Corporate Governance and

Performance of the Listed Companies in tse

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Abstract

This paper examines the relationship between corporate governance & performance of the listed companies in Tehran Stock Exchange (TSE). Reviewing the literature, four criteria were selected to assess corporate governance, including, Board Size, External Members of the Board, Common Stocks owned by Major Shareholders, and Free Float shares, and two criteria to measure performance, including ROA, and ROE. The statistical sample consisted of 71 firms chosen from companies listed in TSE during a 5-year period 2002-2006. Panel Data regression (F and t-test) was used. The results show that all criteria, except External Members of the Board (hypotheses 2), have a significant relationship with performance.

Introduction

According to the Cadbury committee(1992), some of the features of corporate governance include the presence of external members in the board of directors, separation of the chairman of the board from the CEO, presence of subsidiary board committees (i.e. auditing committee), ownership by CEOs and the proportion of ownership by major stockholders. In the report presented by this committee, it was suggested that in order to perform better, firms should follow certain rules of corporate governance. Although conformance with these rules was optional, it was expected that companies adhere to them and change their structures. Therefore, they were set as a qualification for persisting in Stock Exchange and then listed companies were obliged to present their procedures of following that in the annual reports. Otherwise they had to disclose the reasons (Laing, Mc. Knight and Weir, 1999).

The Cadbury committee suggested the establishment of a system based on the assumption that external members of the board and subsidiary committees of the board are sensitive to corporate governance. It also accentuated the importance of independence and adequacy of external members. The proposals made by this committee, especially on the appointment of subsidiary committees, were welcomed by the companies (Conyon & Mallin, 1997).

However, very little work has been done on assessing the impact of the establishment of subsidiary committees and its quality on the performance of companies (Dalton et al., 1998).

The primary responsibility of external members is to ensure that CEOs adhere to the guidelines established, for the benefit of shareholders (Fama, 1980). These members have two main characteristics which enable them to perform their supervisory functions, first their independence (Cadbury, 1992) and second their concern for their reputation in the managerial market (Fama & Jensen, 1983).

Although external members of the board benefit from characteristics such as independence and experience, but evidence suggests that these characteristics do not have a positive impact on performance. Results obtained from certain researches suggest that the presence of independent managers may hurt firm performance. Yermack, Agrawal and Knoeber(1998) have discovered a negative relationship between the level of independence experienced by directors and performance . Bhagat and Black (1998) have also reported a similar negative relationship .

Baysinger and Hoskisson(1990); Hermalin and Weisbach (1991) believe that a relationship exists between the composition of the board of directors and firm performance (for a period of one year) . However, Baysinger and Butler (1985) have offered, with a ten year period delay, evidence on the presence of a relationship between the mentioned factors .

Based on the literature, little concurrence exists on the relationship between the number of external members and firm performance; therefore it seems that more research has to be carried out on this subject.

Where chairman of the board of directors and the CEO are the same person, supervision will encounter serious obstacles. According to Fama and Jensen(1997), if the company manager who is also the chairman of the board controls the board of directors, supervision will be very difficult . The Cadbury committee(1992) supported this and claimed that such a fact would be quite inappropriate since it would give one person too much decision making power .

However, very little evidence supports this claim. Most of the researches carried out in this regard do not indicate an adverse relationship between joining the responsibilities of the CEO and the chairman of the board with firm performance (Brichley et al.,1999; Theodorou & Vafeas, 1998; Dalton et al., 1998; Weir & Lainy, 1999).

Dahya et al(1996) observed in a small population of British companies that the stock market shows a significant positive reaction to the separation of the chairman from the CEO. Moreover companies that did not have such a situation presented a weaker performance as compared to the years when the two responsibilities were carried out

by the same person. They have, however, carried out their research during U.K.'s period of economic crisis when other factors could have possibly affected performance as well. In the proposals presented by the Cadbury committee, however, only little evidence is present to indicate that the segregation of these two responsibilities hurts performance.

The other proposal offered by the committee is to establish a subsidiary committee of the board of directors (auditing committee) in all listed companies. The responsibilities of the auditing committee include signing agreements with independent auditors, reviewing the financial statements of a company and to make suggestions based on the findings of internal auditors. According to the Cadbury committee, the auditing committee should have a minimum of three members solely from external CEOs, which means that the majority of the members should be independent.

There are few researches on the impact of the auditing committee on performance. Wild(1994) discovered that the market reacts favorably to income reports received subsequent to the formation of the auditing committee , while Klein(1998) observed that the presence of an auditing committee has no impact whatsoever on market performance criteria. Results of his study indicated that variations in the composition of the auditing committee do not result in abnormal yield .

The higher the ownership of major shareholders, the higher the agency expenses due to weaker firm performance. Therefore, increasing ownership interests of major shareholders raises the level of motivation for supervision. Evidence approves the presence of a relationship between increasing the number of individual shareholders with better performance (Schleifer & Vishny, 1986; Leahy & Leech, 1999).

If the internal strategies of a firm are weak, the market can control it through its governance system. Inappropriate strategies will lead the company to a weak performance (Fama, 1980).

In the present research, the relationship between some of the corporate governance factors including the structure of the board of directors, proportion of ownership by

major shareholders and the amount of free float shares, with the performance of listed companies in TSE was studied.

History of Research

Sarkar(2008) studied the criteria used in determining incentives and salaries for CEOs with a highlight on the relationship between salaries and performance. The sample included 500 companies studied for the four quarters of the year 2003. The performance criteria included firm's book to market value, Tobin's Q, asset return and added value of assets.

Results indicated that with regards to the composition of the board of directors, external members do not play a strong supervisory role. When the company has no external members, the level of salary paid to managers was higher. Although, in companies lacking external members, a higher coordination was observed between CEOs and shareholders.

Krivogorski (2007) studied the relationship between ownership and the structure of the board of directors with performance of the European continent. The research sample consisted of 87 European companies between the years 2000-2001. Criteria selected for assessing performance included asset return, return on capital and book to market value of the company. The first couple of criteria are accounting ratios and the last one is a market ratio.

Independent variables have been classified into two groups namely, indices to measure the board composition and empirical indices to calculate ownership concentration. Indices used for the composition of the board of directors include the proportion of internal members, proportion of external members within the board of directors, proportion of highly educated CEOs within the board and separation of the chairman and the CEO, and empirical indices to measure ownership concentration include the proportion of inside ownership, proportion of family ownership, proportion of inherent ownership and the proportion of ownership by block shareholders. Control variables are company age (number of years that company's stocks have been exchanged within markets), operational leverage, company size and growth. To test the hypotheses, Pierson's correlation was used.

Results reflected a positive relationship between the level of ownership by block and inherent shareholders with the company's profitability ratios, and to the same extent a positive relationship existed between number of external members within the board with profitability ratios. However, no relationship has been observed in European corporations between internal members or internal ownership with profitability.

Shijun(2007) investigated the relationship between board size and variability of firm performance. The research sample consisted of 1252 companies studied between 1996 and 2004. The study used stock returns to measure stock performance, annual return on assets to measure accounting performance,Tobin's Q for measuring corporate performance. The board size was defined as the number of CEOs present within the board and the proportion of independent CEOs was used to measure the composition 0f the board.

The study was performed not only for each company each year but also for panel data and based on Glejser tests (1969). Results indicated that a relationship exists between a large board of directors with less extraordinary items, inaccuracy of predictions and lower R&D expenses. Previous researches indicated that a large board of directors may be optimal in certain situations and that a negative relationship between the board size and corporate performance may be due to other external factors (Harris & Raviv, 2006; Raheja, 2005). Results of this research has complimented previous studies and indicated that corporate performance varies with board size .

Tang(2007) has studied 245 small companies in the United States between the year 2000 and 2004 to examine the mutual effects of corporate governance on performance.

Independent variables of the research included the following:

1- An independent board of directors (with criteria such as the right to fill in the position of CEO and the proportion of external members) each separately examined.

2- Ownership of the CEO

3- Incentives based on the performance of the CEO

The dependent variable of the research has been firm performance determined through Tobin's Q. The control variable's been company size (total assets) and industry type.

Results reflected a mutual and significant relationship between an independent board of directors, company leverage, ownership by the CEO and incentives based on performance. Considering the influence of corporate governance on performance, leverages reduced company value to a certain extent; while incentives paid to CEOs based on performance had a positive relationship with firm performance. Moreover, a weak relationship was observed between an independent board of directors and firm performance.

Omran(2007) studied on the effects of ownership concentration on performance in capital markets in Arabian countries. The sample consisted of 304 companies from countries such as Egypt, Jordan, Oman and Tunis between the years 2000 and 2002. The Panel regression method was used to test the hypotheses and assessment criteria involved return on assets, return on capital and Tobin's Q. In this research, ownership concentration has been defined as the percentage of stocks held by three major block investors. Block investors refer to those investors holding more than 10 percent of the company's shares. Results reflected that ownership concentration has a negative relationship with legal support and does not distinctly reflect a specific influence on the firm profitability and performance. Moreover, separation of the CEO and the chairman of the board does not have a meaningful effect on firm performance. However the presence of block investors and the separation of the CEO and the chairman does reflect a positive relationship between Tobin's Q and ownership concentration. Large companies and those that are less limited in their economic transactions report a higher profitability.

Method of Research

Research variables have been divided into two categories. The first category involves criteria for corporate governance while the second includes criteria for operational performance. There are four criteria for corporate governance, namely, "Board Size", "Proportion of External Members of the Board", "Proportion of Common Stocks

owned by Major Shareholders" and "Proportion of Common Stocks owned by Individual Shareholders(Free Float shares)" which are also independent variables in this study. Operational performance with the ROA and ROE criteria, are the dependent variables of the research.

- **Board Size:** The number of CEOs (whether externally or internally involved) that are members of the board of directors as well (Jong et al., 2002).

- **External member of the Board:** A part time member of the board of directors that do not hold an executive position within the company and do not receive monthly or annual salaries. The proportion of these members is obtained by dividing the number of external members present at the Annual General Council by the total number of members (Jong et al., 2002).

- **Major Shareholders:** Shareholders which own at least 5% of the marketable shares of the company (Jong et al., 2002; Mahavarpour, 2007).

- **Free Float Shares:** To calculate the number of free float shares, shares owned by major and inherent shareholders are deducted from the total number of shares (Abdoh Tabrizi, 2003).

Jong et al (2002), have used the following model to examine the effects of corporate governance on firm performance:

Performance = f (Corporate governance variables , Control variables)

The model used criteria such as the return on equity, Tobin's Q and return on assets for evaluating firm performance. Moreover variables such as the size of the board , proportion of external members of the board, proportion of ownership by major shareholders, proportion of ownership by individual shareholders (free float shares) and proportion of ownership by institutional shareholders were used as indices for corporate governance. Company value and leverage were the control variables of the model. The regression model was presented as follows:

Performance $_{i,t}$ = β0 + β1 BRDSIZE + β2 BRDEXT $_{i,t}$ + β3 FINAN $_{i,t}$ + β4 INDIV $_{i,t}$ + β5 INDUS $_{i,t}$ + β6 LOG(BVTA) $_{i,t}$ + β7 LEV $_{i,t}$ + €$_{i,t}$

Performance: Firm performance

BRDSIZE: Board Size

BRDEXT: proportion of external members of the board

FINAN: Proportion of ownership by major shareholders

INDIV: Proportion of ownership by individual shareholders (proportion of Free Float Shares)

INDUS: Proportion of ownership by institutional shareholders

LOG (BVTA): Logarithm of the book value of assets

LEV: Leverage

The method of research selected is based on the model presented by Jong et. al. to evaluate firm performance which would be the dependent variable in the study, two criteria were selected including the return on equity and return on assets. This has been due to the fact that the information required for the calculation of the Tobin's Q had not been available. Independent variables of the research included board size, percentage of external members of the board, proportion of ownership by major shareholders , and the proportion of ownership by individual shareholders (percentage of Free Float Shares).

Scope of Subject: The scope of the subject in this research is the effects of corporate governance on the performance of companies listed in Tehran Stock Exchange.

Scope of Research: Companies listed in Tehran Stock Exchange.

Time Scope of Research: The time scope selected for this research was a five year period between the years 2002 to 2006.

Out of the 421 companies in the primary population, 71 were selected as the final sample.

Upon collection of information, related folders were designed in the excel format and the variables calculates through SPSS and Eviews software.

In the present research, data for 71companies was collected for a period of 5 years. Therefore, it was quite possible that a correlation existed between the data and that data were not independent of each other, and subsequently data independence which was one of the regression hypotheses could not be valid. Thus the Panel Data

regression model (whole-piece data) was used to estimate coefficients and to assess the model.

Considering that the normality of distribution of data is a pre-requisite for the regression model, the Kolmogorov-Smirnov test was used for this study.

To apply general regression analysis, the variance analysis method was used and in this method F tests were applied. General regression implies the simultaneous evaluation of all regression variables except fixed amounts.

The F amount for the regression model of the sample was obtained from the following equation:

Data Analysis

First Hypothesis: A significant relationship exists between firm performance and the Board Size.

Criteria selected for performance included ROA and ROE indices. Therefore the hypothesis was divided into two subsidiary hypotheses independent of each other:

A. A significant relationship exists between the ROA and the Board Size.

Regression running for this hypothesis is as follows:

$\text{ROA}_{i,t} = \beta_0 + \beta_1 \text{ BRDSIZE} + \beta_2 \text{ LOG(BVTA}_{i,t}) + \beta_3 \text{ LEV}_{i,t} + \text{€}$

ROA: Return on Assets

BRDSIZE: Board Size

LOG (BVTA): Logarithm of the book value of assets

LEV: Leverage

Results from testing the hypotheses were presented in Table 1.

Table 1: Statistical results of the model for ROA (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.0282	-0.0858	0.9317					
Board Size	-0.1780	-3.2194	0.0014					
Company Size	0.0000	0.0274	0.9781	0.1131	0.1054	14.7013	0.0000	1.7515
Financial Leverage	-1.2990	-6.0409	0.0000					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for Board Size and financial leverage was less than 0.05, meaning that the coefficients of these variables are significant and that the Board Size affects ROA .

R^2 is approximately equal to 11% , meaning that 11 percent of the changes in ROA would be explained through the independent variable called the Board Size.

The final running of the regression model resulted in the following equation:

ROA $_{i,t}$ = – ۰,۰۲۸۲ + – ۰,۱۷۸۰ BRDSIZE+–۱,۲۹۹۰ LEV $_{i,t}$

Since the slope (β₁) is negative and equal to 0.1780; therefore changes in ROA are not parallel with changes in the Board Size and one unit of change in the Board Size would result in 0.1780 units of change in ROA.

The Durbin-Watson parameter is equal to 1.7515 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

B. A significant relationship exists between ROE and the Board Size.

Regression running for this hypothesis is as follows:

$$ROE_{i,t} = \beta_0 + \beta_1 \, BRDSIZE + \beta_2 \, LOG(BVTA_{i,t}) + \beta_3 \, LEV_{i,t} + \epsilon$$

ROE: Return on Equity

Results from testing the hypotheses were presented in Table 2.

Table 2: Statistical results of the model for ROE (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.2016	-0.4619	0.6444					
Board Size	-0.2310	-3.1771	0.0016					
Company Size	0.0000	1.7503	0.0810	0.0560	0.0478	6.8454	0.0002	1.6561
Financial Leverage	0.7759	2.6875	0.0075					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for Board Size and Financial Leverage was less than 0.05, meaning that the coefficients of these variables are significant and that the Board Size affects ROE .

R^2 is approximately equal to 4%, meaning that 4 percent of the changes in ROE would be explained through the independent variable called the Board Size.

The final running of the regression model resulted in the following equation:

$$ROE_{i,t} = -0.2016 + 0.2310 \, BRDSIZE + 0.7759 \, LEV_{i,t}$$

Since the slope (β_1) is negative and equal to 0.2310; therefore changes in ROE are not parallel with changes in the Board Size and one unit of change in the Board Size would result in 0.2310 units of change in ROE, if operational leverage is kept constant.

The Durbin-Watson parameter is equal to 1.6561 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

Second Hypothesis: A significant relationship exists between firm performance and the proportion of external members of the board.

The hypothesis was again divided into two subsidiary hypotheses using both ROA and ROE as operational indices; the two new hypotheses have been tested independently.

    A. A significant relationship exists between ROA and the proportion of external members of the board.

    Regression running for this hypothesis is as follows:

$$ROA_{i,t} = \beta_0 + \beta_1 \, BRDEXT_{i,t} + \beta_2 \, LOG(BVTA) + \beta_3 \, LEV_{i,t} + \text{\euro}_{i,t}$$

    BRDEXT: the proportion of external members of the board

Results from testing the hypotheses were presented in Table 3.

Table 3: Statistical results of the model for ROA (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.9516	-5.2298	0.0000					
Proportion of External Members of the Board	-0.0454	-0.2496	0.8031		0.0834	11.5894	0.0000	1.7479
Company Size	0.0000	-0.1118	0.9111					
Financial Leverage	-1.2424	-5.7546	0.0000					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not

simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of External Members and Company Size was more than 0.05, meaning that the coefficients of these variables are not significant and that the proportion of external members of the board does not affect ROA.

The final running of the regression model resulted in the following equation:

$$\text{ROE}_{i,t} = -0.9516 + -1.2424\ \text{LEV}_{i,t}$$

Since the independent variable is not significant, therefore the estimated model includes a control variable called the operational leverage. Therefore changes in ROA cannot be predicted.

The Durbin-Watson parameter is equal to 1.7515 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

B. A significant relationship exists between ROE and the proportion of external members of the board.

Regression running for this hypothesis is as follows:

$$\text{ROE}_{i,t} = \beta_0 + \beta_1\ \text{BRDEXT}_{i,t} + \beta_2\ \text{LOG(BVTA)} + \beta_3\ \text{LEV}_{i,t} + \text{€}_{i,t}$$

BRDEXT: the proportion of external members of the board.

Results from testing the hypotheses were presented in Table 4.

Table 4: Statistical results of the model for ROE (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-1.4289	-6.1267	0.0000					
Proportion of External Members of the Board	0.0066	0.0295	0.9765	0.0354	0.0271	4.2461	0.0058	1.6532
Company Size	0.0000	1.8765	0.0614					

Financial Leverage	0.8278	2.8862	0.0041					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of external members of the board and company size was more than 0.05, meaning that the coefficients of these variables are not significant and that the proportion of external members of the board does not affect ROA.

The final running of the regression model resulted in the following equation:

$$ROE_{i,t} = -1.4289 + 0.8278\ LEV_{i,t}$$

Since the independent variable is not significant, therefore the estimated model includes a control variable called the operational leverage. Therefore changes in ROE cannot be predicted.

The Durbin-Watson parameter is equal to 1.6532 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

Third Hypothesis: A significant relationship exists between firm performance and the proportion of common stocks owned by major shareholders.

The indices used for measuring performance were ROA and ROE. Therefore the hypothesis was again divided into two subsidiary hypotheses which have been tested independently.

A. A significant relationship exists between ROA and the proportion of common stocks owned by major shareholders.

Regression running for this hypothesis is as follows:

$$ROA_{i,t} = \beta_0 + \beta_1\ FINAN_{i,t} + \beta_2\ LOG(BVTA) + \beta_3\ LEV_{i,t} + \epsilon_{i,t}$$

FINAN: the proportion of common stocks owned by major shareholders

Results from testing the hypotheses were presented in Table 5.

Table 5: Statistical results of the model for ROA (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-1.4289	-6.1267	0.0000					
Proportion of common stocks owned by Major Shareholders	0.0066	0.0295	0.9765	0.0354	0.0271	4.2461	0.0058	1.6532
Company Size	0.0000	1.8765	0.0614					
Financial Leverage	0.8278	2.8862	0.0041					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for proportion of common stocks owned by major shareholders was more than 0.05, meaning that the coefficients of these variables are not significant and that the proportion of stocks owned by major shareholders does not affect ROA.

R^2 is approximately equal to 3%, meaning that 3 percent of the changes in ROA would be explained through the independent variable called the proportion of common stocks owned by major shareholders.

The final running of the regression model resulted in the following equation:

$$ROA_{i,t} = -1.4289 + 0.0066\ FINAN_{i,t} + 0.8278\ LEV_{i,t}$$

Since the slope (β_1) is positive and equal to 0.0066; therefore changes in ROA are parallel with changes in the proportion of common stocks owned by major shareholders and one unit of change in the proportion would result in 0.0066 units of change in ROA, if operational leverage is kept constant.

The Durbin-Watson parameter is equal to 1.6532 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

B. A significant relationship exists between ROE and the proportion of common stocks owned by major shareholders.

Regression running for this hypothesis is as follows:

$$ROE_{i,t} = \beta_0 + \beta_1 FINAN_{i,t} + \beta_2 LOG(BVTA) + \beta_3 LEV_{i,t} + \text{€}_{i,t}$$

FINAN: the proportion of common stocks owned by major shareholders

Results from testing the hypotheses were presented in Table 6.

Table 6: Statistical results of the model for ROE (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-2.4153	-7.6075	0.0000					
Proportion of common stocks owned by Major Shareholders	0.0128	3.7741	0.0002	0.0798	0.0718	10.0013	0.0000	1.6163
Company Size	0.0000	1.9133	0.0565					
Financial Leverage	0.7295	2.5834	0.0102					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for proportion of common stocks owned by major shareholders and financial leverage was less than 0.05, meaning that the coefficients of these variables are significant and that proportion of common stocks owned by major shareholders affects ROE.

R^2 is approximately equal to 7%, meaning that 7 percent of the changes in ROE would be explained through the independent variable called the proportion of common stocks owned by major shareholders.

The final running of the regression model resulted in the following equation:

$$ROE_{i,t} = -2.4153 + 0.0128\ FINAN_{i,t} + 0.7295\ LEV_{i,t}$$

Since the slope (β_1) is positive and equal to 0.0128; therefore changes in ROE are parallel with changes in the proportion of common stocks by Major Shareholders and one unit of change in the proportion would result in 0.0128 units of change in ROE, if operational leverage is kept constant.

The Durbin-Watson parameter is equal to 1.6163 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null meaning that the remainders are independent of each other.

Fourth Hypothesis: A significant relationship exists between firm performance and the proportion of common stocks owned by individual shareholders (Free Float Shares).

The hypothesis was again divided into two subsidiary hypotheses using both ROA and ROE as operational indices; the two new hypotheses have been tested independently.

- A significant relationship exists between ROA and the proportion of common stocks owned by individual shareholders (Free Float Shares).

- Regression running for this hypothesis is as follows:

$$ROA_{i,t} = \beta_0 + \beta_1\ INDIV_{i,t} + \beta_2\ LOG(BVTA) + \beta_3\ LEV_{i,t} + \text{€}_{i,t}$$

INDIV: the proportion of common stocks owned by individual shareholders (Free Float Shares)

Results from testing the hypotheses were presented in Table 7.

Table 7: Statistical results of the model for ROA (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.3814	-2.3030	0.0223					
Proportion of Free Float Shares	-0.0093	-3.4286	0.0007					
Company Size	0.0000	-0.0326	0.9740	0.2204	0.2089	19.2220	0.0000	1.7569
Financial Leverage	-1.8487	-7.7845	0.0000					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of common stocks owned by individual shareholders and financial leverage was less than 0.05, meaning that the coefficients of these variables are significant and that the proportion of free float shares affects ROA. R^2 is approximately equal to 21% meaning that 21 percent of the changes in ROA would be explained through the independent variable called the proportion of free float shares.

The final running of the regression model resulted in the following equation:

$$\text{ROA}_{i,t} = -0.3814 + -0.0093\ \text{INDIV}_{i,t} + -1.8487\ \text{LEV}_{i,t}$$

Since the slope (β_1) is negative and equal to 0.0093; therefore changes in ROA are not parallel with changes in the proportion of free float shares and one unit of change in the proportion of free float shares would result in 0.0093 units of change in ROA, if operational leverage is kept constant.

The Durbin-Watson parameter is equal to 1.7569 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

- **B** significant relationship exists between ROE and the proportion of free float shares.

- Regression running for this hypothesis is as follows:

$$ROE_{i,t} = \beta_0 + \beta_1\,INDIV_{i,t} + \beta_2\,LOG(BVTA) + \beta_3\,LEV_{i,t} + \epsilon_{i,t}$$

INDIV: the proportion of common stocks owned by individual shareholders (free float shares)

Results from testing the hypotheses were presented in Table 8.

Table 8: Statistical results of the model for ROE (2002-2006)

Variable	β	T	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.7796	-3.3399	0.0010					
Proportion of Free Float Shares	-0.0090	-2.4016	0.0172					
Company Size	0.0000	1.1346	0.2579	-0.0394	0.0254	2.8060	0.0408	1.6474
Financial Leverage	0.1398	0.4098	0.6823					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of free float shares and financial leverage was less than 0.05, meaning that the coefficients of these variables are significant and that the ratio of free float shares affects ROE.

R^2 is approximately equal to 3% meaning that 3 percent of the changes in ROE would be explained through the independent variable called the proportion of free float shares.

The final running of the regression model resulted in the following equation:

$$ROE_{i,t} = -0.7796 +- 0.0090\,INDIV_{i,t}$$

Since the slope (β_1) is negative and equal to 0.0090; therefore changes in ROE are not parallel with changes in the proportion of free float shares and one unit of change in the proportion of free float shares would result in 0.0090 units of change in ROE.

The Durbin-Watson parameter is equal to 1.6474 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

General Regression Tests

The general regression was presented as follows:

Performance$_{i,t}$ = $\beta 0 + \beta_1$ BRDSIZE$_{i,t}$ + β_2 BRDEXT$_{i,t}$ + β_3 FINAN$_{i,t}$+ β_4 INDIV$_{i,t}$ + β_5 LOG(BVTA)$_{i,t}$+ β_6 LEV$_{i,t}$ + €$_{i,t}$

Since information relating to free float shares have been available since the year 2004, the research was confined to the years 2004-2006. Performance criteria used in the research were ROA and ROE, therefore the general regression equation has been defined as follows:

    A) ROA$_{i,t}$ = $\beta_0 + \beta_1$ BRDSIZE$_{i,t}$ + β_2 BRDEXT$_{i,t}$ + β_3 FINAN$_{i,t}$+ β_4 INDIV$_{i,t}$ + β_5LOG (BVTA)$_{i,t}$+ β_6 LEV$_{i,t}$ + €$_{i,t}$

    B) ROE$_{i,t}$ = $\beta_0 + \beta_1$ BRDSIZE$_{i,t}$ + β_2 BRDEXT$_{i,t}$ + β_3 FINAN$_{i,t}$+ β_4 INDIV$_{i,t}$ + β_5 LOG (BVTA)$_{i,t}$+ β_6 LEV$_{i,t}$ + €$_{i,t}$

Results from testing regression A have been reflected in the Table 9.

Table 9: Statistical results of the general model for ROA (2002-2006)

Variable	B	t	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-0.209	0.613	0.733					
Proportion of Free Float Shares	-0.004	0.004	0.346					
Proportion of common	0.011	0.005	0.013					

				0.263	0.241	11.872	0.00	1.637
stocks owned by Major Shareholders								
Board Size	-0.249	0.079	0.002					
Proportion of External Members of the Board	0.099	0.245	0.686					
Company Size	0.00	0.00	0.809					
Financial Leverage	-1.910	0.238	0.00					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of stocks owned by Major Shareholders and the Board Size was less than 0.05, meaning that the coefficients of these variables are significant and that the proportion of stocks owned by Major Shareholders and the Board Size affects ROA.

R^2 is approximately equal to 24%, meaning that 24 percent of the changes in ROA would be explained through the independent variables called the proportion of stocks owned by Major Shareholders and the Board Size.

The final running of the regression model resulted in the following equation:

$ROA_{i,t} = -0.249\ BRDSIZE_{i,t} + 0.011\ FINAN_{i,t} + -1.910\ LEV_{i,t}$

Since the slope (β_1) is negative and equal to 0.249; therefore changes in ROA are not parallel with changes in Board Size and one unit of change in the Board Size would result in 0.249 units of change in ROA.

The Durbin-Watson parameter is equal to 1.637 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

Results from testing regression B have been presented in Table 10.

Table10: Statistical results of the general model for ROE (2002-2006)

Variable	B	t	Prob(t)	R	R^2	F	Prob(F)	Durbin-Watson Stat
Intercepts	-1.090	1.074	0.311					
Proportion of Free Float Shares	0.00	0.005	0.935					
Proportion of stocks owned by Major Shareholders	0.017	0.007	0.011					
Board Size	-0.269	0.138	0.049	0.089	0.062	22.278	0.00	1.996
Proportion of External Members of the Board	0.120	0.312	0.702					
Company Size	0.00	0.00	0.241					
Financial Leverage	0.091	0.346	0.793					

Since the amount reflected for Prob(F) is less than 0.05, the regression can be considered as significant. This means that coefficients of regression variables were not simultaneously zero. Moreover the amount reflected Prob(t) for the proportion of stocks owned by Major Shareholders and the Board Size was less than 0.05, meaning that the coefficients of these variables are significant and that the proportion of stocks owned by Major Shareholders and the Board Size affects ROE.

R^2 is approximately equal to 6%, meaning that 6 percent of the changes in ROE would be explained through the independent variables called the proportion of stocks owned by Major Shareholders and the Board Size.

The final running of the regression model resulted in the following equation:

$$ROE_{i,t} = -0.269\ BRDSIZE_{i,t} + 0.017\ FINAN_{i,t}$$

Since the slope (β_1) is negative and equal to 0.269; therefore changes in ROE are not parallel with changes in Board Size and one unit of change in the Board Size would result in 0.269 units of change in ROE.

The Durbin-Watson parameter is equal to 1.996 which is between the 1.5 and 2 range. Therefore the probability of a correlation between the remainders is null, meaning that the remainders are independent of each other.

Conclusion

The present research attempted to discover a relationship between criteria selected for corporate governance and performance. For this purpose research hypotheses were designed using four criteria for corporate governance and two indices for measuring performance. Results from testing the hypotheses reflected that except for the relationship between the proportion of External Members of the Board with performance (second hypothesis), the other relationships are significant.

It seems that even though the presence of External Members in board composition should enhance performance; in Iran due to the short history of corporate governance, this issue has not yet been fully understood and/or executed. In previous studies performed in Iran, same results have been achieved (Rezayi, 2007; Ghanbari, 2007).

In other countries as well, most studies have shown a significant relationship between the presence of External Members of the Board and firm performance (Dehaene, 2001; Lefort et al., 2007; Krivogorsky, 2007). This may be due to the long history of applying corporate governance in these countries.

Results from applying the general regression tests indicate that the variables named the proportion of Free Float shares and the proportion of External Members of the Board do not influence firm performance. It seems that the two most significant factors in the issue of corporate governance, that is the presence of external Members in the composition of the board and Free Float shares have not yet had an executive effect, and thus do not influence firm performance.

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