The Impact of Mergers and Acquisitions on Firms Performance:

An Event Study Approach

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Abstract

This paper examines the impact of pre and post mergers and acquisitions on the performance of Pakistani banking sector during the period 2002 to 2011. The sample consists of eight banks operating in Pakistan. For data analysis the method are used; stock market approach and accounting approach. The results from stock market approach shows that investors can generate cumulative average abnormal returns (CAARs) through prior merger announcement. The result through accounting method shows that there is no impact of pre and post mergers and acquisitions on firm's performance. The deviation in results of both methods as that in stock market approach people gives more importance to information while in accounting method one can deeply study the overall financial position of the firm's. We conclude that there is no impact merger and acquisition on firm's performance in Pakistan.

Keywords: Pre and Post-Merger, Pre and Post-Acquisition, Event Methodology, Banking sectors

Introduction

During the past few years, mergers and acquisitions are increasing in the banking sectors of Pakistan. This increasing trend showing by Pakistani banks is due to the instructions of State Bank of Pakistan (SBP) to commercial banks to increase their capital to Rs. 6 billion up to December 2009. It is difficult for some banks operating in the local industry to fulfill the capital requirement. The gap between their capital and the required capital of 6 billion is too much, and it is not cover from equity injection or re investment of their profit. To meet requirement of capital, the only choice is to merge or acquire a firm/s. In today's globalized world, the concept of merger and acquisition are being increasingly used for the purpose to improve competitiveness, for entering to the new geographies and market reduce business risk through broadening the portfolio, and to achieve economies of scale (Kemal, 2011). The reason behind merger is that two companies are better than one, because they increase shareholders wealth more than that of two separate firm's operating (Sharma, 2009).

Generally, merger is the combination of two or more companies to form a single company. In the perspective of finance, the purchasing equity share of one or more companies by a single existing company. Merger is divided in to various types, such as horizontal merger, vertical merger, co generic merger and conglomerate merger. Merger between two companies having the same industry and segment are called horizontal merger. For example if there is a merger between Bata and Service this merger will called horizontal merger because they compete in the same industry and have same market segments. When two companies having the same industry but a different market segment is called vertical merger. Merger between two companies from the same industry but offering different products are called

congenric merger. Example of such mergers is insurance companies and banking services are from the same industry but offering different products to the market. Merger between two firm's having not belong from the same industry and have not produce the same products are called conglomerate merger. Example of such merger is the merger between Pepsi Co and PTCL, both of these firm's have different industry and offer different products to the market.

On the other hand, acquisition is defined as, when one company takeover another company and manage its operation. The main difference between merger and acquisition is, that merger is the combination of two or more companies, whereas acquisition is the takeover of one company over other. In merger, management of both firms' combines to share experiences, expertise, skills, and knowledge whereas in acquisition the acquirer firm or parent company will manage the new entity. Merger will take place with the consult of both parties management while acquisition maybe friendly takeover or hostile takeover. In friendly takeover, the management of the target company agreed to be acquired while in hostile takeover the management of the target company are not agreed to be acquired. The motives behind mergers and acquisitions (M & A) is to increase market share and revenues, create synergy, economies of scope, economies of scale, geographical and other diversification (Kemal, 2011).

Theoretical Background of the study:

All marriages are decided on heaven; it's the life afterwards that makes trouble. Theoretically it is assumed that merger improve performance

of the firm's due to increased market power, synergy impact and other qualitative and quantitative factors. The two main theories of merger and acquisition are; value increasing theory and value decreasing theory of merger and acquisition.

Value Increasing Theory

According to this theory merger, take place because it creates synergy and as a results increase the value of the firm. Barkovitch & Narayanam, (1993) explored that higher the synergy, higher will be the target gains as well as the benefits of the acquiring firm's shareholders. Due to merger or acquisition two types synergies are created; operational synergy and financial synergy. Operational synergy is the achievement of administrative production efficiencies (Chatterjee, 1986), whereas financial synergy is the reduction in the cost of capital and produce better cash flows (Fluck& Lynch, 1999).

Value Decreasing Theory

According to this theory, merger and acquisition can leads to managerial hubris, agency problem and free cash flow theory that decrease the value of the firm. According to Hubris hypothesis, when acquiring a firm's managers look for their personal interest first and gives second priority to the economic gains of the firm as a result the value of the decreases (Roll, 1986). Same as the hubris hypothesis, agency problem arises when manager's focus on their own interest instead of the firm's interest at the expense of shareholder's (Berkovitch& Narayanam, 1993).

Significance of the Study

Merger and acquisition is considered one of the principal tools for corporate restructuring. There is a sharp increase in both the number and size of merger and acquisition transactions throughout the world. Financial restructuring through mergers and acquisitions evokes a great deal of public interest and perhaps represent the most dynamic facet of corporate strategy. In developing economies like Pakistan such study will help to identify whether merger and acquisition are beneficial for corporations. By considering these important facets, the research has undertaken this study.

Research Questions

Is there any effect of pre and post merger & acquisition on firm's performance?

Is there any effect of pre and post merger & acquisition on share price of the selected firm's?

Objectives of the Study

To find the relationship between pre and post mergers & acquisitions on firm performance.

To find the relationship between pre and post merger & acquisition on share price of the selected firms.

Review of Literature

Andrade, G; Mitchell, M. & Stafford, E. (2001) studied the impact of mergers on corporate operating performance. By examining pre and post merger financial ratios of the selected firms from 1991 to 2003. They found that, due to mergers minor variations will occur in the operating performance of the selected firms.

Nalwaya, N; & Vyas, R. (2012) explored the post-merger financial performance analysis of the selected banks in India. The study found that a positive impact of merger in the profitability of the selected

banks. The higher earnings growth was found in the selected banks. In addition, dividend growths were observed in the selected firms.

Kumara, M; & Satyanarayana, (2013) studied the pre and post corporate integration through mergers and acquisitions in India. By selecting ten major companies the result showed a significant positive value creation to the acquired firms. Ghosh, (2011) also found a significant positive effect of merger & acquisition on firms operation performance, while HBR, (2011) found that 70% of merger & acquisition are failed to create value to the firm.

Selvan & Vanitha, (2007) found that merger & acquisition improve the performance of the firms. Manthravadhi & Reddy, (2008) found a positive effect of merger & acquisition on firms' liquidity in banking and finance sector, while there is a reduction in liquidity, profitability and return on assets on textile, electrical and pharmaceutical firms.

Mylonidis & Kelnikola, (2005) studied mergers in Greek banking system. They found that there is no impact of merger on the operating performance of the selected banks. Burki & Ahmad, (2008) explored the impact of changes in governance of banks on the performance of commercial banks in Pakistan. They found that banking performance improve due to financial reforms. Kemal, U, M. (2011) studied the post merger profitability of Royal Bank of Scotland (RBS) in Pakistan. The study found that there is no impact of merger on the performance of RBS.

Khan, A, M; Kayani, F; & Javid, A. (2011) explored the effect of merger and acquisition on market concentration and interest rate spread in the banking industry of Pakistan. They found that profitability of the selected banks is declines as results of mergers. Siems, (1996) studied 24 US banks mega-mergers by using event study

methodology in 1995. He found that the shares of acquirer fell by 1.96%. Vennet, V. (1996) explored European banks mergers by using accounting data and the efficient approach. The accounting data consists of return on equity, asset utilization and return on asset and so forth.

Athanasogou & Brissimis, (2004) studied pre-merger and post-merger data by using operating performance methodology. They found that there is a positive effect of merger and acquisition on bank performance. Kavussanos & Dockery, (2001) studied the Athens Stock Exchange and found that it is inefficient market which means that past stock prices predict future stock prices. Liargovas, P. & Repousis, S. (2011) explored the impact of mergers and acquisition on performance of the Greek banking sector by using event study approach. Their finding showed that there is no impact of merger and acquisition on Greek banks performance. Selcuk, E. & Yilmaz, A. (2011) explored the impact of merger & acquisition on acquirer performance in Turkey. They select a sample of 62 companies involves in mergers & acquisitions deals from 2003 to 2007. They found that both accounting data and stock market showed negative effect of merger & acquisition.

Hypothesis of the Study

Literature led us to develop the following hypothesis;

H₀₁: There is no effect of pre and post merger & acquisition on firm's performance.

H₁: There is an effect of pre and post merger & acquisition on firm's performance.

 \mathbf{H}_{02} : There is no effect of pre and post merger & acquisition on share price of the firm's.

H₂: There is an effect of pre and post merger & acquisition on share price of the firm's.

Methodology

The sample of the study consists of all banks listed in Karachi Stock Exchange (KSE) websites and involves in mergers and acquisitions deals were selected for the study. Based on mergers and acquisitions (M & As) deals and availability of data, data period was selected from 2002 to 2011. A total of ten banks including in M & A deals were selected for the study. An M & A deals between non-listed firms or those having non availability of data were excluded from the study. By using accounting method we compare two years pre and post merger and acquisition, hence those firms having relevant data are not available are also excluded from the study. If firms involves in more than one deal the largest deal will be considered, the reason is to avoid event window overlapping. In our study Summit Bank perform two deals with Atlas Bank and My Bank in 2011, so the largest one will be considered for the study. By applying these restrictions, only ten banks were selected for the study.

Performance Measurement

In order to assess the impact of merger and acquisition on performance we use two approaches: stock market approach and accounting approach.

Stock Market Approach

The objective of the study is to investigate the impact of merger and acquisition (M &A) on Pakistani banks performance. In order to achieve the above objective, an event methodology was use to know whether shareholders earns any abnormal returns around merger and

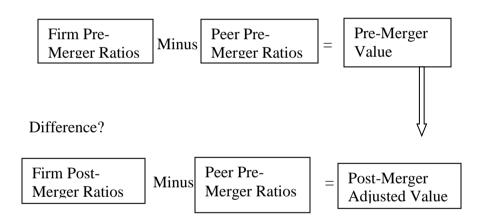
acquisition announcements. The assumption of event study is that, an abnormal return will generate if information deliver to the market are useful and surprising, thus motivates shareholders or investors in positive way. In other words, the reaction of investors to specific information or events that take place in the market.

The first step of event methodology is to identify the sample of the study. In our study the sample, consist of ten banks listed on KSE from 2002 to 2011 are selected. During this period, other factors that influence share prices are ignore from the study. In the second step of event study 20 days (ten days before merger and ten days after merger), were taken. From this data an event window were calculated, which is five days before merger and five days after merger. The selection of five days before period is that any information regarding the event is leak to the market before the official announcement, will adjust in security prices. The third step is to predict expected returns during the event window. This can be calculating through CAPM model. After that an abnormal returns will calculated, which is obtain by subtracting expected returns from real returns of a securities. The next step is to calculate individual securities T value (T-AR), which is simply dividing abnormal returns over error term. After that cumulative average returns (CAR) will calculated, which simply the sum of abnormal returns is. Finally, we calculate T-CAR through which we identify whether merger and acquisition improve shareholders wealth or get abnormal returns. If the T-CAR value is greater than 1.96 than it will significant and if lower than 1.96 than it will be insignificant.

Accounting Approach

The second approach through which we identify the impact of merger and acquisition on firm's performance is accounting approach. In accounting approach we use historical financial data and see either the performance of the firms improve after merger and acquisition. For this purpose, the study uses the following two ratios;

ROA: return on assets which is net income/ total assets ROE: return on equity which is net income/ total equity Calculating these ratios, will lead to misleading results because changes in these ratios may be sue to other factors such as economic condition or market fluctuations? To isolate the effect of acquisition, a literature suggests an adjustment for the industry trend. As a proxy for industry trends, we determine a peer company. The peer company is the one which is not involved in merger or acquisition deal during the sample period.



For each sample company these financial ratios are calculated for two years before (year T_{-1} and T_{-2}) and two years after (year T_{+1} and T_{+2}), then we compare the results of pre and post merger activities on firms performance.

Empirical Results

The results through stock market approach indicate that there is an impact of merger and acquisition on firm's performance. We know that if T-CAR value is greater than 1.96 than there will be a significant

impact of merger and acquisition on firm's performance. We select ten days before the event can take place and ten days after the event. The reason to select the pre merger period is that if there is any information leaked to the market will affect the share prices. If we see from table one, first three days of pre-merger period of Faysal bank shows no significant impact of merger and acquisition on share prices. However, when the information leaked to the market will effect on the share prices as seen from the table one. The significant impact will see from seven days before merger until the event window. When investors knows about a merger between two firms they expect that a firm have financially stable and wants to invest, such good news will motivates to buy the shares of parent firm, as a result the share price of the parent company will move upward. Dealing and trading through stock exchange is the game of human behavior, good news about firms will invites to invest in the shares of firms. The results from table one shows that KASB bank merger deal will not motivates investors to buy their shares and improve share price of the respective firm. Improvements in share prices of other banks will see from table one. The highlight row shows the event date on which the merger will take place. The data above the highlighted row will represent pre-merger period and the data below represent post-merger period. Therefore, stock market approach shows that there will a significant impact of merger and acquisition on firm's performance in Pakistani context.

The share price of KASB bank will move upwardly before merger event, when market aware about the deal will respond adversely as seen from the table. The day, on which the KASB bank merger will take place, the value of T-CAR will go down from 1.96, which shows insignificant impact of merger on firm performance, and as a result,

shareholders cannot earn abnormal returns. In addition, the effect will be seen up to next few days.

Table 1

Faysal Bank		NIB Bank		Summit Bank		Standard Chtd Bank	
T-CAR	Sig	T-CAR	Sig	T-CAR	Sig	T-CAR	Sig
-1.267	No	0.162	No	-3.962	Yes	-0.167	No
0.018	No	-1.541	No	-4.323	Yes	5.638	Yes
1.252	No	-5.388	Yes	-5.056	Yes	13.547	Yes
2.621	Yes	-6.115	Yes	-5.284	Yes	29.906	Yes
3.976	Yes	-2.663	Yes	-5.452	Yes	48.136	Yes
5.213	Yes	-6.413	Yes	-3.412	Yes	64.856	Yes
6.344	Yes	-10.176	Yes	-3.864	Yes	71.663	Yes
7.690	Yes	-10.221	Yes	-5.011	Yes	67.353	Yes
8.899	Yes	-8.371	Yes	-5.129	Yes	63.454	Yes
10.141	Yes	-10.928	Yes	-8.066	Yes	75.746	Yes
11.371	Yes	-11.433	Yes	-11.038	Yes	70.061	Yes
12.594	Yes	-10.496	Yes	-8.791	Yes	81.757	Yes
13.781	Yes	-10.469	Yes	-9.275	Yes	89.100	Yes
15.006	Yes	-12.118	Yes	-11.533	Yes	91.634	Yes
16.271	Yes	-12.159	Yes	-16.584	Yes	98.049	Yes
17.588	Yes	-10.663	Yes	-17.549	Yes	102.423	Yes
19.014	Yes	-6.895	Yes	-21.733	Yes	109.858	Yes

Table 1 Continue

		Askari		JS				ABL	
KASB		Bank		Bank		Atlas		Bank	
Bank		Ltd		Ltd		Bank Ltd		Ltd	
T-		T-		T-				T-	
CAR	Sig	CAR	Sig	CAR	Sig	T-CAR	Sig	CAR	sig
8.999	Yes	-1.432	No	4.041	Yes	0.299	No	0.570	No
8.463	Yes	0.727	No	1.781	No	-4.236	Yes	1.109	No
3.282	Yes	5.530	Yes	7.643	Yes	-3.993	Yes	1.676	No
9.599	Yes	5.793	Yes	6.982	Yes	-5.180	Yes	2.141	Yes

-2.451	Yes	7.136	Yes	10.407	Yes	-7.704	Yes	2.613	Yes
2.537	Yes	7.902	Yes	15.518	Yes	-10.571	Yes	3.150	Yes
7.779	Yes	8.447	Yes	19.897	Yes	-11.512	Yes	3.689	Yes
-0.392	No	9.386	Yes	24.474	Yes	-10.001	Yes	4.361	Yes
1.227	No	14.616	Yes	33.147	Yes	-8.783	Yes	4.949	Yes
0.808	No	13.758	Yes	47.438	Yes	-9.174	Yes	5.493	Yes
-6.012	Yes	14.208	Yes	55.163	Yes	-8.327	Yes	6.058	Yes
2.194	Yes	13.833	Yes	56.525	Yes	-6.146	Yes	6.522	Yes
1.655	No	13.264	Yes	58.398	Yes	-7.858	Yes	7.053	Yes
0.822	No	-6.313	Yes	60.293	Yes	-7.005	Yes	7.530	Yes
-1.442	No	-5.824	Yes	67.044	Yes	-8.372	Yes	8.048	Yes
-0.639	No	-7.459	Yes	72.346	Yes	-7.472	Yes	8.034	Yes
-0.543	No	-6.346	Yes	70.347	Yes	-6.436	Yes	6.325	Yes

Accounting Approach

The result through accounting approach shows that there will no impact of merger and acquisition on firm's performance. The study select two ratios return on assets and return on equity to analyze the impact of merger and acquisition on firm's performance. For this purpose two years before (T_{-1} and T_{-2}) and two years after merger (T_{+1} and T_{+2}) were select. For each sample firms these ratios were calculated for five years period. The red row in the table shows the event year. The year above the red line, indicate pre-merger period and the years below the red row shows post-merger period. There is no significant different in pre and post mergers data of these ratios so there have no impact of mergers on firm's performance.

TABLE 2

Faysal Bank	ROA	ROE		ROA	ROE
	0.02	0.22	Standard Chtd bank	0.03	0.11
	0.02	0.17		0.05	0.18
	0.03	0.19		0.04	0.26

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	0.06	0.34		0.06	0.38
	0.02	0.18		0.06	0.24
Allied Bank	0.03	0.43	NIB bank	0.02	0.24
	0.04	0.54		0.01	0.05
	0.04	0.59		0.02	0.11
	0.03	0.56		0.03	0.13
	0.04	0.63		0.02	0.22
Atlas Bank	0.01	0.05	KASB Bank	0.02	0.15
	0.02	0.09		0.01	0.04
	0.01	0.04		-0.01	-0.09
	0	0.01		0	-0.02
	0.02	0.15		-0.01	-0.16
JS bank	0	0	Askari Bank	0.038	0.597
	0	0		0.036	0.604
	0	0		0.032	0.626
	0	0		0.029	0.566
	0.03	0		0.003	0.053

Return on assets (ROA) of Faysal bank before merger is .02 for period T_{-1} and .02 for the period T_{-2} . Return on equity (ROE) of Faysal bank before merger is .22 in period T_{-1} and .17 in T_{-2} . In the event year, ROA of Faysal bank is .03 and ROE is 0.19. The post merger ROA is .06 in period T_{+1} and .02 in period T_{+2} . Post merger ROE is .34 in T_{+1} and .18 in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Allied bank before merger is .03 for period T_{-1} and .04 for the period T_{-2} . Return on equity (ROE) of Allied bank before merger is .43 in period T_{-1} and .54 in T_{-2} . In the event year, ROA of Allied bank is .04 and ROE is 0.59. The post merger ROA is .04 in period T_{+1} and .03 in period T_{+2} . Post merger ROE is .56 in T_{+1} and .63 in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Atlas bank before merger is .01 for period T_{-1} and .02 for the period T_{-2} . Return on equity (ROE) of Atlas bank before merger is .05 in period T_{-1} and .09 in T_{-2} . In the event year, ROA of Atlas bank is .01 and ROE is 0.05. The post merger ROA is zero in period T_{+1} and .20 in period T_{+2} . Post merger ROE is .05 in T_{+1} and .15 in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of JS bank before merger is zero for period T_{-1} and zero for the period T_{-2} . Return on equity (ROE) of JS bank before merger is zero in period T_{-1} and 0 in T_{-2} . In the event year, ROA of JS bank is zero and ROE is zero. The post merger ROA is zero in period T_{+1} and .03 in period T_{+2} . Post merger ROE is zero in T_{+1} and zero in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Standard Chtd bank before merger is .03 for period T_{-1} and .05 for the period T_{-2} . Return on equity (ROE) of Allied bank before merger is .11 in period T_{-1} and .18 in T_{-2} . In the event year, ROA of Allied bank is .04 and ROE is 0.26. The post merger ROA is .06 in period T_{+1} and .06 in period T_{+2} . Post merger ROE is .38 in T_{+1} and .24 in T_{+2} periods. This result shows that after post-merger there is an improvement in these variables.

Return on assets (ROA) of NIB bank before merger is .02 for period T_{-1} and .01 for the period T_{-2} . Return on equity (ROE) of NIB bank before merger is .24 in period T_{-1} and .05 in T_{-2} . In the event year, ROA of NIB bank is .02 and ROE is 0.11. The post merger ROA is .03 in period T_{+1} and .02 in period T_{+2} . Post merger ROE is .11 in T_{+1} and .13 in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of KASB bank before merger is .02 for period T_{-1} and .01 for the period T_{-2} . Return on equity (ROE) of KASB bank before merger is .15 in period T_{-1} and .04 in T_{-2} . In the event year, ROA of KASB bank is -.01 and ROE is -0.09. The post merger ROA is zero in period T_{+1} and -.01 in period T_{+2} . Post merger ROE is -.02 in T_{+1} and -.16 in T_{+2} periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Askari bank before merger is .038 for period T_{-1} and .036 for the period T_{-2} . Return on equity (ROE) of Askari bank before merger is .597 in period T_{-1} and .604 in T_{-2} . In the event year, ROA of Askari bank is .032 and ROE is 0.626. The post merger ROA is .029 in period T_{+1} and .003 in period T_{+2} . Post merger ROE is .566 in T_{+1} and .053 in T_{+2} periods. This result shows that after post-merger there is an improvement in these variables.

The contrast between stock market approach and accounting approach will see in the study. The reason is that in accounting approach one can analyze the firms in detail i.e. detail study of financial position, profit and loss account, and cash flow statement whereas in stock market approach investors can give weight to the information not to the accounting information. In addition, if we see the variation in data from stock market approach that is so minor, so there effect will be ignore in ratio analysis.

Conclusion

In today's globalize world, the concept of merger and acquisition are being increasing used for the purpose to improve competitiveness, for entering to the new geographies and market reduce business risk through broadening the portfolio, and to achieves economies of scale (Kemal,2011). The reason behind merger is that two companies are

better than one, because they increase shareholders wealth more than that of two separate firm's operating (Sharma, 2009).

The objective of the study is to investigate the impact of merger and acquisition on firm's performance. For this purpose a sample of eight banks listed on Karachi stock exchange were select from 2002 to 2011. To analyze the impact of merger and acquisition two approaches were used i.e. stock market approach and accounting base approach. The result from stock market approach shows that there will an impact of merger on Pakistani banks performance and hence investors can generate abnormal returns. While the results from accounting base approach show that, there is no impact of merger on Pakistani banks performance. There will contradiction in results of both approaches. The reason is that stock market approach depends on behavior and gives more importance to information, while accounting approach depends on detail study of financial position, income statement, and cash flow statement of the firm. Therefore, we conclude from the study that there will no impacts of mergers on Pakistani banks performance. The results are consistent with Yilman & Selcuk 2011, Kumara & Satyanarayana 2013, Kithitu & Keraro 2012, Adebayo 2012, Joshua 2011.

Although the study have important contribution to the field but there is certain limitations as well; the sample of the study is too small, the period of event window is also too small, the study only focus on banking sectors and so on. So one can work on these limitations, by selecting a large sample size, increase event window period, and considered other sectors for future research to further contribute in the field.

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