THE IMPACT OF MERGER AND ACQUISITION ON KARACHI STOCK EXCHANGE–TESTING SEMI-STRONG EFFICIENT MARKET HYPOTHESIS

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Abstract: *This paper particularly addresses the impact of mergers and acquisition (M&A) announcements on share prices in Pakistani stock market from 2006 to 2014. It uses event study method for a sample of 32 M&A announcements from both financial and non-financial sectors. The result shows that M&A declarations do not signal any significant information to Pakistani market. Therefore, the findings show statistically insignificant abnormal returns on announcements of M&A, however a significant positive abnormal return just before proclamation of merger and acquisitions is noted. Similarly, the bidder firms show significant share price reaction and also some gains before the announcement which may be because of leakage of information (Khan, 2011). While after the declaration both target and bidder firms experience losses but overall conclusion detects that the target companies get fewer abnormal earnings as compared to acquirer firms in case of acquisitions. The insignificant unexpected returns on announcement date of M&A do not support semi-strong form of EMH. The findings of this study help investors in devising their investment strategies based on the timing of important announcements by companies such as M&A.*

Key words: Merger, Acquisition, Event Study, Semi-Strong, Efficient Market Hypothesis, Pakistan.

Introduction

Merger and acquisitions (M&A) always play an essential part in external expansion of businesses. During the 5th M&A wave, amalgamation and possession extended all over the world, especially in Asia. Due to this technological growth and globalization in the world all corporations are trying to maintain their competitive position. That's why all firms need to build an appropriate M&A strategy in order to improve its performance and also maintain its existence for surviving in this competitive market. Several researches acknowledged that due to globalization advancement, a number of companies prefer the M&A as a means to broaden the company, advance existing production and increase their market share. The same fashion has been observed in Pakistan where large number of merger took place in many sectors especially in banking industry.

As an emerging market, according to analysis by Bloomberg, Pakistan ranked third in 2014 amongst the top ten best performing markets in the world and second the most

mature stock exchange in south Asia. Besides this Karachi Stock Exchange (KSE, now Pakistan Stock Exchange, PSX; hereinafter PSX and KSE will be used interchangeably)[1] is one of the major stock exchanges in Pakistan. It revealed significant growth in few precedent periods.

This study analyzes the impact of M&A announcements on share prices on the KSE. The reason behind conducting study on the KSE is that a lot of work has been done on this topic in developed countries but very little is known about its influences in case of Pakistan. This study analyses cases of M&A from both financial and non-financial sectors. In addition, the main reason of choosing banking sector (financial sector) of Pakistan is recently experiencing regulatory changes in the industry. The State Bank of Pakistan has increased paid-up-capital for all banks operating in Pakistan from Rs.1 billion in 2001 to Rs. 10 billion in 2013 (Tauseef & Nishat, 2013). The increment in paid-up capital compels many banks to either merge with other small banks or being acquired by other banks. The last decade is considered as "merger and acquisition decade" in banking sector of Pakistan. Now, it is a suitable time to analyze the effect of M&A on share prices.

Problem Statement

M&As have become increasingly widespread in the 1990's. According to the UN's World Investment Report (UN, 2000), worldwide M&A grew at an annual rate about 42% over the period 1980-1999 to reach $2.3 trillion in 1999 where more than 24,000 M&A took place during that period (Liang, 2013). M&A activities have been a common form for more than four decades in North American and European markets. In Asia, most of the M&A activities have taken place after the Asian financial crisis in 1997 (cited in Liang, 2013, p. 3).

The stock markets of firms are affected due to different events including the announcements of M&A. This research analyzes the impact of M&A in banking sector of Pakistan over the period from 2006-2014.

Objectives of the Research

The main objective of this research is to analyze the effect of M&A on stock returns of listed firms of the KSE. The banking sector of Pakistan is of prime interest as many M&A took place in this industry due to increase in Minimum Capital Requirements which compel the banks to either merge or be acquired by other banks. The study can

[1] Pakistan Stock Exchange (PSX) is the result of demutualization of three stock exchanges of Pakistan (i.e., Karachi Stock Exchange, Lahore Stock Exchange and Islamabad Stock Exchange) in January 2016. The old performance indicator KSE-100 index is still used for measuring the performance of PSX.

help in providing additional guidelines to decision makers by simultaneously planning at the time of merger and acquisition. The results can help shareholders in making investments decisions around M&A.

Theoretical Framework

This study is used to judge semi-strong form of Efficient Market Hypothesis (EMH). This theory assumes that share prices are the true reflection of all available information in the market (Fame, 1970). EMH has three types: weak form, semi-strong form and strong form. Weak form of efficiency assumes that past share prices are embodied in today's share prices. Semi-strong EMH states that any public information should be quickly reflected in share prices in either positive or negative manner. While strong EMH assumes that all information, including past share prices, public information and private news, are available to all investors and no investor can beat the market (Fama, 1970). This research uses M&A events as public information to test semi-strong form of EMH. In case, there are unexpected returns on the day of M&A, it testifies semi-strong form of efficiency that public information (M&A announcements) reflects quickly in share prices.

Literature Review

A significant amount of literature gives facilitation to know about the effect of M&A on stock returns (Gopalaswamy, Acharya & Malik, 2008; Simões, Macedo-Soares, Klotzle & Pinto, 2012). It also gives assistance in order to know that how target and bidder firms are affected by it.

Liang (2013) examined the effect of M&A declarations of firms listed on the Hong Kong Stock Exchange from 2007-2012. For analysis, the researcher selected a sample of 44 firms. During this study, event study was applied for measuring abnormal returns. The study found that the acquiring firms achieved a constructive and momentous unexpected returns just 2 days pre & post of declaration dates. Correspondingly Dianita, Tarmidi, and Hadian (2013) also analyzed the impact of M&A proclamations in Indonesia from year 2005-2011 for 20 firms. Using the event study, the results showed significant abnormal proceeds on the declaration date and there was a significant Accumulated Abnormal Returns (AAR) prior to declaration of M&A events. Similarly, Padmavathy and Ashok (2012) analyzed the impact of merger announcements on stock price behavior in 2010 for a sample of 97 companies listed on the Bombay Stock Exchange. Again, as a method to analyze the results, event method was demeanor to discover AR. The event study method shows that M&A events failed to produce any unexpected returns forbidders.

In the same way, Mahmood, Aamir, Hussain and Sohail (2012) also observed the impact of merger and acquisition on post-merger life of 8 Pakistani companies for a sample of three years (2000-2002) using event study method. Here results indicated that in five companies the stock prices were affected positively while in two companies, one month after the merger, the results were negative. Moreover, no change in the price of one company has been found. Overall, the result specifies that M&A positively affects the stock values of corporations.

Likewise Gopalaswamy et al. (2008) also carried out research in India to check stock value response of companies due to M&A declarations from 2000-2007. For analysis, 25 firms were chosen. On the basis of standard event study model the author found growing tendency in CARs for corporations and AR for firms before the time of announcements which again confirmed the insider keenness.

Ma, Pagan and Chu (2009) also examined the abnormal returns by selecting a total sample of 1477 firms from ten Asian stock markets.[2] The author exploits event procedure for measuring AR before and after the transactions in three event windows. The findings suggest that the financial benefits related with M&A were beneficial and it would be helpful in external growth of firms so it was highly recommended to managers.

Similarly, studies are also conducted in order to outlook the impact of M&A on target and bidder firms which illustrate sometimes gains for both firms (Sana & Nishat, 2013) but most studies demonstrate gains for target firms (Karnik, 2005; Manasakis, 2009; Shaheen, 2006).

Like Sana and Nishat (2013) examined the wealth effect of merger and acquisition of seven M&A events in banking sector in Pakistan over the period from 2003 to 2008. The authors divided the sample merger and acquisition transactions into three categories[3]. The investigation was carried out on the basis of standard event study model in order to measure the impact of M&A on the return of both bidder and target banks around 30 days event window of announcement dates. It pointed out statistically significant reactions and also the combined mean CARs for the target banks and bidder companies are both positive and statistically significant.

Likewise Karnik (2005) also assessed value creation for target companies' shareholders in the Indian context. The author, using a sample of M&A spread across industries, compared the share prices of target firms before and after public announcements for open offer in relation to stock market index. The study found that the effect of public announcements is sometimes very short-lived. This study used differing time windows to test the hypotheses. It was found that there was a significant value creation for target companies' shareholders due to public announcements as well as relative to benchmark index, irrespective of the time window used for the study.

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[2] China, India, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

[3] The sample of M&A were categorized as, (1) Merger of Pakistani banks with the other domestic banks, (2) Acquisition of Pakistani banks by the foreign investors; and (3) Merger of Pakistani banks with the foreign banks operating in Pakistan.

Manasakis (2009) also examined the shareholder wealth effects of M&A in Greek over the period (1995-2001) through means of typical event method. The study gave evidence of considerable abnormal returns by target investors due to declarations. While on other side, the bidders' companies had major losses in these transactions. The M&A in Greek market failed to initiate worth.

Shaheen (2006) explained acquisitions proclamation influence on share prices with the help of market model of event study. For sample the researcher only considered merger announcements after 1997 between two publicly traded companies. Out of 467, only 40 announcements were randomly chosen which shows that sample consists of 80 securities, which were large enough for assessing firms. Beta's parameter estimation period and post event phase were constant for all securities in this sample. The results indicated meaningful positive abnormal proceeds for target businesses on pronouncements date. Similarly Wong et al. (2009) also observed the effect of M&A announcements on pricing activities of bidding investors in six Asian countries over the period (2000-2007) for a sample of 95 mergers and 563 acquisitions. The authors used market model and regression model in order to find abnormal value for bidder and target firms. The study found drastically negative results for target companies while good for bidders.

Bashir, Sajid and Sheikh (2011) analyzed M&A influence on shareholder's wealth in 44 mergers companies of Pakistan from 2004-2010. Among these 44 mergers, 27 were in financial sectors and the rest occurred in non-financial industries. The findings of event study showed that target firms experience insignificant losses while the acquirer firms enjoy statistically insignificant gains.

In aforesaid literature it has been found that a lot of work has been done on the issue of merger and acquisition and its consequences in emerging and developed countries. All of which shows a mix pattern of results, some show positive impact (Ma et al., 2009; Sana & Nishat, 2013) and some show negative results on stocks (Manasakis, 2009; Wong, Cheung & Mun, 2009). As due to technological development and globalization all firms in the world are trying to sustain their competitive situation. The same pattern has been observed in various sectors of Pakistan with limited research. Although researchers have tried to determine the impact of M&A on stock returns (Bashir et al., 2011; Mahmood et al., 2012; Sana & Nishat, 2013) but that shows mix results which may be due to small sample used in the analysis. So this current study tries to take a bigger sample of M&A cases in Pakistan. Hence, this paper examines the impact of M&A on stock return in Pakistani market from 2006 to 2014.

Based on the above literature, the following hypothesis can be derived for testing in the paper. The following hypothesis is meant to be proved by this study:

H_o: AR=0: M&A has no significant impact on share prices around the announcement date.

H_1: AR≠0: M&A has a significant impact on share prices around the announcement date.

Methodology

A secondary data of M&A in Pakistan is taken from competition commission of Pakistan (CCP's website, 2014). There are total 70 mergers and 372 acquisitions in Pakistan over a period of 2006-14 (CCP's website, 2014). Due to non-availability of data, about 38 firms are not included in this study in case of mergers. So to carry out this particular research, a total of 32 firms both from financial and non-financial sectors[4] (see Appendix for more detail) are taken as a sample size which announced mergers and acquisitions from 2006-2014[5]. In these 32 firms, 22 firms are those companies which have been merged, five are the target and five are the bidder firms. The secondary data is collected from the KSE website, Competition Commission of Pakistan (CCP's website, 2014) and other related websites like Bloomberg, Business recorder and yahoo finance etc.

In order to test whether this M&A has any positive and negative impact on the KSE, an event study is employed to calculate any unexpected returns around these announcement dates (Brown & Warner, 1985; Dianita et al., 2013; Fuller et al., 2001; Sana & Nishat, 2013; Shaheen, 2006; Travlos, 1987).

An econometric way to determine the effect of certain events is termed as event study which is the most used empirical methods in finance and accounting for this purpose (cited in Eleclasson, 2010, p. 7). It observes response of market to an incident, where facts regarding incident are available as a pronouncement (Jogiyanto, 2007). Event study can disclose significant information regarding how stocks respond to an occasion and also facilitate in estimating other stock performance (Brown & Warner, 1985). Similarly, it also examines the information content of public news. Event study research is usually associated with rapidness of facts approaching market and how quickly that information is reflected in share prices (cited in Dianita et al., 2013, p. 3). Hence, event study is used to measure the semi-strong form of efficiency.

It determines average unexpected returns pre & posts to the M&A announcements. Unexpected return is the difference between actual returns and expected returns. Two procedures of projected returns are considered in this study. First one is Market Adjusted Returns which is used for scheming excess returns and the second one is Market Model Returns which is used to measure abnormal returns (AR). The present study centers on market model in analyzing unexpected earnings in the region of broadcast date of mergers and acquisitions (Bashir et al., 2011; Dianita et al., 2013; Shaheen, 2006; Wong et al., 2009); as according to Strong (1992), market model is "the mainly well-liked" technique in scheming unexpected proceeds.

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[4] There are 14 banks from financial sector while 18 companies from non-financial sector.

[5] Due to non-accessibility of data before 2006, only this period is selected.

According to Dianita et al. (2013) the following steps are carried out for the measurement of unexpected returns. Firstly, to calculate the actual returns which are the gains from investment during period of observation. The share returns by logarithmic method are computed by:

$$R_{it}=Ln\ (P_{it}/P_{it-1}) \qquad [1]$$

Whereas R_{it} is the daily return of firm i on day t; Ln is the natural log; P_{it} is the share price of firm i on day t; P_{t-1} is the share price of firm i on the previous day.

To inspect the impact of M&A on share prices daily data is used rather than their weekly and monthly complement. While using the daily share prices, however, various issues occur (such as thin trading etc.). In order to reduce these difficulties, this study obtains Ln of share prices to bring the data into normality (Strong, 1992). Furthermore, to address the econometric issue of normality, non-parametric tests (such Wilcoxon Signed Rank Test) are also used along with parametric tests.

Secondly, the market returns are calculated with the help of following equation.

$$R_m = Ln\ (KSE\text{-}100_t/KSE100_{t-1}) \qquad [2]$$

Where, KSE-100 index is used as a proxy for market returns.

Thirdly, Excess Returns are calculated while comparing actual returns with market returns where KSE-100 index is used as a proxy of market returns. A 21-day event window is used for this purpose i.e., t-10 up to t +10 days. The ExR is deliberated by the formula:

$$ExR_{it} = R_{it} - RM_t \qquad [3]$$

Whereas ExR_{it} is the excess return of security i at time t; R_{it} is the actual return on security i at time t; R_{mt} is the return on the market index at time t.

Fourthly, another alternative method of calculating unexpected returns is abnormal returns where the expected returns are measured with the help of market model. Consequently, it is premeditated by:

$$E(R_{it}) = \alpha_i + \beta_i.RM_t + \varepsilon_{i,t} \qquad [4]$$

Where E (R_{it}) indicates expected return on stock i; α_i is intercept of regression equation; β_i shows beta is assessment of systematic risk; RM_t is market index(here KSE-100 show market returns); $\varepsilon_{i,t}$ is the residual error of the stock i and the unsystematic risk.

Under the method, the expected returns is calculated from estimated window which is prior to the the event window. For this purpose, time t = 0 demonstrates event date; Event window = [-10, +10]; Estimation window = [-110, -11] days.

For projecting the market model parameters (α and β), various estimation periods are considered in the literature. For example, Sulong et al. (2008) used 61 trading days; Travlos (1987) used 136 days; Liang (2013) included 120 days and Bacon et al. (2009) included 180 days in his estimation procedure. A parameter estimation period of 100 trading days is considered for this paper before the event window for estimation of α

and β. So when $E(R_{it})$ is once measured then unexpected returns is considered by deducting the actual share returns from its expected returns.

$AR_{i,t} = R_{it} - E(R_{it})$ OR $AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$ [5]

While $AR_{i,t}$ shows abnormal return of the stocki of the event periodt; $R_{i,t}$ shows actual return of the stocki of the event periodt and $E(R_{it})$ indicates expected return of the stocki of the event periodt calculated using market model.

Lastly, Cumulative Abnormal Returns is calculated with the following formula:

$CAR_{it} = \sum_{t-10}^{t+10} \mathbf{ARit}$ [6]

Whereas CAR_{it} is cumulative abnormal return; AR_{it}shows unusual return of the stock and t is event period (i.e., t+10 to t-10)**.**

Empirical Analysis

This section shows the findings of event study for a sample of 32 events of M&A. The findings are categorized into three sub-sections: (I) Behavior of stock prices of merged firms; (II) Behavior of stock prices of bidder firms; (III) Behavior of stock prices of target firms

Behavior of Stock Prices of Merged Firms

Table 1 shows the detail of both abnormal and excess returns of merged firms over 21-days event window.

Table 1 *Behavior of Stock Returns around Merger Events*

	ABNORMAL RETURNS			**EXCESS RETURNS**		
DAY	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
t-10	0.0159	0.0013	0.0809	-0.0104	-0.0037	0.0832
	(0.379)	(0.862)		(0.573)	(0.651)	
t-9	0.0088	0.0060	0.0813	-0.0159	-0.0061	0.1284
	(0.624)	(0.578)		(0.577)	(0.702)	
t-8	0.0269	0.0160	0.0512	0.0184	0.0111	0.0549
	(0.026)*	(0.040) *		(0.140)	(0.187)	
t-7	-0.006	0.0018	0.0632	-0.0082	-0.0097	0.0799
	(0.648)	(0.835)		(0.643)	(0.198)	
t-6	-0.039	-0.0073	0.1680	-0.0181	-0.0019	0.1832
	(0.292)	(0.251)		(0.656)	(0.754)	
t-5	0.0482	0.015	0.1836	0.0213	-0.0023	0.1957
	(0.243)	(0.164)		(0.623)	(0.896)	
t-4	0.0183	0.0105	0.0420	0.0265	0.0109	0.0764
	(0.052)*	(0.040)*		(0.128)	(0.059)*	
t-3	-0.0131	-0.0084	0.0383	-0.0057	-0.0068	0.0751
	(0.132)	(0.224)		(0.734)	(0.424)	
t-2	0.0090	0.0121	0.0522	0.0144	0.0106	0.0650
	(0.437)	(0.118)		(0.321)	(0.118)	

t-1	-0.0146	-0.0108	0.0441	0.0118	0.0044	0.0470
	(0.145)	(0.266)		(0.265)	(0.385)	
t0	0.0214	0.0060	0.0813	0.0192	0.0020	0.0780
	(0.242)	(0.465)		(0.274)	(0.781)	
t+1	-0.0311	-0.0018	0.1684	-0.0254	-0.0081	0.1149
	(0.407)	(0.889)		(0.323)	(0.313)	
t+2	-0.0103	-0.0089	0.0403	-0.01110	-0.0070	0.0449
	(0.255)	(0.251)		(0.270)	(0.297)	
t+3	0.0226	0.0029	0.0891	0.0093	-0.0079	0.0996
	(0.258)	(0.578)		(0.674)	(0.538)	
t+4	-0.0102	-0.0156	0.0422	-0.0200	-0.0220	0.0509
	(0.280)	(0.020)*		(0.087)	(0.014)*	
t+5	-0.0083	-0.0076	0.0431	-0.0218	-0.0131	0.0588
	(0.389)	(0.348)		(0.104)	(0.251)	
t+6	-0.0047	-0.0011	0.0411	0.0002	-0.0081	0.0620
	(0.606)	(0.889)		(0.991)	(0.297)	
t+7	-0.0111	-0.0101	0.0346	-0.00246	-0.0056	0.0352
	(0.157)	(0.211)		(0.752)	(0.487)	
t+8	-0.009	-0.0020	0.061	0.0011	0.0044	0.0625
	(0.530)	(0.781)		(0.936)	(0.578)	
t+9	0.0104	0.0037	0.0347	0.0079	0.0007	0.0693
	(0.185)	(0.385)		(0.606)	(0.917)	
t+10	-0.0133	-0.0057	0.053	-0.0136	-0.009	0.0698
	(0.260)	(0.487)		(0.384)	(0.287)	

Note: In the above table the P-values are indicated through the brackets while point out the significance of the value at 5% critical value. Here for mean averages one-sample T-test while for median Wilcoxon Signed Rank Test is exploited in case of P-values.

The following findings can be extracted from Table 1. Firstly, it is observed that on merger declaration date, response of stock value to this news is not noteworthy (Gopalaswamy et al., 2008; Padmavathy & Ashok, 2012)**.** The mean (median) abnormal return is 2.1 % (0.5952%) respectively but the p-value of abnormal return is higher than the 5.0% critical value i.e., 0.24 (mean) and 0.46 (median). Similarly, on day t0, the mean (median) excess return is at 1.92% (0.197%) but the p-value of excess return is insignificant which is 0.27 (mean) and 0.78 (median). So, the declaration date shows an affirmative mean (median) for AR & ExR but not significant at the 5.0% level. Due to which the null hypothesis cannot be rejected which means unexpected returns of share value on declaration date of merger are not significant. It shows that merger announcement fails to incorporate any information to interested parties on announcement date. This result also proves that the KSE is not efficient in semi-strong form as it is unable to incorporate new information quickly. One reason for this insignificant irregular gain to the market, on day of declaration, may be the leakage of information before formal declaration (Gopalaswamy et al., 2008)

Secondly, Table 1 reports some significant values before announcement dates, for example, day t-4 and day t-8 shows that mean value of abnormal return is 1.825% and

2.69% respectively which is statistically significant because its p-value is 0.052 and 0.040 respectively at 5% critical values. Similarly, the median of both abnormal return and excess are significant on day t-4 (i.e., 1.048% with p-value of 0.04) and 1.089% (p-value 0.05) respectively. The table also shows that median of day t-8 is 1.60% and its p-value (0.04) is significant. So statistically considerable positive excess returns and abnormal returns are found immediately before the announcement day (i.e., day t-4 and day t-8). While for other rest of the days before declaration, the table indicates an insignificant mix of negative and positive results for abnormal returns and excess returns. So overall, the results propose a clue of information leakage to market prior to the information of declaration which may cause insignificant unexpected gains on day of declaration. This outcome is consistent with Gopalaswamy et al. (2008, p. 99) findings who had done research in India and found a significant AR for businesses before the time of announcement which again confirmed the insider keenness.

Thirdly, Table 1 shows a large divergence from mean for both AR & ExR in form of standard deviation. In the vein of AR, it fluctuates as 3.4% on day t+7 to 18.3% on (t-5) day. Similarly in ExR, it differs from 3.5% to 19.5% on same days. This huge variability in returns may lead to insignificant unexpected returns on day t0.

Lastly, Table 1 also depicts that the mean (median) of abnormal returns and excess returns of post-announcement dates are statistically insignificant at 5% level except on day t+4 where the median of both abnormal return and excess return is statistically significant and have p-values of 0.02 (abnormal return) and 0.01 (excess return) at 5% significant level. On average, the findings indicate an insignificant negative mean (median) of both abnormal returns and excess returns during post-announcement period. The significant values after announcements further strengthen the argument of non-existence of semi-strong form of efficiency, as the market takes some times to incorporate new information.

Share Prices Behavior of Bidder Firms

Table 2 shows the results of event study around 21-day event window of bidder firms.

Table 2: *Share Price Behavior of Bidder Firms (Acquisition)*

ABNORMAL RETURNS				**EXCESS RETURNS**		
DAY	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
t-10	0.00162	0.002835	0.0186	0.00578	0.005717	0.01459
	(0.855)	(0.862)		(0.426)	(0.651)	
t-9	0.01301	0.01300	0.0111	0.0219	0.01924	0.0236
	(0.059)*	(0.578)		(0.106)	(0.702)	
t-8	-0.0803	-0.038	0.1212	-0.0697	-0.03270	0.1080
	(0.213)	(0.040)*		(0.223)	(0.187)	
t-7	0.0073	0.0069	0.0231	0.0124	0.01811	0.0416
	(0.516)	(0.835)		(0.543)	(0.198)	
t-6	-0.0027	-0.0025	0.0085	0.01339	0.01174	0.00825
	(0.519)	(0.251)		(0.022)*	(0.754)	

t-5	0.0125	0.0115	0.024	0.01151	0.01230	0.00722
	(0.307)	(0.164)		(0.023)*	(0.896)	
t-4	-0.0089	-0.010	0.0120	0.0014	0.00738	0.0350
	(0.143)	(0.040)*		(0.933)	(0.110)	
t-3	0.03006	0.0303	0.0191	0.03508	0.03323	0.01998
	(0.024)*	(0.224)		(0.017)*	(0.424)	
t-2	0.01723	0.0077	0.0172	0.0084	0.00996	0.0290
	(0.496)	(0.118)		(0.554)	(0.118)	
t-1	-0.0073	-0.0060	0.0407	-0.0070	-0.0036	0.0424
	(0.707)	(0.266)		(0.730)	(0.385)	
t0	-0.0072	-0.0069	0.0377	-0.0096	-0.0111	0.0271
	(0.691)	(0.465)		(0.473)	(0.781)	
t+1	0.0155	0.0156	0.0247	0.0087	0.00376	0.0235
	(0.233)	(0.889)		(0.456)	(0.313)	
t+2	-0.0083	-0.0087	0.0342	-0.0133	-0.0134	0.0357
	(0.617)	(0.251)		(0.453)	(0.297)	
t+3	-0.0228	-0.0226	0.0183	-0.0206	-0.01713	0.02047
	(0.050)*	(0.578)		(0.088)	(0.538)	
t+4	0.00750	0.0093	0.0124	0.00314	0.00386	0.01203
	(0.249)	(0.020)*		(0.590)	(0.014)*	
t+5	-0.0075	-0.0078	0.0277	-0.0133	-0.01397	0.0332
	(0.579)	(0.348)		(0.420)	(0.251)	
t+6	0.01080	0.0119	0.0217	0.00049	0.00071	0.02224
	(0.327)	(0.889)		(0.963)	(0.297)	
t+7	0.0143	0.0137	0.0302	0.01723	0.01446	0.02187
	(0.350)	(0.211)		(0.153)	(0.487)	
t+8	-0.0116	-0.0082	0.0299	-0.0096	-0.0076	0.0406
	(0.436)	(0.781)		(0.623)	(0.578)	
t+9	-0.0101	-0.0074	0.0184	-0.0105	-0.0013	0.0283
	(0.288)	(0.385)		(0.453)	(0.917)	
t+10	-0.0014	-0.0044	0.0237	0.0001	0.0020	0.0268
	(0.902)	(0.487)		(0.992)	(0.287)	

Note: In the above table the P-values are indicated through the brackets while * point out the significance of the value at 5% critical value. Here for mean averages one-sample T-test while for median Wilcoxon Signed Rank Test is exploited in case of P-values.

Many findings come forward after a detailed assessment of Table 2. It also shows a mix pattern of results.

Firstly, the results of Table 2 are consistent with the results of preceding Table 1 which show inconsequential abnormal return (AR) and Excess returns (ExR) on announcement date (Shaheen, 2006). AR of both mean (median) is -0.72% (-0.68%) with its p-valuesof0.69 and 0.46 which are higher than 5% critical level. Similarly, the mean (median) of excess return is -0.96% (-1.11%) while its p-value is not statistically significant at 5% critical level. So it means the null hypothesis cannot be rejected and

there are insignificant negative returns on announcement date. It refers that the KSE is not efficient in its semi-strong form.

Secondly, table 2 shows some significant positive mean AR (1.3%) on t-9 at 5% critical level (Liang, 2013). Likewise there is significant AR and ExR on day t-3 as its p-value are 0.02 and 0.01 respectively. Similarly there is significant positive mean ExR on t-5(1.15%) and t-6(1.33%) with significant p-values. Only day t-4 and t-8 show significant negative median abnormal returns (i.e.,-1.0% and -3.7%) at 5% significant level. Hence, on average, considerable positive response of share values being viewed before formal announcements which may be because of the insider trading (Gopalaswamy et al., 2008).These results are similar to the findings of Liang (2013, p.18)**"**who examined M&A in Hong Kong Stock Exchange and found that 2 days prior and later than declaration date a positive and considerable AR by acquiring companies had been observed**"**.

Thirdly, table 2 illustrates the amount of standard deviation which shows variation from mean values from very low to very high for both abnormal and ExR values for example, it varies from 0.84% (day t-6) to 12.1% (day t-8). Equally ExR, it varies from 0.72% (day t-5) to 10.8% (day t-8). So it shows a lot of variability in returns.

Lastly, most of the mean (median) of abnormal and excess returns are insignificant in post-acquisition period (Padmavathy & Ashok, 2012). Some values are still significant after Day t0, for example, day t+3 which shows significant mean abnormal return and also day t+4 where the median of both abnormal (0.93%) and excess returns (0.38%) are statistically significant at 5% level (Liang, 2013).

Therefore, it has been noticed that mostly there is no positive significant share prices reaction as well as no such considerable gain for the bidders after the announcement of acquisition. While on other hand may be due to information leakage, a positive significant reaction before the announcement has been noticed (Gopalaswamy et al., 2008).

Share Prices Behavior around 21-day Event window of Target Firms

Here the Table 3 shows a comprehensive picture of the target firms results around 21-day of event window.

Table 3 *Share Price Behavior of Target Firms (Acquisition)*

ABNORMAL RETURNS				**EXCESS RETURNS**		
DAY	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
t-10	0.0187	0.0153	0.0470	0.0214	0.01413	0.0503
	(0.425)	(0.787)		(0.395)	(0.590)	
t-9	-0.0186	-0.0161	0.0444	-0.0219	-0.02358	0.0501
	(0.401)	(0.418)		(0.383)	(0.418)	
t-8	0.0057	0.0034	0.0409	0.0046	0.01343	0.0459
	(0.770)	(1.000)		(0.833)	(1.000)	
t-7	0.0128	0.0127	0.0363	0.0174	0.01668	0.0377
	(0.476)	(0.418)		(0.360)	(0.418)	

t-6	-0.0276	-0.0289	0.0237	-0.0070	-0.004833	0.0277
	(0.060)	(0.059)		(0.603)	(0.787)	
t-5	-0.0112	-0.0077	0.0438	0.0051	0.0012	0.0599
	(0.597)	(0.787)		(0.858)	(1.000)	
t-4	-0.0012	0.00297	0.0380	0.0050	0.0071	0.0269
	(0.949)	(1.000)		(0.698)	(0.787)	
t-3	-0.0040	-0.0065	0.0387	0.0060	0.0031	0.0603
	(0.830)	(1.000)		(0.835)	(1.000)	
t-2	-0.0116	-0.0150	0.0351	-0.0013	-0.0026	0.0418
	(0.503)	(0.590)		(0.948)	(0.787)	
t-1	-0.0025	-0.0319	0.1132	0.0097	-0.0068	0.1130
	(0.963)	(0.590)		(0.858)	(0.787)	
t0	-0.0420	-0.0164	0.0803	-0.0342	-0.012	0.0891
	(0.307)	(0.590)		(0.439)	(0.590)	
t+1	0.0132	0.0192	0.0305	0.0167	0.0267	0.0439
	(0.388)	(0.590)		(0.444)	(0.590)	
t+2	-0.0056	-0.0056	0.0329	0.0017	0.0012	0.0385
	(0.724)	(0.590)		(0.927)	(0.787)	
t+3	-0.0008	-0.0017	0.0133	-0.0017	-0.0020	0.0287
	(0.900)	(1.000)		(0.902)	(0.418)	
t+4	-0.0133	-0.0064	0.0591	-0.0068	-0.001770	0.0640
	(0.641)	(1.000)		(0.823)	(1.000)	
t+5	-0.0092	-0.0033	0.01922	-0.0093	-0.002807	0.0284
	(0.346)	(0.418)		(0.505)	(1.000)	
t+6	-0.0051	-0.0099	0.0254	-0.0090	-0.01068	0.0211
	(0.679)	(0.590)		(0.392)	(0.418)	
t+7	0.0154	0.0132	0.0278	0.0064	0.006901	0.0180
	(0.283)	(0.418)		(0.472)	(0.281)	
t+8	-0.0051	-0.0067	0.01400	-0.00955	-0.009010	0.01710
	(0.459)	(0.787)		(0.280)	(0.281)	
t+9	0.0407	0.0415	0.0278	0.04460	0.04691	0.02146
	0.031)*	(0.059)*		(0.010)*	(0.059)*	
t+10	-0.0151	-0.016	0.01831	-0.0128	-0.01142	0.0262
	(0.139)	(0.178)		(0.335)	(0.281)	

Note: In the above table the P-values are indicated through the brackets while* point out the significance of the value at 5% critical value. Here for mean averages one-sample T-test while for median Wilcoxon Signed Rank Test is exploited in case of P-value.

A number of findings can be extracted from table 3. First, there is a negative insignificant mean (median), abnormal returns and excess returns on the announcement dates for the target firms. This result is similar with finding of Bashir et al. (2011, p.263) "who had analyzed the impact of merger and acquisition in Pakistan and found that the target firms experience insignificant loss while the acquirer firms enjoy

statistically insignificant increase in value." It refers that market is inefficient in semi-strong form where new information (here M&A) is not quickly incorporated in share prices.

Secondly, Table 3 shows a very different picture of target firms from that of bidders. The table shows that there are insignificant negative mean (median) abnormal returns and excess returns on most of the days prior to the acquisition's proclamation dates. Therefore, no major stock value reactions are noted before the pronouncement dates and no significant gains for target firms (Bashir et al., 2011).

Thirdly, Table 3 indicates that only on day t+9, there is significant positive mean(median) abnormal and excess returns after the announcements, i.e., with a mean(median) of abnormal returns are 4.0% (4.1%) and excess returns are 4.4% (4.6%) with significant p-values at 5% level. For rest of the days after announcements, the table presents insignificant negative abnormal and excess returns for most the days except a significant gain on day t+9 for both abnormal and excess returns. It may imply that acquisition announcements take some times to incorporate such information and supports inefficiency in semi-strong form.

Lastly, Table 3 demonstrates standard deviation values which show a greater departure from the mean values for both abnormal and excess returns. Such as for unexpected values, it varies from 1.3% on day t+3 to 11.3% on day t-1. Likewise in excess values, it varies from low 1.7% to a high of 11.3% on same days. This shows variability in returns due to which the abnormal returns may not become significant on day t0.

Conclusion

This paper particularly addresses the impact of mergers and acquisition announcements on share prices in Pakistani market from 2006 to 2014. The current study uses an event study method in order to analyze the M&A announcements on stock returns of 32companies listed on the KSE (or PSX). Out of these 32 announcements, 22 firms are those companies which have been merged, five companies are the target and five are the bidder firms. A number of findings can be extracted from the results of event study. Firstly, the results show statistically insignificant abnormal returns on the day of M&A announcements (Gopalaswamy et al. 2008; Padmavathy & Ashok, 2012) for merger firms. One reason for these insignificant unexpected gains may be due to news leakage prior to the formal announcements because the firms show significant share price reactions just before the announcements (Liang, 2013; Khan, 2011). So the current outcome also proposes leakage of news to market immediately before the declaration of amalgamation (Gopalaswamy et al., 2008). Alternatively, the findings indicate negative insignificant abnormal returns after the announcements of merger.

Secondly, the results of bidder firms in acquisition announcements are also consistent with the merger declarations, which indicate that on proclamation day there is no significant share price reaction and also the bidders do not gain any proceeds on announcement dates. On the other hand, there is considerable positive stock values reaction prior to announcements of acquisition for bidder firms which may be because of the leakage of information prior to formal announcements (Liang, 2013). Instead, on average, the findings indicate insignificant negative abnormal returns after

announcements (Padmavathy & Ashok, 2012). Thirdly, the results depict a very different picture of target firms from that of bidders before and after the announcements of acquisition. So, on average, no major stock value reaction is documented before the pronouncement date and no significant gains for target firms (Bashir et al., 2011). On average, the conclusion detects that the target companies get less profit as compared to acquirer firms in case of acquisition of Pakistani firms.

Based on the findings, this paper does not support semi-strong form of EMH because there is insignificant unexpected return on the day of announcements of both merger and acquisition. However, there are significant abnormal returns before and after announcement date of M&A. The significant returns before the formal declaration may refer to leakage of information. Similarly, the significant values after announcements imply that the market takes time to incorporate any public news such as M&A. Further research can be found to apply dedicated statistically tests to check the insider trading, if any. In addition, the results have importance for investors to device the timing of their investment decision around announcements of important events such as M&A. This study suggests that investors can not earn abnormal profit on announcement date of M&A.

References

Adebayo, O., & Olalekan, O. (2012). An analysis of the impact of mergers and acquisitions on commercial banks performance in Nigeria. *Pakistan Journal of Social Sciences*, *9*(3), 139-146.

Ali, S., & Akbar, M. (2009). Calendar effects in Pakistani stock market. *International Review of Business Research Papers*, *5*(1), 389-404.

Ali, S. S., Mustafa, K., & Zaman, A. (2001). Testing semi-strong form efficiency of stock market [with comments]. *The Pakistan Development Review*, *40*(4), 651-674.

Bashir, A., Sajid, R.M., & Sheikh, S. (2011). Impact of merger and acquisition on shareholders wealth: Evidence from Pakistan. *Journal of Scientific Research, 8(*1*),* 261-264.

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of financial economics*, *14*(1), 3-31.

Chakraborty, M. (2006). Market efficiency for the Pakistan stock market: evidence from the Karachi Stock Exchange. *South Asia Economic Journal*, *7*(1), 67-81.

Dianita, M., Tarmidi, D., & Hadian, N. (2013, November). Analysis of Announcement Merger and Acquisition and Payment Method to Stock Return: Study of Listed Companies at Bei During 2005-2011. 23rdInternational Business Research Conference, World Business Institute.

Dodd, P., & Ruback, R. (1977). Tender offers and stockholder returns: An empirical analysis. *Journal of financial economics*, *5*(3), 351-373.

Fatima, T., & Shehzad, A. (2014). Analysis of Impact of Merger and Acquisition of Financial Performance of banks: A case of Pakistan. *Journal of Poverty, Investment and Development and Open Access International Journal*, *5*, 29-36.

Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance*, *57*(4), 1763-1793.

Gersdorff, N.V., & Bacon, D.F. (2009). U.S. Mergers and Acquisitions: A Test of Market Efficiency. *Journal of Finance and Accountancy.1*(8), pp.1-8.

Gopalaswamy, A. K., Acharya, D., & Malik, J. (2008). Stock price reaction to merger announcements: an empirical note on Indian markets. *Investment Management and Financial Innovations*, *5*(1), 95-103.

Hijzen, A., Görg, H., & Manchin, M. (2008). Cross-border mergers and acquisitions and the role of trade costs. *European Economic Review*, *52*(5), 849-866.

Hussain, F. (1999). The day of the week effect in the Pakistani equity market: an investigation. *The Lahore Journal of Economics, 5*(1), 93- 98.

Indhumathi, G., & Selvam, M, M. (2008). Impact of mergers on stock return in Indian stock exchange with reference to BSE**.** *Department of Commerce.* Available at SSRN: 180114.

Karnik, S. (2005). Do M&As Create Value for Target Companies' Shareholders. *The ICFAI Journal of Mergers and Acquisitions*, *11*(4), 62-76.

Khan, N. U. (2011). Dividend policy and the stock market reaction to the dividend announcements in Pakistan. *University of Dundee, scotland, UK.*

Liang, C. (2013).The impact of merger and acquisition announcements on firms' stock performance: Evidence from Hong Kong Stock Market. *Master Degree at Finance Saint Mary's University*

Ma, J., Pagan, J. A., & Chu, Y. (2009). Abnormal returns to mergers and acquisitions in ten Asian stock markets. *International Journal of Business*, *14*(3), 235-250

Mahmood, I., Aamir, M., Hussain, C. M., & Sohail, N. (2012). Impact of merger/acquisition on share price-a case study of Pakistan. *European Journal of Scientific Research*, *67*(4), 617-624.

Manasakis, C. (2009). Shareholder wealth effects from mergers and acquisitions in the Greek banking industry. *International Journal of Banking, Accounting and Finance*, *1*(3), 242-256.

Odoru, M.I., & Agyei, K. S. (2013). Mergers & acquisition and firm performance: evidence the Ghana stock exchange. *Journal of finance and Accounting, 4(7),* 99-107.

Olusola, A.O., & Olusola, J.O. (2012). Effect of merger and acquisition on returns to shareholders of conglomerates in Nigeria. *Journal of finance and Accounting, 3(7),* 86-90

Padmavathy, S., & Ashok, J. (2012). Merger announcements and stock price behaviour: Empirical evidence from Indian stock market. *International Research Journal of Finance and Economics*, *83*(1), 153-160.

Shaheen, I. (2006). *Stock market reaction to acquisition announcements using an event study approach* (Doctoral dissertation).

Simões, M. D., Macedo-Soares, T. D. L., Klotzle, M. C., & Pinto, A. C. F. (2012). Assessment of market efficiency in Argentina, Brazil and Chile: an event study of mergers and acquisitions. *BAR-Brazilian Administration Review*, *9*(2), 229-245.

Smit, C. J., & Ward, M. J. D. (2007). The impact of large acquisitions on the share price and operating financial performance of acquiring companies listed on the JSE. *Investment Analysts Journal*, 65, 5-14.

Strong, N. (1992). Modelling abnormal returns: a review article. *Journal of Business Finance & Accounting*, *19*(4), 533-553.

Tauseef, S., & Mohammed, N. (2010). Wealth effect of mergers & acquisitions in an emerging market: A case study of Pakistan's banking sector. *Available at SSRN 1653690*.

Travlos, N. G. (1987). Corporate takeover bids, methods of payment, and bidding firms' stock returns. *The Journal of Finance*, *42*(4), 943-963.

Woolridge, J. R., & Snow, C. C. (1990). Stock market reaction to strategic investment decisions. *Strategic management journal*, *11*(5), 353-363.

Wong, A., & Cheung, K. Y. (2009). The effects of merger and acquisition announcements on the security prices of bidding firms and target firms in Asia. *International Journal of Economics and Finance*, *1*(2), 274.

Appendix

Panel 1: List of Mergers Carried out In Pakistan from 2006 to 2013

Name of Company of Merger	New name of the company / merged with	Date of merger
Mustehkam Cement Limit	Bestway Cement Company Limit	26/12/2013
Azam Textile Mills Limit	Saritow Spinning Mills Limited	21/2/2012
The Royal Bank of Scotland Ltd	Faysal Bank Limited	3/01/2011
Atlas Bank Limited	Summit Bank Limited	11/01/2011
MyBank Limited	Summit Bank Limited	6/07/2011
Stiefel Laboratories Pak (Pvt) Ltd	GlaxoSmithKline Pakistan Limit	14/01/2011
Askari Leasing Limited	Askari Bank Limited	10/03/2010
Al-Zamin Leasing Corp. Ltd	Invest Capital Invest. Bank Ltd	11/01/2010
Orix Investment Bank Limited	Orix Leasing Pakistan Limited	28/10/2009
AutomotiveBatteryCompany Ltd	Exide Pakistan Limited	4/05/2009
Network Leasing Corporation Ltd	KASB Bank Limited	17/02/2009
Shaheen Cotton Mills Limit	Shehzad Textile Mills Limit	21/12/2009
PICIC Commercial Bank Ltd	NIB Bank Limited	1/01/2008
Pirkoh Gas Company (Pvt) Ltd	Oil & Gas Develop.Company Ltd	4/09/2008
Nishat Apparel Ltd	Nishat Mills Limited.	11/11/2008
Suzuki Motorcycles Pakistan Ltd.	Pak Suzuki Motor Company Ltd	29/10/2007

International Housing Finance Ltd	KASB Bank Limited	22/11/2007
Dewan Hattar Cement Ltd	Dewan Cement Limited	22/10/2007
First Allied Bank Modaraba	Allied Bank Limited	25/08/2006
WORLD CALL Comm. Ltd	WORLDCALL Telecom Ltd	9/06/2006
Modaraba Al-Tijarah	Modaraba Al-Mali	11/07/2006
Pakistan Papersack Corp. Ltd	Thal Limited	4/08/2006

Panel 2: List of Acquisitions Carried out In Pakistan from 2006 to 2013

Target company	**Bidder company**	**Date of Acquisition**
Habib Sugar Mills Limited	Bank Al Haibib Limited.	27-03-2009
MCB Bank Limited	Nishat Mills Limited.	16-06-2009
Royal Bank of Scotland	MCB Bank Limited	31-08-2009
Fauji Fertilizer Company Limited	PICIC Investment Fund.	04-01-2010
Royal Bank of Scotland Limited	Faysal Bank Limited.	10-08-2010