

The impact of corporate governance on the financial performance of listed companies in the Tehran Stock Exchange Chemical industry

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Abstract - The purpose of the present paper is that of researching the impact of corporate governance on financial performance, on a sample of 3 companies (Tamin Petroleum & Petrochemical Investment Co., Persian Gulf Petrochemical Industries Company and Parsian Oil and Gas Development Group), mainly from the chemical industry area, listed at Tehran Stock Exchange index, during the period 2011-2016. In this study the return on assets (ROA) is the proxy of financial performance. As variables for the corporate governance there have been considered: the characteristics of the board of directors (independence, salary, size, tenure, age and Risk Committees); firm size; the shareholder structure (the shares of institutional investors); the characteristics of CEO (duality) . The estimation techniques used in the empirical analysis have been multivariate regression models based on the method of econometric data based on the relationship between independent and dependent variables using software Eviews8. The results show that the percentage of institutional investors, the salary Board of Directors, the Risk Committee of the Board of Directors and the Board of Directors size have a positive and significant effect on the financial performance of companies listed on Tehran Stock Exchange chemicals industry.

Keyword - Corporate governance, financial performance, Board of directors' Characteristics, Panel data

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I. INTRODUCTION

One of the most important factors influencing the control and management of the companies is ownership combination specially the concentration of ownership of stocks in the hands of major shareholders. Such shareholders have a significant percentage of the company's stock, which in turn could take the control of corporate governance. Corporate governance as an important approach to management planning and control, increase confidence of corporate activities and policies in line with the interests of shareholders (in particular and all stakeholders in general). So we can expect that the mechanisms of corporate governance and financial performance have a meaningful relationship.

One of the most important aspects of corporate governance is the role of its shareholders. Control and monitoring by the shareholders, especially the shareholders who are directly a board member, as a monitoring tool to improve the performance is noteworthy. The main and important matter of corporate governance mechanisms is to improve the quality of financial reports to make the board be effective.

Effective corporate governance is a fundamental factor in the process of rebuilding the economies in transition. The system by adjusting and setting up a conflict of interest and decrease of opportunistic and inappropriate behaviors, Improve corporate performance and quality of information available to participants in the capital market to the next level And facilitates access to foreign capital. In this paper, in the most comprehensive way, focusing on the board of directors that has not been addressed in previous research was studied the impact of corporate

governance variables on financial performance related to holding companies in the chemical products industry is in Tehran Stock Exchange. This study differs from other studies in this field.

Literature review & Historical Research

The basic concept of corporate governance is taken from the word “Gubernare” means “lead” which is usually used to guide a ship and implies that the first definition of corporate governance tends to focus more on leading and not control. Corporate governance is said to be a set of processes, customs, policies, laws and institutions which influence on a company or organization leadership and control.

Historical roots of corporate governance related to disclosures of 17 US major companies illicit and covert aid to the Republican Party in 1973, which is known as Watergate. In Iran, the issues of corporate governance with existing concepts have been proposed in recent years. Corporate governance with its current concept includes several sections which some of them have reached to the approval of the Stock Exchange in recent years. Among them are the guidelines of internal controls, audit committee charter, internal audit charter, related party instructions, guidelines and procedures and operating instructions of information disclosure.

- Shoorvarzi and colleagues (1394) examined the relationship between corporate governance and firm performance based on their fuzzy regression. Due to the fact that the fuzzy output values are vague and as are in the form of symmetrical triangular fuzzy number, they make the outputs un-fuzzy by using the method of center of gravity (COA). Based on the results of this study, the hypothesis of relationship between non-executive members on the board and institutional owners with corporate performance was confirmed.
- Vintilla et al (2015) investigated the answers to the question of whether corporate governance is effective on financial performance or not. For this purpose, they chose a sample of 51 companies in the areas of technology

between American companies which have been registered in the NASDAQ stock exchange and Dowjones index component. Their review period was between 2000 and 2013. For this purpose they used regression model based on least squares of error method.

Hypotheses

1. The number of members of the board of directors has a significant impact on corporate financial performance.
2. The age of Board of Directors has a significant impact on corporate financial performance.
3. The number of board-year tenure, has a significant impact on corporate financial performance.
4. Board size has a significant impact on corporate financial performance.
5. CEO duality has a significant impact on corporate financial performance.
6. Percentage of institutional investors has a significant impact on corporate financial performance.
7. The right to attend Board of Directors has a significant impact on the corporate financial performance.
8. Risk Committee of the Board of Directors has a significant impact on the corporate financial performance.



Figure1: Conceptual Model Proposed Based on Vintilla et al. (2015)

Methodology

Research methods are the means of achieving the reality. In each study, the researcher attempts to select the most appropriate method and the method that is more accurate than other methods, discovers rules, and facts. Therefore, understanding the facts and determine the relations between them requires the selection of appropriate investigative method. Scientific Studies are divided into two categories based on objective: fundamental and applied.

Since this study reflects the impact of corporate governance on the financial performance of companies listed in Tehran Stock Exchange is the chemical products industry, will be objectively applied; the applied research, develops practical knowledge in a particular field. The present study is correlational (description) in nature using regression analysis. For inferential statistics and testing research hypotheses, panel data multivariate linear regression models were used and the analyzing software was Eviews 8. Collected data was from the sample companies in different years and were observational (corporate, years).

The tests used in this study are as follows:

1. For testing research variables Normality, Jarque-Bera test was used.
2. For testing the reliability of variables, stationary test of Levin, Lin and Chu were used.
3. For testing Solidarity and co-linearity of variables, correlation T test was used.
4. For choosing a hybrid approach or a combination, Chow test was used.
5. For Testing research hypotheses:
 - a. F Fisher, used for testing the significance of the model.
 - b. Dourbin, Watson, was used to test the model independence waste.

The data collection method related to the research in theoretical discussions is Libraries procedure. To collect literature books, journals, studies and articles in Persian and Latin and the Internet have been used. And to collect data companies data bank stock (Internet system of Codal), the site of the stock exchange and the software of Rahavard Novin are used.

The statistical society in this study is the chemical industry of Tehran Stock Exchange

and the statistical sample are three big holding companies, "Tamin oil, gas and petrochemical investment" (Stock symbol, "TAPICO"), "Oil and gas development Corup" (Stock symbol, "PARSAN"), and "Persian Gulf Petrochemical Industries Company" (Stock symbol, "FARS"). Remarkably, the study sample, systematic non-randomly selected. The time span of the study is the performance of these companies in the last 5-year, time periods 3, 6, 9 and 12 months from 1390 to 1395.

Table1: Research variables

ROA	Return on Assets	LEV	Leverage Ratio
BI	Board Independence	B of D T	Board of directors Tenure
BS	Board Size	B of D A	Board of directors Age
RC	Risk Committee	CEO D	CEO Duality
IO	Institutional Ownership	B of D S	Board of directors Salary
FS	Firm Size		

Results and discussion

The following results represent the descriptive parameters for each variable and include two categories of information. The first is related to the mean and median and the second, related to the distribution parameters such as standard deviation, skewness and kurtosis that represents a data distribution is around average.

Table2: Results of Variables Normality Test

	ROA	BI	BS	RC	IO	FS	LEV	BODT	BODA	CEOD	LN BODS
Mean	0.108	3.47	5.067	0.333	0.91	13.867	0.826	2.200	55.07	0.900	16.102
Median	0.031	3	5	0	0.93	13.883	0.809	2	55	1	16.07
The maximum amount	0.439	6	7	1	1	14.305	2.447	3	60	1	16.59
Lowest	0.020	2	4	0	0.790	13.386	0.001	1	50	0	15.61
Standard deviation	0.130	1.1	0.686	0.475	0.06	0.248	0.565	0.755	3.008	0.303	0.306
Skewness	0.861	0.55	1.190	0.707	0.06	0.193	0.543	0.344	0.011	2.667	-0.086
kurtosis	2.631	2.92	5.404	1.5	1.830	2.198	3.099	1.847	2.181	8.111	1.889
Jarque-Bera	7.753	3.07	28.609	10.625	3.45	1.979	2.969	4.505	1.678	136.4	3.158
Critical level	0.021	0.22	0.0000	0.005	0.18	0.372	0.227	0.105	0.432	0.0000	0.206

The first step is to estimate the pattern after collecting statistics, is analysis of stationary or perdurability of variables. For this purpose the stationary the panel data test of Levin, Lin and Chu was used. According to this test, P-Value of all the variables was less than 5%, which means all of them are stable.

level, so the panel date method was chosen.

Table3: Results of Variables Stability

Variable	t-value	significance Level	Cross-sections	observation
ROA	-5.07381	0.0000	3	60
BI	-8.33182	0.0000	3	60
BS	-8.0232	0.0000	3	60
RC	-6.61081	0.0000	3	60
IO	-0.17963	0.0000	3	60
FS	-2.07493	0.0190	3	60
LEV	-4.07532	0.0000	3	60
BODT	-8.74946	0.0000	3	60
BODA	-5.59722	0.0000	3	60
CEOD	-1.64808	0.0497	3	60
LNBOBS	-5.57342	0.0000	3	60

Spearman’s rank correlation coefficients between independent variables to estimate the research models, mentioned in the table below. Minus sign means a negative relationship and positive sign shows direct relationship between two variables. The correlation coefficient only shows the relationship direction and not the effectiveness of a variable to another variable. As can be seen from the table, Research variables correlation coefficients are close to zero or less than 0.5, which shows no correlation between independent variables of the model.

Table4: Results of Variables Solidarity and co-linearity

LNBOBS	CEOD	BODA	BODT	LEV	FS	IO	RC	BS	BI	
0.376-	0.092	0.26-	0.213	0.269	0.5-	0.34-	0.054	0.26	1	BI
0.433-	0.033	0.23-	0.105	0.125	0.53-	0.28-	0.035	1	0.26	BS
0.398	0.236	0.126	0.567	0.03-	0.376	0.46-	1	0.035	0.054	RC
0.02	0.43-	0.46-	0.48-	0.17-	0.03-	1	0.46-	0.277-	0.337-	IO
0.882	0.117	0.363	0.462	0.198	1	0.03-	0.376	0.528-	0.498-	FS
0.26	0.116	0.005	0.374	1	0.198	0.17-	0.03-	0.125	0.269	LEV
0.517	0.312	0.285	1	0.374	0.462	0.48-	0.567	0.105	0.213	BODT
0.277	0.268	1	0.285	0.005	0.363	0.49-	0.126	0.232-	0.256-	BODA
0.201	1	0.268	0.312	0.116	0.117	0.43-	0.236	0.033	0.092	CEOD
1	0.201	0.277	0.517	0.26	0.882	0.02	0.398	0.433-	0.376-	LNBOBS
0.376-	0.092	0.26-	0.213	0.269	0.5-	0.34-	0.054	0.26	1	BI

To choose between the panel data or pool data methods for estimating the model, the Chow or F Limer test was used. If the probability statistic be less than 5% of error level, panel data model without effects is approved; otherwise pool data method model is used.

These results show that the probability statistic for the model of this paper is less than the 5%

Table5: Results of choosing fitted pattern test (Panel or Pool model)

Model	F	d.f.	significance level
Basic	1.600019	(3,60)	0.2127

Table6: Hypothesis Test Results

Dependent variable: rate of return on assets Variable symbol: ROA
 Model: Multivariate linear regression Type: Combined
 Sections: 3 Courses: 20 Views: 60

Variable symbol	Coefficient	standard error	t Statistics	significance level
BI	-0.003498	0.026784	-0.13059	0.8966
BS	0.075933	0.037477	2.026086	0.0482
RC	0.098733	0.040832	2.419003	0.0193
IO	0.979565	0.379074	2.584103	0.0128
FS	0.284179	0.126259	2.250764	0.0289
LEV	-0.070274	0.028052	-2.5051	0.0156
BODT	0.037508	0.027513	1.363275	0.179
BODA	0.011958	0.00623	1.919575	0.0607
SEOD	0.088915	0.048641	1.827977	0.0736
LN BOBS	-0.426486	0.100765	-4.23247	0.0001
C	0.973823	1.253371	0.776963	0.4409
coefficient of determination	0.538566	Average dependent variable		0.108291
F Fisher	5.719059	Deviation of the dependent variable		0.129517
Statistics F	0.000013	Durbin and Watson		1.916683

A) Significant test of the model:

To investigate for significance of regression F. Fisher statistics was used. The F-ascites significance level of research model is smaller than 0.05, at 95% of Confidence level, significance of this model is confirmed.

B) Model waste independence test:

To investigate for fitted model waste independence, Durbin-Watson test is used. If the value of this statistic is in the range of 1.7 to 2.5 (1.5 to 2.5 is mentioned in some sources),waste Independence of the model is approved, otherwise there is evidence of lack of independence or serial correlation in model waste. The Durbin-Watson statistic value in this research model is in this range, so the assumption of serial autocorrelation between variables is rejected.

C) Determining coefficient of model:

The research model coefficient of determination is equal to 0.54. Therefore, according to this value, this model can predict

54 percent of dependent variable changes by explanatory variables.

Final considerations

The results show that the percentage of institutional investors, the salary Board of Directors, the Risk Committee of the Board of Directors and the Board of Directors size have a positive and significant effect on the financial performance of companies listed on Tehran Stock Exchange chemicals industry. But, there was not a significant impact of number of non-executive director on the board, the age of Board, and board tenure and CEO duality on financial performance in the above listed companies.

Compare the results with other studies is as follows:

I. Significant effect of board of directors on corporate financial performance is in line with the results of the study of Rodriguez Fernandez (2015) and Shoorvarzi et al (1394).

II. The significant effect of Board of Directors age on the financial performance of the Company's is in line with the research conducted by vintilla et al (2015).

III. Significant effect of Board of Directors tenure on the financial performance of the company is in line with the research of Rodriguez Fernandez (2015) and Shoorvarzi et al (1394).

IV. Significant effect of board size on the financial performance of the company have the same results as the research conducted by Black (2001), vintilla et al (2015), and Ismailzadeh (1389).

V. CEO duality significant effect on the financial performance is not the same as the results of the study of Nazemi et.al (1393), and vintilla et.al (2015).

VI. Significant effect of institutional investors on the financial performance is in line with research done by Nazemi et al (1393), Hatchysung et al. (2014), Jeffrey & Fang (2011), and Paula Gurova (2010).

VII. Significant effect of board salary on the financial performance of company is the same as the study of Shoorvarzi et al. (1394), and vintilla et al (2015).

VIII. Significant effects of salary and being of risk committee at board on financial performance of the company has the same result as is vintilla et al (2015).

So it is recommended that:

- ▶ To increase the motivation of the board, the salary be increased and it is suggested that this issue be considered more by the auditors, managers and decision makers.

- ▶ Policies for risk committee formation be considered by board of directors

- ▶ The shareholders take to consideration the balance of the board members' number according to obliged and non-executive roles.

In order to do future studies, other variables including deferred funds management, the effect of individuals in the industry as well as other psychological and behavioral variables could be taken in to consideration.

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