Board Mix and Firm Performance

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Abstract
This study uses the five year data of listed companies in Pakistan to analyze the effect of duality and board organization on firm’s performance, which involves three variables, i.e., market-based Tobin Q, accounting-based ROA and Economic Value Added. The results indicated that independent variables have no effect on firm’s performance in terms of Tobin Q, ROA and EVA. When using Tobin Q, ROA and EVA as outcome variables, the results indicated that duality has no influence on firm’s performance; supervisory directors, outside independent directors and inside directors, which are variables of board structure, also have no significant effect on firm’s performance; board size and financial leverage have positive effect on firm’s performance.

Keywords: Board structure, CEO/Chairman duality, firm’s performance

1- INTRODUCTION

Corporate governance concerns the effect of board structure on firm’s performance. Since shareholders elect board members, major shareholders have more advantages when electing directors and supervisory directors because they take over the majority of share rights, which means, they can choose and appoint the person of their choice as directors and supervisory directors. Therefore, major shareholders holding majority of share rights can control the company by controlling the majority of directors and supervisory directors; therefore, influencing the operation of the company. The effectiveness of corporate governance will influence the business performance of the company.

Code of corporate governance in Pakistan 2002 and revised in 2012, which further emphasis the composition of board of directors in listed companies and set the two third majorities of non-executive directors in the board with truly independent definition.

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In Pakistan, a large number of studies have explored the issue of corporate governance, focusing mainly on (1) corporate governance and performance (Yasser, 2011; Javaid & Iqbal, 2010; Ghani & Ashraf, 2005), (2) establishment of corporate governance index (Yasser, 2011 and Javaid & Iqbal, 2010). The implementation of corporate governance in practice deserves exploration. This article investigates the influence of leadership structure and board organization on firm’s performance by using market based performance measure, accounting based performance measure and economic profit called EVA. This study takes five-year data of Karachi stock exchange 100 indexed as research samples to explore the corporate governance of Pakistani companies for the purpose of understanding the influence of board structure on firm’s performance in corporate governance in terms of practice.

2- LITERATURE REVIEW

Three major theories explain corporate governance: (1) agency theory, (2) stewardship theory, and (3) resource dependence theory. (1) Agency theory has two major aspects, i.e., the effect of the board composition on firm’s performance and the effect of board leadership structure (i.e., duality) on firm’s performance (Nicholson & Kiel, 2007). Board of directors supervises primarily corporate operation.

Additional outside directors can supervise corporate managers to prevent them from pursuing their own interests. (2) Stewardship theory considers managers as reliable, high-level executives who will not exhibit behaviors that would be unfavorable for shareholders, therefore inside directors can achieve better firm’s performance and create more profit for shareholders. (3) Resource dependence theory suggests that board members have connections to important external resources and can maximize the firm’s performance (Nicholson & Kiel, 2007).

Board of directors is the most important component of corporate governance; therefore, we need to understand the board structure. Finegold et al. (2007) pointed out that board structure is duality, consisting of inside and outside directors, board size, board share ownership and directors' remuneration.

The condition of board structure will influence firm performance. Therefore, most studies on corporate governance and firm’s performance studied the influence of board of directors on firm’s performance.

Bonn (2004), Bonn et al. (2004), and Jackling & Johl (2009) have analyzed firm’s performance and board structure; Abidin et al. (2009) have analyzed values of board of directors and firm’s performance; Luan and Tang (2007) have analyzed outside directors and firm’s performance. All of the above studies used board structure or a certain property of it to target different firm performance variables assessed with Tobin's Q, ROA, or ROE to understand the effects of board structure on firm’s performance. Many proxy variables are being used to evaluate firm’s performance; however, Tobin's Q, ROA, and ROE are most frequently used proxy variables (Kiel & Nicholson, 2003; Luan & Tang, 2007; Huang, 2010; and Lam & Lee, 2008).

The two major subjects of agency theory are concerned with (1) the effect of duality and (2) the effect of board organization on firm’s performance (Nicholson & Kiel, 2007). (1) Duality concerns leadership structure in terms of duality or the service by separate persons; duality will
reduce the supervising effectiveness of board of directors (Yammeesri & Herath, 2010). Concerning board organization, because Pakistan has the two-tier board system, board of directors is composed of executive directors and supervisory directors. Supervisory directors' major responsibility is to audit, control, and prevent fraudulent behaviors of directors while executive directors' major duty is to supervise CEOs' management of the firm (Huang, 2010). Finegold et al. (2007) have analyzed 105 periodicals and found that in terms of board structure, duality has a vague influence on firm's performance. No consistent results have been reported in terms of proportion between inside and outside directors. Regarding board size, some studies showed positive correlation while others showed negative correlation. The studies indicate the need to clarify many areas of influence of board and share structure on firm's performance. Therefore, the influence of board structure on firm's performance is still a subject that deserves attention. This paper will discuss the influence of each aspect of board structure on firm's performance separately.

3- HYPOTHESES

Duality: The effect of duality is indistinct, with some studies showing positive result while others showing negative results (Finegold et al., 2007). Jermias (2007) found that duality has a negative effect on firm’s performance. According to agency theory, when chairman of the board also serves as CEO, the effectiveness of board of directors' supervision of CEOs will be reduced and the chairman of the board might have more control over fulfilling private interests (Finkelstein & D'Aveni, 1994). Therefore, duality is not good for firm's operation, suggesting that it will have a negative influence. Therefore, this study proposed the following hypothesis:

H1a: Duality relates negatively to firm's performance.

However, Kota and Tomar (2010) pointed out that duality significantly influences firm's performance.

According to stewardship theory, inside directors will create higher profit for shareholders to achieve better performance (Nicholson & Kiel, 2007). Chiang and Lin (2007) mentioned that better performance could be achieved when the chairman of the board also serves as CEO due to effective and explicit leadership with unity of command. The above findings indicated that duality is good for firm's operation and positively influences firm's performance; therefore, the following hypothesis is proposed:

H1b: Duality relates positively to firm's performance.

Board Size: The number of board members will influence the efficiency of board operation. Jensen (1993) pointed out that when the number of board members exceeds seven or eight, it weakens the function of the board and allows CEO to easily control the board. When the number of board members is small, the board’s communication improves and board members are more likely to reach consensus. Chiang and Lin (2007) considered that smaller board of directors could reduce the problem of bureaucracy and thus enable a better functioning. Based on these studies, smaller board of directors will have better communication and will reach consensus faster. Therefore, this study proposed the following hypothesis:

H2: Board size relates negatively to firm's performance.
Supervisory Directors: Board of directors in Pakistan is composed of executive directors and supervisory directors. In such a two-tier board system, primary duties of supervisory directors is to supervise how directors conduct their work while supervising the performance of firm and reviewing firm's business and financial status. Therefore, the major function of supervisory directors in Pakistan is to audit, control, and prevent directors' disloyal behaviors (Huang, 2010). Dahya et al. (2003) pointed out that the effectiveness of supervision of the majority of supervisory directors is unsatisfactory. Huang (2010) reported that the number of supervisory directors correlates negatively with firm's performance, suggesting that firm's performance decreases with increasing number of supervisory directors. Following hypothesis is proposed:

H3: The number of supervisory directors relates negatively to firm's performance.

Outside independent directors: Agency theory points out that outside directors can supervise high-level executives and control whether they seek their own interests, consequently reducing the agency's cost (Fama, 1980). Bonn (2004) pointed out that outside independent directors in Australian companies are effective indicators of Australian boards of companies, correlating positively with the company's performance. Huang (2010) pointed out that outside directors in banks correlate positively with banks' financial performance. Luan and Tang (2007) reported that outside independent directors correlate positively with firm's performance. From the above discussion, the number of outside independent directors seems to be positively related to firm's performance. Therefore, this study proposes the following hypothesis:

H4: The number of outside independent directors relates positively to firm's performance.

Inside Directors: Finegold et al. (2007) reviewed 105 articles and pointed out that the ratio between inside and outside directors affects firm's performance. There are no consistent findings to conclude that increasing outside directors would increase firm's performance.

Wagner et al. (1998) reviewed 29 articles in a meta-analysis and discovered that increasing the number of both inside and outside directors has a positive influence on firm's performance. Stewardship theory thinks that inside directors can achieve better firm's performance and create more profit for shareholders (Nicholson & Kiel, 2007). Therefore, the following hypothesis is proposed:

H5: The number of inside directors relates positively to firm's performance.

4. RESEARCH VARIABLES

Board variables

Duality: Duality means that one individual takes the positions of both the chair of the board and CEO. Duality will be coded as a dummy variable in this study. When the chairman of the board also serves as a CEO, the variable will be coded as 1, otherwise it will be 0.

Board Size (B-size): Board size reflects the total number of directors serving on the board of directors.
Supervisory Directors (Sup-director): Number of supervisory directors serving on the board of directors.

Outside Independent Directors (Outs-director): These include directors or supervisory directors not served by internal personnel, members of families controlling the company, or relatives/friends of families controlling the company, but by external persons who have no relationship with the company.

Inside Directors (Ins-director): When a director serves concurrently as manager, he is an inside director. Inside directors take positions of high-level executives concurrently and participate in the companies’ daily business operation (Yammeesri & Herath, 2010; Johnson et al., 1996).

Performance Variables

This study adopts three performance variables that most researchers use to evaluate firm’s performance, including market-based Tobin Q and accounting-based ROA and ROE (Abdullah, 2004; Lam & Lee, 2008; Huang, 2010).

EVA: Economic Value Added is classified as the economic performance of the companies.

\[
EVA = \text{Operating Profit} - (\text{WACC} \times \text{Invested Capital}) \quad (1)
\]

Tobin Q: Tobin Q is a definition proposed by Brainard and Tobin (1968), i.e., the ratio between market value and replacement cost of corporate assets. This study adopts the proximate calculation formula of Tobin Q proposed by Chung and Pruitt (1994). The formula is as follows:

\[
\text{Tobin Q} = \frac{(\text{MVE} + \text{PS} + \text{DEBT})}{\text{TA}} \quad (2)
\]

“Where MVE is the product of a firm’s share price and the number of common stock shares outstanding, PS is the liquidating value of the firm’s outstanding preferred stock, DEBT is the value of the firm’s short-term liabilities net of its short-term assets, plus the book value of the firm’s long-term debt, and TA is the book value of the total assets of the firm.” (Chung and Pruitt, 1994)

ROA: Return on assets used as the accounting based performance measure of the firm and calculated as:

\[
\text{ROA} = \frac{(\text{Net Profit} / \text{Average Assets})}{\%} \quad (3)
\]

Control Variables

Firm size (F_Size): Majamdar (1997) pointed out that firm size is positively correlated with firm’s performance. This article takes natural logarithm of total assets as control variable.

Financial Leverage (FL): I include a control variable for the debt-equity ratio that measures the degree of a company’s financial leverage. It is defined as the ratio of a firm’s total debt to total capital, where total capital equals total debt plus equity.

\[
FL = \frac{\text{Long Term Debts}}{\text{Total Assets}} \quad (4)
\]
5- ANALYSES AND FINDINGS

To test the relationships suggested in the hypotheses stated in the conceptual framework, the SPSS 20 statistical program was employed. The analysis included descriptive statistics and multiple regression analysis.

Data

The sample size to test the hypothesis was taken from the top 100 companies of Karachi Stock Exchange (KSE-100 index).

I have taken financial data of the sample companies and their corporate governance variables from their annual reports from 2007 to 2011 that also available on the official website of Karachi Stock Exchange and/ or corporate websites of the sample companies. The annual reports used for extraction of data were the previous completed financial year.

Table 1 summarizes the descriptive statistical data for independent variables, dependent variables, and control variables. Table 2 summarizes the results of the regression analysis of variables.

6- Findings

Tobin Q, ROA, and EVA were used as dependent variables in the regression equation analysis to verify the five research hypotheses. Table 2 summarizes the results of the regression analysis. The Durbin Watson values of independent variables in three regression models range from 2.034 and 1.783; therefore, there is no problem of autocorrelation. However, Durbin-Watson is a test for first orders autocorrelation. It tests only for a relationship between an error and its immediate previous value.

Descriptive statistics of table 1 indicates that the mean value of duality is 0.85 which indicates that 85% sample companies having separate position of CEO and Chairman. The minimum number of board members in sample companies is 4 and the maximum is 15 with mean value of 8.75. Other results of descriptive statistics are also pertained in table 1.

Table 1: Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duality</td>
<td>0</td>
<td>1</td>
<td>0.85</td>
<td>0.361</td>
</tr>
<tr>
<td>B-size</td>
<td>4</td>
<td>15</td>
<td>8.75</td>
<td>2.016</td>
</tr>
<tr>
<td>Sup-director</td>
<td>0</td>
<td>9</td>
<td>0.77</td>
<td>1.532</td>
</tr>
<tr>
<td>Outs-director</td>
<td>0</td>
<td>0</td>
<td>4.89</td>
<td>2.388</td>
</tr>
<tr>
<td>Ins-director</td>
<td>0</td>
<td>9</td>
<td>2.67</td>
<td>1.887</td>
</tr>
<tr>
<td>F_Size</td>
<td>5.11</td>
<td>9.06</td>
<td>7.366</td>
<td>0.703</td>
</tr>
<tr>
<td>FL</td>
<td>0</td>
<td>3.61</td>
<td>0.1479</td>
<td>0.268</td>
</tr>
<tr>
<td>EVA</td>
<td>-949.24</td>
<td>46.26</td>
<td>-17.655</td>
<td>73.48</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.88</td>
<td>0.53</td>
<td>0.0697</td>
<td>0.1345</td>
</tr>
<tr>
<td>Tobin Q</td>
<td>0.05</td>
<td>9.16</td>
<td>1.0345</td>
<td>1.0948</td>
</tr>
</tbody>
</table>

Note: n=476; Duality: is a dummy variable that is set to 1 when there is CEO duality and 0 otherwise. B-size: the number of board members. FL: Financial Leverage. EVA: Economic Value Added.
The first regression model used EVA as dependent variable, R-squared value is 0.087 and adjusted R-squared = 0.078. The control value firm size is negatively associated with EVA. Duality, board size, supervisory board, outside director, inside director and financial leverage has no significant association with economic value added.

The second regression model used ROA as dependent variable, R-squared is 0.059 and adjusted R2 = 0.045. The control variable firm size and financial leverage are negatively associated with firm’s performance in terms of ROA, and having significant influence.

Duality did not show an association and had no significant influence on ROA of firm’s performance, both the hypothesis H1a and H1b are rejecting. Board size also not correlated and had no significant influence on ROA of firm’s performance, rejecting hypothesis H2. Supervisory directors also did not found any association with ROA and had no significant influence ROA of firm’s performance, rejecting hypothesis H3.

Outside directors variable also having no association with ROA of firm’s performance and had no significant influence, rejecting hypothesis H4. Inside directors’ variable having no association with ROA and had no significant influence on ROA of firm’s performance, rejecting hypothesis H5.

Table 2: Regression model analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model - 1 EVA</th>
<th></th>
<th>Model - 2 ROA</th>
<th></th>
<th>Model - 3 Tobin Q</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prob.</td>
<td>t-value</td>
<td>Prob.</td>
<td>t-value</td>
<td>Prob.</td>
<td>t-value</td>
</tr>
<tr>
<td>Duality</td>
<td>0.341</td>
<td>-0.954</td>
<td>0.073</td>
<td>-1.798</td>
<td>0.475</td>
<td>-0.715</td>
</tr>
<tr>
<td>B_Size</td>
<td>0.901</td>
<td>0.124</td>
<td>0.765</td>
<td>0.299</td>
<td>0.374</td>
<td>-0.889</td>
</tr>
<tr>
<td>Sup-director</td>
<td>0.372</td>
<td>0.894</td>
<td>0.764</td>
<td>-0.301</td>
<td>0.479</td>
<td>-0.708</td>
</tr>
<tr>
<td>Outs-director</td>
<td>0.539</td>
<td>-0.614</td>
<td>0.622</td>
<td>0.493</td>
<td>0.996</td>
<td>-0.005</td>
</tr>
<tr>
<td>Ins-director</td>
<td>0.160</td>
<td>-1.407</td>
<td>0.517</td>
<td>-0.348</td>
<td>0.923</td>
<td>0.096</td>
</tr>
<tr>
<td>F-Size</td>
<td>0.000</td>
<td>-6.194</td>
<td>0.000</td>
<td>-4.218</td>
<td>0.000</td>
<td>-8.311</td>
</tr>
<tr>
<td>FL</td>
<td>0.263</td>
<td>1.120</td>
<td>0.009</td>
<td>-2.617</td>
<td>0.000</td>
<td>5.257</td>
</tr>
<tr>
<td>R2</td>
<td>0.087</td>
<td>0.059</td>
<td>0.185</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.078</td>
<td>0.045</td>
<td>0.172</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-value</td>
<td>6.366</td>
<td>4.215</td>
<td>15.107</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin Watson</td>
<td>2.034</td>
<td>1.914</td>
<td>1.783</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob. (F-Stat)</td>
<td>0.00</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>476</td>
<td>476</td>
<td>476</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The third regression model used Tobin Q as dependent variable, R-squared value is 0.185 and adjusted R2 = 0.172. The control variable financial leverage is correlated positively with and had significant influence on firm’s performance while firm size is positively associated with firm performance. In addition, duality is not correlated with and had no significant influence on Tobin Q of firm’s performance, rejecting hypothesis H1a and H1b. Board size also having no association with and had no significant influence on Tobin Q of firm’s performance, not supporting hypothesis H2. Supervisory directors’ variable also not correlated with and had no significant influence Tobin Q of firm’s performance, rejecting hypothesis H3. Outside directors’ variable correlated negatively with Tobin Q of firm’s performance, rejecting hypothesis H4.
Inside directors also not correlated with and had no significant influence on Tobin Q of firm’s performance, rejecting hypothesis H5.

**7- DISCUSSIONS AND CONCLUSIONS**

This study focused on the effects of board structure on firm performance in corporate governance. Board structure consists of variables such as duality, board size, supervisory directors, outside independent directors, and inside directors. Regarding board leadership structure, the outcome this study indicated that duality has a no influence on market based performance measure, accounting based performance measure and economic performance, i.e., when the chair of the board also serves as CEO, firm’s performance will no effect. Such conclusion is that same as the finding of Yammeesri and Herath (2010). It indicates that board of directors can effectively supervise CEO to make decisions to benefit the company and thus promote firm’s performance only when the chairman of the board serves as CEO.

Results indicates that board composition and leadership structure have no relationship with market based performance measure, Tobin Q, accounting based performance measure, ROA and economic profit, EVA of the Pakistani companies.

The above results were supported by prior research on the relationship between separate leadership structure and firm performance. The results were consistent with the study conducted by Leng, 2004; Vance, 1978; Sullivan, 1988; Dahya, Galguera-Garcia & Bommel, 2009; and Rechner & Dalton, 1989; reported that combined leadership structure was not significant for performance. According to Abdullah (2004), board independence and combined leadership either singly or jointly are not related to performance, because financial ratios may not capture the board and leadership roles in establishing a firm’s value, but long term measures such as firms’ growth and their share price might be useful measures.

The above results in relation to board composition and firm performance in Pakistan are supported in prior research. Hermalin & Weisbach (1991) and Bhagat & Black (2002) found no correlation between the degree of board composition and four measures of firm performance, controlling for a variety of other governance variables, including ownership characteristics, firm and board size and industry.

**REFERENCES**


