Corporate Governance and Firm Performance: A Case study of Karachi Stock Market

Humera Khatab, Maryam Masood, Khalid Zaman, Sundas Saleem and Bilal Saeed

Abstract—**This paper seeks to investigate the relationship between corporate governance and firm's performance of twenty firms listed at Karachi Stock Exchange. The performance of corporate governance is analyzed through Tobin's Q, while performance of the firms is measured by return on assets (ROA) and return on equity (ROE). The data set is obtained from the annual reports for the year 2005-2009. The multiple regression models are applied to test the significance of corporate governance and firm profitability. The result shows that leverage and growth have a positive relationship with Tobin's Q, which confirms a significant effect in measuring performance of the firm. It means that firms with having good corporate governance measures perform well as compared to the firms having no or less corporate governance practices.**

Index Terms—**Tobin's Q, Leverage, Return on assets, Return on equity, Karachi Stock Market, Pakistan.**

I. INTRODUCTION

Corporate governance is the set of processes, customs, policies, laws, and institutions affecting the way a corporation (or company) is directed, administered or controlled. Corporate governance comprises the long-term management and oversight of the company in accordance with the principles of responsibility and transparency (OECD, 2010).

In Pakistan, the first Code of Corporate Governance was finalized and issued by SECP in March 2002. Then it was subsequently incorporated in all the listed companies of three stock exchanges in Pakistan. It was the first effort by the government of Pakistan. In 2004, SECP took the first step to establish the Pakistan Institute of Corporate Governance in public private partnership. The term corporate governance has been identified to mean different things to different people. Corporate governance has become an issue of global significance. The improvement of corporate governance

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practices is widely recognized as one of the essential elements in strengthening the foundation for the long-term economic performance of countries and corporations (Ibrahim et al, 2010).

The concept of corporate governance presumes a fundamental tension between shareholders and corporate managers (Berle and Means, 1932 and Jensen & Meckling, 1976). While the objective of a corporation's shareholders is a return on their investment, managers are likely to have other goals, such as the power and prestige of running a large and powerful organization, or entertainment and other perquisites of their position. In this situation, managers' superior access to inside information and the relatively powerless position of the numerous and dispersed shareholders, mean that managers are likely to have the upper hand (Fama and Jensen, 1983).

The objective of the study is to investigate the relationship between quality of firm-level corporate governance and the firm-level performance in companies listed at Karachi Stock Exchange through Tobin's Q, ROA and ROE with their explanatory variables i.e., size, Leverage and Growth for a sample of twenty firms. Performance of the firms is affected by practicing good corporate governance policies. Corporate governance in Pakistan is at initial stages, so proper application and practice of corporate governance is not present at this moment in Pakistan. A scientific research is should aim to be of interest to a broad readership, embracing researchers and practitioners around a world and not only to the people of Pakistan.

II. LITERATURE REVIEW

The number of studies has been examined the relationship between corporate governance and firm's performance that show how good governance practices have increase the economic value to firms, higher productivity and lower risk systematic risk (see, Shleifer and Vishny, 1997; John and Senbet, 1998 and Hermalin and Weisbach, 2003). The empirical study of Mitton (2001) which taken sample of 398 firms include Korean, Malaysian, Indonesian, Philippines, Thailand have found that the firm-level differences in variables are related to corporate governance has strong impact on firm performance during East Asian Crisis in 1997 and 1998. The results suggest that better price performance is associated with firms that have indicators of higher disclosure quality, higher outside ownership concentration and they are focused rather than diversified.

Brown and Caylor (2004) analyze the US firms with 51 factors, 8 sub-categories for 2327 firms based on dataset of

Institutional Shareholder Service (ISS). Their findings indicate that better governed firms are relatively more profitable, more valuable and pay more cash to their shareholder. Lipton and Lorsch (1992) and Jensen (1993) opine that limiting board size improves firm performance because the benefits by larger boards of increased monitoring are outweighed by the poorer communication and decision-making of larger groups. The study by Yermack (1996) shows an inverse relationship between board size and profitability, asset utilizations, and Tobin's Q. Anderson et al. (2004) document that the cost of debt is lower for larger boards, because creditors view these firms as having more effective monitors of their financial accounting processes. Kinney, et al. (2004) show no association between earnings restatements and fees paid for financial information systems design and implementation or internal audit services.

Fich and Shivdasani (2004) find that firms with director stock option plans have higher market to book ratios, higher profitability and they document a positive stock market reaction when firms announce stock option plans for their directors. The study by Ashraf and Ghani (2005) examines the origins, growth, and the development of accounting practices and disclosures in Pakistan and the factors that influenced them. They document that lack of investor protection, judicial inefficiencies, and weak enforcement mechanisms are more critical factors than are cultural factors in explaining the state of accounting in Pakistan. They conclude that it is the enforcement mechanisms that are paramount in improving the quality of accounting in developing economies. La Porta, et al (1999) argues that an investor's protection tends to be greater when the legal environment is stronger, and therefore his willingness to invest tends to increase. They find strong positive association between corporate governance and firm's performance. Drobetz et al. (2004) found a positive relationship between governance practices and firm valuation for German public firms. Aggarwal et al. (2008) determines the number of governance attributes with data available for each firm-year observation, and then define the governance index as the percentage of attributes a particular company has in place. Adjaoud et al (2007) used the 2002 rankings to examine the relationship between firm performance and the governance scores. They found that the relationship generally was not significant between the scores and accounting-based measures of performance (such as ROI, ROE, EPS, and market-to-book) while the relationship between the scores and measures of value created (such as market value added and economic value added) was generally significant.

The literature lacks a comprehensive study by using sophisticated econometric techniques, data set and additional test of robustness (endogeneity test) to confirm the relationship between corporate governance and firm's performance in the context of Pakistani markets. The paper addresses the gap in the literature by using challenging econometric techniques and adequate data set to examine this nexus.

The paper is organized as follows: after introduction and literature review which is provided in Section 1 and 2 above, Methodological framework is explained in Section 3. Results are shown in Section 4. Final section concludes the study.

III. METHODOLOGICAL FRAMEWORK

The panel data set covers a 5-year period from 2005 to 2009, with a sample of twenty firms listed at Karachi Stock Exchange. The data were taken from the annual reports of these firms. All financial data is nominated in terms of Pakistani rupees (millions). The basic estimation strategy is to pool the observations across firms and apply the regression analysis on the pooled sample. That is, a pooled OLS (POLS) equation will be estimated in the form of:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + u_{it} \quad (1)$$

Where;

- Y_{it} represents Tobin's Q; Return on Asset (ROA) and Return on Equity (ROE) for firm i at time t.
- $X1_{it}$ represents firm's size (SIZE) for firm i at time t
- $X2_{it}$ represents LEVERAGE for firm i at time t
- $X3_{it}$ represents ratio of GROWTH for firm i at time t
- i = 1 to 20 firms
- t = 2005-2009
- u_{it} = Error term.

The advantage of pooling is that more reliable estimates of the parameters in the model can be obtained. It is a valid procedure where the relationship between the variables is stable across cross-section units. Our data set gives evidence that Pakistani firms show similar response to cyclical movements. Therefore, we believed that the relationship between corporate governance and firm's profitability are stable across firms and that is why we decided to apply pooled OLS estimation method.

This paper does not include all dimensions of the corporate governance and firm's performance but limited to the following variables:

- Return on Assets (ROA): An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. ROA is calculated by dividing a company's annual earnings by its total assets. ROA is displayed as a percentage. Sometimes this is referred to as "return on investment". Some investors add interest expense back into net income when performing this calculation because they'd like to use operating returns before cost of borrowing.

- Return on Equity (ROE): The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. ROE is expressed as a percentage and calculated as:
  Return on Equity = Net Income/Shareholder's Equity

- Net income is for the full fiscal year (before dividends paid to common stock holders but after dividends to

preferred stock.) Shareholder's equity does not include preferred shares. It is also known as "return on net worth" (RONW).

- Firm size: It is natural logarithm of total assets.
- Leverage: It is book value of debt divided by book value of total asset and
- Growth: It is growth rate of sales.

IV. RESULTS AND DISCUSSION

The current section deals with the results of the study which include the descriptive statistics, econometric results for the model, and tests for robustness relevant for the study.

Descriptive Statistics

The descriptive statistics are calculated and analysis mean and standard deviation of all the variables have been presented in Table 1. The result relevant to the descriptive statistics for the Tobin's Q is 0.63. The value is lesser than 1, which shows that firms of the under developed market are not so healthy and they didn't create value for shareholders. Similarly, the mean values for size (7.59) and growth (7.42) which shows that the firms of under developed market have concentrated shareholding and are indebted.

TABLE 1: DESCRIPTIVE STATISTICS

Variables	Minimum	Max	Mean	Std. Deviation
TQ	0.07	3.40	0.63	0.6713
ROA	0.02	1.85	0.47	.05087
ROE	0.01	6.72	1.69	1.6670
Size	6.40	8.90	7.59	0.6804
Leverage	0.01	1.23	0.23	0.2612
Growth	0.00	8.90	7.42	1.1979

Inferential Statistics

In this section the results of the inferential statistical techniques used in the study are presented. Pearson correlation co-efficient is calculated in Table 2. The result reveals that leverage and growth has both significant impact on Tobin's Q as coefficient values indicate r= 0.492 and r = 0.393. Size shows a negative but insignificant effect on Tobin's Q, as correlation coefficient value is too weak i.e., r= -0.070.

TABLE 2: CORRELATION MATRIX

Variables	Tobin's Q	
	Pearson Correlation	Significance 0.05 (2-tailed)
Size	-.070	0.941
Leverage	.492	0.013
Growth	.393	0.029

In Table 3, Size has negative and insignificant relationship with ROA of the firm which shows that firms with greater size has less ROA. The positive relationship of leverage and growth with ROA shows significant effect in measuring performance of the firm.

TABLE 3: CORRELATION MATRIX - ROA

Variables	ROA

	Pearson Correlation	Significance 0.05 (2-tailed)
Size	-.046	0.729
Leverage	.288	0.025
Growth	.235	0.071

The result of Table 4 reveals that Size and growth both have a negative relationship with ROE, confirming that size and growth has insignificant in measuring the performance of the firm. Leverage, on the other hand, has a positive effect with ROE.

TABLE 4: CORRELATION MATRIX: ROE

Variables	ROE	
	Pearson Correlation	Significance 0.05 (2-tailed)
Size	-.128	0.331
Leverage	.461	0.000
Growth	-.009	0.947

The value for the R-squared in Table 5 is 0.612 which endorses that 61.2% of the variation in the dependent variable is explained by the independent variables of the model. The 38.8% variation in the dependent variable remains unexplained by the independent variables of the study.

TABLE 5: GOODNESS OF FIT (TOBIN'S Q)

Model	R	R-Square	Adjusted R- Square
Tobin's Q	0.808	0.612	0.512

TABLE 6: POOLED ORDINARY LEAST SQUARE
DEPENDENT VARIABLE = TOBIN'S Q

Variables	Coefficients
Constant	-0.027
SIZE	-0.086
LEVARGE	0.248***
GROWTH	0.218**
Adjusted R-squared	.512
F-statistics	4.481*

*, ** and *** shows correlation is significant at the 0.01, 0.05 and 0.09 level.

The value for the F-statistic is 4.481 and is significant endorsing the validity and stability of the model relevant for the study. The other diagnostics suggest that the leverage and growth both have significant positive relation with Tobin's Q. While, SIZE has a negative and insignificant effect on Tobin's Q. The test to detect multicollinearity (variance inflation factor) is also performed to support the validity of the regression results. In case of VIF, if the result is below the 10 and Tolerance near to zero suggest no multicollinearity (Gujrati, 2003). In Table 7 results of VIF and tolerance factor is reasonably good. The values of variance inflation factor for the variables in the model ranges from 1.201 to 4.873 for SIZE to GDP suggesting the absence of multicollinearity among the variables of the model.

TABLE 7: VALUES OF TOLERANCE AND VARIANCE INFLATION FACTOR (VIF) FOR TOBIN'S Q

Variables	Tolerance	Variance Inflation Factor
SIZE	0.701	1.452

LEVARAGE	0.805	1.982
GROWTH	0.749	2.124

The value for the R-squared in Table 8, shows that 71.2% and 82.4% of the variation in the dependent variable are explained by the independent variables of both the models i.e., with ROA and ROE respectively. The 28.8% and 17.6% variations in the dependent variable remain unexplained by the independent variables of the study.

TABLE 8: GOODNESS OF FIT

Model	R	R Square	Adjusted R Square
ROA	0.869	0.712	0.602
ROE	0.912	0.824	0.712

In Table 9, the value for the F-statistic is 10.481 and 12.248 and both are significant at 99 percent level which endorses the validity and stability of the model relevant for the study. The other diagnostics suggest that the leverage and growth both have significant and positive relation with ROA. However, Leverage and growth both have significant impact on ROE, but growth has negative effect on ROE. SIZE on the other hand, has a negative and insignificant effect in both the models.

TABLE 9: POOLED ORDINARY LEAST SQUARE
DEPENDENT VARIABLE = ROA & ROE

Variables	Coefficients (ROA)	Coefficients (ROE)
Constant	-0.055	1.426
SIZE	-0.042	0.029
LEVARGE	0.243***	0.484*
GROWTH	0.208**	-0.096**
Adjusted R-squared	0.712	0.824
F-statistics	10.481*	12.248*

*, ** and *** shows correlation is significant at the 0.01, 0.05 and 0.09 level.

Robustness Tests:
a) Incremental Regression

The incremental regression is performed by removing individual independent variables from the model and by checking the effect on the value of R-squared. Among all the variables removed, leverage has altered the value of R-squared to a highest degree (13%, 21.5% and 33.4% decreases in the portion of the dependent variable explained by independent variables in all three models i.e., Tobin's Q, ROA and ROE) as the value for the R-squared changes from 61.2% to 48.2% in the first model i.e., Tobin's Q; 71.2% to 49.7% in the second model i.e., with ROA and 82.4% to 49.0% in the third and last model i.e., ROE. This importance is also highlighted in the regression result as the value of coefficient of the variable (0.248, 0.243 and 0.484) is highest among all the variables in their three models respectively. The result is presented in Table 10 below.

TABLE 10: RESULTS OF INCREMENTAL REGRESSION REMOVING LEVERAGE

Models	Values

R-squared (Tobin's Q)	0.612
R-squared (after the removal of leverage)	0.482
R-squared (ROA)	0.712
R-squared (after the removal of leverage)	0.497
R-squared (ROE)	0.824
R-squared (after the removal of leverage)	0.490

b) Endogeneity Test

The second robustness test used in this study is the test for endogeneity. This test is performed to make the results of the study robust. The possibility of reverse causation from Leverage to firm's performance is raised by the extensive literature. Where such a relationship exists it raises the possibility of endogeneity in our model. The result is presented in Table 11.

TABLE 11: POOLED LEAST SQUARE ENDOGENEITY TEST
DEPENDENT VARIABLE: TOBIN'S Q, ROA AND ROE

Variables	Tobin's Q	ROA	ROE
Constant	-0.034 (1.231)	-0.067 (1.041)	1.875 (1.241)
SIZE	-0.102 (-0.876)	-0.057 (0.989)	0.075 (0.714)
LEVERAGE	0.279*** (1.761)	0.342*** (1.682)	0.684* (3.785)
GROWTH	0.226 (1.625)***	0.285** (2.142)	-0.106** (2.144)
Residuals	0.283 (0.775)	0.201 (0.65)	0.412 (1.102)
R-squared	0.92	0.945	0.979
Adjusted R-squared	0.91	0.943	0.978
Durbin-Watson	1.37	1.741	1.452
F-statistic	141.9*	111.2*	99.2*

Notes: The values of the coefficients are in the first row. Below are the values for t-statistics in parenthesis. *, ** and *** Represents the significance of a variable at 1, 5 and 10 % significance level.

In the first step of this process, the relationship of the Tobin's Q, ROA and ROE separately with all their independent variables (SIZE, LEVEARGE and GROWTH) is tested and the error term (residual) is calculated. In the second step, the relationship of the Tobin's Q, ROA and ROE separately with all the independent variables including the calculated error term (residual) is tested. We have found no relationship of residual with the Tobin's Q, ROA and ROE which shows that there is no endogeneity in all the three models.

V. CONCLUSION

This paper examines the relationship between corporate governance and firm's performance of twenty firms listed at Karachi Stock Exchange. The main objective of the study was to find whether profitability ratios i.e., ROA and ROE affect the performance of the firm? Further, the firms with higher Tobin's Q values have performed well or not in appraised to the other firms in the industry. The result reveals

that leverage and growth has positive and significant impact on Tobin's Q and ROA. However, growth has a negative and significant impact on ROE. Size of the firms in all the three models is remained insignificant. It means that firms with having good corporate governance measures perform well as compared to the firms having no or less corporate governance practices.

This study conducted from the data taken from the period 2005-2009. For future considerations this period may be extended to the ten years or above. Moreover this study is on the corporate governance practices and firm performance in twenty firms taken from different industries listed on Karachi Stock Exchange. This sample can be extended to 21-50 firms for the evaluation. More profitability ratios can be used to establish a relationship of corporate governance to firm's performance.

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