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Impact of Mergers and Acquisitions on Banking and Textile Sector of Pakistan by Applying the Data Envelopment Analysis

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ABSTRACT

The objective of the study is to estimate the impact of mergers and acquisitions on banking and textile sector of Pakistan during 2004 to 2012 by applying the data envelopment analysis. Three years pre and post mergers and acquisitions financial statements were examined. Cause behind cherry-picking the both sectors is the importance in expansion of economy. Banking sector is the finance supplier while textile is the large manufacturing and exporting sector of Pakistan. From the findings it was apparent that after mergers and acquisitions Trust Bank, Crescent Bank, Faysal Bank and Standard Chartered Bank improved their efficiency and Summit Bank, National Investment Bank, Jahangir Siddiqui Investment Bank and Atlas Bank unsuccessful to achieve their objectives. On the other hand, Shehzad Textile Mills Ltd., Colony Mills Ltd. and Dawood Lawarencepur Ltd. enhanced efficiency after mergers and acquisitions and Saritow Spinning Mills Ltd, Nishat Chunian Ltd. and Kohinoor Weaving Mills Ltd. failed to improve their efficiency.

Keywords: Mergers and Acquisitions, Efficiency, Data envelopment analysis

INTRODUCTION

To measure and compare before and after merger efficiency of banking and textile sectors of Pakistan is the main object of this study. Mergers and acquisitions events happen in the logic that the operations of the merged/acquired firms would be efficient by creating synergy after mergers and acquisitions. Due to mergers and acquisitions, there are possibilities of operative synergies and allocative synergies. Operative synergies assist the management to achieve the economy of scale and opportunity. On the other hand allocative synergies are used to develop market power and improve consumer's surplus. Banerjee and Eckard (1998) stated that according to previous studies the operating synergies have positive influence on gain. Ismail, (2011) identified that mergers and acquisitions are positive sign for the success of corporations. The mergers and acquisitions is the process which is supportive for the management of an organization to achieve the goals of corporate strategy, corporate finance and management dealing that can help the growing companies in the industry to grow rapidly. Mergers and acquisitions is an instrument which is implemented by the companies to expand their operations to increase long term profitability. Most of the leading corporations of the world improved their performance after mergers and acquisitions dealing. Information shows that most of the organizations situated in United States had a merger in their history.

The contemporary literature on the effect of mergers and acquisitions has been focused on advanced countries while a very little research has been conducted to estimate the impact of mergers and acquisitions on financial and non-financial sectors of developing countries especially Pakistan. Mostly Pakistani banking sector studies estimated financial performance by using accounting ratios (Abbas, 2013; Afza & Nazir, 2012; and Kouser & Saba, 2011). On the other hand, very few studies estimated performance of firms by using data envelopment analysis (Sultan, 2013 and Warraich, 2011). In this study, we estimated efficiency of all mergers and acquisitions of financial and non-financial sectors during 2004 to 2012. In order to estimate the efficiency, data envelopment analysis was used. There is no single study in Pakistan who simultaneously measures the efficiency of banking and textile sector after mergers and acquisitions.

Basel III is a complete set of reforms advanced by the Basel Committee about supervision of banks to support the instructions and risk management of the banking sector. In the light of requirements of Basel III, all the banks have to maintain minimum capital requirement. Because of the poor growth of banks and strict conditions imposed by Basel Committee, it was then pertinent to move towards the mergers and acquisitions for survival as well as growth in the market. Due to these requirements imposed by Basel committee, number of branches enhanced but number of banks declined. On the other hand, recently the textile sector of Pakistan was facing the threatening challenges by the international competitors. In addition to this, internal issues are major threats for Pakistan's textile industry. These threats included high energy cost, lack of innovation and competitiveness in the market. In 2014, Pakistan got the opportunity to enhance their exports to European Union due to benefit of GSP-PLUS status. In order to exploit such favorable opportunity and to get the benefits of economies of scale, lot of mergers and acquisitions took place in the textile sector of Pakistan.

General Objective: The general objective of the study is to evaluate the pre and post-merger impact on banking and textile sectors. Specific Objectives: Measure the efficiency of banking sector of Pakistan after mergers and acquisitions. Investigate the impact of mergers and acquisitions on efficiency of textile sector.

LITERATURE REVIEW

The theories related to the mergers and acquisitions can be classified into value increasing theories and value decreasing theories. The purposes of value increasing theories are to improve the value of the organization through synergies. According to Efficient Theory, mergers and acquisitions events happen in the logic that after mergers and acquisitions, the operations of the merged organizations would be efficient by creating synergy. Market power theory is most reliable theory for mergers and acquisitions as organizations charge high prices when they have extraordinary market power and obtain high gains. Corporate Control theory states that owners of the organizations always try to choose efficient management to control corporate for the betterment of organization.

No doubt the aim of mergers and acquisitions is to gain the value but occasionally these mergers and acquisitions become nastiest. The following theories link with the value decreasing theories. Managerial hubris theory describes that sometimes management wants to increase the value of their firm and become confident and over evaluate the assets. Managerial discretion theory states that the management of the firm involves themselves in large scale strategic decision when liquidity of the firm increases. High liquidity of the firm motivates the decisions and they chose poor acquisitions. Managerial entrenchment theory tells that the management of the organization keep interest in those mergers and acquisitions transactions where maximization of individual value than value of shareholders. According to empire building theory managers of the organization try to diversify in merger and acquisition dealings so that the size of the firm can be increased and minimum profit requirement could be met.

Hung and Wu (2011) estimated the efficiency of financial sector in China during 2001-2007 using data envelopment analysis by following the work of Defond, (2000), Chen, (2000) and Wang, (2008). Results initiate that commercial banks in China are inefficient. Another study was conducted by Ismail and Rahim (2009) to evaluate the effect of mergers and acquisitions on the efficiency and productivity of Malaysian commercial banks during 1995 to 2005. They found that banks presented greater efficiency score after mergers and showed improvement in productivity. Kanwal (2014) applied the same methodology used by Holf (2007) and analyzed the efficiency of telecom industry in Pakistan by using Charnes, Cooper and Rhodes model. Results of the study showed that there is a positive relationship between size and efficiency in total asset model.

Another study relating to the impact of mergers and acquisitions was conducted by Sufian (2006), who followed the event study used by Banker (1984). For this purpose, he used an event study to observe the impact of mergers and acquisitions on efficiency of Singapore domestic banking sector and for this purpose three year window was chosen. The non-parametric frontier methodology and data envelopment analysis was used and results indicate that after mergers and acquisitions, banking sector has achieved higher mean overall efficiency as compared to pre-merger efficiency. Cocris, (2011) hunted the data envelopment analysis used by Housten and Ryngaert (1994) and analyzed the effect of Mergers and Acquisitions (M&A) on the efficiency of banks across the Central and Eastern European banking sector during 2001 - 2009. The results showed that efficiency improved of target banks after mergers and acquisitions.

Yanam, (2016) conducted a study to investigate the financial performance of American firms. They used accounting ratios as an investigative tool to judge the financial performance. Researchers indicated that firms enhanced financial performance after mergers and acquisitions as compared to before mergers and acquisitions. Ogada, (2016) used accounting ratios to examine the financial performance of financial institutions of Kenya. The results indicated that there is significant improvement after merger. Reda (2013) adopted intermediation approach used by Isik and Hassan (2002) and Pasiouras (2007) and used data envelopment analysis to estimate the impact of mergers and acquisitions on efficiency and profitability of Egyptian banking sector for the time period of 2000 - 2003 and 2007 - 2010. The results showed that merger and acquisition had positive impact on bank's efficiency.

Cummins and Xie (2008) examined the impact of mergers and acquisitions on US insurance industry for the period of 1994-2003. The results of the study provide evidence that mergers and acquisitions enhanced the value of the merged firms. Acquiring firms achieved more revenue than non-acquiring firms and target firms experienced greater cost and allocative efficiency growth than non-targets. Kemal (2011) estimated after merger effectiveness of Royal Bank of Scotland. Accounting ratios have been used to test after merger financial performance of Royal Bank of Scotland. He used 20 accounting ratios for four years (2006-2009). Results of the study depict that after merger deal Royal Bank of Scotland failed to improve the financial performance.

Kouser and Saba (2011) comparable to Mishra and Chandra (2010) used accounting ratios to measure performance of banks after mergers. They selected 10 merged banks during the period of 1999-2010 and concluded that operating financial performance of all commercial bank's mergers and acquisitions included in the sample from banking industry had declined after mergers and acquisitions. Arshad (2012) evaluated the performance of Standard Chartered Bank of Pakistan. Researcher estimated the accounting ratios after the merger and acquisitions and found that the performance of the bank decreased.

Abbas (2013) compared pre and post-merger results through sample paired t-test and concluded that after mergers, banks failed to improve financial performance. Kayani (2013) evaluated the performance of three banks by using ratio analysis between the years of 2007-2010. They concluded that the operating performance and shareholder's wealth have declined after the event of merger and acquisition. Afza and Yusuf (2012) applied stochastic frontier analysis for data study to show the importance of the study. Findings of the study showed that cost efficiency improved and profitability deteriorated after merger and acquisition in banking sector of Pakistan. Irfan, (2014) examined the impact of mergers and acquisitions dealing on liquidity, profitability, investment and solvency. They found that only liquidity ratio stayed positive and the rest of the ratios revealed negative impact. Usman (2010) investigated the profitability of banks in Pakistan. Study found that banks have average improvement after mergers and acquisitions. It is concluded that after mergers and acquisitions both banks improved financial performance.

RESEARCH METHODOLOGY

This study used a non-parametric approach or Data Envelopment Analysis-DEA due to its simplicity and for comparative purposes. Data Envelopment Analysis is a technique to investigate the efficiency of firms after mergers and acquisitions. Sultan (2013), Sufian and Habibullah (2009), and Soetanto (2012) used Data Envelopment Analysis to estimate the efficiency of various banks. Population consists of seventy eight mergers and acquisitions dealings of listed companies occurred in Pakistan during 2004 to 2012 in all the sectors. But we short listed banking transactions from financial sector and textile transactions from non-financial sector considered as sample of the study. Data was collected from annual reports of selected banks and textile firms, Pakistan Stock Exchange website, websites of banks and textiles firms. The detail of the banks and textile firms is given below in the table 1 and table 2 respectively.

Data envelopment analysis is a technique to evaluate the performance of organizational units where there are several units of outputs and inputs and difficult to comparison their performance. Data envelopment analysis methodology was employed by Charnes, Cooper and Rhodes first time in 1978 to evaluate the efficiency of various decision making units when the organizational structure presents multiple units of input and output.

RESULTS AND DISCUSSION

Table 1

List of Sample Banks

S. No	Year	Bank Name (Bidder)	Target Company
1	2011 (06/07/2011)	Summit Bank Ltd. (SMBL)	My Bank (MYBL)
2	2011 (03/01/2011)	Faysal Bank Ltd. (FABL)	Royal Bank of Scotland (RBS)
3	2008 (01/01/2008)	NIB Bank Ltd. (NIB)	Pakistan Industrial Credit and Investment Corporation (PICIC)
4	2006 (30/12/2006)	Jahangir Siddiqui Bank Ltd. (JSBL)	Jahangir Siddiqui Investment Bank (JSIB)
5	2006 (26/07/2006)	Atlas Bank Ltd. (ATBL)	Atlas Investment Bank Limited (ATLSB)
6	2006 (29/12/2006)	Standard Chartered Bank Ltd. (SCBPL)	Union Bank Limited (UNBL)
7	2004 (18/10/2004)	Crescent Commercial Bank Ltd. (CCBL)	Trust Commercial Bank Limited (TCBL)
8	2004 (30/04/2004)	Trust Commercial Bank Ltd. (TCBL)	Trust Investment Bank Limited (TIBL)

Table 2

List of Sample Textile Firms

S No.	Year	Acquirer Firm	Acquired Firm Name
1	2012 (21/02/2012)	Saritow Spinning Mills Ltd. (SSML)	Azam Textile Mills Limited (AZAMT)
2	2010 (02/08/2010)	Shehzad Textile Mills Ltd. (SZTM)	Shaheen Cotton Mills Limited (SCML)
3	2006 (28/08/2006)	Colony Mills Ltd. (CML)	Colony Textile Mills Limited (COLT)
4	2005 (20/01/2005)	Nishat Chunian Ltd. (NCL)	Umar Fabrics Limited (UMEL)
5	2004 (29/06/2004)	Dawood Lawarencepur Ltd. (DLL)	Lawrencepur Woollen & Textile Mills Limited (LPRW)
6	2004 (13/01/2004)	Kohinoor Weaving Mills Ltd. (KOHW)	Kohinoor Genertek Limited (KGL)

Table 3 reveals the mean of post-merger efficiency is higher than pre-merger efficiency. On the other hand, maximum value is showing statistically significant changes after merger and acquisition as compared to before merger and acquisition. Standard deviation is showing a positive improvement after merger and acquisition from 0.15 to 0.31. Table 4 illustrates three years before and three years after merger efficiency of banks. After merger Trust Bank, Crescent Bank, Faysal Bank and Standard Chartered Bank improved their efficiency and Summit bank, National Investment Bank, Jahangir Siddiqui Investment Bank and Atlas Bank failed to expand their efficiency. Results of such study are consistent with earlier studies like Ismail and Rahim (2009), who also found that after merger, banks improved their efficiency.

Graphical expression of efficiency is showed in Fig 1. After merger, merged banks are overall efficient because average mean value is 0.25 as compared to pre-merger 0.18. On the other hand, post-merger maximum value is 0.87 against pre-merger value 0.46.

Table 3

Descriptive Statistics of Efficiency of Banks

					Pre and Post M&A Average		
Year	**N**	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
T-3	8	0.2	0.2	0.1			
T-2	8	0.1	0.1	0.2	0.1	0.15	0.1
T-1	8	0.1	0.1	0.0			
T+1	8	0.2	0.1	0.3			
T+2	8	0.2	0.1	0.3	0.2	0.13	0.3
T+3	8	0.2	0.1	0.2			

N: number of observations, Max: Maximum figure, Min: minimum figure, SD: standard deviation

Table 4

Efficiency of Pre and Post Merger Years of Banks

Efficiency						
Banks	T-3	T-2	T-1	T+1	T+2	T+3
Summit Bank	0.2	0.0	0.0	0.00	0.01	0.086
National Investment Bank	0.1	0.1	0.1	0.13	0.04	0.030
Trust Bank	0.0	0.0	0.0	0.37	0.24	0.416
Crescent Bank	0.3	0.0	0.1	0.04	0.72	0.107
Faysal Bank	0.2	0.1	0.1	0.14	0.26	0.335
Jahangir Siddiqui Bank	0.1	0.0	0.1	0.07	0.13	0.106
Atlas Bank	0.3	0.3	0.2	0.00	0.04	0.005
Standard Chartered Bank	0.3	0.7	0.0	0.96	0.91	0.742

T-3: three years before merger, T-2: two years before merger, T-1: one year before merger, T+1: one year after merger, T+2: two years after merger, T+3: three years after merger

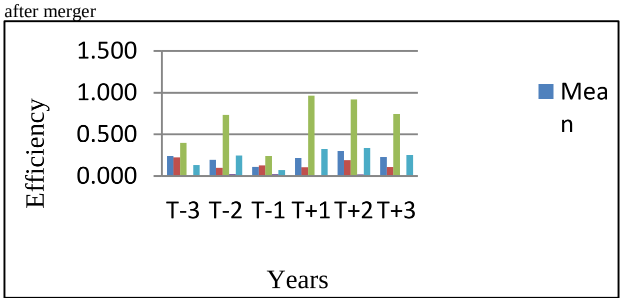

***Figure 1**: Descriptive statistics of efficiency of banks*

Descriptive statistics in table 5 shows that after merger there is minor improvement in maximum and standard deviation. Mean remained unchanged after merger. So, we can say that in the field of efficiency textile sector failed to improve their performance.

Table 6 informed about the efficiency of textile sector of Pakistan. The comparison of three year before and three years after merger indicates that there is no statistically significant change in efficiency after merger. Shehzad Textile Mills Ltd., Colony Mills Ltd. and Dawood Lawarencepur Ltd. improved their efficiency after mergers and acquisitions and Saritow Spinning Mills Ltd., Colony Mills Ltd. and Kohinoor Weaving Mills Ltd. failed to expand their efficiency. Manonmani (2013) evaluated efficiency of Indian textile industry by using DEA methodology and found significant improvement in efficiency after M&A.

Fig 2 indicated that after merger and acquisition efficiency of textile sector is constant because there is no significant change in mean, median and minimum values. After merger and acquisition, maximum value is 0.18 against pre-merger value 0.11 and standard deviation is 0.07 against pre-merger value 0.05.

Table 5

Descriptive Statistics of Efficiency of Textile Sector

Year	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
T-3	0.0	0.0	0.0			
T-2	0.0	0.0	0.0	0.04	0.02	0.0
T-1	0.0	0.0	0.0			
T+1	0.0	0.0	0.1			
T+2	0.0	0.0	0.0	0.0	0.0	0.0
T+3	0.0	0.0	0.0			

N: number of observations, Max: Maximum figure, Min: minimum figure, SD: standard deviation

Table 6

Efficiency of Pre and Post Merger of Textile Sector

Efficiency						
Textile Firms	T-3	T-2	T-1	T+1	T+2	T+3
Saritow Spinning Mills Ltd.	0.008	0.029	0.00	0.00	0.00	0.0
Shehzad Textile Mills Ltd.	0.001	0.003	0.00	0.01	0.01	0.0
Colony Mills Ltd.	0.013	0.002	0.00	0.01	0.01	0.0
Nishat Chunian Ltd.	0.028	0.012	0.07	0.02	0.02	0.0
Dawood Lawarencepur Ltd.	0.127	0.126	0.08	0.39	0.01	0.1
Kohinoor Weaving Mills Ltd.	0.117	0.059	0.01	0.00	0.00	0.0

T-3: three years before merger, T-2: two years before merger, T-1: one year before merger, T+1: one year after merger, T+2: two years after merger, T+3: three years after merger

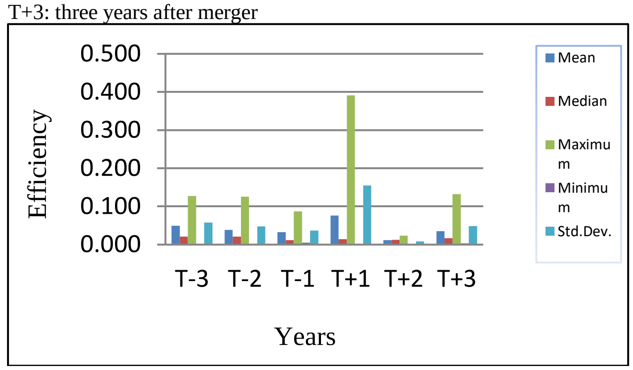

Figure 2: *Descriptive Statistics of Efficiency of Textile Secto*r

Findings of the Study

Summative results of the present study indicate that banking sector improved efficiency after mergers and acquisitions as compared to pre-mergers and acquisitions but individual performance of banks is not statistically significant. Trust Bank, Crescent Bank, Faysal Bank and Standard Chartered Bank improved efficiency after mergers and acquisitions and Summit bank, National Investment Bank, Jahangir Siddiqui Investment Bank and Atlas Bank failed to achieve their targets. On the other hand, collective results of textile sector point out the consistency in efficiency in pre and post-merger periods. Exclusive performance shows that Shehzad Textile Mills Ltd., Colony Mills Ltd. and Dawood Lawarencepur Ltd. enhanced their efficiency after mergers and acquisitions and Saritow Spinning Mills Ltd., Colony Mills Ltd. and Kohinoor Weaving Mills Ltd. failed to expand their efficiency.

DISCUSSION

We can say that mergers and acquisitions are measured as corporate events which help organizations to create collaboration and justifiable economic advantages. Poor growth organizations have the opportunity to fill their pockets with these advantages after performing this action. A number of business entities accomplished this event all over the world as well in Pakistan. A lot of international studies disclosed significant results after mergers and acquisitions. Similarly, this study also indicated that Pakistani banking and textile sectors improved their efficiency after mergers and acquisitions.

CONCLUSIONS

The present study purposes to evaluate pre and post-mergers and acquisitions efficiency of banking and textile sectors of Pakistan for the period of 2004 to 2012. The efficiency of various banks and textile firms has been estimated on the basis of data envelopment analysis. Based on the results of data envelopment analysis, the average results of the study indicate that banking and textile sectors are efficient after mergers and acquisitions as compared to pre-mergers and acquisitions. On the basis of single results, Trust Bank, Crescent Bank, Faysal Bank and Standard Chartered Bank from banking sector and Shehzad Textile Mills Ltd., Colony Mills Ltd. and Dawood Lawarencepur Ltd. from textile sector improved efficiency after mergers and acquisitions. But individual results show that Summit bank, National Investment Bank, Jahangir Siddiqui Investment Bank and Atlas Bank miscarried to enhance their efficiency after mergers and acquisitions. On the other hand, Saritow Spinning Mills Ltd., Colony Mills Ltd. and Kohinoor Weaving Mills Ltd. from the textile sector failed to improve post-merger efficiency.

Recommendations

On the basis of this study, it is recommended that organizations should go to mergers and acquisitions as a business enlargement strategy. Organizations should also use other corporate expansion strategies such as retrenchment and reorganizing. After implementing mergers and acquisitions strategy, well growth organizations can increase their business performance by saving their taxes. In Pakistan, the trend of mergers and acquisitions is very low as compared to other countries of the world and a lot of work still needed to do to enhance this rate in Pakistan. Especially in Pakistan, low growth organizations must keep an eye on this strategy to join hands for the betterment of their existence in the market.

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