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Procedia Economics and Finance 36 (2016) 137 – 146

Procedia
Economics and Finance

www.elsevier.com/locate/procedia

1st International Conference on Applied Economics and Business, ICAEB 2015

The Effect of Corporate Governance Components on Return on Assets and Stock Return of Companies Listed in Tehran Stock Exchange

Shoeyb Rostami^{a,*}, Zeynab Rostami^b, Samin Kohansal^a^a*Faculty of Accounting, Kooshyar Higher Education Institute, Rasht, Iran*^b*Faculty of Accounting, Raja University, Qazvin, Iran*

Abstract

This paper investigates the effect of corporate governance components on return on assets and stock return of companies listed in Tehran stock exchange. In order to test the hypothesis, about 469 firm-year observations were collected using systematic sampling for a period of seven years. In this paper, we have used 6 internal components of a corporate governance system such as ownership concentration, institutional ownership, Board independence, Board size, CEO duality and CEO tenure as independent variables and their effect on return on assets and stock return, as the firm financial performance evaluation criteria, were studied. The control variables of this study are the market value of the equity and the ratio of book value to market value of the equity. The results, which are based on estimated generalized least square method, indicate that there is a significant positive relationship between ownership concentration, Board independence, CEO duality and CEO tenure and return on assets. On the other hand, there is a significant negative relationship between institutional ownership and Board size and return on assets. Besides there is a significant positive relationship between institutional ownership, Board independence, CEO duality and CEO tenure with stock return. However, there is a significant negative relationship between ownership concentration and Board size with stock return.

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Peer-review under responsibility of SCIJOUR-Scientific Journals Publisher

Keywords: corporate governance system; return on assets; stock return; firm performance; Tehran stock exchange

* Corresponding author. Tel.: +989115586548.
E-mail address: Sh.Rostami.Acc@gmail.com

1. Introduction

Corporate governance is a system that improves agency problems between managers and shareholders. According to the survey, stock crash of companies such as Adelfa, Enron, Tyco and WorldCom was largely due to weak governance (Deakin and Konzelmann, 2004). The establishment of an effective governance system makes the interests of managers and owners to be in the same line (Fama and Jensen, 1983), operational performance to be improves and firms to grow and spread (Shleifer and Vishny, 1997).

The results of many empirical studies conducted in other countries also suggest that the establishment of a good governance system leads to the company's better performance (Balatbat et al., 2004; Gompers et al., 2003). The International Federation of Accountants (IFAC) in 2004 has defined corporate governance as: "responsibilities and practices used by the Board of Directors and managers aimed at determining a strategic direction that ensures achieving objectives, risk control and responsible use of resources". Given the different and incongruent structures of corporate governance system in various countries, the relationship between the components of the corporate governance system with the company's performance is different in the financial markets of developed and developing countries. Hence, the most important aim of this study is to investigate this issue that whether the components of corporate governance in companies listed in Tehran Stock Exchange lead to stabilization and increase in their performance (through two performance criteria including return on assets and stock return)?

Without doubt, we can say that proper management of the company allows achieving high levels of performance for the entity. The structure of the board, as the most important aspect of corporate governance, has a great impact on the performance of the board and thus firm performance (Fama and Jensen, 1983). It is worth noting that the situation in Iran, as a developing country, is different from other developed countries and also developing countries. The existence of these differences has caused Iran to be among the countries that their current laws and practices provide less protection of shareholders and creditors and the range of business owners is not so large in the classification of LaPorta et al. (1998).

Performance can be the result of organization's decisions and actions' measurability that reflects the organization's success and achievements. Organizations' performance evaluation is necessary and accepted standards should be used for this purpose so as to consider different aspects of limitations in activities and the opportunities to use facilities. Various criteria have been used to evaluate and measure business units' performance in accounting studies and researches that can be classified in two general categories of market-based criteria and accounting data-based criteria. By comparison, although market-based criteria are more objective, but at the same time, they are affected by a large number of factors uncontrollable by management, affected (Gani and Jermias, 2006). Therefore, to investigate the relationship between corporate governance and performance of business units, accounting data-based criteria are superior to market-based criteria.

In another classification, the criteria for evaluating the performance of business units can be classified as non-financial criteria and financial criteria. Financial criteria investigate how the company achieves its financial goals and indicate the attitudes of shareholders toward the company (Tesamenyia et al., 2008). There are different views on the use of different variables to assess the company's performance. For example, Andreou et al. (2014) used annual data to calculate the return on assets as operating profit before depreciation divided by the total assets. However, in similar studies, these criteria have been used to investigate the relationship between corporate governance and the company's operating performance (Giroud and Mueller, 2011).

From another perspective, evaluation of the performance of companies can be developed into accounting models and economic models. From the perspective of accounting models, accounting profit is the most traditional performance evaluation criteria, which is of utmost importance for investors, shareholders, managers, creditors and securities analysts. Accounting profit is calculated by accrual basis and many scholars believe that it is one of the most important measures of performance. In order to remove failures of performance evaluation models that are due to the use of accounting information, researchers such as Bacidore, Stewart and Suojanen searched for new criteria for evaluating the company's performance. With the advent of theories in the field of economic benefit or residual income, models were proposed to calculate the economic benefit (Stewart, 1991). In these models, net operating profit after tax deduction and cost of capital is defined as economic profit or residual income. In economic models, company's value is a function of profitability, existing priorities, potential investment and difference of the rate of return and cost of capital (Bausch et al., 2003).

Economic criteria of performance evaluation try to go through some adjustments and convert accounting information to economic information, and make economic information the basis for evaluating the performance of companies. The most important criterion in assessing corporate performance using economic criteria is the economic value added (Ansari and Karimi, 2009). The studies conducted so far, the researchers have used criteria such as Tobin's Q, return on equity (ROE), earnings per share (EPS), annual stock returns (RET) growth in operating profit and growth of net profit after tax deduction to investigate the relationship between companies' corporate governance and business unit's performance and value.

In this study, two measures of return on assets (ROA) and stock return (R) are used for measuring the performance of business units. Based on the Tehran Stock Exchange Corporate Governance Code in 2007, since the external components of corporate governance refers to a corporate control market that is not common in Iran, we have used just internal components of corporate governance such as concentration of ownership, institutional ownership, board independence, board size, CEO duality, CEO tenure. These 6 components are derived from the dimensions of the structure of ownership and board structure that Kumar classified in 2004 in order to control the agency costs. The following section of the study will be as follows: In the second section, the literature related to the subject is presented; in the third section, method, research hypotheses and models and variables are presented; in the fourth section, the results of research and finally in the fifth section conclusion is presented.

2. Research background

Andreou et al. (2014) investigated the relationship between corporate governance and financial management decisions such as earnings management and sub-optimal investment in maritime industries. They have also considered factors related to firm performance in their study. Finally, it was determined that their used corporate governance measures, such as insider ownership, board size, presence of corporate governance committees, the percentage of directors serving on the boards of other firms and CEO duality, are associated with financial management decisions and firm performance.

Gupta and Sharma (2014) investigated the effect of corporate governance practices on the performance of Indian and South Korean companies. They tried to show that better corporate governance leads to better performance of the company. The results showed that the practices of corporate governance impose effective limitations on both the share prices of companies and their financial performance.

Koerniadi et al. (2014) analyzed practices of corporate governance and variability of stock returns. Their findings showed that in the case of the stability of other factors, various aspects of corporate governance such as board composition, shareholder rights, and disclosure practices are associated with lower levels of risk.

Mousavi et al. (2010) studied the effect of some of the regulatory mechanisms of corporate governance such as ownership concentration on the rate of return on assets, return on equity and the ratio of market value to book value. Their results showed that there is a significant relationship between the concentration of ownership and return on assets, but there is no relationship between concentration of ownership and return on equity and the ratio of market value to book value.

Lee (2008) investigated the effect of ownership structure on financial performance of the companies. He considered the two criteria of ownership concentration and the nature of shareholders as the criteria of ownership structure and investigated companies listed in South Korean stock exchange in the period of 2000 to 2006 using panel data. The results showed that the performance can be improved by increasing the concentration of ownership of companies, but the effect of institutional ownership and foreign ownership is negligible.

3. Research method

According to the division in terms of methodology, the present study has been done based on descriptive and correlation method. In order to evaluate each hypothesis, multivariate regression models have been used in this study. The population of the study included all companies listed in Tehran Stock Exchange in a 7-year period from 2006 to 2012. In this study, a systematic elimination method has been used to select the sample. In order to select the sample based on the above-mentioned method, the companies have to be listed in Tehran stock exchange before the fiscal year of 2006; their fiscal year should have been ended in the end of March each year and they should not have changed

their fiscal year during the study period; they should not be one of the investment companies, financial intermediaries, banks, insurance companies, holding and leasing companies and also samples should include companies that have institutional investors.

Imposing the mentioned restrictions, 67 companies per year and a total of 469 year-company were selected and the required data has been extracted. Cochran test (Bartlett et al., 2001) was also used as follows to ensure that the results of the sample can be generalized to all companies listed in Tehran Stock Exchange during 2006 to 2012. The sample size is calculated using the following formula:

$$n = \frac{[Z\alpha/2]2 \times p \times q \times N}{[N-1] \times \varepsilon^2 + ([Z\alpha/2]2 \times p \times q)} \quad (1)$$

In which:

N=the population size

n= sample size

p= the ratio of success

q= the ratio of failure

Z= standard variable of normal distribution

ε = estimation error

In this study, the estimation error was considered 12% (like similar studies in this area) and also the preliminary estimates in relation to testing hypotheses by observation is equal to 0/5. Also, given that the number of companies listed in Tehran Stock Exchange for the study period is 463 companies, the study sample size was calculated.

According to calculations, it can be seen that at 95% confidence level and 12% error, 58 samples should be selected so that the results can be generalized to the entire population. Given that 67 companies were investigated in the present study, therefore, the results can be generalized to all companies listed in Tehran Stock Exchange for the period under study (2006-2012).

3.1. Research hypotheses

Based on the theoretical foundation and literature, the hypotheses have been proposed as follows:

H1. There is a significant relationship between the components of corporate governance and return on assets.

H2. There is a significant relationship between the components of corporate governance and stock returns.

3.2. Research models and variables

To test the proposed hypotheses, the following multivariate regression models have been used:

$$ROA_{i,t} = \alpha_0 + \beta_1 OWNCON_{i,t} + \beta_2 INSOWN_{i,t} + \beta_3 BRDIND_{i,t} + \beta_4 BRDSZE_{i,t} + \beta_5 DUAL_{i,t} + \beta_6 TENURE_{i,t} + \beta_7 MVE_{i,t} + \beta_8 BME_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$R_{i,t} = \alpha_0 + \beta_1 OWNCON_{i,t} + \beta_2 INSOWN_{i,t} + \beta_3 BRDIND_{i,t} + \beta_4 BRDSZE_{i,t} + \beta_5 DUAL_{i,t} + \beta_6 TENURE_{i,t} + \beta_7 MVE_{i,t} + \beta_8 BME_{i,t} + \varepsilon_{i,t} \quad (3)$$

The first dependent variable of the study (return on assets) is calculated with logarithm ((net profit (loss) + interest expense / total assets at the beginning of the year) + 1). The other dependent variable (capital market return) is also calculated using logarithm (stock returns + 1). Other variables, including independent variables and control variables are calculated on the basis of common method of their calculation in corporate governance and data were extracted.

4. Results

4.1. Descriptive statistics

Table 1 shows the results of descriptive statistics of research variables.

Table 1. Descriptive statistics of research variables

	No. of obs.	Min	Max	Mean	Std. dev.
ROA	469	-0.0785	0.2856	0.0803	0.0494
R	469	0.0602	1.6497	0.4511	0.2377
OWNCON	469	0.0667	0.8625	0.4538	0.1846
INSOWN	469	0.0000	0.8384	0.5376	0.0380
BRDIND	469	0.0000	1.0000	0.5947	0.2238
BRDSIZE	469	3.0000	8.0000	5.0575	0.4609
DUAL	469	0.0000	1.0000	0.1599	0.3669
TENURE	469	0.0000	0.9031	0.3778	0.2768
MVE	469	4.3054	7.6054	5.7025	0.6566
BME	469	0.0428	0.7119	0.2150	0.1318

Source: Authors' calculation

4.2. Preliminary statistics test results

In this research, co-linearity between the variables has been identified using two methods of correlation matrix (Pearson correlation coefficient) and variance inflation factors (VIF) and with respect to existing relationships in correlation analysis and VIFs that all are under number 10, the lack of co-linearity between the variables was confirmed. The white test is also used to assess heteroscedasticity; in the end, EGLS method was used due to the heteroscedasticity. Also according to the obtained probability values that are less than 5% for both research models in Chow test's output, panel data model was used. Hausman test was used to choose random effects and fixed effects methods to estimate regression model in panel data and the results emphasized the use of fixed effects method for both research models.

4.3. The results of hypothesis testing

Table 2 shows the results of the first hypothesis estimation with fixed effects model.

Table 2. The results of first hypothesis estimation

	Coefficient	t-statistics	p-value
Constant	0.132203	24.05499	0.0000
OWNCON	0.000337	4.217176	0.0000
INSOWN	-0.009266	-1.217868	0.0228
BRDIND	0.008523	3.779077	0.0002
BRDSIZE	-0.006998	-9.819616	0.0000
DUAL	0.001310	3.256460	0.0013
TENURE	0.007015	5.665103	0.0000
MVE	-0.004989	-4.061561	0.0001
BME	0.010081	4.046799	0.0001
AR(3)	-0.024709	-1.114143	0.2666

	Coefficient	t-statistics	p-value
Adj.R ²	0.922987		
DW	2.486466		
F-statistics	43.66572		
Prob (F-statistics)	0.000000		

Source: Authors' calculation

The results of testing this hypothesis suggests that there is a positive and significant relationship between the concentration of ownership (OWNCON), the independence of the board (BRDIND), CEO duality (DUAL) and board's tenure (TENURE) with the return on assets. The results showed a significant negative correlation between institutional ownership (INSOWN) and board size (BRDSZE) and return on assets.

F-statistics shows the overall significance of regression model fitted at a confidence level of 99%. Therefore, the first hypothesis of this study is confirmed and it can be said that: "there is a significant relationship between the components of corporate governance and return on assets (performance criteria) of companies listed in Tehran Stock Exchange". According to the adjusted coefficient of determination (Adj.R²) of the fitted model, it can be claimed that 92% of changes in the dependent variable (ROA) is explainable by the explanatory variables. Meanwhile, according to the results of autocorrelation, second and third level autocorrelation is confirmed for this pattern and that is why (AR3) is used to resolve it. The weighted least squares method (WLS) and White test were used to remove heteroscedasticity.

Table 3 shows the results of second hypothesis estimation.

Table 3. The results of second hypothesis estimation

	Coefficient	t-statistics	p-value
Constant	-1.063198	-11.24439	0.0000
OWNCON	-0.002841	-5.308863	0.0000
INSOWN	0.003078	1.316700	0.0189
BRDIND	0.080965	4.502301	0.0000
BRDSZE	-0.001348	-0.144017	0.0088
DUAL	0.071903	4.602541	0.0000
TENURE	0.036132	3.640958	0.0003
MVE	0.277488	22.72375	0.0000
BME	0.010952	0.473202	0.0063
AR(3)	0.349386	5.403204	0.0000
Adj.R ²	0.949317		
DW	1.725110		
F-statistics	67.68000		
Prob (F-statistics)	0.000000		

Source: Authors' calculation

The results of testing this hypothesis suggests that there is a positive and significant relationship between institutional ownership (INSOWN), the independence of the board (BRDIND), CEO duality (DUAL) and board's tenure (TENURE) with stock return, so that increasing these variables increases companies' performance (based on capital market's return). The results showed a significant negative correlation between concentration of ownership (OWNCON) and board size (BRDSZE) and stock return, so that increasing these variables decreases companies' performance (based on capital market's return).

F-statistics and its significance level (67/68 and 0/000) show the overall significance of regression model fitted at a confidence level of 99%. According to the Adj.R² of the fitted model, it can be claimed that 94% of changes in the

dependent variable (R) is explainable by the explanatory variables. Therefore, the second hypothesis of this study is confirmed and it can be said that: "there is a significant relationship between the components of corporate governance and stock returns (performance criteria) of companies listed in Tehran Stock Exchange". Meanwhile, according to the results of autocorrelation, first, second and third level autocorrelation is confirmed for this pattern and that is why (AR3) is used to resolve it. This model has heteroscedasticity and the weighted least squares method (WLS) and White test were used to remove heteroscedasticity.

4.4. Comparison of Performance Evaluation models

In addition to adjusted coefficient of determination to evaluate models (1) and (2), historical prediction of these models is estimated for dependent variables, so that the accuracy of these models can be evaluated by comparing them with the actual values. Fig (1) and Fig (2) show simulation of models (1) and (2) and their comparison with the actual values. Table (4) shows prediction assessment criteria for estimated models. The root mean square error (RMSE) and mean absolute error (MAE) are two evaluation criteria that are affected by the scale measuring model variables' data, so that if their value is less, the creditability of the model in prediction is shown. As can be seen in table (4), by comparing the two criteria for the estimated models, model (1) is of less value.

Mean absolute percentage error (MAPE) is another criterion to assess model prediction that is not sensitive to data scale. By comparing this criterion for 2 models, it can be seen that model (2) is of lower value and this represents a more accurate prediction of model (2). Theil inequality coefficient (TIC) is the most important and most useful criterion for assessing the model prediction. The value of this coefficient is always between zero and one, so that if it goes toward zero, the prediction of model is more accurate and more complete and model is of higher accuracy. As can be seen in table (4), Theil inequality coefficient of model (1) is of less value. Three indices of bias proportion (BP), variance proportion (VP) and covariance proportion (CP) show the mean, variance and covariance of prediction error, respectively; so that if their value is less, the model will be more accurate. According to the overall results of table (4), model (1) has a more accurate prediction and has higher reliability than other models in describing the company's performance.

Table 4. Prediction evaluation criteria for estimated models

	Model 1	Model 2
RMSE	0.026088	0.145957
MAE	0.019275	0.103948
MAPE	38.44520	25.86052
TIC	0.141004	0.146419
BP	0.000000	0.000000
VP	0.080257	0.137275
CP	0.919743	0.862725

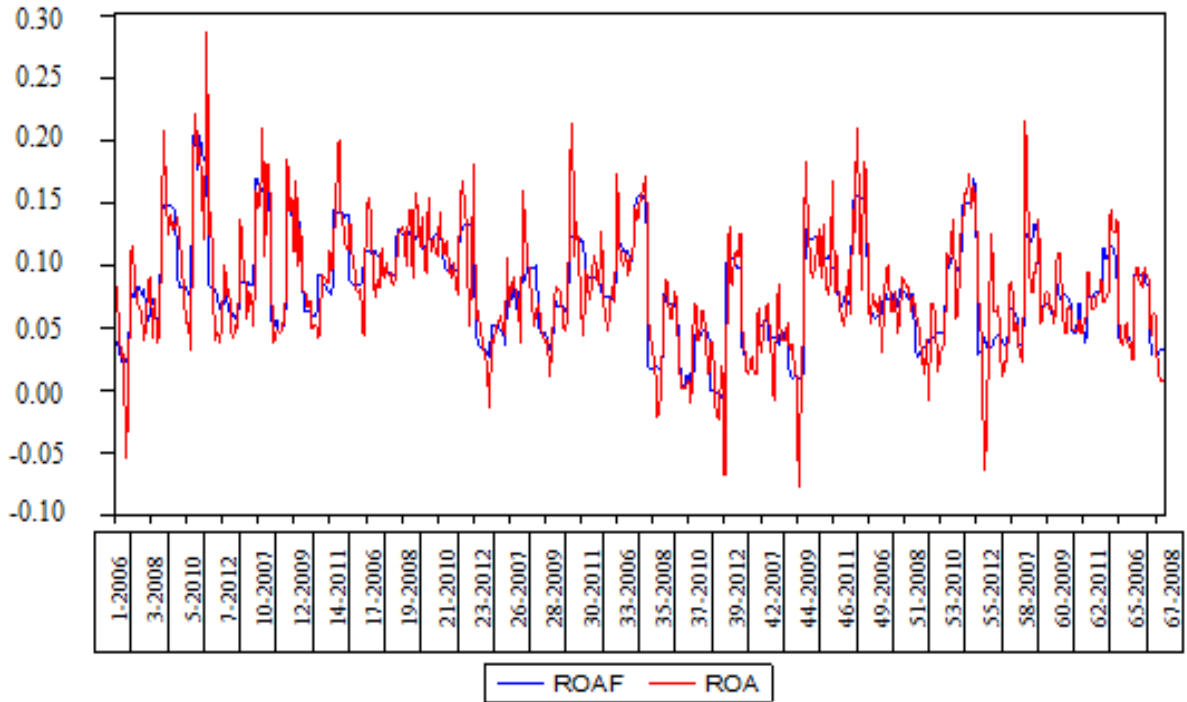


Fig. 1. Simulation of model 1 and its comparison with the actual value

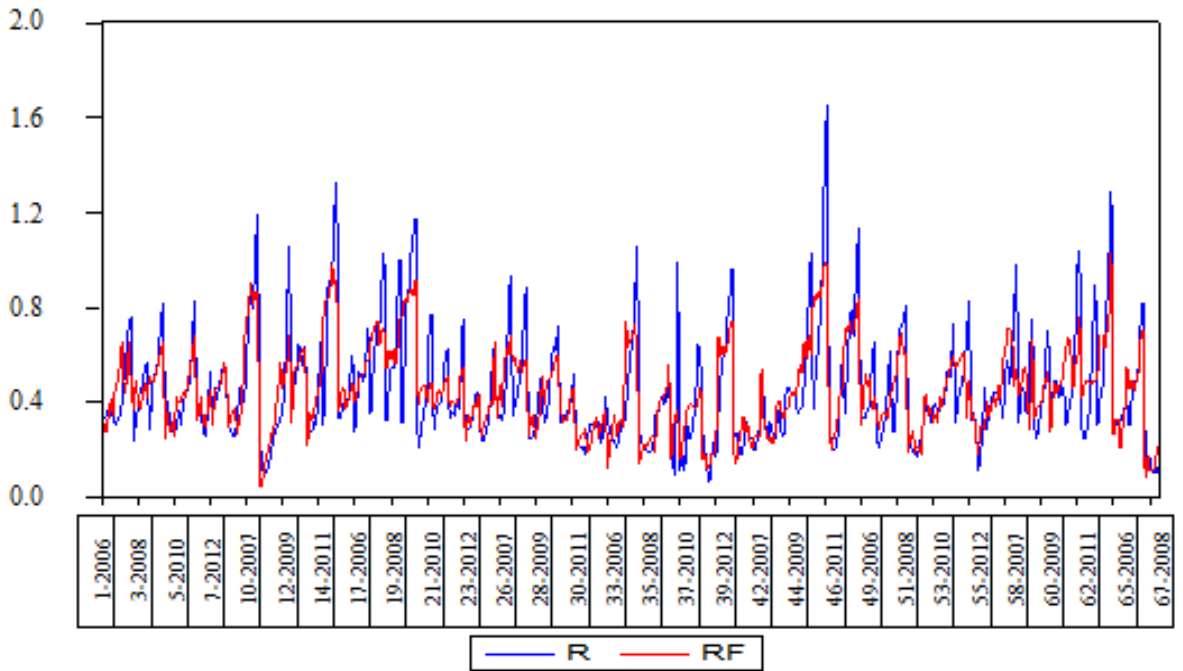


Fig. 2. Simulation of model 2 and its comparison with the actual value

As can be seen in figures (1) and (2), the estimated values of models (1) and (2) are very close to the actual values of the dependent variables.

5. Conclusion

Today, there is no doubt about the importance and place of corporate governance for the companies' success, because this issue has become more and more important around the world due to recent events and the financial crisis of companies. Studies have shown that the results of research on corporate governance in different countries are different. In Iran, the issue of corporate governance with its current concept has been proposed in recent years. It was proposed and investigated in the year 2002 and in interviews with officials of the Stock Exchange and the Research Center of the Iranian Parliament and the Ministry of Economic Affairs and Finance committee addressed the subject of corporate governance. Primarily, because of the failure of content separation of ownership from management and the influence of other environmental factors, accountability is low in corporate governance systems. Major shareholder's not being physically and mentally far away from the company in this case plays a crucial role and thus accountability is not considered as the duty intended by professional managers. The legal requirement is only respecting it in the limits of a legal requirement. Legal requirement to audit and prepare the information required by the Stock Exchange is the legal requirement of accountability in Iran.

It seems that if the goal of privatization of programs and increase in the company's stakeholders and shareholders is achieved, the corporate governance system in our country is growing and expanding. Based on the proposed issues and given the importance of issues related to corporate governance, the present study investigated the effect of the components of corporate governance on performance evaluation criteria such as return on assets and stock return of companies listed in Tehran stock exchange. The results indicate that there is a positive and significant relationship between the concentration of ownership, the independence of the board, CEO duality and CEO tenure with return on assets and there is a negative significant relationship between institutional ownership and size of the board and return on assets. On the other hand, there is a positive and significant relationship between the institutional ownership, board independence, CEO duality and CEO tenure with stock return; while, there is a negative significant relationship between the concentration of ownership and the size of the board with stock returns. The results are generally consistent with the study of Shleifer and Vishny (1986), Gutierrez and Pombo (2009), Omran (2009), Garay and Maximiliano (2008), Vincent and Nicole (2010) and Andreou et al. (2014) and also they are not consistent with the findings of Lee (2008) and Bhagat and Black (2002). As is stated in the definition of corporate governance, corporate governance seeks to follow four objectives of accountability, transparency, justice and the rights of stakeholders. Thus, according to the above-mentioned points and based on the research results, in order to achieve these goals, it is suggested to set the stage to achieve well governance through Tehran Stock Exchange.

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