and synergy. The reasoning behind acquiring a corporation is to make stockholder wealth in addition to that of the summation of the two separate corporations. This underlying principle becomes more appealing when companies face hard times. To achieve more competitiveness and cost efficiency more strengthen corporations will acquire others or the companies will approach for mergers with a hope to achieve a larger market share and to gain more efficiency. Because of these potential benefits, target companies will often agree to be purchased when they know they cannot survive alone (Brealey and Myers 2003).

The trend of business combinations started after depression of 1883 in United States and this first wave lasted till 1904 which created monopolies. The second wave of mergers and acquisitions then named as of oligopolies from 1916-1929. After that conglomerates mergers were began to seen from 1965 and hostile takeovers as well so on not only in US and Europe but also in Japan and Australia. M&A have always been concerned with bringing benefits including operating efficiency, financial strength and an increase in the survived firm because of more gains, reduction in expenses, reduction in earnings volatility, achievement of economy of scale and scope and in increased market power as well. According to Ogden, Jen & O'connor (2003), the motives behind these M&A were to achieve both operating and financial synergy, diversification, bankruptcy avoidance and self interest of bidder's management. In this instance post merger entity should have more strength in terms of profitability, efficiency and in value of firm in markets which leaves gap for researchers.

Many research studies from the beginning of M&A have focused on approximately every aspect of firm affected by business combinations. In finance literature there are many issues which have been addressed including M&A effect on firm profitability, efficiency, risk performance, liquidity and share performance to some extent as well. Particularly in Pakistan many researchers have been conducted on this phenomenon but those studies focused on firm performance in context of profitability. As actual goal of firm is to get increase in shareholder's wealth, therefore we must evaluate the performance of company in stock market as well. This study is trying to focus on the impact of business combinations, either in the shape of mergers or acquisitions, on the firm value.

Roll (1986) gave the Hubris theory regarding mergers and acquisitions in which he presented a hypothetical view that M&A affect the value of merging firm. According to hubris theory when an announcement of M&A is made, the stock price of a target company (firm which got an offer to be acquired) goes up and bidding firm (firm which gives offer to purchase) faces loss in terms of decline in stock price. The basic reasoning behind the theory is that when a corporation gives an offer of M&A to target firm then that target firm's shareholders become ready to transfer their shares in response to offer at high premium that has been offered by bidding firm, consequently the share price of target firm increases. According to hubris theory share holders of bidding company become overconfident and pay too much to target company for merger or acquisition. The increased stock price of target firm leads to increase in firm value. On the other side bidding firm faces a capital loss in stock value because it has to pay cash or some additional shares to target stockholders, as a result, decreased price of share of bidding firm leads to decrease in value. Number of studies tested this argument and documented consistent results with hubris hypothesis for both acquiring and acquired firm that target company have earned abnormal returns whereas bidding firm share value declined. Ruback (1983) reviewed thirteen studies and examine share prices around the M&A announcements and documented that Target Company earns thirty percent abnormal return on average. According to Jarrell, Brickley, and Netter (1988) study which analyzed 663 M&A offers between 1962-1985 and documented the results of abnormal returns of target company's as 19%, 35% and 30% for 1960, 1970 and 1980-1985 respectively. However, the results for bidding firms are mixed, contradictory and not clear. Many researchers depicted the

abnormal returns for bidding firm after an announcement of M&A in financial sector including Cornett and De (1991), James and Weir (1987) and Desai and Stover (1985). But the Cornett and Tehranian (1992) and Neely (1987) reported negative returns for the bidding companies.

This study is intended to test the hubris theory hypothesis about bidding firm that either survived firm's value increase or decrease subsequent a M&A. In Pakistan there are some studies on the subject matter but they are limited to financial performance of firm in context of profitability and studies which focused on effect on firm value are not comprehensive in nature and results are not able to generalize or are not enough to accept or reject the hubris hypothesis. Mahmood et al. (2012) tried to see the effect of M&A on share price. They took the sample of 8 Pakistani companies listed at KSE (Karachi stock exchange) which passed through merger and acquisition from 2000-2002. They depicted the share prices of one month before and after of merger and acquisition on a graph and found 5 bidding companies had increase in share prices, 2 had decrease in share prices and one was not subject to any change. Study concludes that overall positive effect found on share price. This was good initiative to contribute in literature but this study lacks statistical technique which could give enough evidence for conclusions. We could not found any other study in Pakistan which focused on this phenomenon, so there is a gap found to shed light on this arena that either results of M&A in case of developing countries, Particularly in Pakistan, are consistent with that of developed markets as they claim to being more efficient, NYSE for example. The investors in Pakistan are somewhat different as compared to developed market investors because of market differences, regulations and information available to them. The M&A announcement effect therefore could be different on share price.

Despite of Pakistan, many studies on the subject matter in the entire world reveals the short term analysis and have very least focus on long term effect. Harjito and Sulong (2006) attempt to examine the effect of M&A completion announcement on stock price behavior. They took event study of two Malaysian banks, calculated their abnormal returns and applied t test to check the significant differences for 60 days before and after of event. They concluded M&A as positive information inconsistent with hubris hypothesis. Sugiarto (2000) also calculated abnormal returns but found consistent results with hubris hypothesis that target firms gain more abnormal returns than that of bidding firms. All these studies lack the long run effect of the event. Some studies tried the long run performance in stock market by just increasing the event window and employing t test and checked significant differences as done in short run analysis. Tuch and O'Sullivan (2007) conducted a comprehensive review on empirical studies taken on M&A effect on value either on short run or on long run. The study revealed mixed results but depicted that short run abnormal returns were better whereas long run analysis shown negative effect.

The present study intended to perform analysis of M&A events on both short run and long run. In short run daily closing prices around event date would be used to calculate abnormal return with daily market index on the basis of market model. T test will be employed to check the significant differences as found in literature. The long run analysis would be different in nature. This study will use Ohlson (1995) traditional linear model for share price determination which uses financial information, book value per share and earnings per share. The first study to see the relationship between accounting variables and share prices is assumed to be of Ball and Brown (1968). After that Dividend discount model used but has been criticized much for its constant dividend assumption. Many studies concluded that stock prices have too many variations and these variations are not predictable by just dividends. Believers of this thought include studies of Flavin (1983), Marsh and Merton (1986) and Mankiw, Romer & Shapiro (1991). Ohlson (1995) model then used from late of 20th century to determine share price and it was showed that earnings and book value have positive and significant effect on stock price. Kadri, Aziz and Mohamed (2009) used this model for sample of Malaysian firms, Callao, Jarne & Lainez (2007); and Gaston, et al.

(2010) also demonstrated the same results. Nazir et al. (2010), Azeem & Kouser (2011) and Malik, Qureshi & Azeem (2012) are studies conducted on Pakistani sample used the Ohlson (1995) model and found that earning and book value are variables which positively and significantly affect the share price of KSE listed companies.

Research problem

Research got attention on M&A effect as they started in late of 19th century. Researches concerned with financial economics seek to result on shareholders wealth as it is a solely goal of firm. Most of researches only went for event window to capture immediate result of M&A announcement signal to shareholders for short run and ignored long term effects. The results even for short run are not consistent, some studies documented significant increase in abnormal returns of bidding companies after event, and others gave results consistent with hubris hypothesis. Therefore need is there to scrutinize it more. As M&A is not a matter of some days, research needed to answer for long run prospects as firms are going concerns. The present study feels a big gap here to contribute for long run prospects of company followed by M&A announcement. On the other hand, developing countries including Pakistan also needed to explore the results of M&A announcement, because business combinations become usual practice there as well after independence. Till now only effect on profitability could get attention of researcher's on this issue but not firm value, which needs to be performed.

Research objectives

The present study has very clear objectives regarding M&A effect on firm value. The more straight forward words are followings:

- i. The study seeks to catch the effect of mergers and acquisitions on stock returns for the immediate time after the event occurred.
- ii. The study intends to capture the effect of mergers and acquisitions on stock price for long term after the event occurred.

Research significance

Merger and acquisitions are the very big milestones for survived firm because it takes too much resources of acquiring firm and in result it hoped with getting much benefits as well including in terms of efficiency, fulfilling management objectives and financial performance. In finance literature financial performance is more concerned in which researchers much focused on the profitability. Some studies gave attention on result of firm value as well but not so much adequately. The analysis have been given on after results of M&A around the event date and not focused on long term effect on firm.

On the other hand prevailing results are not consistent but contradictory. The present study will try to shed light on it by covering both short and long term analysis. Particularly in Pakistan there is no research study available, in my best knowledge, which could help to managers, investors and other stakeholders in decision making about M&A and firm value relationship. The present study intends to give such information particularly for Pakistani scenario using KSE listed companies sample.

Delimitations of study

The current study is focusing on financial firms only, as most of mergers and acquisitions are occurred in this sector, listed at Karachi stock exchange, because it is the major stock exchange of Pakistan and contains majority of firms listed there. The other two stock exchanges listed firms are ignored in this study. The results will only generalize able to financial sector firms of Pakistan.

Literature review

With the emergence of Mergers and Acquisitions, the research also gave attention to this phenomenon and gauges the effects on different aspects of firm. Finance literature is more concerned with financial performance of firm affected by business combinations. Two traditional approaches are there to test the effect of consolidation in context of financial performance. First uses the accounting data of individual firms to capture the results on revenue, costs and profits. The approach is fairly straight forward which directly measures the performance around the event with pre and post data which is easily available and well understood. But this approach is not accurate in economic sense because data used is based on historical figures which more likely ignore the current market value. Other drawback is that, changes in results could be due to other factors also than only of M&A. Second approach to seek the result of M&A is to capture the stock market reaction which highlights true benefits and real economic effect due to consolidation announcement Pilloff & Santomero (1996). The study intends to seek similar effect which depicts investor perception about announcement and shed light on real economic benefit realized due to the event and not just of accounting figures changes. The analysis has been performed on both short and long run effect in past, following is detail given:

Short run event studies

Studies done on the M&A effect are many in numbers with focused on short run and immediate effect it creates to firm value around the event. Measuring abnormal returns for before and after the event is most common method to check the significant differences. Fama, Fisher, Jensen and Roll (1969) were first to use it by calculating abnormal returns. According to Fama (1970), stock prices in market reflect available information, therefore new stock price will be adjusted to up or down accordingly to new information. As capital markets are assumed to be efficient, event study method show true change in share price emerged from M&A announcement. Other benefit associated with using event study methodology to capture the effect of M&A on share price is of information effect. Announcement of M&A produces a signal which goes to investors and informs them about an event having potential to affect share price.

Drawbacks related with event studies while measuring effect of consolidation on firm value, first can be of different models. Allen and Sirmans (1987) measured abnormal returns by mean adjusted returns, Dennis and McConnell (1986) used the market adjusted returns, Eckbo (1983) and Dodd & Ruback (1977) used market model and Asquith & Kim (1982) went to CAPM based method. These different models sometimes make comparison of results impossible. Other drawback contain is of different event window used by different authors. Franks and Harris (1989) used event period as four month before to one month after the event occurred, likewise some used one week announcement effect and others took days as two days, five days or 12 days around the event to measure abnormal returns. In this instance there is no standard time which could be used reliably.

Empirical evidence on event studies

There are many studies on event studies related with the effect of M&A on share price. Some studies documented positive abnormal returns for the acquiring firms after the combination and others have opponent view of event regarding value effect with negative returns. Here are some studies describing this phenomenon.

Mandelker (1974)

The study took a sample of companies mergers listed at New York Stock Exchange for the period of November 1941 August 1962 to scrutinize the returns affected by mergers to owners. Study used market adjusted model and showed the cumulative abnormal returns of 0.037% for the 40 months after and before the event for acquiring firm and did not gave CAR for the acquired firms.

Dodd (1976)

This study took the sample of 242 firms of Australia and examined the share price around takeover offer. Findings of the study were that shareholders gained abnormal returns before announcement date because of good performance and surplus funds which could be maximized in a takeover bid. But shareholders suffered significant losses after the takeover announcement. The cumulative abnormal returns (CAR) for the shareholders were up to -10.9% over the 24 months after event date. Whereas the abnormal returns of acquired firm increased significantly even CAR went to 25% after public announcement. The news was good for acquired firm and they expected high compensation for their firm at the expense of acquiring firm. The weakness of this study was that it took 24 months before and after around the announcement made. The effect on share price documented therefore could be biased, because economic factors can influence these share price movements as well, which are less relevant in gauging the true effect of these M&A.

Dodd and Ruback (1977)

The study took sample of companies listed at New York Stock Exchange from 1958 to 1975. They document similar results with earlier event studies conducted on subject matter. Consolidation shown positive abnormal returns as 11.6% for pre 12 months but depicted reduced 2.83% returns for post 1 month of that event announcement with even having negative cumulative abnormal returns as -1.32%. Their study tried to capture long run perspective and showed CAR for 5 years (60 months) as -4.59%. Apparently results seen consistent with hubris hypothesis but these CAR for much long period could have resulted due to another market wide or economic wide factors.

Langetieg (1978)

The author uses three factor performance index based on Jensen's performance index (1969) and Mandelker's model (1974), documented significant differences with results of two different methods employed. 149 mergers and acquisitions of NYSE listed companies showed positive returns for the acquired and and negative returns for the acquiring companies around the event occurred. Returns for both target and bidding firms were negative when authors prolonged the time span to 70 months after the M&A announcement.

Dennis and McConnell (1986)

By using the mean adjusted returns and market adjusted returns, the study measured the flow of returns for corporate mergers occurred during 1962-1980 of US firms. The strength of study was that it tried to isolate effects on shareholders wealth other than M&A by taking 20 days for before and after the event. And showed the very clear positive abnormal returns for targets firms and found no evidence that showed shareholders of acquiring firm loses, instead in some cases they found positive abnormal returns as well. The results here are mixed and are inconsistent with other documented results in the era.

Allen and Sirmans (1987)

To capture share price reaction to the announcement made for mergers, authors used mean adjusted returns for measuring abnormal results of acquiring companies. The cases of U.S mergers occurred during 1977 to 1983 were focused and documented similar results with Dennis and McConnell (1986) and inconsistent with others that of conducted for same period such as with Mandelker (1974) and Dodd (1976). This study also focused short period around the date of announcement but bit larger than Dennis and McConnell (1986), 40 days for before and after instead of 20 days. The results showed 1.34% abnormal return for the first day and 10.34% CAR for second day for acquiring firms raising a question mark on earlier results, therefore made space to clear the true effect.

Bradley, Desai and Kim (1988)

Authors of this study enlarged the sample to 921 from NYSE and American Stock Exchange listed firm's mergers and increased the time span over the period from 1963 to 1984. They employed market model to measure abnormal returns for both acquiring and acquired firms. They showed CAR of acquiring firms as 31.28% for period commencing from 20 days before the announcement date to 80 days after the event occurred. The CAR for acquiring firms was showed very low to 1.62% but positive for same time period.

Franks and Harris (1989)

This study took sample from different market, U.K 1800 corporate mergers, for the period of 1955 to 1985. For the announcement month study finds 23.3% abnormal returns for the acquired firm whereas only 1% found for acquiring firms. These returns increased to 29.7% and 7.9% for target and bidding firms respectively when period is taken 4 months before till 1 month after the date. Other studies conducted on the mergers and acquisition effect by event studies are shown in following table.

Study	Sample details	Event window	Main findings
Firth (1980)	They took sample of 642 takeovers of UK from 1969 to 1975.	Month of announcement.	-0.045 Average cumulated residuals for the month of announcement (statistical significances are not reported).
Dodd (1980)	They took sample of 151 takeovers of US from 1970 to 1977.	40 days before and after of event.	Bidders earn -0.23% (insignificant) at the announcement date from completed bids
Bradley et al. (1983)	They took sample of 241 successful targets and bidders from 1962 to 1980, 94 US unsuccessful bidders	20 days before and after of event.	On average, unsuccessful bidders gain 2.32% for -20 to +1 day, but lose -2.96% as soon as the bid failure is revealed (+2 to +20 days). Both statistically significant
Lang et al. (1989)	They took sample of 87 targets and bidders from successful tender offers of U.S of 1968 to 1986.	5 days before and after of event.	Negative impact on bidder's returns when the bid is made by a low Tobin's q firm
Lang et al. (1991)	They took sample of 87 targets and bidders from successful tender offers of U.S of 1968 to 1986.	5 days before and after of event	Negative abnormal returns were ranging from -6% to -7% from single, opposed bids (significant).
Smith & Kim (1994)	They took sample of 177 targets and bidders US from 1980 to 1986.	5 days before and after the bid.	Bidders lose from -0.23% to -1 to 0 days (significant).
Holl & Kyriazis (1997)	They took sample of 178 successful bids of UK from 1979 to 1989.	From 0 to +2 months.	Negative abnormal returns of -1.25% to bidders two months after the bid announcement (significant)

Higson & Elliot (1998)	They took sample of 1660 acquirers and targets of UK from 1975 to 1990.	From 0 to +3 months.	Insignificant gains between announcements until completion.
Walker (2000)	They took sample of 278 acquisitions, 230 mergers, 48 tender offers of US from 1980 to 1996.	2 days before and after the event.	Market adjusted abnormal returns were Negative of -0.84% (significant).
Sudarsanam & Mahate (2003)	They took sample of 519 listed acquirers of UK from 1983 to 1995.	1 day before and after the event.	Abnormal returns of bidders between -1.39%, and -1.47%, using a variety of benchmarks.
Gupta & Misra (2004)	They took sample of 285 mergers and acquisitions of US from 1980 to 1998.	10 day before and after the event.	Bidders lose a significant 1.57% over the -1 to 0 day period. Returns for the -10 to -2 days or +1 to +10 days are insignificant. The returns are calculated from a market model, based on an equally weighted market index.
Song and Walking (2004)	They took sample of 5726 mergers and acquisitions of US from	-1 day before and day of event	Acquiring firms with a period of more than a year of 'dormant' bid activity receive a positive abnormal return of about 1%. Acquirers with a 'dormant' period of less than a year earn insignificant returns.
Campa & Hernando (2004)	They took sample of 262 European mergers and Acquisitions from 1998 to 2000.	30 day before and after the event.	Regulated EU acquirers lose -1.96% over 60 days around the bid announcement. Bidders from unregulated industries do not earn significant returns for the same period.
Ben-Amar & Andre (2006)	They took sample of mergers and acquisitions by 138 Canadian firms from 1998 to 2000.	1 day before and after the event.	Acquiring firms earn 1.6% over 3 days. Returns are calculated using the market model.

Above evidences raises a question on results. Many studies gave consistent results with hubris hypothesis that acquiring companies suffer losses in terms of shareholders wealth against negative market reaction. But many of them had a weak point there of event window. Much of studies took 4 to 5 years as event window (time period before and after the event occurred), which in turn can mislead the results. Large time span around the announcement date could have factors other than M&A affecting the stock returns such as economic or some market wide factors. On the other hand some studies documented that acquiring companies also earned positive abnormal returns, more of them were using short event window around the date.

This study, therefore, to avoid these misleading results, designs the research in a way that both, long and short run analysis depict their true picture and stakeholder can get a clearer picture of the

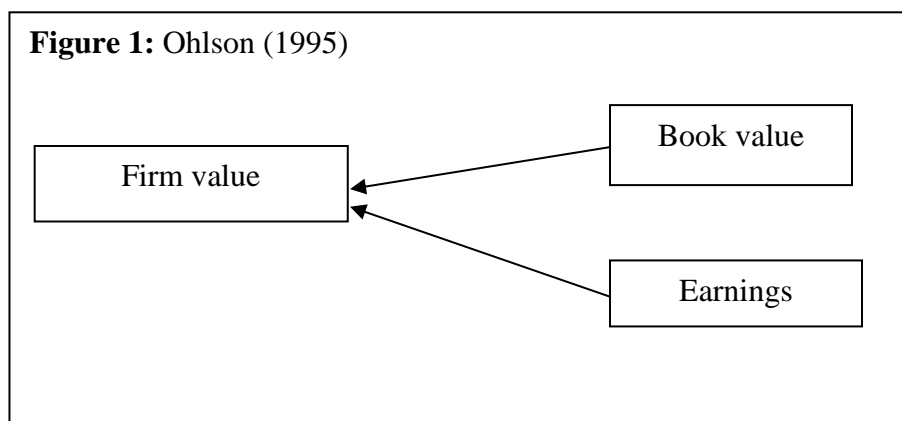
event in terms to effect on shareholders return. Short run analysis employs market model, whereas long run analysis employs Ohlson (1995) model to scrutinize the effect of M&A on firm value. We have done much discussion on former, now further discussion is underlying the later in literature review.

Long run analysis

Analysis of the word “value relevance” depicts that information which affects the value of firm. Accounting, macroeconomic and non financial variables are those major factors which used much in the literature to gauge the relationship with firm value. Some studies focused on the impact of hedging on firm value in the developed markets as well. Gordon and Modigliani & Miller (1958) also introduced their models which focused on dividend and firm real assets as determinants of firm value respectively. In this instance, Ohlson (1995) model for share price determination is much famous in these days. It uses the book value per share and earnings per share to determine the market value per share. Many researchers contributed a lot in literature of value relevance but effects other than firm fundamental variables and macro economic variables could not being focused in past. They usually focused on affect of business combinations on profitability or other performances only, whereas the M&A effect has been analyzed only at short run period, and studies which tried to focused on long run analysis of this phenomenon have failed to give a clear picture because the results were not pure (other effects could not been isolated because of longer event windows). The present study introduces a dummy variable in this model to capture the long run effect of M&A on share price so that gauges the effect of mergers and acquisition on firm value.

Particularly in Pakistan (developing country) situation is bit a different because no study found in there which examines the M&A affect on firm value, therefore indicating gap which need to be fulfilled. This study is seeking the impact of M&A on firm value in the financial sector companies of Pakistan listed at Karachi stock exchange because most of business combinations cases are there. The short run analysis employs the market adjusted model which measures the abnormal returns around the M&A announcement date. The long run analysis employs Ohlson (1995) model with an introduction of dummy variable to see the impact on firm value. The model is depicted below in figure:

Figure-1: Theoretical framework for long run analysis



Research methodology

This section involves discussion upon type of the study, sampling of the study, data collection, and data analysis technique employed by the study for both (short and long run) analysis.

Type of the study

The study collected secondary data for theory testing therefore the nature of the study is explanatory and is quantitative in type. The study does contribute in literature of firm value and is conducted for the academic purposes, therefore it is a pure research not applied.

Sample of the study

The population of the study is all the mergers and acquisition of financial sector firms listed at Karachi stock exchange, Pakistan. The financial sector has been choosing because most of mergers and acquisition found of KSE listed companies were from financial sector of Pakistan. M&A cases list is obtained from KSE website. The author intended to focus on all the M&A but due to data availability issue some criteria has been developed to get sample for the study.

The study took separate analysis for the immediate and long run effect of M&A on firm value, therefore the change in modeling for both of analysis arises need of two samples because of incorporating different variables for the two separate models. The first criterion for the short run analysis sample is that data for the market price of stock of firms must be available around the merger date (Event window). The second criteria is that survived firm after M&A must not merge again with some other firm because in that case the data of market prices of that very firm is vanished from KSE website therefore later case of M&A is considered for the study.

For long run analysis the study employed Ohlson (1995) model which uses the earnings and book value to determine the market value. We took 3 years before and after the merger date so all the cases of M&A which were having the data of share price, book value and earnings for these 6 years has been selected for sample of long run analysis. For short run analysis 12 cases out of 28 M&A of financial sector firms were selected and 7 cases qualified for the long run analysis because most of survived firms through M&A itself merged with some others and data for former case is not found.

Data collection

Data collection for the analysis contains secondary data as it is explanatory study in its nature. Data for the share price and daily 100 index points is obtained from KSE website. Whereas the data for earnings and book value is obtained from financial statement analysis (2007-2011), issued by state bank of Pakistan, and from annual reports of each firm.

Data analysis

Event study method

Discussion in literature proved that measuring returns for immediate effect due to M&A can best given by event study methodology. This study uses this method because it can directly measure the capital gain earned by shareholders resulting from any event of merger and acquisition. The event window used is 20 days before and after the event. Many studies took the event window for the years but it is argued that for that long time there can be other economic and market wide factors which could affect the returns. Sugiarto (2000) used $t=10$ around the event to be specific to gauge the true effect of mergers on share price. The study conducted in Pakistan where many studies have proven weak form of market efficiency is prevailing. Therefore to cover the leakage of information we extended the event window to 20 days.

The study employs the market model developed by Fama (1976). The model is very famous to measure the abnormal returns. The standard approach to measure abnormal returns by market model is to employ it for each individual firm. The equation for each firm is as follow:

$$AR_{dit} = R_{dit} - \alpha_i - \beta_i (R_{mit}) \quad (1)$$

Where α_i and β_i will be getting through regressing the returns with market return and the equation is as follow:

$$R_{dit} = \alpha_i + \beta_i (R_{mit}) + e \quad (2)$$

$t = -20, \dots, +20$ days

Where;

R_{dit} = daily stock return in day t for firm i .

α_i = Intercept for firm i .

β_i = the systematic risk of stock i (individual firm).

R_{mit} = Return on market index in day t relative to the announcement of offer i

e = Residual term.

Whereas;

Daily stock return in day t for firm i could be getting by formula below:

$$R_{dit} = (P_{it} - P_{it-1}) / P_{it-1} \quad (3)$$

$t = -20, \dots, +20$ days

P_{it} = Price of common stock outstanding for firm i at the day t end.

P_{it-1} = Price of common stock outstanding for firm i at the day $t-1$ end.

Market return could be getting through the formula below:

$$R_{mit} = (MI_{it} - MI_{it-1}) / MI_{it-1} \quad (4)$$

$t = -20, \dots, +20$ days

MI_{it} = Daily market index at the end of day t .

MI_{it-1} = Daily market index at the end of day $t-1$.

The cumulative abnormal return then will be calculated as follow:

$CAR_i = \text{Sum of } AR_{dit}$

Long run analysis

We employ the Ohlson (1995) model to capture the long run effect on share price which uses earnings and book values depicted in figure 1. The dummy is introduced for the merger and acquisition event which will have value of 0 for pre merger years and 1 for post merger years. The data sheet will be in panel form because all three variables of the model are both cross sectional and time variant. To infer results study used the panel data regression but to address the multicollinearity problem the correlation coefficients between the variables are also calculated. To choose efficient panel regression form the study employs Restricted F-test and Hausman test.

Empirical findings

Short run analysis

Market model measured abnormal return by using daily share prices and daily market index. After that t-test has been applied to abnormal returns got from market model. The aim of study is to check the hubris hypothesis whether it holds in developing economies too or not. According to that shareholders of acquiring firm (biding firm) suffers from merger or acquisition occurred. There were 12 cases for this analysis. All were from financial sector firms listed at KSE in Pakistan containing 4 modarba firms, 5 commercial banks, 2 investment banks and one from leasing sector. The results for all of the M&A are given in table 2.

The event window is selected for twenty days before and after. The results for average abnormal return (AAR) pre and post are given in table. Eleven out of twelve M&A showed that AAR not just reduced after the event but they even went to negative return. According to t-test, eight cases showed reduction in AAR with 1% significant level, KASB bank and First Fidelity Leasing Modarba abnormal returns are reduced after event with 5% level of significance and two cases, NIB bank and Modarba al-Mali, showed differences in abnormal returns but these are not significant according to t-test.

Abnormal returns for each M&A case are given in appendix (available from author on request). Average abnormal returns for shareholders of KASB Bank were 0.73% before merging

International housing finance ltd. but table showed these returns reduced to -0.45% with p-value of 0.002. Shareholders of First Tri Star Modarba had 2.08% AAR in pre time period but these returns decreased to -2.16% which are statistical significant on 1%. Shareholders of First Paramount Modarba likewise had pre AAR 0.64% but this figure reduced to -1.07% with p-value of 0.000. First Dawood Investment Bank gave 1.15% AAR to their shareholders in pre merger period but table show -0.55% AAR for post merger period with p-value of 0.000 which shows that results are statistically significant. AAR for Invest Capital Investment Bank also decreased to -0.79% with 1% significance level. Orix Leasing Pakistan, Askari Bank and Allied bank mergers showed that their average abnormal returns decreased in post period to -0.22, -2.96 and -0.56% respectively, OLPL abnormal returns are statistical significant at 5% and later two are at 1% level.

These results are in line with hubris hypothesis of Roll (1986), according to which abnormal returns reduces after the merger or acquisition announcement because usually acquiring firms offer much more to target firms than the value they possess. This study shows that hubris hypothesis also holds in developing countries. The results are consistent with the study of Sugiarto (2000) which uses market model to calculate abnormal returns and applied t-test to check the significant differences in pre and post abnormal returns. The present study also calculated cumulative abnormal returns for each of merger & acquisition case which shows cumulative returns for the shareholders.

Table 2: Average abnormal returns for each firm

S/r.	Bidding firm	AAR* Pre	AAR* Post	t-value	p-value
1	NIB Bank	0.37 %	0.34 %	0.04	0.486
2	KASB Bank ltd.	0.73	-0.45	3.14	0.002
3	KASB Bank ltd.	1.07	-0.37	4.75	0.000
4	First tri star modarba	2.08	-2.16	4.87	0.007
5	Modarba Al-Mali	-0.14	0.07	-0.59	0.719
6	First Paramount modarba	0.64	-1.07	5.12	0.000
7	1 st Fidelity leasing modarba	0.54	-0.07	1.81	0.039
8	First Dawood investment bank	1.15	-0.55	5.27	0.000
9	Invest capital investment bank	0.59	-0.79	3.68	0.000
10	Askari bank ltd.	1.30	-2.96	3.36	0.000
11	Orix leasing Pakistan ltd.	0.66	0.04	2.22	0.016
12	Allied Bank ltd.	0.97	-0.56	3.66	0.000

*ARR = Average abnormal return, AR (Average Returns) for each case in pre and post are given in appendix (available from author on request).

Table 3: Cumulative abnormal return for each firm

S/r.	Bidding firm	CAR* Pre	CAR* Post
1	NIB Bank	7.86%	7.17%
2	KASB Bank ltd.	14.7	-9.02
3	KASB Bank ltd.	21.53	-7.55
4	First tri star modarba	41.68	-43.24
5	Modarba Al-Mali	-2.83	1.59
6	First Paramount modarba	12.87	-21.45
7	1 st Fidelity leasing modarba	10.89	-1.41
8	First Dawood investment bank	23.14	-11.05
9	Invest capital investment bank	11.99	-15.94
10	Askari bank ltd.	26.00	-59.36
11	Orix leasing Pakistan ltd.	13.20	-0.84
12	Allied Bank ltd.	19.45	-11.23

*CAR = Cumulative abnormal return

Above are given the cumulative abnormal return for individual firm's shareholders. These CARs are showing the differences in abnormal returns in pre and post clearly. The positive CAR for pre period are showing the better position of shareholders of bidding firm and negative CARs are showing decrease in wealth after the announcement of M&A.

Table 4: Cumulative average abnormal returns for each day

Days	AAR	CAAR
-5	0.64	0.64
-4	0.78	1.42
-3	0.81	2.23
-2	0.94	3.17
-1	1.17	4.34
1	-1.28	3.06
2	-0.83	2.23
3	-0.79	1.44
4	-0.83	0.61
5	-0.82	-0.21

The above table shows the average abnormal return for shareholders of M&A in each day around the event. It is clearly depicting that there were positive average abnormal returns (AAR) for pre period days. But certainly after the M&A announcement those AAR reduced to negative figures. The cumulative average abnormal return also is showing the pattern of decreased returns from pre-merger periods to post merger period days.

Long run analysis

This section is about long run results of mergers and acquisition on firm value. The data for model was in panel form. Therefore, firstly we run the diagnostic test whether to choose the efficient panel regression among pooled OLS, Fixed effect and Random effect. The results for diagnostic test are given in table 05 below:

Table 5: Diagnostic tests to choose efficient panel regression estimates.

Diagnostic test	F-Statistic	Chi-square
Restricted F-Test	7.86241***	
Hausman Test		11.8318***

*** denote significance level of 1%

Restricted F-Test is demonstrating fixed effect than pooled OLS because cross sectional units have differences in their characteristics. The null hypothesis of F-Test is that “all the differential intercepts is equals to zero” and results in above table are showing the value of F-Test is significant at 1% level therefore rejecting the null hypothesis. After that Hausman test also indicating that efficient estimate could be getting by fixed effect model because the chi-square value is also significant at 1% level. The null hypothesis of the Hauman test is that “fixed effects estimators and random effects estimators do not differ substantially” therefore by rejecting the null hypothesis diagnostic test is depicting that fixed effect estimates are more efficient in this case.

Table 6: Fixed Effects Regression Results

	Coefficient	Std. Error	t-ratio	p-value
Constant	0.60	0.39	1.52	0.138
BVPS	0.13	0.03	3.74	0.000
EPS	0.04	0.02	1.71	0.095
Merger dummy	-0.52	0.17	-3.06	0.004

After diagnostic test we applied the fixed effect regression model with incorporating dummy variable for the pre and post years. The dummy is given value 1 for post years and 0 for the pre years. The method applied is LSDV, the cross sectional units are seven and time series length is six (three for pre and three for post) resulting in 42 observations. The dependent variable MVPS is market value per share. The cross sectional dummies were significant indicating the presence of heterogeneity effect for which we used the fixed effect. The F-statistics of 15.65 is significant at 1% level as depicted in table 05.

The coefficient of book value per share is 0.13 with 1% level of significance. EPS has coefficient of 0.04 but significant at 10% level. The most important thing in it is dummy variable for the merger. The dummy for merger has negative coefficient of -0.52 and is significant at 1% level. This is indicating that event of merger and acquisition significantly affects the stock prices negatively with 52%. These results are also consistent with the results we infer from short run analysis by calculating abnormal returns using market model. This demonstrates that event of M&A negatively affects the firm value either for short run or for long run time period.

Discussions and conclusions

The most important issue in the study of merger and acquisition is about the wealth effect of shareholders regardless of the motives behind it. In past many studies tried to address that issue by using event study methodology and documented that acquiring firm’s shareholders suffers from the announcement of the M&A. All these studies were carried down in developed countries and the results cannot be inferred directly without being investigated in developing economies. This study took sample from Pakistan financial sector firm’s M&A listed at Karachi Stock exchange.

The important contribution of this study is to measure the abnormal returns for M&A for pre and post periods. Recent study of Iqbal et al. (2012) showed stock prices of before and after the event and concluded differences in pre & post prices. But this difference may not be statistical significant. This study calculated abnormal returns first by using the market model given by fama

(1976). After that 2 sample t-tests was employed to check the significant differences between two samples. The results got in this manner are of more reliable. Those abnormal returns then used to calculate CAR cumulative abnormal returns to scrutinize the total effect of shareholder wealth. This is the first study, in author's best knowledge, in Pakistan which gives information to management of firms with such effects of M&A while decision making about the M&A, and to the investors of stock markets as well.

Table 02 shows the results of each individual firm for average abnormal return. According to the results eight out 12 M&A cases have decreased the average abnormal return in post period of 20 days with statistical 1% significance. The two M&A were significant with decreased abnormal returns at 5% significance level and two were not significant reduced. The results were mixed but most of M&A showed statistically significant decrease in abnormal returns. Overall these results are in line with earlier theories of merger and acquisition effect on shareholder wealth. This study used the event window less than the earlier study used as to isolate the other effects which could be incorporated in results. 20 days were taken because of Pakistani weak efficient markets as to cover the leakage of information which may be incorporated earlier due to having private information.

Another important contribution of this work is of long run analysis. Earlier studies to check the long run effects enlarge their event windows to years. Those results will not be of pure M&A effect on firm value (sugiarto, 2000). Other economic and market wide influences may be the result of that change in stock prices and returns. This study therefore models the long run analysis separately and used the Ohlson (1995) model. Other valuation models have much criticism on their assumptions, as Gordon, (1960) and Modigliani & Miller, (1958), but this model is being considered the good model for firm value till now. The model uses the earnings per share and book value as independent variables and market value per share as dependent variable. The present study introduced the dummy variable indicting the pre and post periods of event.

The results showed that all the variables are positively and significantly affecting share prices but dummy variable has coefficient of -0.52, depicting that fifty two percent variation comes in stock price due to the M&A announcement negatively. Diagnostic test earlier suggested that fixed effect model should be used because of existence of heterogeneity effect in model. These results are consistent with the short run analysis of this study and also with the earlier existing theories that M&A affects the shareholder wealth of acquiring firms negatively. Therefore the study concludes that announcement of mergers and acquisition affects the shareholders wealth of acquiring firm negatively in both long and short run.

The results are generalize able in Pakistan only because the data of stock prices only taken by the KSE and other economies have some other patterns of stock prices depends upon the economic conditions of that country. But audience of developing countries can have this work in use for decision making because more or less developing economies have the similar economies.

Policy implications

This is the first study, in author's best knowledge, in Pakistan which gives empirical evidence to effects of merger and acquisitions on firm value. Management of firms with information of such effects of M&A can use it while decision making about the M&A. Since takeovers does not necessarily add up to shareholder wealth therefore the decision needs much scrutinization before entering in any M&A, because the aim of firm is to increase shareholders' wealth. On the other hand investors and other stakeholders, particularly in Pakistan, may get the idea and will be known for the effect of announcement of merger and acquisition on their wealth and can act accordingly.

Area of further research

This study analyses only the returns of acquiring firms (bidding firm) not of target (acquired firm) due to data unavailability. There is need to explore the results for the acquired firm where merger and acquisition are not for the 100% ownership. Furthermore results showed negative returns for shareholders but the reasons and other fact are still hidden. So the studies may be conducted to explore the factors behind such a pattern of share prices.

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