Impact of Mergers and Acquisitions on the Financial Performance of Bidding Banks in Pakistan

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Abstract
Merger and acquisition (M&A) is a growth policy for business to achieve desire objectives. Its importance is showed by the number of transaction in the previous year. Thus, this study is conducted to know about the influence of M&A on firm performance. The current study is to identify the influence of M&A (pre and post) on bidding banks in Pakistan. And then to analyze factors of firm, industry and country-level effect the financial performance of M&A firms. For this purpose, selected 51 listed bidder banks during 2002-2013 and used descriptive statistics, Z test, and regression models for analysis. Results show that M&A is failed to produce a fruitful result for bidding banks in Pakistan. Hence, recommended that direction and practical implication are provided to banks, investors, and policymakers to get knowledge about M&A to secure their investment from financial losses.

Key Words:
Merger and Acquisition, Bidder Banks, Firm Performance

Introduction
M&A was considered as a business debatable phenomenon for developed nations (Dilshad, 2013) but during a period from 1992-2002, it spread all over the world. M&A’s is the main source for resource producing and collocating in the devolving and developed countries, therefore its most debatable topic in recent. M&As is highly growing at economic zone (Shakoor et al., 2014). The growth of the trend of M&A’s are highly judge in USA, the values of the M&A’s transactions in UK were 220 billion pounds consisting of 2300 deals which rose to 500 billion pounds consisting of 5000 deals (http://www.imaainstitute.org/ resources/statistics) in 2007-2008. Internationally, according to 2015, it declares that firms stated more than 44,000 transactions which value more than 4.5 trillion USD. Therefore, the researchers motivate to work more. Based on protruding M&A’s theories, many empirical researchers examined M&A’s and firm performance (FP). In the beginning, studies concentrate whether M&A’s are value-creating or reducing practices and have reported inconsistent and varying results. The studies reported three major varying perspectives on performance such as significant deterioration and improvement, and insignificant changes in post-period performance.

The literature failed to offer a definitive explanation for such varying and puzzling results. Sometimes banks invest in small and less efficient products to boost their managerial skills and also want to get improvement in the profit (Akhavein et al., 1997). But according to portfolio shift there is no evidence in cost efficiency improvement. Financial advisor and economists are failed to identify reasons behind varying and puzzling results of M&A’s for financial institutions. According to (Piloff & Santomero, 1998) main reason for M&A practice is an agency problem. They explain that financial institution is not sure about the techniques which would be needed in future. That’s why the M&As allow them to diversify their business. More recently, the literature in the subject of M&A’s has started acknowledging the fact that variations in the results of M&As do not simply have its roots in financial and operational issues or other legal conflicts (Vazirani, 2015). The research in M&A’s field is now diverted to examine other aspects such as industry and country-level factors to note its consequences behind varying results (Anderibom & Obute, 2015; Hegbrant & Hellberg, 2014). Similarly, Uzhegova (2015) inferred that country and industry level factors are more valuable for financial institutions.
Problem Statement
The complex phenomenon of M&A’s remains mystified from inception. Studies are conducted to examine the pre and post-M&As and FP (Chawla, 2014). M&A’s are the main option for the firm to avoid uncertain situations. According to previous studies and background of the problem, this paper aims to highlight the issue related to M&A’s in three distinctive viewpoints. Firstly, banks get involved in the deal of M&A’s is, whether bank merged or acquired at the end results in improving and maximizing financial performance? The current research main objective is to find answers to these questions. Secondly, previous literature on M&A’s has studied effect of M&As on firm-level variables only. However, very little attention has been given to industry and country-level variables. Hence, the study recognizes the need to consider industry, country and firm-level variables.

Objectives
To examine the financial performance of bidding banks in the pre & post-M&As in Pakistan.
To examine the overall significant determinants that affect bidding banks financial performance in pre & post-M&As at the firm, industry, and country-level in Pakistan.

Literature Review
Performance of the company relate in M&A’s deals remained for many years. Studies concern, whether M&A’s deals are valued ornamental or finishing strategy for firms is still of immense significance and enduring discussion. The prior literature has made numerous efforts to define this concern to have clear understanding of whether M&A’s transactions have recorded superior performance or not. Since only such increase in performance can validate M&A’s as mean of corporate strategic expansion (Ramakrishnan, 2008). To study performance of bidding banks and to have clear understanding of M&A’s is strategy of value-enhancing or destroying for the bidding banks, the present study uses two measurement approaches i.e. accounting performance and long term market approaches.

In the literature of M&A’s, accounting performance is mainly judged through profitability (Kouser & Saba, 2011). McDougall and Round (1986) are considered to be the earlier researchers who investigated the effect of M&A’s by using profitability in Australia. According to the output which clearly shows that horizontal type of M&A’s, is more valuable. It’s also identified that performance of merged firm is low as compared to non-merged firm. In addition, performance of these firms after M&As are decreased. As per data from US, Australia, and Canada, the studies found that performance of such firms that involved in activities of M&A’s are deteriorated (Andre et al., 2004). Similarly, there are some studies which conducted in developing countries like Taiwan, India, Malaysia, and Thailand the result of these studies also show decrease in merged FP (Lai et al., 2015).

However, Healy et al. (1992), identified that post merged firms have increased in their profitability Likewise, Andrade et al. (2001) find that due to M&A there is little positive difference occurred in selected firms FP. Similarly, other studies provide positive effects on FP. Additionally, Liu and Tripe (2003) found that merged banks had efficiency gains in the post M&A’s period. Other studies that reported zero and insignificant increase in the FP due to M&A, like Badreldeen and Kalhoefer (2009) and Abd-Kadir et al. (2010) reported insignificant result of M&A on FP. Furthermore, Pillania and Kumar (2009) found that the profitability in the post M&A’s, on average, showed zero progress. In pursuance to Pakistani scenario, studies have documented mixed results.

Long Term Market Approach
Current study is used Tobin Q for long term market performance analysis (Hamid, 2010). This measurement is developed by Brainard and Tobin (1968). They argue that it is the ration of market to replacement values of physical assets. It is mostly used by the production companies (Chung & Pruitt, 1994). However, this method as proxy for long market performance has gained little attention.

Besides, firms with high qs considered to have good opportunities for investment (Lang et al., 1989). Moreover, reported that such firms have higher potential for growth (Tobin, 1969) and indicate management has performed well (Lang et al., 1989). According to some researcher they are stated that Tobin’s Q has mostly usable technique of firm financial performance (Erickson & Whited, 2006).

Factors of Financial Performance
The literature of corporate finance used different determinants of financial performance to explain the M&A’s impact on FP of the firms. Literature attempted to explain these determinants which directly or indirectly associated (Hegbrant & Hellberg, 2014).
Conceptual Framework

![Diagram showing relationship among variables for financial performance](image)

**Independent Variables**
- Firm-level variables
  - i. CA
  - ii. AQ
  - iii. Lev
  - iv. Liq
  - v. Size
- Industry-level variables
  - i. HHI
  - ii. Dynamism
  - iii. Munificence
- Country-level variables
  - i. Control
  - ii. Corruption (COC)
  - iii. Rule of Law (RL)
  - iv. Political Instability (P.Ins)

**Dependent Variables**
- i. ROA
- ii. Tobin’s Q

**Methodology**
Data used in term of numbers and numeric. The researchers not only describe the data but also discover the data link between variables. Therefore, the researchers design the study to get output through specific analysis and statistics. Punch (2013) suggested that quantitative methodology is more valuable. The current study used accounting data.

**Population and Sampling**
The current research study is conducted on all M&A’s deals announced during 2002-2013 in the banking sector of Pakistan. Used 18 years of data from 1999-2016 covering a sample period from 2002-2013. Additionally, the selection of 3 years period after and before M&A’s for the current study is consistent with the studies conducted by Hamid (2010) and Ghosh (2001). Based on the above-mentioned criteria, banks selection is made on the following conditions. Firstly, the bidding banks must be scheduled banks. Secondly, the study considers only those
M&A’s deals in which the bidding bank must belong to banking sector. Lastly, the study only assumes domestic deals that occurred within the geographical boundaries Pakistan.

Data and sources
Table 1:

<table>
<thead>
<tr>
<th>S/NO</th>
<th>Data Types</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identification of M&amp;A’s Deals</td>
<td>CCP database</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KSE website</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SBP and KSE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual reports</td>
</tr>
<tr>
<td>2.</td>
<td>Financial data and stock market data</td>
<td>DataStream database</td>
</tr>
<tr>
<td></td>
<td>Data about country-level factors (COC, RL, and P.Ins)</td>
<td>The World Bank(<a href="http://www.govindicators.org/">www.govindicators.org/</a>)</td>
</tr>
</tbody>
</table>

Variables
The dependent and independent variables are selected from the extensive empirical literature. For accounting method this study used profitability as dependent variable and it is proxy of performance. However, for shareholder’s wealth, assumes cumulative abnormal return as dependent variable.

Dependent Variable for Financial Performance
Under the accounting performance approach, the performance of M&A’s is judged by comparing different financial ratios in pre and post-M&As period. It is opposite to the event study method that measures the returns on M&A’s based on daily, weekly and monthly basis. Maximum studies based on accounting measure approach determine M&A’s effect on performance over a longer period such as Healy et al. (1992, 1997) used pre and post period of 5 years.

Long Term Market Performance
Furthermore, for more than one-year market recital, the current study employs Tobin’s Q Song et al. (2008); Hamid (2010).

\[ TQ = \frac{BMVE + BPS + BDCA}{BASET} \]

Where BMVE is the product of share price of bidding firms and the number of outstanding common stocks. Moreover, BPS shows outstanding preferred stock value, BDCA is the combination of long-term and short-term liabilities net of its short-term assets and BASET is assets book value.

Independent Variables for Financial Performance
The independent variables of the present study are grouped as firm, industry and country-level variables. The firm-level variables are asset quality, capital adequacy (CA), leverage (Lev), liquidity and size. However, the industry-level variables include Herfindahl- Hirschman Index, munificence and dynamism. While country-level variables include COC, RL, and P.Ins.

Table 2: Explanation of Independent Variables of Accounting Method

<table>
<thead>
<tr>
<th>Variables</th>
<th>Explanations</th>
<th>Empirical evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm-level variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>Total capital divided by total assets.</td>
<td>Shah and Khan (2017)</td>
</tr>
<tr>
<td>Lev</td>
<td>Ratio of Tier 1 capital and total assets.</td>
<td>Ahmed &amp; Ahmed (2014)</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Ratio of total loan and total customer deposit.</td>
<td>Sulaiman (2012)</td>
</tr>
</tbody>
</table>
Analysis are represent the standard error of the regression coefficient from after and before M&A’s model where test formula for the bidding banks pre and post analysis. (Clogge et al., 1995) and (Paternostera et al., 1998), the current study employed Z test is used to examine whether the change in regression coefficients from pre to post period based on Z test. Equation 2 and 3 provides an overall estimated regression model for bidder bank’s financial recital in the pre-M&As period.

\[
ROA_{pre} = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 LEV + \beta_4 UQ + \beta_5 SIZ + \beta_6 HHI + \beta_7 MUNIF + \beta_8 DYNM + \beta_9 COC + \beta_{10} RL + \beta_{11} PI + \varepsilon_i
\]  
(2)

\[
TQ_{pre} = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 LEV + \beta_4 UQ + \beta_5 SIZ + \beta_6 HHI + \beta_7 MUNIF + \beta_8 DYNM + \beta_9 COC + \beta_{10} RL + \beta_{11} PI + \varepsilon_i
\]  
(3)

Where, ROA pre, and TQ pre represents profitability of the bidding banks.

Equation 4 and 5 finally provides the overall estimated regression model for bidder bank’s FP in the post-M&As period.

\[
ROA_{post} = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 LEV + \beta_4 UQ + \beta_5 SIZ + \beta_6 HHI + \beta_7 MUNIF + \beta_8 DYNM + \beta_9 COC + \beta_{10} RL + \beta_{11} PI + \varepsilon_i
\]  
(4)

\[
TQ_{post} = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 LEV + \beta_4 UQ + \beta_5 SIZ + \beta_6 HHI + \beta_7 MUNIF + \beta_8 DYNM + \beta_9 COC + \beta_{10} RL + \beta_{11} PI + \varepsilon_i
\]  
(5)

Where, ROA post, and TQ post represents profitability of the bidding banks.

Regression Coefficients Comparison (Z-test)

Current study determines the difference in the regression coefficients from pre to post period based on Z-test. Z-test is used to examine whether the change in regression coefficients is because of independent variables. Following (Clogge et al., 1995) and (Paternostera et al., 1998), the current study employed Z-test. Equation 6 provides the Z-test formula for the bidding banks pre and post analysis.

\[
Z = \frac{\beta_2 - \beta_1}{\sqrt{(SE\beta_2)^2 + (SE\beta_1)^2}}
\]  
(6)

where \(\beta_2\) and \(\beta_1\) are the regression coefficient from the post and pre M&A’s model respectively, SE\(\beta_2\) and SE\(\beta_1\) are represent the standard error of the regression coefficient from after and before M&A’s model respectively.

Analysis
Table 3. Company, Industry and Country level determinants of financial performance proxied by ROA based on OLS

<table>
<thead>
<tr>
<th>Coefficient (Pre)</th>
<th>Coefficient (Post)</th>
<th>Difference (Post-Pre)</th>
<th>Z-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.49 (0.20)</td>
<td>-5.38 (−3.37) ***</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>0.76 (3.80) ***</td>
<td>0.65 (1.94) *</td>
<td>-0.11</td>
</tr>
<tr>
<td>AS</td>
<td>0.46 (1.64)</td>
<td>0.32 (1.89) *</td>
<td>-0.14</td>
</tr>
<tr>
<td>Lev</td>
<td>0.18 (3.38) ***</td>
<td>0.44 (2.03) **</td>
<td>0.26</td>
</tr>
<tr>
<td>Liq</td>
<td>0.15 (0.50)</td>
<td>-0.04 (−0.15)</td>
<td>-0.19</td>
</tr>
<tr>
<td>Size (Siz)</td>
<td>0.50 (3.27) ***</td>
<td>0.29 (2.33) **</td>
<td>-0.21</td>
</tr>
<tr>
<td>HHI</td>
<td>-0.002 (−2.61) **</td>
<td>0.0006 (2.98) ***</td>
<td>0.002</td>
</tr>
<tr>
<td>Munificence (Muni)</td>
<td>0.24 (0.48)</td>
<td>0.77 (2.74) ***</td>
<td>0.53</td>
</tr>
<tr>
<td>Dynamism (Dyn)</td>
<td>-0.85 (−2.02) **</td>
<td>1.13 (2.93) ***</td>
<td>1.98</td>
</tr>
<tr>
<td>COC</td>
<td>0.07 (1.76) *</td>
<td>0.08 (2.43) **</td>
<td>0.01</td>
</tr>
<tr>
<td>RL</td>
<td>0.01 (0.27)</td>
<td>-0.07 (−1.90) *</td>
<td>-0.08</td>
</tr>
<tr>
<td>P.Ins</td>
<td>-0.11 (−1.92) *</td>
<td>-0.13 (−2.56) **</td>
<td>-0.02</td>
</tr>
<tr>
<td>F statistics</td>
<td>5.94</td>
<td>6.93</td>
<td></td>
</tr>
<tr>
<td>P-value (F)</td>
<td>0.00***</td>
<td>0.00***</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.18</td>
<td>0.43</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 indicates that Lev, Herfindahl-Hirschman Index (HHI), munificence, dynamism, and COC have improved the financial performance of the bidding banks in the post-M&As period. This change in coefficients from 0.18 to 0.44 for Lev shows 26%, -0.002 to 0.0006 for HHI shows 2%, 0.24 to 0.77 for munificence shows 53%, -0.85 to 1.13 for dynamism shows 198% and 0.07 to 0.08 for COC shows 1% improvement in the performance of bidding banks. In pre and post period Lev of firms, COC, HHI, and dynamism are statistically significant. However, munificence is statistically insignificant in the pre and significant in post.

However, CA, asset-quality, liquidity, size, RL and P.Ins decreased the financial performance of the bidding banks in the post-M&A’s period. Moreover, the results of the Z-test confirmed that differences in coefficients from pre to post M&A’s period. While the difference in coefficients for HHI is statistically significant. The difference in coefficients for COC and P.Ins are statistically confident.

Long Term Performance

Table 4: Firm, Industry and Country level determinants of financial position proxied by TQ based on OLS

<table>
<thead>
<tr>
<th>Coefficient (Pre)</th>
<th>Coefficient (Post)</th>
<th>Difference (Post-Pre)</th>
<th>Z-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>−0.38 (−0.12)</td>
<td>−7.23 (−2.92) ***</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>0.78 (2.62) **</td>
<td>0.58 (1.58)</td>
<td>-0.2</td>
</tr>
<tr>
<td>AS</td>
<td>−0.39 (−1.17)</td>
<td>0.63 (2.44) **</td>
<td>1.02</td>
</tr>
<tr>
<td>Lev</td>
<td>0.29 (4.19) ***</td>
<td>0.62 (2.43) **</td>
<td>0.33</td>
</tr>
<tr>
<td>Liq</td>
<td>−0.27 (−0.64)</td>
<td>−0.49 (−1.50)</td>
<td>-0.22</td>
</tr>
<tr>
<td>Size (Siz)</td>
<td>0.42 (1.78) *</td>
<td>0.41 (2.65) **</td>
<td>-0.01</td>
</tr>
<tr>
<td>HHI</td>
<td>−0.003 (−2.76) ***</td>
<td>0.001 (2.32) **</td>
<td>0.004</td>
</tr>
<tr>
<td>Munificence (Muni)</td>
<td>1.24 (2.09) **</td>
<td>1.25 (2.57) **</td>
<td>0.01</td>
</tr>
<tr>
<td>Dynamism (Dyn)</td>
<td>−1.24 (−2.77) ***</td>
<td>0.28 (0.44)</td>
<td>1.52</td>
</tr>
<tr>
<td>COC</td>
<td>0.07 (1.82) *</td>
<td>0.11 (2.34) **</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Table 4 specifies that asset quality, Lev, HHI, munificence, dynamism, and COC have improved the financial performance of the bidding banks in the post period. This change in coefficients from -0.39 to 0.63 for asset quality shows 102%, 0.29 to 0.62 for Lev shows 33%, -0.003 to 0.001 for HHI shows 4%, 1.24 to 1.25 for munificence shows 1%, -1.24 to 0.28 for dynamism shows 152% and 0.07 to 0.11 for COC shows 4% improvement in the performance of bidding banks. The asset quality is statistically significant in the post, moreover, Lev in pre and post period statistically significant, HHI and munificence are statistically significant in the pre and post period. However, dynamism is statistically significant only in the pre-period of the study and finally, in pre and post period COC is statistically confident. In addition, concluded that capital adequacy, liquidity, size, RL and P.Ins has decreased the financial performance of the bidding banks in the post period. Additionally, the results of the Z-test confirmed that difference in coefficients from pre to post period is statistically significant for HHI while the difference in coefficients for Lev, munificence, and P.Ins are statistically significant. Similarly, the difference in coefficients for size and COC are statistically weighty.

**Conclusion**

In this paper examined the impact of M&A on the FP of bidder banks in Pakistan. Therefore, selected a sample of 51 banks listed on PSX. On the basis of study requirements selected time period from 2002 to 2013. Moreover, used Z-test, summary statistics and Regression models for analyses and results show that after M&A the financial performance of sample banks in Pakistan deteriorate. Hence, recommended for all concern authorities to apply proper and required policies to reduce the chances of losses of investors’ investment in such businesses.

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>P-value (F)</th>
<th>Adj R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>0.06</td>
<td>0.14</td>
<td>-1.16</td>
</tr>
<tr>
<td>P.Ins</td>
<td>-0.13</td>
<td>0.00</td>
<td>-1.16</td>
</tr>
<tr>
<td>Lev</td>
<td>-0.43</td>
<td>0.00</td>
<td>-1.16</td>
</tr>
<tr>
<td>HHI</td>
<td>0.18</td>
<td>0.00</td>
<td>-1.16</td>
</tr>
<tr>
<td>Munificence</td>
<td>0.32</td>
<td>0.00</td>
<td>-1.16</td>
</tr>
<tr>
<td>Dynamism</td>
<td>-0.02</td>
<td>0.00</td>
<td>-1.16</td>
</tr>
<tr>
<td>COC</td>
<td>-0.10</td>
<td>0.00</td>
<td>-1.16</td>
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<tr>
<td>F statistics</td>
<td>5.98</td>
<td>0.00</td>
<td>0.15</td>
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<tr>
<td>P-value (F)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.39</td>
</tr>
<tr>
<td>Adj R-squared</td>
<td>0.15</td>
<td>0.00</td>
<td>0.39</td>
</tr>
</tbody>
</table>
References


