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Investigating the impact of board structure on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange

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Abstract: The aim of this investigation is to examine the impact of board structure on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange. Board size, board independence and non-executive board members ratio, and corporate social responsibility are considered as independent and dependent variables of the study, respectively. All listed companies in Tehran stock exchanged were selected as statistical population of the research based on systematic method in a five-year period during 2009 to 2013. Based on this method, 342 firms were selected and finally 73 were picked up through Demorgan table. The results indicated that board size, board independence and non-executive board managers' ratio significantly impact on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange.

Key words: Board size; Board independence; Non-executive board managers' ratio; Corporate social responsibility

1. Introduction

Since some managers have unit one organization, board structure is determined. The performance of organizations have been examined in terms of board size in recent years and this is a common action which enables scientists to investigate the performance of an organization based on their board size (Cannel and Kramer, 2010). Having a suitable board structure effecting on welfare and operations of corporate social responsibility is an important discussion todays (Hermalin and Visbach, 2003; Eisenberg et al., 1998; Zahra and Pires, 1989; Kil and Nichelsson, 2003).

To determine suitable management and monitoring strategies (Zahra and Pires, 1989), it is suggested that large board size is effective for organizations to implement their corporate social responsibility. Then, firms with large board size have more experience, proficiency, knowledge and information; have more relationship with other organizations in a way that they will not be faced with any problem during operational strategies developments (Godastin et al., 1994; Kil and Nichelsson, 2003). Unlike the above arguments (Hermalin and Visbach, 2003; Eisenberg et al., 1998), it is stated that small board size would enhance the performance of organizations and large board size would increase the possibility of disagreement between board members and it would create some problems in communication and coordination that is problematic for that organization. They concluded that small board size and large board size led to improved performance and decreased organizational performance.

Corporate social responsibility that has many complexities and components move towards other side of organizations' business strategies. The issue was proposed because it was depended on humans' and other creatures' welfare (Anglidis and Ebrahim, 1979; Zenisk, 1979). Organizations tend to adopting social responsibility approach to actively attend public welfare programs and adding up the approach to their long-term strategies (Klemenger, 1998). What we looking for is responding to the question whether board structure impacts on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange?

2. Research background

(Hamfry Hang, 2011) examined the role of board of directors in corporate social responsibility with shareholders' outlook. According to the study of 120 firms, the results suggested that shareholders pay more attention to firm board and they expect that the relation among board of directors and social responsibility become more efficient.

(Arosa et al., 2012) investigated the efficiency of board of directors as a corporate governance mechanism. Their findings indicated that external managers and firm size negatively impact on firm performance, consequently their existence would not improve the firm performance. As well, existence of internal managers is related to higher firms' knowledge and positively impact on strategic planning decisions.

(Asqar Ali, 2013) examined the relation between board structure and social responsibility disclosure

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in Pakistan. He investigated four important and main cores of board structure and social responsibility strategy factors. His researches suggested that (1) existence of female board members majorly impact on social responsibility strategy (2) board members' independence is one of the main components in determining social responsibility strategy (3) managers tenure positively impact on the strategy of corporate social responsibility and (4) board size plays the central role in planning and developing the strategy of corporate social responsibility.

(Daros et al., 2014) investigated the correlation among ownership structure and social responsibility disclosure in Malaysian financial institutions during 2008 to 2011 and reached to the conclusion that centralized firms' ownership structure in a financial institution can prevent from corporate social responsibility reporting, namely management disclose limited information about social responsibility to small number of shareholders.

3. Research methodology

3.1. The research's hypothesis

- Board size significantly impact on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange.
- Board independence significantly impact on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange.
- Non-executive board managers' ratio significantly impact on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange.

3.2. The research's statistical population

All listed companies in Tehran stock exchanged were selected as statistical population of the research based on systematic method in a five-year period during 2009 to 2013. Firms were selected based on the following conditions and the remaining ignored; finally some of selected firms were picked up through Demorgan table:

1. Their fiscal year ends in 19/3/
2. They should not be part of special industries, such as investment companies, financial intermediary, banks or leasing.
3. Their information should be available.
4. They should not have been experience transactions suspension.
5. They should have not changed their fiscal year
6. Their wealth should have not been increased during the research.

342 firms were selected based on systematic method and 71 firms were finally picked up as the research's sample through Demorgan table.

3.3. Way of measuring the variables

Table 1: The operational definitions of the variables

Type of variable	Variable's name	Way of measuring
Dependent	CSR	The score of social responsibility disclosure of each company is obtained that companies provide it based on the final checklist about corporate social responsibility items.
Independent	Board size	The number of people in boards' commissions and board of directors (Hassas Yeganeh et al., 2010).
	Non-executive board managers to total members ratio	Non-executive managers to total members ratio (Yahya Hassas Yeganeh et al., 2010)
	Board independence	The number of independent commissions divided by the number of boards' commission members (Hassas Yeganeh et al., 2012).
Control	Firm size	Natural logarithm of book value of total assets (Kordestani et al., 2012).
	MB	Market value to book value per share ratio (Kordestani et al., 2012).
	Financial leverage	Total debt to total assets ratio (Kordestani et al., 2012).

3.4. Regression model

3.4.1. The first hypothesis

$$CSR_{it} = \gamma_0 + \gamma_1 \text{Board Size}_{it} + \gamma_2 \text{Firm Size}_{it} + \gamma_3 MB_{it} + \gamma_4 \text{Leverage}_{it} + \varepsilon_{it}$$

3.4.2. The second hypothesis

$$CSR_{it} = \gamma_0 + \gamma_1 \text{Board Independent}_{it} + \gamma_2 \text{Firm Size}_{it} + \gamma_3 MB_{it} + \gamma_4 \text{Leverage}_{it} + \varepsilon_{it}$$

3.4.3. The third hypothesis

$$CSR_{it} = \gamma_0 + \gamma_1 \text{Outside Directors}_{it} + \gamma_2 \text{Firm Size}_{it} + \gamma_3 MB_{it} + \gamma_4 \text{Leverage}_{it} + \varepsilon_{it}$$

3.5. Data analysis method

In this research, one of common effects, fixed effects and random effects models is used to estimate the efficiency of a regression model using panel data. Firstly, ADF test is used to determine whether xt time series has static process (zero accumulation order) or divergent (one accumulation order). Applying a suitable method for combined data is necessary like examination of the variables' staticness. We use modified Wald test 1 to examine group wise heteroskedasticity among surpluses of regression fixed effects model. Also, F and Hausman 2 test is used to determine either fixed effects method or random effect. To describe the explanatory power of explanatory variables, adjusted coefficient of determination (Adjusted R^2) is used, and F-fisher test is applied in order to examine the significance of variables and overall adequacy of the model. Statistical analyses are also made using EXCEL and EVIEWS software.

4. Results

4.1. Examination of heteroskedasticity

To examine heteroskedasticity, Arch error terms test (LM) is performed. The obtained results are as follow:

Table 2: The results of Arch error term test (LM)

Description	Statistics amount	Probability
F-statistic	0.916452	0.106
Obs*R-squared	1.718462	0.106

* 5% error level

Regarding Table 2, due to the level of f-statistics is not significant in 5% error level, homogeneity of variance is confirmed and heteroskedasticity of error terms are rejected.

4.2. Significance test of fixed effects method

Table 2: F-Limer and Hausman test

F-Limer test			
Description	Statistics amount	Freedom degree	Probability
Cross-section F	1.491115	70	*0.016
Cross-section Chi-square	147.821623	70	*0.005
Hausman test			
Description	Statistics amount	Freedom degree	Probability
Cross-section F	7.913227	14	*0.034

* 5% error level

Regarding the results of both table (F and Hausman), the obtained probability were less than 5% in each tests, so fixed effects method should be used in the related regression model.

4.3. The first research hypothesis test

Table 4: The first hypothesis regression test

Variable	Estimated coefficients	Estimation of deviation	t-statistics	Significance level
Fixed	0.552	0.102	5.411	*0.018
board size	0.617	0.125	4.936	*0.022
Firm size	2.335	0.335	6.971	*0.000
Financial leverage	-0.495	0.337	-1.468	0.081
Market value to book value per share ratio	0.769	0.169	4.551	*0.029

* 5% error level

Table 5: Explanation and significance ability of whole model

R			ANOVA	
Coefficient of determination	Adjusted coefficient of determination	DW	F	Sig.
0.378	0.362	2.163	57.716	**0.000

** 1% error level

Regarding the Table 4, impact factor of firm size on disclosure level of corporate social responsibility is 0.716, indicating positive and direct impact of firm size on disclosure level of corporate social responsibility. On the other hand, regarding significance level of t-statistics of firm size on disclosure level of corporate social responsibility (0.022), H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that firm size significantly impact on disclosure level of corporate social responsibility. The empirical model of the research is:

$$CSR_{it} = 0.552 + 0.617\ Board\ Size_{it} + 2.335\ Firm\ Size_{it} + 0.769\ MB_{it} - 0.495\ Leverage_{it} + \varepsilon_{it}$$

4.4. The second hypothesis test

Table 6: The second hypothesis regression test

Variable	Estimated coefficients	Estimation of deviation	t-statistics	Significance level
Fixed	0.437	0.132	3.314	*0.036
Board independence	0.698	0.175	3.988	*0.028
Firm size	3.024	0.562	5.381	*0.005
Financial leverage	-0.514	0.475	-1.082	0.079
Market value to book value per share ratio	0.678	0.192	3.531	*0.032

* 5% error level

Table 7: Explanation and significance ability of whole model

R		DW	ANOVA	
Coefficient of determination	Adjusted coefficient of determination		F	Sig.
0.578	0.526	1.821	66.024	**0.000

** 1% error level

Regarding the Table 6, impact factor of board independence on disclosure level of corporate social responsibility is 0.698, indicating positive and direct impact of board independence on disclosure level of corporate social responsibility. On the other hand, regarding significance level of t-statistics of board independence on disclosure level of corporate social responsibility (0.028), H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that board independence significantly impact on disclosure level of corporate social responsibility. The empirical model of the research is:

$$CSR_{it} = 0.437 + 0.698\ Board\ Independent_{it} + 3.024\ Firm\ Size_{it} + 0.678\ MB_{it} - 0.514\ Leverage_{it} + \varepsilon_{it}$$

4.5. The third hypothesis test

Table 8: The third hypothesis regression test

Variable	Estimated coefficients	Estimation of deviation	t-statistics	Significance level
Fixed	0.617	0.147	4.197	*0.0317
Non-executive board members ratio	0.225	0.195	1.153	0.083
Firm size	2.417	0.419	5.768	*0.006
Financial leverage	-0.681	0.562	-1.211	0.079
Market value to book value per share ratio	0.678	0.107	3.131	*0.035

* 5% error level

Table 9: Explanation and significance ability of whole model

R		DW	ANOVA	
Coefficient of determination	Adjusted coefficient of determination		F	Sig.
0.437	0.421	1.857	57.323	**0.000

** 1% error level

Regarding the Table 8, impact factor of non-executive board members ratio on disclosure level of corporate social responsibility is 0.225, indicating positive and direct impact of non-executive board members ratio on disclosure level of corporate social responsibility. On the other hand, regarding significance level of t-statistics of non-executive board members ratio on disclosure level of corporate social responsibility (0.083), H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that non-executive board members ratio not significant impact on disclosure level of corporate social responsibility. The empirical model of the research is:

5. Conclusion and recommendation

The results suggested that board size, board independence and non-executive board members ratio significantly impact on disclosure level of corporate social responsibility of the listed companies in Tehran stock exchange. Hence, (Asqar Ali, 2013) showed that board size plays a major role in planning and developing CSR.(Hamfry Hang ,2011) indicated that shareholders pay more attention to CSR strategy, and whatever their attention is higher, they expect more efficient relation between board of directors and CSR. (Side et al, 2009) demonstrated that board size impacts on CSR of Malaysian firms. On the contrary, (Kamyabi et al., 2013) showed that there is no significant relation between board size and financial information disclosure. According to the obtained results, the following recommendations are made:

1. It is suggested to the stock exchange to classify firms by their disclosure level of CSR that can highlight CSR more precisely.
2. It is suggested to International Accounting Standard Committee to emphasize on CSR issue and makes CSR disclosure level obligatory through determining standards.
3. It is recommended to investors, shareholders and other stakeholders who seeking for CSR-based decision-making to emphasize on board structure during their decision-making in order to make consciously conclusions.

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