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# Corporate Governance and Firm's cost of Capital: Empirical Evidence from Iran

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ABSTRACT

This study examines wheat her and how the corporate governance mechanisms affect the cost of capital of publicly listed firms within the Iranian capital market. Data analysis over a period of five years (2007–2011)revealed that the percentage of outsiders on the board has a negative effect on the firm's cost of capital. Additionally, firms with a smaller size of board of directors are associated with lower cost of equity capital. However, contrary to expectation, we fail to find a significant association between board ownership and firm's cost of capital. Taking together, our findings support the contention that board independence and board size play a significant role in mitigating the firm's cost of equity capital.



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## INTRODUCTION

Corporate governance is the set of processes, customs, policies, laws, and institutions affecting the way a corporation is directed, administered or controlled. In other words, corporate governance can be defined as the system by which companies are directed and controlled. It is the way in which the affairs of corporations are handled by their Corporate Boards and officers. According to agency theory, the separation of ownership and control is the most efficient governance structure. Furthermore, the role of the board is recognized as crucial in corporate governance. From a theoretical perspective, empirical investigation proposes that weak Corporate governance will lead to amplified agency risk, which may increase the uncertainty of future cash flows (Jensen and Meckling, 1976; Jensen, 1986 and Bhojraj and Sengupta, 2003). Summing up the prior empirical studies, Corporate governance has been found to have a linkage with the cost of capital, with stronger governance leads to lower cost of capital. Corporate governance has received a great attention to the academicians and several research is done both in developed and developing countries. however, a very few attention is done in the emerging countries in general and Iran in particular. As such, the focus of the study is to acquire an understanding of whether the mechanisms of Corporate governance are effective in alleviating cost of capital financing amongst iranian public listed companies. In essence, by examining the relationship between Corporate governance and cost of capital, the effectiveness of Corporate governance can be further evaluated and improvised by the regulators. For this reason we selected a sample of 91 companies all listed in the Tehran Stock Exchange, with full financial data and information on the structure of the board of directors. The availability of data restricted our research horizon only on a five-year period from 2007 to 2011.Our empirical findings documented that board independence is negatively and significantly associated with firms cost of capital. Additionally, firms with a smaller board size have lower cost of capital. On the other hand, board ownership was not found to have any significant impact on cost of capital. These findings have implications for policy makers, researchers, managers, and investors in general and those in emerging markets in particular. The rest of the paper is organized as follows. The next section contains a brief description of the Iran corporate governance setting. Section 3 includes the review of relative literature and states the main research hypothesis. Section 4 describes the data selection procedure and provides details on the methodological framework of the paper. Section 5 illustrates the empirical results and finally the last section is dedicated to concluding remarks.

*2. Corporate governance in Iran:*

Corporate governance in Iran is not yet well developed, but in the last few decades the government has taken some steps to make marginal improvements. The Tehran Stock Exchange (TSE) was established in early 1967. The process of instituting and controlling firms is briefly addressed in the Iranian Trade Law, particularly

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in its April 1968 amendment. A modem concept of corporate governance was not recognized in Iran, however, until the government sought to improve the competitive position of Iranian companies in the world's capital markets in an attempt to attract foreign investment. In early 2000, the management of the TSE, the Islamic Parliament Research Center and the Economic and Finance Ministry, began efforts to improve at least on paper, corporate governance in Iran. Until recently, the Iranian government controlled the majority of businesses in Iran, either directly or indirectly, and has made significant efforts to expand the capital market. Its actions indicate an interest in enhancing the current system to include external governance structures. For instance, the Third and the Fourth Economic Development Plans place a great deal of importance on the privatization of governmental organizations. Recent policies have also been aimed at increasing the number of external control mechanisms in place. Currently, Iranian firms still have weak internal and external corporate governance when compared to companies in industrialized nations. The capital market in Iran is new and somewhat inefficient. Pension funds, mutual funds, and insurance companies

now own more than half of the share value of publicly traded stocks on the TSE. Majorsh are holders, including institutional investors, exercise their supervision by controlling management decisions and by appointing executives according to their whims and fancies. Unlike that of majority shareholders, minority shareholders' interests are not protected in contrast to other countries where non-controlling shareholders sometimes exercise significant influence. No Iranian institution ranks firms based on such characteristics as revenue, income, total assets, number of employees, etc. Iran's internal control super vision mechanisms are also inadequate. In general, organizational roles and responsibilities are poorly defined and communicated. As a result, employees too often place personal gain and interest ahead of corporate interest. Nevertheless, and despite the noted inefficiencies, public companies registered on the TSE are required to have their financial statements reviewed by an external auditor. In late 2004, the TSE Research and Development Center published the first edition of The Iranian Code of Corporate Governance. This code consisted of 22 clauses, which included the following: definitions of key terminology, an overview of the management board and shareholders' responsibilities, guidelines for financial disclosures, and a conceptual frame work for accountability and auditing. The code was amended in 2005 to address issues of ownership structure, the capital market situation and the Trade Law. This second edition of The Iranian Code of Corporate Governance contains five chapters and38 clauses. While the application of this code is not mandatory, many firms have implemented it.

*3.Literature review and hypotheses development:*

Corporate governance encompasses a broad spectrum of internal and external mechanisms intended to mitigate agency risk by increasing the monitoring of managements' actions, limiting managers' opportunistic behaviour, and improving the quality of firms' information flows in the context of separation of ownership and control. The governance mechanisms that have been most extensively researched can be broadly characterized as being either internal or external to the firm. The internal mechanisms that are most commonly examined are the board of directors. The present study concentrates on discussing and analyzing the effect of corporate board characteristics on cost of capital. Hence, several hypotheses are developed that identify and link some specific attributes of board of directors to cost of capital.

*3.1. Board independence:*

Agency scholars (e.g., Byard, Li, and Weintrop, 2006) suggest that appointing outside directors on the board is an important aspect that enhances the board's independency and, as a result, increases its directors' ability and willingness to monitor management's investing and financing decisions. Generally, empirical studies provide support for the hypothesis that the percentage of outsiders on the board has a positive effect on firm performance. Specifically, Rosenstein and Wyatt (1990) find that the stock market reacts favorably to the news of appointing addition a outside directors. Similarly, Anderson, Mansi, and Reeb (2004) find that the percentage of outsiders on the board of directors is negatively related to the cost of debt .In the U.S.A context, Ashbaugh, Collins, and LaFond, (2004) documented a negative relation between the cost of equity and the independence of the board. Using a sample of large Australian firms from 1994 to 2003, Pham, Suchard and Zein(2007) provide empirical evidence that presence of an independent board in the firm serves to reduce the perceived risk of a firm, thereby leading investors to demand lower rates of return on capital provided. Hence, previous empirical findings seem to suggest that as proportion of outside directors increases, the firm's cost of capital decreases, thus leading us to the following hypothesis:

H1: There is a significantly negative association between Board independence and firm's cost of capital.

*3.2. Board size:*

Research in agency theory suggests that board size affects the directors' ability to control and monitor managers. Jensen (1993) for instance, explains that because of the difficulty associated with organizing and coordinating high numbers of directors, larger boards are less effective in monitoring managers and in engaging in long term strategic planning. Empirically, Yermack (1996) finds a negative relationship between board size

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and firm performance (Tobin's Q). In addition, Yermack finds that the relationship between CEO compensation and firm performance is stronger in firms with small boards. Pham *et al*.(2007) found a positive relationship between board size with the cost of equity. Based on the above arguments and evidence, we expect that the cost of capital to be positively related to the board size. As such, the next hypothesis, which is related to board size and cost of capital, is set as follows:
H2: There is a significantly positive association between board size and firm's cost of capital.

*3.3. board ownership:*

One important form of insider ownership in the firms is managerial ownership. Managerial ownership can increase management´s motivation to work to raise the value of the firm´s stock (Hermalin and Weissbach 1991).Yermack (1996) reports that board stock ownership and firm value are positively associated. Furthermore, Agrawal and Knoeber (1996) find a positive statistically significant relationship between firm profitability and manageria ownership. Ashbaugh *et al*. (2004)show a negative relation between the cost of equity and and the percentage of the board that owns stock. Ali Shah and Ali Butt(2009) posit that managerial ownership is associated with a decreased cost of equity. Based on the foregoing discussion it can be inferred that the board ownership might have an inverse impact on firm's cost of capital, thus we posit the following hypothesis (in alternate) form:
$H_3$: There is a significantly negative association between Board Ownership and firm's cost of capital.

*4.Research design:*
*4.1Sample:*

This study's sample comprises firms listed on the TSE for the years 2007and 2011. We exclude all financial firms (including banks) because this regulated industry is likely to have fundamentally different cash flow and accrual processes. We also eliminate firms with insufficient data to estimate dependant and independent variables. After adjusting for outliers, the sample comprises 455 firm years.

*4.2.Variables measurement:*
*4.2.1 Dependent variable:*

The cost of equity capital was considered as the dependent variable of the present research. To estimate cost of equity (CoEC), the valuing model of Gordon was used as follows:

$$CoEC = \frac{D1}{P0} + g$$

In the above model:
D1: stands for the dividend of each share after reducing the capital increase from demands and cash brought.
P0 :stands for the value of each share at the beginning of year.
G: represents for the growth rate of distributed profit which is equal to geometric average of the growth rate of distributed profit.

*4.2.2 Independent variables:*

*Corporate Governance*: three variables that represent corporate governance attributes are the board independence, board size and board ownership. the board independence is measured by dividing the total number of independent non-executive directors by the total number of board members . Board size is defined as the number of board members. Finally, board ownership is computed as the proportion of executive share ownership to total shares of the firm.

*4.2.3 Control variables:*

Consistent with Prior empirical research on the relationship between corporate governance and cost of capital (e.g. El Ghoul *et al*.,2010; Gebhardt *et al*., 2001; Dhaliwal *et al*., 2007),we controlled for the variables includeing: firm size (FSIZE), measured as the natural logarithm of total assets; leverage (LEV), computed as the ratio of total debt to the book value of total assets; Stock beta (BETA), estimated over 36 months ending in the month of issue of forecast, representing systematic risk; and return on equity( ROE), defined as income before tax and interest to total equity.

*4.3 Regression model:*

This study uses ordinary least square multiple regression as the main statistical
technique to test the hypothesis. The main regression model is defined in the followingequation:

$$CoEC_{i,t} = \beta_0 + \beta_1 BIND_{i,t} + \beta_2 BSIZE_{i,t} + \beta_3 BOWN_{i,t} + \beta_4 FSIZE_{i,t} + B_5 LEV_{i,t} + \beta_6 Beta_{i,t} + \beta_7 ROE_{i,t} + \varepsilon_{i,t}$$

where, for firm *i* at the end of year *t*:
*CoEC*: cost of equity capital estimated using Gordon model;
*BIND* =board independence defined as percentage of independent non-executive directors on board;

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*BSIZE*= board size measured as the number of directors on the board of firm;
*BOWN* = Board Ownership computed as the proportion of executive share ownership to total shares of the firm;
*FSZE*: firm size defined as log of firm's total assets;
*LEV*: leverage is measured by ratio of total debt to total assets;
*Beta*: Stock beta calculated over 36 months ending in the month of issue of
forecast, representing systematic risk;
*ROE*= return on equity defined as income before tax and interest to total equity;
ε = the error term.

*5. Empirical results:*

*5.1. Descriptive statistics:*

Table I contains the descriptive statistics of the sample variables from 2007 to 2011. The table indicates that the Cost of capital ranges from 0.0891 to 0.5357with a mean of 0.2619 .Table I also shows that the proportion of independent directors on the board is 36 percent. So we can say that Iranian firms have not significant board independence. This indicates that Iranian corporations may be characterized by more agency divergences relative to companies with increased board independence. board size has a mean (median) of 5.6248 (5.0000).For our sample, the mean (median) percentage of shares held by boards is 25.81% (22.04%). Morever, The average firm size was5.59and The leverage ratio of corporations stood at 69%.Finally, the mean (median) of ROE is 0.59(0.61) respectively.

**Table I:** Descriptive statistics for all variables.

| Variables | N | Mean | Median | Minimum | Maximum | Std. Deviation |
|---|---|---|---|---|---|---|
| *CoEC* | 455 | 0.2619 | 0.2544 | 0.0891 | 0.5357 | 0.1423 |
| *BIND* | 455 | 0.3561 | 0.3005 | 0.0000 | 1.0000 | 0.1321 |
| *BSIZE* | 455 | 5.6248 | 5.0000 | 3.0000 | 7.0000 | 0.107 |
| *BOWN* | 455 | 0.2581 | 0.2204 | 0.0000 | 0.4698 | 0.4389 |
| *FSZE* | 455 | 5.5864 | 5.4012 | 2.0031 | 7.8142 | 0.3982 |
| *LEV* | 455 | 0.6927 | 0.6630 | 0.3786 | 0.8050 | 0.1918 |
| *Beta* | 455 | 0.4125 | 0.3911 | 0.1865 | 1.6007 | 0.3191 |
| *ROE* | 455 | 0.5924 | 0.6157 | 0.2163 | 0.6387 | 0.0342 |

Notes: *CoEC*- cost of equity capital estimated using Gordon model; *BIND*- board independence defined as percentage of independent non-executive directors on board ; *BSIZE* - board size measured as the number of directors on the board of firm ; *BOWN*- proportion of executive share ownership to total shares of the firm; *FSZE* - natural log of firm's total assets*; LEV*- ratio of total debt to total assets; *Beta* - Stock beta calculated over 36 months ending in the month of issue of forecast, representing systematic risk; *ROE*- return on equity defined as income before tax and interest to total equity

*5.2.Multivariate hypothesis test:*

Table II present the results of ordinary least squares regression used in testing the relationship between corporate governance variables and firm's cost of capital. The use of Multivariate hypothesis test is based on the assumption of no significant multicollinearity between the explanatory variables. to investigate the existence of multicollinearity, the variance inflation factors (VIFs) for each of the explanatory variables are computed. as reported in column 5 of Table II, the maximum VIF is 1.852, which is lower than ten, a number that is used as a rule of thumb as an indicator of multicollinearity problems(Belsely, 1991). Thus, these results support the lack of presence of multicollinearity in the research model. The results of the regression analysis can, therefore, be interpreted with a greater degree of confidence. Based on the statistical analysis shown in Table II, The adjusted $R^2$ is 61.5 percent and some of the board characteristics have a significant t-value which implies that corporate governance has some explanatory power on firms cost of capital.

The $H_1$ proposes that there is a significantly negative association between board independence and cost of capital. As presented in the Table, the *BIND* coefficient is negative, as predicted, and statistically significant at the 0.01 level, which indicates a significant negative relationship between board independence and cost of capital; thus providing support for $H_1$.

The $H_2$ states that board size is significantly positively associated with cost of capital. To this extent, it was found that board size (*BSIZE*) is significant and positively related to cost of capital at the 0.01 level; which support $H_2$.

However, Contrary to the third hypothesis that states there is a negative relationship between board ownership and firm's cost of capital, the result in column 3indicates that, there is no significant relationship between board ownership and cost of capital and therefore, hypothesis is not supported.

Several control variables are significantly related to cost of capital .firm size is found to be negatively related to cost of capital , which suggests that larger firms are more likely to have less cost of capital. Leverage is found to be positively related to cost of capital, suggesting that as leverage increases, the cost of capital associated with the firm increases.Finally, consistent with existing literature, the coefficient on *Beta*is significantly positive. However, We fail to find evidence that ROE is associated with the Firm's cost of capital.

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**Table II:** Multiple regression results.

| Explanatory variable | Expected Sign | Coefficients | t-statics | Collinearity Statistics |
|---|---|---|---|---|
| | | | | VIF |
| *intercept* | ? | 0.1681* | 2.3191 | - |
| *BIND* | - | -0.2014** | -5.0219 | 1.521 |
| *BSIZE* | + | 0.0998** | 2.8601 | 1.852 |
| *BOWN* | - | -0.1296 | -1.0078 | 1.625 |
| *FSZE* | - | -0.3168* | -2.0654 | 1.538 |
| *LEV* | + | 0.1925* | 2.3146 | 1.246 |
| *Beta* | + | 0.1259* | 2.1815 | 1.510 |
| *ROE* | - | - 0.2563 | -1.2814 | 1.357 |
| Adjusted $R^2$ | | 61.54 | F-value | 24.651 |
| Durbin Watson | | 1.879 | *P*-value of F-test | 0.000 |

Notes: * statistically significant at the <5 percent level, one-tailed test;** statistically significant at the <1 percent level, one-tailed test;; *BIND*- board independence defined as percentage of independent non-executive directors on board ; *BSIZE* - board size measured as the number of directors on the board of firm ; *BOWN*- proportion of executive share ownership to total shares of the firm; *FSZE* - natural log of firm's total assets*; LEV*- ratio of total debt to total assets; *Beta* - Stock beta calculated over 36 months ending in the month of issue of forecast, representing systematic risk; *ROE*- return on equity defined as income before tax and interest to total equity.

*6.Conclusion:*

The issue of corporate governance has been a growing area of financial research especially among developed countries. However, less attention has been paid in the area with respect to emerging economies such Iran. The study investigates the impact of corporate governance on cost of capital of listed firms in Iran as one of emerging economies. For this reason we selected a sample of 94 companies all listed in the Tehran Stock Exchange, with full financial data and information on the corporate governance from 2007 to 2011.The empirical findings suggest that the number of outside directors serving on the board affects the firms cost of equity capital negatively, indicating that board independence provides an effective monitoring mechanism that reduces the agency problem and leads to a decreased cost of capital. Moreover, we found that board size is positively and significantly related to the cost of capital. This finding suggests that firms with a smaller size of board of directors enjoy lower cost of capital. However, our study does not find evidence to support the notion that board ownership is effective in mitigating the cost of capital. Overall, our findings demonstrate the contention that both board independence and board size play a significant role in alleviating the firm's cost of capital. In closing, it should be noted that our study has several limitations. First, the sample only covers five years of Iranian data and an external validity problem exists that the results may not be transportable over different time periods and locations. Second, while suggestive of the link, our study does not show a causal relationship between Corporate governance and firm's cost of capital. Instead, we rely on association tests to document the relation. Despite the aforementioned limitations, our findings could be proved valuable to investors, managers and regulators since they have implications for all these related parties.

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