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The Role of Corporate Governance in Preventing Bankruptcy: a Case of Tehran Stock Exchange

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Abstract

The aim of this study is to investigate the effects of corporate governance mechanisms in preventing the bankruptcy of companies listed in Tehran Stock Exchange. For this purpose, corporate governance mechanisms, including institutional ownership, non-executive members of the board, CEO dual responsibility and free float stock are determined as independent variables and Bankruptcy based on the Spring ate model is determined as the dependent variable. The Spring ate model was used to evaluate institutional ownership, non-executive members of the board, CEO duality and free-floating share. The findings have mostly supported the hypothesis during the study period. Institutional ownership and non-executive board members have negative and free-floating shares have positive relationship with bankruptcy. Our model did not find a significant relationship between CEO duality and bankruptcy. Although, we can't rule out the possibility of any effects CEO duality might have.

Introduction

The last two decades in economic history are characterized by an unprecedented increase in the rate of bankruptcies. The East Asian financial crisis in 1997, the Brazilian financial crisis and the Russian economic crisis in 1998, Enron crisis in the US, housing crisis in 2005 and the US financial crisis in 2008 all showed reoccurring and sustainable crisis (Iravani 2009). Bankruptcy and scandals of companies such as Enron, Arthur Andersen and WorldCom in the United States and other examples of failure of large companies such as Seiko, Lucent, Sunbeam and Tycho in other countries happened as a result of weak corporate governance.

The importance of establishing robust corporate governance led to the introduction of some acts like Sarbanes-Oxley in the US and adoption of the leadership principles that is known as "corporate governance" by Ministers of OECD* in different countries (Baradaran-e Hassanzadeh, Badavar Nahandi, and

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Hossein Babaei 2012). The corporate governance has gained more attention during recent years because of the spread of the financial crisis. In fact, corporate governance system is a response to the agency problem caused by the separation of control from ownership. The agency theory states that, there should be independent non-executive directors in the board of directors. The role of these directors as independent individuals is to reduce conflicts of interest among shareholders. If a company separates the duties of chair of the board of directors and CEO, the agency problems will be reduced due to more independence in decision-making, which in turn will result in performance improvement. Some explain this as "controlling role of the board" (Kim et al. 2013). On the other hand, "the resource dependence role" defines another role for the board, which prepares the company with resources using their networks. The board of directors of a company can be seen as a mechanism for managing the company's external resources (Pfeffer and Salancik 1978). This role reduces environmental uncertainty and transaction costs associated with environmental dependence (Hassas Yegane and Tajick 2008). Experimental researches have also studied the role of Corporate Governance mechanisms in preventing the bankruptcy of corporates, such as:

Habib and Azim (2008) assessed the relevance of accounting information in 500 Australian companies from 2001 to 2003. This feature was assessed using some of corporate governance mechanisms including non-executive members of the board of directors, board independence, and audit committee. Their findings indicated that companies with better corporate governance have reported more relevant accounting information. Fich and Slezak (2008) examined the ability of corporate governance mechanisms to prevent bankruptcy. In this study, Altman’s Z model and interest coverage ratio are used to determine bankruptcy level. The results show that more independent board with higher percentage of non-executive members may result in a more successful company management. Moreover, making a certain part of the company's shares available for internal managers have a great impact on avoiding bankruptcy. Funchal, Galdi, and Lopes (2008) studied the relationship between corporate governance and bankruptcy due to debt payoff. The results show that companies with better corporate governance have less debt and more credibility. It is worth mentioning that a better monitory system along with executing stronger rules has a positive impact on the amount of the debt.

Considering the above mentioned, the main hypothesis of this research is as following:

H1: Corporate governance mechanisms are effective in preventing companies listed on the Stock Exchange from the bankruptcy.

Since corporate governance includes various dimensions, it is necessary to divide main hypothesis into minor hypothesis to test the main one. Those minor hypothesizes are adjusted based on the role of institutional ownership, CEO duality, the role of Non-executive management and the free-floating share.

Institutional ownership represents another strong corporate governance mechanism that can monitor the management of the company. Institutional owners monitor the company implicitly through collecting information and pricing the decisions made by board of directors and explicitly through handling how company should act (Taleb Nia, Rahimian, and Bagheri Navir 2011). The Sarbanes-Oxley act is an external monitoring rule which emphasizes the internal monitoring systems of a company (Sarbanes and Oxley 2002). Cadbury Report notes that a balance of power must be present between board members, so that no one would be able to "unconditionally control" the company's decision-making process (Cadbury 1992).

After Cadbury report, the Higgs review (2003) again emphasized the importance of segregating duties in a company (Higgs 2003). For instance, CEO duality (if the Chairman of the Board and CEO are one person) gives the CEO more power to control the information available to other members and thus may prevent effective oversight (Kim and Buchanan 2011), ultimately resulting in the reduction of board independence and the natural tendency for voluntary disclosure (Yanesari, Gerayli, and Abadi 2012). In addition, various experimental researches show the effect of Institutional ownership on different dimensions of corporate activities:

Petra (2005) examined the impact of corporate governance on the information content of earnings using a sample of 203 US companies from 1996 to 1999. He concluded that there is a significant positive relationship between board composition and the information content of earnings, while CEO dual responsibility will not reduce the information content of earnings.

Cornett et al. (2007) investigated the relationship between institutional investors and large companies' operational performance. This study shows a significant correlation between companies' operating cash flow yield, the percentage of institutional equity ownership and institutional ownership. However, this was seen only for a subset of institutional ownership: those who were less likely to have a business relationship with the company.

Tsai and Gu (2007) studied the relationship between institutional ownership and corporate performance in the casino industry from 1999 to 2003. This study showed that institutional ownership may help casino companies to reduce agency problems resulting from the separation of management and ownership. In addition, financial institutions are willing to invest in larger casino companies with lower financial leverage.

Elyasiani and Jia (2008) studied the correlation between the performance of bank holding companies and stability of institutional ownership. The results showed that: first, the performance of bank holding companies is positively associated with stability of institutional ownership. Second, this association is weaker when bank holding companies are compared with the profit and the companies industry. Third, this association is more noticeable in new deregulated years and for bank holding companies, where the possibility of adjustment is less.

Lefort and Urzúa (2008) concluded that increasing non-executive members of the board would increase the firm value. When the ratio of non-executive members and professional members are analyzed separately, only the number of non-executive members of the B of D may affect the firm value.

Butt and Hasan (2009) investigated the effect of ownership structure and corporate governance on the capital structure. In this study, three variables of board size, board composition and membership of the CEO in B of D were used to assess corporate governance. Ownership structure was also measured using the percentage of shares owned by managers and institutional ownerships. The results showed that the size of B of D and managerial shareholding negatively and significantly associated with the leverage ratio, while membership in B of D and board composition did not have any significant effects on the capital structure. Furthermore, their findings suggest a positive, but insignificant relationship between institutional ownership and capital structure.

Chang (2009) examined the features of corporate governance in failed firms of Taiwan. He concluded that companies with independent B of D (companies with a higher percentage of non-executive members of B of D) were less affected by the crisis and financial distress. Their results also show that there is a positive relationship between board size and financial insolvency.

Considering the discussed researches secondary hypothesis of this research are as follows:

H1-1: Institutional ownership is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

H1-2 Non-executive manager in B of D is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

H1-3 CEO duality is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

H1-4 The free-floating share is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

We explained bankruptcy as an outcome of poor governance. Owners, managers, investors, credit providers, business partners as well as government agencies are interested in evaluating the company's financial situation because bankruptcy imposes heavy costs on them (Rahnamay Roodposhti, Alikhani, and Maranjori 2009). Predicting Bankruptcy is one of the main issues in classifying companies. Corporate governance has been used for many years to quantitate the tendency of a company to descent towards insolvency/bankruptcy (Chan et al. 2016, Daily and Dalton 1994, Wu 2014). The mechanisms behind corporate governance are valuable tools to protect the interests of shareholders and creditors against financial crises. Corporate governance more than anything focuses on healthy life of economic agencies in the long run and because of that it seeks to protect the interests of shareholders against organizations' management.

Corporate governance has been proposed in Iranian Stock Exchange since 2007 (TSE board 2007). Iranian economic scholars think of corporate governance as a predictor or preventer for companies' insolvency (Seif 2014, Iravani 2009, Etemadi et al. 2009). To evaluate the advantage of adapting corporate governance in Iranian firm, we took a closer look on Tehran Stock Exchange (TSE). In the present study, we investigate the ability of some corporate governance mechanisms including the existence of non-executive directors, institutional ownership, CEO duality, the percentage of free-floating shares in preventing the bankruptcy of companies.

Model and Variable Definitions

In this study, the relationship between corporate governance and the bankruptcy will be investigated based on Spring ate model (Spring ate 1978) and using regression analysis with panel data:

$$SP_{it}=\alpha_{it} + \beta_1(IO)_{it} + \beta_2(ID)_{it} + \beta_3(DU)_{it} + \beta_4(FF)_{it} +\varepsilon_{it}$$

SPit = the amount of bankruptcy or insolvency based on Spring ate model in firm i and year t

αit = intercept of firm i in year t

IOit = percentage of institutional ownership of firm i in year t

IDit = percentage of non-executive directors on the board of firm i in year t

DUit = dummy variable of dual responsibilities of CEO in firm i in year t, if during desired year CEO has dual responsibility (if CEO is Chairman or Vice Chairman of the Board) it will be equal to 1, if CEO has not dual responsibility, (S/he is just CEO) it will be considered as 0.

FFit= the percentage of free float shares in the firm i in year t

εit = remaining error of firm i in year t

β4β3β2β1α = coefficients of models, estimated using statistical software.

The statistical population includes all firms listed on the TSE with the following conditions:

Table 1: Descriptive statistics

Variable	Mean	Median		Min	Max
institutional ownership	*0/69*	*0/74*	*0/195*	*000*	*0/9893*
non-executive members of the board	*0/72*	*0/80*	*0/18*	*0/2*	*1*
CEO duality	*0/17*	*0/00*	*0/37*	*0*	*1*
free-floating share	*0/31*	*0/266*	*0/37*	*1*	*0/01*
Bankruptcy(Spring ate)	*1/14*	*1/03*	*0/82*	*8/25*	*-0/3653*

(1) The fiscal year end of the company should be March 22nd (The end of Persian calendar)

(2) Should not be in this list: banks and financial institutions, insurance companies, investment companies, financial intermediaries, holding and leasing companies.

(3) Haven't changed the fiscal year during 1386 (March 21, 2007) to 1390 (March 21, 2012)

(4) The information required to calculate the research variables should be available for the years studied; furthermore, the financial statements and the explanatory notes relating to them should be fully accessible.

(5) The firm must be accepted in stock exchange until the end of March 22, 2007.

In this research, the data is related to the period from 1386 (March 21, 2007) to 1390 (March 21, 2012). Thematic scope of this study is to investigate the effect of corporate governance mechanisms of the studied companies on their bankruptcy. The description of statistical population, 467 companies, were assessed and only 74 were eligible to enter the study

Descriptive statistics of the dependent variable of the research show that during the entire research period, the mean and median were 1.147 and 1.03 based on Spring ate model. These numbers indicate that in our statistic sample, the majority of companies were not bankrupt. Spring ate model says that if a company's Z value[‡] is less than 0.862 it is considered a bankrupt company and if Z is more than 0.862 the company is considered healthy (Spring ate 1978).

Hypothesis Testing

The main hypothesis: Corporate governance mechanisms are effective in preventing the bankruptcy of companies listed on the Stock Exchange.

The correlation coefficient between corporate governance mechanisms and bankruptcy of companies listed on the TSE is provided in Table (1) (based on Spring ate model during the period of study). The results show that during the study period, the non-executive members of board, institutional ownership and the CEO duality have a positive and significant correlation, but the free-floating share is significantly and negatively associated with financial bankruptcy. In addition, investigation of the results of the adjusted coefficient of determination (R2) shows that according to bankruptcy model about 27.8% of changes in bankruptcies have been influenced by independent variables of the research. The results of statistic F, (regression variance analysis) also show that the error is in expected level thus the model is significant. Statistic t (regression coefficient) also shows that only P- value of non-executive members of the board is less than 0.05. According to the results of t static, among the corporate governance mechanism only non-executive members of the board are effective in avoiding bankruptcy. Considering the weight of

[‡] $Z = 1.03X1 + 3.07X2 + 0.66X3 + 0.4X4$

This model consists of four financial ratios: Working capital to total assets ratio (X1), Earning before Interest and Tax to total assets (X2), Earning before tax in current liabilities (X3) and sales to total assets (X4) (Springate 1978)

Table 2. The effect of corporate governance mechanisms to avoid bankruptcy

variable	regression coefficient				constant	Durbin-Watson	F	Sig
	IO	ID	FF	DU				
	β_1	β_2	β_3	β_4				
total	0.186	2.11	*0.624	0.15	-0.332	1.587	36.453	0.00
correlation coefficient		53.4%			Adjusted coefficient of determination			27.8%

Table 3. The impact of institutional ownership to avoid bankruptcy

Variable	regression coefficient	Constant	T	Sig	F	sig
institutional ownership	1.068	0.413	5.029	0.00	25.288	0.00
correlation coefficient	25.4%	Adjusted coefficient of determination				0.062

provided beta, non-executive members of the board play the most important role in preventing bankruptcy, because one unit change in non-executive members of the board variable will change bankruptcy by 0.465, while the institutional ownership by 0.044, free-floating share by -0.147 and CEO duality by 0.068. The regression coefficients for the impact of corporate governance mechanisms on bankruptcy are provided in table (1) and the equation is as follows:

Y = -0.332 + 0.186(IO) +2.111(ID) - 0.624(FF) +0.15(DU)

First sub hypothesis: Institutional ownership is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

The correlation coefficient between institutional ownership and bankruptcy of listed companies in TSE based on Spring ate model during the study period (Table 2) shows a positive and significant relationship between institutional ownership and bankruptcy. Increasing the institutional ownership will increase the Spring ate score thus the risk of bankruptcy will decrease. The results of the adjusted coefficient of determination also show that during the investigation period, 0.062 of changes in corporate bankruptcy is affected by institutional ownership in the company. The results of statistic F (ANOVA), also show that the P-value is less than 0.05 expected error rate, thus the model is significant. In addition, T- statistic (regression coefficient) confirms the finding given that P-value is less than expected error rate 0.05. Table (2) includes regression coefficients and constant coefficients. The regression equation between institutional ownership and bankruptcy is as follows:

Y =0.413 +1.068(IO)

These results may indicate the positive influence of institutional ownership on appropriate decision making in a company. If institutional owners actively manage their portfolio, the company will move towards an optimum functionality. Our findings conform to Fich and Slezak (2008), Funchal, Galdi, and Lopes (2008), Tsai and Gu (2007), Cornett et al. (2007). The advantage of institutional ownership should be interpreted in the context of country's financial legislation. In countries with no pyramidal corporate ownership, the shares are distributed between several shareholders and the rules have been formulated in such a way that the shareholders, especially minority shareholders, gain more support (Ghodrati and Feizi 2015). But in countries where the supportive laws of capital market is weak and deficient, institutional ownership is an effective mechanism to protect the interests of shareholders, increase the company's survival and avoid bankruptcy

(Pishgahi and Mahd 2016). We see such a situation in Iran's capital market and thus the hypothesis test proves this claim.

The second sub-hypothesis: Non-executive manager in B of D is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

The correlation coefficient between non-executive members of the board and bankruptcy of listed companies in TSE based on Spring ate model during the study period (Table 3) shows a positive and significant relationship between non-executive members of the board and bankruptcy. Increasing non-executive members of the board will increase the Spring ate score, thus the risk of bankruptcy will decrease. The results of the adjusted coefficient of determination in table (3) show that during the investigation period about 24.4% of changes in corporate bankruptcy is affected by non-executive members of the board in the company. The small amount of F shown in table (3) and the P-value (less than 0.05 expected error suggest that regression is highly significant. In addition, T- statistic (regression coefficient) confirms the finding given that P-value is less than expected error 0.05. Table (3) includes regression coefficients and constant coefficients. The regression equation between non-executive members of the board and bankruptcy is as follows:

$Y = -0.476 + 2.251(ID)$

The encouraging stimulus of non-executive members of the board has been also mentioned in previous researches: Haspeslagh (2010), Chang (2009), Fich and Slezak (2008). In contrast, our findings are indirectly opposite to what Fernandes explained in his article (Fernandes 2008) and directly in contrary with Lajili and Zéghal (2010). Fernandes (2008) argued the issue from another perspective. In case of having higher numbers of non-executive members in the board the individual pay will increase. The solution to this side effect is maintaining the pay-performance relation.

The third sub-hypothesis: CEO duality is effective in preventing the bankruptcy of companies listed on the Stock Exchange

The correlation coefficient between CEO duality and bankruptcy of listed companies in TSE based on Spring ate model during the study period (Table 4) shows a positive relationship between CEO duality and bankruptcy. Increasing CEO duality will increase the Spring ate score, and should decrease the risk of bankruptcy will decrease. However, the results of statistic F (ANOVA), show that the P-value is higher than expected error 0.05, thus the model is not significant. The results of the adjusted coefficient of determination in table (4) also show that during the investigation period 0.007 of changes in corporate bankruptcy is affected by CEO duality in the company, which had a little effect. T-statistic (regression coefficient) show that this mechanism is not effective in preventing bankruptcy given that P-value is higher than expected error (0.064>0.05). The regression equation between CEO duality and bankruptcy is as follows:

$Y = 1.112 + 0.213(DU)$

Table 4. The effect of non-executive members of the board to avoid bankruptcy

Variable	regression coefficient	Constant	T	Sig	F	sig
non-executive members of the board	2.251	0.476	10.954	0.00	119.985	0.00
correlation coefficient	24.4%	Adjusted coefficient of determination				49.6%

Table 5. The effect of CEO duality to avoid bankruptcy

Variable	regression coefficient	Constant	T	Sig	F	sig
CEO duality	0.213	1.112	1.860	0.064	3.461	0.064
correlation coefficient	0.09	Adjusted coefficient of determination				0.007

Table 6. the effect of free-floating share to avoid bankruptcy

Variable	regression coefficient	Constant	T	Sig	F	sig
free-floating share	-1.066	1.482	-4.989	0.00	24.88	0.00
correlation coefficient	-25.2%	Adjusted coefficient of determination			0.061	

It should be noted that most large Iranian companies have government (or quasi-government) ownership. The director of the company is mainly elected through political processes and in this context CEO duality is common (Fakhr 2011). That generality may explain the non-significant effect of this variable on bankruptcy.

The fourth sub-hypothesis: The free-floating share is effective in preventing the bankruptcy of companies listed on the Stock Exchange.

The correlation coefficient between free-floating share and bankruptcy of listed companies in TSE based on Spring ate model during the study period (Table 5) shows a negative correlation between free-floating share and bankruptcy. Increasing free-floating share will decrease the Spring ate score and thus the risk of bankruptcy will increase. The results of the adjusted coefficient of determination in table (5) also show that during the investigation period 0.061 of changes in corporate bankruptcy is affected by free-floating share in the company, which had a little effect. The results of statistic F, also show that the P-value is less than (0.05) expected error, thus the model is significant. T-statistic (regression coefficient) confirms this issue, given that P-value is less than expected error rate. Considering the weight of provided beta in table (5) one unit change in free-floating share variable will change bankruptcy by -0.252. The regression equation between free-floating share and bankruptcy is as follows:

$$Y = 1.482 - 1.066(FF)$$

Increasing the free-floating share will decrease the number of strategic shareholders and the majority of outstanding shares will be in hands of small and temporary shareholders (Guthrie, Xiao, and Wang 2008). In absence of laws protecting the right of such shareholders, the probability of bankruptcy will increase for companies whose shares are free-floating. Funchal, Galdi, and Lopes (2008), also found a positive correlation between the company's ownership structure and bankruptcy. In their case the free float should not be larger or equal to what is required by the São Paulo Stock Exchange New Market (25%), as this might lead to insolvency.

Conclusion

Descriptive statistics of the dependent variable of the research show that during the entire research period, the mean and median were 1.147 and 1.03 based on Spring ate model. These numbers indicate that in our statistic sample the majority of companies were not bankrupt. Spring ate model says that if a company's Z value[§] is less than 0.862 it is considered as a bankrupt company and if Z is more than 0.862 the company is considered healthy (Spring ate 1978). The findings also suggests that during the entire study period and using Spring ate model there has been (53.4%) correlation between mechanisms of corporate governance (institutional shareholders, non-executive members of the Board, CEO duality and free-floating shares) and bankruptcy.

Corporate governance mechanisms play a significant role in accomplishing

[§] $Z = 1.03X1 + 3.07X2 + 0.66X3 + 0.4X4$
This model consists of four financial ratios: Working capital to total assets ratio (X1), Earning before Interest and Tax to total assets (X2), Earning before tax in current liabilities (X3) and sales to total assets (X4) (Springate 1978)

accountability, transparency, justice and investors' right protection (Francis, Khurana, and Pereira 2003). Although corporate governance system exists in Iran (Based on the guidelines and principles governing the companies by the Organization for Economic Cooperation and Development in 2005 and the Stock Exchange Organization adopted the principles of corporate governance (TSE board 2007)), the system hasn't achieved its goals so far (Seif 2014).

Perhaps one reason behind the ineffectiveness of corporate governance principles articulated in Iran is emulating the current model of Western countries and Anglo-Saxon economic model. The western model of corporate governance is mainly a suitable conduct for private sector companies. However, in Iran major part of the economies are government-owned or quasi-government-owned. Private companies' primary goal is profit making, while, public companies are faced with conflicting goals (Etemadi et al. 2009).

On the other hand, a good corporate governance pattern is a pattern developed according to the characteristics of cultural, social and legal system of each country. The situation in Iran's capital market, ownership structure, poor separation of ownership from management and governmental influence on the economy reduces accountability and compliance with corporate governance principles (Seif 2014). Accountability is fundamental for a good corporate governance system (Cadbury 1992). Therefore, main goals cannot be achieved only by adopting a code of corporate governance.

It is necessary to note that our economy is in an urgent need to attract foreign investment. It will not be possible unless we can secure the market for foreign investors. For years, Iran has planned to join the World Trade Organization (Urban 2015). Strengthening the management mechanisms and developing international regulations such as corporate governance can help us in reaching these objectives (Farsi et al. 2016), because foreign investors are willing to invest in a market where the rights of all stakeholders are taken into account.

Considering the positive impact of institutional ownership and non-executive members of the board to avoid a company’s bankruptcy it is recommended for the users of financial information, as well as stock exchange organization to pay attention to these issues while making their economic decisions and assessing the financial accuracy of companies. Besides, companies should be motivated to strengthen these mechanisms in their structure and avoid the negative impact of free-floating share.

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