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# The relationship between corporate governance and the restatements of the firms listed on the Tehran Stock Exchange using Logistic regression

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ABSTRACT

Financial restatement is considered as the corrections made in the financial statements and is usually resulted from the ignorance of the generally accepted accounting principles. Corporate governance is a strong mechanism in preventing the misstatement of the financial reports, the restatement is then considered as an important element in mitigating the reliability of the publicly issued financial information. Therefore, it seems necessary to examine the relationship between corporate governance and the restatement. This study seeks to examine whether some of the corporate governance mechanisms are associated with the restatements. They include board independence, CEO duality, managerial ownership, ownership of the outside blockholders and audit quality. The sample is composed of 40 listed firms (98 fimr-year observation) over a period from 2008 to 2012. The sample includes one group of the firms with restatements and a control group comprised of the firms without restatements. These firms are selected based on a pairwise comparison and in terms of the size and industry type. To analyze the data, Logistic regression has been used. The findings support a positive significant relationship between audit quality and restatement at the 95 percent level of significance. The results also represent that the financial restatement is not significantly associated with the CEO duality, board independence, managerial ownership and ownership of the outside blockholders.



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## INTRODUCTION

The overflow of the accounting scandals during the recent years decreased the public confidence in the big institutions and audit firms. All these scandals have been accompaniedbyrestatements. Most often, these restatements represent the weaknesses of the internal control systems and corporate governance of the firms which have lost their reputation in the market or have led to their bankruptcy (Kazemi, 2011, 20). Reliability is one of the most important qualitative characteristic of the accounting information. Based on the theoretical concepts of the financial reporting, the reliable information should be free of the material misstatements. The prior literature in Iran, however, indicated that a high percentage of the Iranian firms have restatements as a result of correcting the accounting errors (Kordestani *et al*, 2010). Restatements negatively impact the reliability and relevancy of the financial statement information. However, the restatements in the listed firms during the recent years have become very popular (Nikbakht and Rafiei, 2012). According to the role of the corporate governance mechanisms in aligning the interests of the managers and shareholders, it is expected that increasing the quality of the corporate governance leads to higher quality of the financial reporting and lower restatements. Most investors and users believe that some of the corporate governance characteristics (such as the presence of non-executive and independent members of the board) contribute in increasing the interests of the shareholders and mitigating the conflict of interest among the investors and managers. The conflict of interest might lead to the financial misstatements, lower quality of the financial reports and financial fraud (Abdallah *et al*, 2010, 527). In fact, the final objective of the corporate governance is not only mitigating the agency problems and aligning the interests of the investors and directors, but also satisfying the needs of all stakeholders. Therefore, it is theoretically expected that the characteristics of the corporate governance affect the financial performance of the firms. This is because the effective corporate governance results in reducing the improper consequences of

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the conflict of interest among the managers and owners. The findings of many empirical studies in other countries revealed that good corporate governance results in better firm performance (Balatbat *et al*, 2004; Gompers and Metrick, 2003). The restatementis becoming very popular among Iranian firms so that the annual adjustments are categorized as one of the persistent elements in the retained earnings statement. These adjustments are mainly resulted from the correction of the prior periods and the items related to the changes in the accounting methods are unlikely to be represented. The adjustments have specific impacts on the reliability and validity of the figures represented in the financial statements. The restatementbrings new information for the market. The revised financial statements clearly convey a message about the fact that the previous financial statements are of low quality and are not reliable (Kazemi, 2011, 18). Restatements might be due to different reasons. The fraud basedrestatements have produced significant concerns about the quality of the corporate governance and the disclosure quality (Abdullah*et al*, 2010, 527). Based on the Iran accounting standards, the restatements occur as a result of the annual adjustments in the financial statements mainly derived from the correction of the errors. Simply stated, the restatements confirm the errors in the financial statements of the prior years. Having a closer look at the financial statements, it is found that the restatements disclose a negative message about the reliability of the financial statements and increase the information asymmetry of the capital market (Azad and Kazemi, 2010, 53). In doing so, the present study aims to recognize and describe the nature of the restatements among the firms listed on the Tehran Stock Exchange. It also examines whether the characteristics of the corporate governance are associated with the restatements in terms of achieving the goals of accountability, transparency, justice and stakeholders' rights protection. The characteristics of the corporate governance include board independence, CEO duality, managerial ownership, audit quality and the ownership of the outside institutional shareholders.

*Theoretical Bases:*

*Corporate Governance and Restatements:*

The restatement is defined as the corrections of the previous statements which might result from noncompliance with the generally accepted accounting principles. General Accounting Office (GAO) declares that the financial statements are restated when the companies revise the previously issued financial statements voluntarily or because of the requirements of the regulators or auditors (Abdullah*et al*, 2010, 530). According to the generally accepted accounting principles, the previously issued financial statements are restated due to two reasons including changes in the accounting principles and correction of the accounting errors. Changing the accounting trends is defined as changing from one accepted principle to another accepted accounting principle previously used in preparing the financial statements. This might be accomplished discretionary or by following new standards. There are two approaches to report accounting changes: retrospective and prospective approach (Kazemi, 2011, 18). A change should be made only when the new principle is preferable over the former. It must be mentioned that the financial statements are restated because of informed manipulation of the earnings by the management that is called accounting irregularities. In this situation, the investors differently react to the informed and uninformed behaviors of the firms. Therefore, the significance of these behaviors should be considered. For example, the uninformed errors and informed irregularities with the same amounts are not of similar significance. Certainly, informed items seem more significant to the investors (Kazemi, 2011, 19).

Another statement of the accounting standards of Iran denotes that the effect of annual adjustments should be reflected through correcting the beginning balance of the retained earnings. The comparative items of the financial statements should be restated unless they are impractical. This should be disclosed in the notes accompanied to the financial statements. In addition, the disclosed points include the amount and nature of the annual adjustment components, the explanatory reasons of changes in the accounting principles and the restatement. Based on the conducted studies in Iran, the annual adjustment and restatements mainly result from the correction of the errors (Azad and Kazemi, 2010, 53). Huron Consulting Group (2003) denotes three primary reasons for the accounting errors: problems in applying the accounting rules, errors resulted from the system or the human and the fraudulent behaviors. They found that the major reasons for the restatements are revenue recognition, equity accounting, provisions, accruals and contingent events. It is also declared that the corrections in the earnings of the prior yearoccurred for overstatements (Abdullah*et al*, 2010, 530). Restatements represent the weaknesses in the internal control system and corporate governance of the firms which eventually led to their bankruptcy (Kazemi, 2011, 20). Based on the prior literature, there are many definitions provided for the corporate governance which are in accordance with the different perspectives and models of the countries. However, the most comprehensive definition of the corporate governance includes a set of regulations, laws, structures, processes, cultures and systems aimed to achieve the objectives of accountability, transparency, justice and protection of the stakeholders' rights. The general definition of the corporate governance in the science texts shows that all definitions have joint characteristics among which the most important one is accountability (Hassas Yeganeh, 2006, 34). The final objective of the corporate governance is not only mitigating the agency problem and aligning the interests of the managers and investors, but also satisfying the needs of all stakeholders. In doing so, it is expected that enhancing the quality of the corporate governance leads to increasing the quality of the financial reporting and reducing the restatements. In the next section, the theoretical relationship of any of the governance elements with the restatements will be explained:

*Board Independence and Restatements:*

The studies about the role of the board of directors demonstrated that the board independence is one of the significant characteristics of the board effectiveness. It is also found that the board independence is unlikely to be related to the possibility of the financial frauds and earnings management (Abdullah*et al*, 2010, 531). The findings of the empirical studies about the impact of non-executive members are complex and conflicting. Ahmad Pour *et al* (2009) found an insignificant association among non-executive members and accruals anomaly as an indicator of the earnings management. Kosnik (1990) also believed that the independent directors use their power over the crisis periods. Weisbach (1988) suggested that the possibility of CEO dismissal by the board of directors increases when the profitability of the firms decreases or when the board is independent of the management. Beasley (1996) showed that the financial frauds are negatively associated with the board independence. Since restatements have destructive impacts on the board integration and the reputation of the independent directors, it is expected that the board is negatively associated with the restatements (Abdullah*et al*, 2010, 531).

*CEO Duality and Restatements:*

Board leadership refers to the division of power among the board chairman and CEO. Compounding these two roles leads to weaker systems of internal corporate governance in the firms in which there are conflicts of interests among the board chairman and CEO. Efendi *et al* (2004) concluded that the firms with the restatements have weaker corporate governance systems. However, CEOs of these firms are often appointed as the board chairmen. The appointment of the board chairman makes sure that the significant issues related to the shareholders' interests are completely covered in the board meetings. The board chairman who is also appointed as CEO, will determine and control the proceedings and will not disclose the significant information (Abdullah*et al*, 2010, 534). Generally, separating the roles of CEO and board chairman might be in line with the interests of the shareholders.

*Managerial Ownership and Restatements:*

Ownership patterns of the firms represent the agency costs and the level of monitoring by the managers. Managerial ownership mitigates the agency problems and increases the information content of the earnings. Fama and Jensen (1983) believed that the more sporadic ownership structure results in theconflict of interest between the owners and managers because sometimes the operations of the managers and stakeholders are not satisfying the same needs. The level of the managerial ownership is associated with the restatements because the managerial ownership indicates the honesty of the manager. Fan and Wong (2002) concluded that the institutional managers might hide the material information from the other shareholders. However, this relationship might not be in a linear form and has a curve-line form. In the lower managerial ownership level, the managers are expected to be more honest than the other shareholders because they are monitored by the shareholders. When the managers own a significant portion of the shares, they control the corporate governance and have more incentives to show the other shareholders that the financial operations of the firms are in a good situation. These incentives are reflected in the overstatement of the revenues and earnings and that is why the accounting errors and irregularities increase when the managerial ownership is at a high level (Abdullah*et al*, 2010, 534, 535).

*Ownership of the Blockholders and Restatement:*

The blockholderswho own a significant portion of the stocks play monitoring roles. Higher incentive of the outsideblockholders for monitoring the managers is due to the fact that their wealth is closely and directly related to the corporations. These shareholders have enough resources for monitoring their investments accurately. The significance of the outsideblockholders for monitoring the firm performance results from the effect of these shareholders on the stock price and abilities of the investors to determine the board decisions. In doing so, the presence of these shareholders might be an essential monitoring mechanism for ensuring the managerial performance, which is in accordance with the interests of the shareholders. Protection of the shareholders' interests requires managers to provide fair and honest financial statements for the shareholders. As a result, the possibility of the restatement might reduce because of the presence of the outside institutional shareholders (Abdullah*et al*, 2010, 535, 536).

*Audit Quality and Restatement:*

Auditing by big audit firms shows that their operation enhances the audit quality in comparison with the other firms. It is believed that the audit trends of these firms are more structured and more organized. Therefore, there is more possibility to discover the accounting inaccuracy. Defond and Jiambalvo (1991) suggested that the big audit firms are more advantageous and confirm that the financial statements are free of material misstatements. Audit quality directly associated with the corporate governance and monitoring, has one hidden and a multidimensional structure. As a consequence, there is no comprehensive definition provided for the audit quality. In doing so, some measures such as audit firm size, history and brand of these firms are considered as the substitutes for the audit quality (Setayesh *et al*, 2010, 55).

*Research Background:*

Aghayi and Chalaki (2009) examined the relationship between eight elements of corporate governance and earnings management of the firms listed on the Tehran Stock Exchange over a period from 2001 to 2007. Their findings revealed that the elements of the institutional ownership and the board independence are negatively associated with the earnings management. Noravesh *et al* (2009) investigated the relationship between corporate governance and agency costs of the firms listed on the Tehran Stock Exchange. In their study, agency costs are functions of the interaction between growth opportunities and free cash flows. Tobin’s Q index was an indicator of the growth opportunity. They provided evidences about the effective influence of institutional investors on the managerial decisions. Setayesh *et al* (2010) tested the relationship between income smoothing and four elements of corporate governance in a sample of 110 firms for a period covering 2004 to 2008. These four elements are the percentage of the non-executive members, institutional ownership, board independence and audit quality. They found that the factors impacting the income smoothing are audit quality, the percentage of the non-executive members and institutional ownership; however, the board independence has no impact on the income smoothing. Shariat Panahi and Kazemi (2010) studied the effect of restatements on the information content of the earnings. Using a sample composed of 185 listed firms, they found that the restatement decreases the information content of the earnings. It was also found that the information content of the earnings decreased for the firms which mainly aimed to restate the financial statements. Nikbakht and Rafeie (2012) tried to develop an effective pattern for the restatements in Iran. They concluded that profitability, financial leverage, CEO tenure, audit change and audit firm size influenced the restatements. Saei *et al* (2013) examined the frequency and significance of the restatements on the Tehran listed firms. Their results showed that the frequency ratio of the restatements is significant in terms of years and industry type.

Beasley (1996) investigated the relationship between board composition and fraud in the financial statements and also the relationship between the existence of the audit committees and the reducing fraud possibility. Their conclusions indicated that the fraud possibility decreases because of some factors, including higher ratio of non-executives and more experienced board members. Agrawal and Chadha (2005) studied the association between some corporate governance mechanisms and the probability of the earnings restatements among the American firms over a period from 2000 to 2001. Their findings confirmed that there is no relationship between some key characteristics of the corporate governance and earnings restatements. These characteristics include board independence, CEO ownership,audit committee independence, blockholders, CEO duality, CEO ownership and non-audit services by the independent auditors. However, they found that the possibility of the restatements decreases when the board or the audit committee has an independent director with an expertise in financial affairs. Efendi *et al* (2007) explored the role of the stock based compensation in earnings restatement. Based on the data from 190 firms, it was found that the higher stock based compensation increases the possibility of the earnings restatement. In addition, it was found that the possibility of the earnings restatement is higher for the firms with constrained debt contracts and also the firms that have recently increased their capital. Abdullah*et al* (2010) tested the relationship between corporate governance and restatements for a sample composed of 62 Malaysian firms over 2002 to 2005. They found that the restatements were associated with the ownership of the blockholders and the independence of the audit committee. However, it was found that the restatements were not related to the board independence, managerial ownership and CEO duality. Their conclusions revealed that there was more possibility of financial inaccuracies for the firms with higher debt ratios. Zhizhong *et al* (2011) tried to find whether corporate governance impacts the restatements. They selected a sample composed of 1147 Chinese listed firms over 2002 to 2006 and found that the restatements were associated with the performance and this might be improved by establishing strong corporate governance systems. The internal governance might be reinforced by establishing a board composed of higher percentage of the non-executives and an independent audit committee; however, the outside governance might be attributed to the institutional shareholders and strong independent auditors.

The prior studies revealed that the restatements and corporate governance have been examined by considering different factors. To the best of our knowledge, there is no study conducted about the corporate governance and restatements in Iran. Therefore, it seems necessary to examine this topic.

*Methodology:*

This is a field study based on the information exploited from the financial statements. This is also an applied study using the correlation-regression method because it aims at predicting the changes in the dependent variable (restatement) based on the changes in the independent variable (corporate governance). In doing so, the variables of the corporate governance related to the restatements are recognized by examining the studies in the other countries and Iran in order to determine the specific variables. To examine the relationship between the variables and the restatements, five variables of corporate governance have been selected. Corporate governance data are collected from the annual reports of the board and the hand-collected financial data is obtained from the issued financial statements on the official web sites of the Tehran Stock Exchange and other related resources. Using SPSS software and binary logistic regression, the collected data and the hypotheses have been analyzed.

*Population and Sample:*

The population of this study is composed of the firms listed on the Tehran Stock Exchange over a period from 2008 to 2012. This time period is selected because the corporate governance guideline of the Tehran Stock Exchange has been enacted in 2007. Finally, the population of the study at the beginning of 2008 is composed of 430 firms.

The sample firms are selected based on filtering technique and these firms should have the following characteristics:

1. These firms should be listed on the Tehran Stock Exchange from the beginning of 2008.

2. Investment firms, financial intermediaries, holdings and leasing are excluded from the sample because they have different operations and corporate governance systems.

3. The managerial and financial information should be available.

Considering the above criteria, 232 firms are selected as the sample among which two groups of experimental and control firms have been determined. These groups are selected according to the following criteria:

a) The experimental group: This group includes the firms with restatements over a period of time from 2009 to 2012 based on the sixth statement of the accounting standards of Iran. Because there is no independent restatement in Iran, the firms are required to report their financial statements in a comparative format. Among the financial restated firms, those firms with the following characteristics are selected:

a.1) The firms that their restatement is not due to the reclassification. In other words, the annual adjustment of the restatement year is not zero and the accounting earnings have not changed. This method was used by Baber *et al* (2005).

a.2) The firms for which there is a control firm based on the size and industry type. This method wasused by Efendi *et al* (2004).

According to the above mentioned points, 20 firms Are selected and 49 firm-year observations are covered over the examination period.

b) The control group: This group includes the firms which have not restated their financial statements over a period from 2009 to 2010 and have been also selected based on the pair match method and the measures of size and industry. In doing so, there is a control firm for each one of the experimental firm. The control firm should be operating in a similar industry and its total assets should be in a range of ± 30 percent of the total assets of the experimentalgroup. This is the method used by Efendi *et al* (2004). According to the above characteristics, 20 firms have been selected as the control group. Finally, the sample is composed of 40 firms (98 firm-year observations).

3.2 Research Hypotheses

The following hypotheses are developed based on the theoretical bases and research background:

H1: There is a significant negative relationship between board independence and restatements.

H2: There is a significant positive relationship between CEO duality and restatements.

H3: There is a significant non-linear relationship between managerial ownership and restatement; the negative relationship at the lower levels and the positive relationship at the higher levels.

H4: There is a significant negative relationship between the ownership of the outside institutional shareholders and restatement.

H5: There is a significant negative relationship between audit quality and restatement.

3.3. Research Variables and Model

3.3.1. Dependent Variable

Restatement (R) is the dependent variable of the study. It is a dummy variable; when there is a restatement, this variable equals one and zero, otherwise.

3.3.2. Independent Variable

The independent variables include some characteristics of the corporate governance such as board independence, CEO duality, managerial ownership, ownership of the outsideblockholders and audit quality. These items are defined as follows:

Board independence (BIND): The independent managers percentage(board independence) shows the ratio of the non-executive members to the total board members.

CEO duality (DUAL): This is a dummy variable which equals one when the CEO is also theboard chairman and equals zero, otherwise.

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Managerial ownership (MGOWN): This variable is defined as the percentage of the stocks held by the board members and their families (including direct and indirect benefits) to the total stocks of the firms.

Outside Blockholders (OUTBLK): This variable is defined as the sum of the stocks held by the outside investors especially the institutional investors who own more than five percent of the stock _ to the total stocks of the firms.

Audit Quality (AUDQ):This study used the auditor type as an indicator of the audit quality which is defined as a variable, including the probability of selecting the audit organization (as an index of quality) and the probability of selecting other audit firms. This variable is considered as a dummy variable which equals one when the firm is audited by the audit organization and zero, otherwise.

3.3.3. Modifying Variable

Two control variables are used to potentially examine the relationship between restatementand corporate governance. They include:

Bankruptcy Probability (Z): This variable is calculated by using Altman Z-score in terms of the following formula:

Z"= 6.5 (working capital/total assets) + 3.26 (retained earnings/ total assets) + 6.72 (earnings before interest and tax/ total assets) + 1.05 (book value of the owner's equity/ total debts)

Where, Z"< 1.1 indicates high probability of bankruptcy, Z"> 1.1 indicates the low probability of bankruptcy and Z"≥ 2.6 shows the probability of non-bankruptcy.

Debt Level (GRG): The debt level (debt ratio) is calculated by dividing total debts to the total assets.

The following formula shows the regression model of the study. This model represents the relationship between these variables based on the research hypotheses.

$$\ln ( R / 1 - R ) = \alpha_0 - \beta_1.BDIND + \beta_2.DUAL + \beta_3.MGOWN - \beta_4.OUTBLK - \beta_5.AUDQ - \beta_6.Z + \beta_7.GRG + \varepsilon, \quad (1)$$

*Findings:*

*Descriptive Statistics:*

Tables 1 and 2 show the descriptive statistics and the findings of the significant difference between the experimental and control group. The findings shown in table 1 confirm that more than 65% of the boards are composed of the independent variables. In addition, it is found that the percentage of the independent managers in the firms without restatements (67%) is more than the percentage of the independent variables of the restated firms. The difference in level is statistically insignificant; however, this finding is consistent with the predictions. The descriptive results of the managerial ownership reveal that more than 67% of the stocks are held by the board members and their families and it shows that the firms are controlled and managed by few specific shareholders. The average probability of bankruptcy has been examined in terms of two groups of experimental and control group. Based on these two groups, it is found that this probability is 6.3% for both groups and the total sample. Therefore, it can be concluded that there is no difference between the performance of the restated firms and the non-restated firms.

The descriptive statistics of the dummy variables are shown in table 2. The results indicate that there are only three firms in which the CEO and the chairman are the same and it is found that the firms try to prevent the combination of these responsibilities.

The results of the t-statistics show that the significance level of audit quality (0.018) is lower than 0.05 and it is concluded that there is a significant difference between the mean values of this variable in both groups (t=-2.357). The significance level is higher than 0.05 and it shows that there is no significant difference between the mean of these variables.

**Table 1:** Descriptive statistics and t-test results of the discrete variables

| Variable | Mean | Std. deviation | Skewness | Kurtosis | Mean of the restated firms | Mean of the non-restated firms | t-test | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | t- statistics | Sig. level |
| BIND | 0/658 | 0/2067 | -0/723 | 0/875 | 0/642 | 0/674 | -1/477 | 0/14 |
| MGOWN | 67/691 | 17/1789 | -0/749 | 1/299 | 68/302 | 67/079 | -0/4 | 0/691 |
| OUTBLK | 9/15 | 12/04 | 1/87 | 4/65 | 9/644 | 8/650 | -0/46 | 0/64 |
| Bankruptcy | 6/348 | 2/6627 | 0/658 | 2/618 | 6/373 | 6/323 | -0/125 | 0/901 |
| Debt level | 0/668 | 0/2134 | 0/767 | 2/751 | 0/663 | 0/673 | -0/067 | 0/947 |
| Confidence level of 95% ،n= 98 | | | | | | | | |

**Table 2:** Descriptive statistics and t-test results of the dummy variables

| Variable | Frequency 0 | Frequency 1 | Mean | Std. deviation | Mean of the restate firms | Mean of the non-restated firms | t-test | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | t-statistics | Sig. level |
| DUAL | (%97) 95 | (%3) 3 | 0/031 | 0/17 | 0/00 | 0/6 | -1/732 | 0/083 |
| AUDQ | (%78) 76 | (%22) 22 | 0/22 | 0/42 | 0/33 | 0/12 | -2/357 | 0/018 |
| Confidence level of 95% ،n= 98 | | | | | | | | |

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*Correlation test between independent variables:*

The following hypotheses are examined to test the correlation between variables:

H0: There is no significant relationship between the variables.

H1: There is a significant relationship between the variables.

Table 3 indicates the correlation results between the independent variables. As interpreted from this table, it is found that the significance level is lower than 0.05 and it shows that H0 is rejected. Based on the negative sign of the correlation coefficients, it is resulted that there is a negative correlation between the variables. This relationship was as expected because these two variables are both the components of the corporate ownership. This finding is consistent with Abdullah*et al* (2010). In terms of the other variables, there is no significant relationship at the 95% level. It must be mentioned that based on the study of Cooper and Schindler (1998), the value of 0.8 indicates the strongest multicollinearity between the variables (Abdullah *et al*, 2010). It is found that the correlation coefficients of the variables are lower than 0.8 and it shows that there is no strong multicollinearity.

**Table 3:** Results of Pearson correlation coefficient between independent variables

| Variables | | BDIND | DUAL | MGOWN | OUTBLK | AUDQ |
|---|---|---|---|---|---|---|
| BIND | Correlation coefficient | 1 | -0/079 | 0/082 | 0/033 | -0/015 |
| | Sig. level | - | 0/398 | 0/284 | 0/686 | 0/869 |
| DUAL | Correlation coefficient | | 1 | -0/029 | -0/150 | 0/046 |
| | Sig. level | | - | 0/726 | 0/094 | 0/648 |
| MGOWN | Correlation coefficient | | | 1 | -0/495 | -0/022 |
| | Sig. level | | | - | 0/000 | 0/789 |
| OUTBLK | Correlation coefficient | | | | 1 | 0/049 |
| | Sig. level | | | | - | 0/582 |
| AUDQ | Correlation coefficient | | | | | 1 |
| | Sig. level | | | | | - |
| Confidence level of 95% ،n= 98 | | | | | | |

*Multicollinearity Test:*

The multicollinearity should be tested in regression analysis and is measured by the variance inflation factor (VIF). Based on table 4, VIF of all variables is lower than 10 and it is concluded that the multicollinearity of the regression variables is low. Consequently, the regression model is good for the prediction.

**Table 4:** Results of multicollinearity test

| Variable | VIF |
|---|---|
| BDIND | 1/018 |
| DUAL | 1/057 |
| MGOWN | 2/273 |
| OUTBLK | 2/295 |
| AUDQ | 1/006 |
| n= 98 | |

*Testing Hypotheses:*

Tables 5 and 6 represent the results of the regression analysis without the control variables. After testing the hypotheses, the goodness of fit of the model has been interpreted. Finally, the regression results are explained by the control variables and final regression model.

**Table 5:** Results of regression without control variables

| Variable | Sign | Coefficient | Standard error | Wald statistics | Sig. level | Exp(B) |
|---|---|---|---|---|---|---|
| BDIND | Negative | -0/916 | 1/049 | 0/762 | 0/383 | 0/400 |
| DUAL | Negative | -21/752 | 22028/961 | 0/000 | 0/999 | 0/000 |
| MGOWN | Positive | 0/005 | 0/013 | 0/156 | 0/693 | 1/005 |
| OUTBLK | Negative | -0/004 | 0/007 | 0/299 | 0/585 | 0/996 |
| AUDQ | Positive | 1/399 | 0/568 | 6/060 | 0/014 | 4/051 |
| Constant | Positive | 0/086 | 1/078 | 0/006 | 0/937 | 1/090 |
| Confidence level of 95% ،n= 98 | | | | | | |

**Table 6:** Indexes of goodness of fit without control variables

| Predictive accuracy | Omni Bus test | | Hosmer & Lemeshow | | Fitness of the model | Cox and Snell's R squared | Nagelkerke's R Square |
|---|---|---|---|---|---|---|---|
| | Statistic | Sig. level | Statistics | Sig. level | | | |
| 61/2 | 12/95 | 0/02 | 10/27 | 0/25 | 123 | 0/124 | 0/165 |
| Confidence level of 95% ، n= 98 | | | | | | | |

*Testing the first hypothesis:*

H0: There is a significant negative relationship between board independence and restatement.

H1: There is a significant negative relationship between board independence and restatement.

The results of this hypothesis reveal that The Wald statistic is 0.762 and the significance level is 0.383 which is higher than 0.05 and shows that H0 is confirmed at the 95 percent level. As a result, the first hypothesis of the study is rejected and it is found that the board independence is not significantly associated with the restatements.

*Testing the second hypothesis:*

H0: There is no significant positive relationship between CEO duality and restatements.

H1: There is a significant positive relationship between CEO duality and restatements.

The Wald statistic is 0.000 and the significance level is 0.999 and shows that H0 is confirmed at the 95 percent level. As a result, the first hypothesis of the study is rejected and it is found that the board independence is not significantly associated with the restatements. As a result, the second hypothesis is rejected and it is concluded that there is no significant association between CEO duality and restatement.

*Testing the third hypothesis:*

H0: There is no nonlinear significant relationship between managerial ownership and restatements.

H1: There is a significant non-linear relationship between managerial ownership level and restatement; the negative relationship at the lower levels and the positive relationship at the higher levels.

The Wald statistic for the managerial ownership is 0.156 and H0 is confirmed based on the significance level of 0.693 and at the 95 percent level of significance. As a result, the third hypothesis is rejected and it is concluded that the managerial ownership is not significantly associated with the restatement.

*Testing the fourth hypothesis:*

H0: There is no significant negative relationship between the ownership of the outside institutional shareholders and restatement.

H1:There is a significant negative relationship between the ownership of the outside institutional shareholders and restatement.

The Wald statistic for the ownership level of the outside institutional shareholders is 0.299 and H0 is confirmed based on the significance level of 0.585. As a result, the fourth hypothesis is rejected and it is concluded that theownership level of the outside institutional shareholders is not significantly associated with the restatement.

*Testing the fifth hypothesis:*

H0: There is no significant negative relationship between audit quality and restatement.

H1:There is a significant negative relationship between audit quality and restatement.

Based on the Wald statistic which is 6.060 for the audit quality, and based on the significance level of 0.014, it is found that there is a significant relationship between audit quality and restatement. However, the sign of this variable is positive in the regression and it shows that there is a positive direct association between audit quality and restatement. Consequently, H0 is confirmed and the fifth hypothesis is rejected.

*Significance test of the regression equation:*

Using the indexes of the goodness of fit, the significance of the regression equation has been tested. These indexes are provided in table6. The values ofthe Nagelkerke's R Squareand Cox & Snell’s R Squareare 0.165 and 0.124, respectively. These values show that 12.4-16.5 percent of the variation in the dependent variable is explained by this set of the independent variables. The likelihood ratio is 123 andrepresents the suitable power of the model in maximizing the likelihood of estimating the regression coefficients by the model. Furthermore, the index of Hosmer & Lemeshow Testand Omni Bus Test are 0.25 and 0.02, respectively. These values represent the goodness of the fit of the model.

*Predictive accuracy of the model:*

Table 6 represents an index for the accuracy of the predictions that shows the level at which the model is able to predict the right class for each item (control vs. experiment group). Comparing two values before and after adding the control variables, the improvement level in the model by entering these variables is determined. The value of this variable in table 6 shows that when the independent variables are added to the model, 61.2 percent of the items have been properly classified.

*The regression model by adding the control variables:*

Tables 7 and 8 represent the results of the regression analysis after adding the control variables. As shown in these tables, adding the control variables does not lead to the modification of the regression model and the comparison results indicate that the Omni Bus Test index confirms the goodness of the model at the 90 percent level of significance. As stated before, this test at the significance level of 0.05 confirms the goodness of the model for the values lower than 0.05 percent of significance. In addition, the predictive accuracy of the model reduced to 6.02 percent after adding the control variables to the model. The findings of table 7 show that audit quality is the only variable that is effective in restatements. This relationship is found to be positive and significant; however, there is no significant association between other variables and restatements. The findings indicate that adding the control variables has no impact on the bankruptcy probability and debt level and these two variables have no significant relationships with the restatements. Furthermore, the sign of the variable correlation is negative and represents that these variables have inverse relationships with the predictions.

**Table 7:** Results of regression analysis by control variable

| Variable | Sign | Coefficient | Standard error | Wald statistics | Sig. level | Exp(B) |
|---|---|---|---|---|---|---|
| BDIND | Negative | -0/928 | 1/097 | 0/716 | 0/397 | 0/395 |
| DUAL | Negative | -21/757 | 22106/240 | 0/000 | 0/999 | 0/000 |
| MGOWN | Positive | 0/005 | 0/013 | 0/148 | 0/700 | 1/005 |
| OUTBLK | Negative | -0/004 | 0/007 | 0/299 | 0/585 | 0/996 |
| AUDQ | Positive | 1/400 | 0/569 | 6/045 | 0/014 | 4/054 |
| Bankruptcy | Negative | -0/009 | 0/122 | 0/005 | 0/942 | 0/991 |
| Debt level | Negative | -0/082 | 1/721 | 0/002 | 0/962 | 0/921 |
| constant | Positive | 0/211 | 2/375 | 0/008 | 0/929 | 1/235 |
| Confidence level of 95% ،n= 98 | | | | | | |

**Table 8:** Indexes of goodness of fit by control variables

| Predictive accuracy | Omni Bus test | | Hosmer & Lemeshow | | Fitness of model | Cox and Snell R Square | Nagelkerke's R Square |
|---|---|---|---|---|---|---|---|
| | Statistic | Sig. level | Statistic | Sig. level | | | |
| 60/2 | **12/96 | 0/076 | *8/9 | 0/35 | 123 | 0/124 | 0/165 |
| Confidence level of 95%*, confidence level of 90% ** ، n= 98 | | | | | | | |

Omitting the insignificant variables, the final regression model is provided as follows:
(2)1/4 AUDQ Ln(R/1-R) =

*Conclusions and Suggested areas for future research:*

The findings reveal that there is no significant relationship between the corporate governance variables (except for audit quality) and restatements in the firms listed on the Tehran Stock Exchange. However, it was found that the audit quality is positively and significantly associated with the restatements and this relationship is in contrast with the expectations in the fifth hypothesis. Based on the findings of the fifth hypothesis, selecting big audit firms and audit organization as the indicators of audit quality do not result in mitigating the misstatements. The findings of this study in relation to the board independence, CEO duality and managerial ownership are consistent with the findings of Agrawal and Chadha (2005) and Abdullah *et al* (2010). However, Zhizhang *et al* (2011) found inconsistent results. Furthermore, the findings related to the ownership of the outside institutional shareholders and audit quality are not consistent with the results of Abdullah *et al* (2010) and Zhizhang *et al* (2011).

In terms of the first hypothesis, it seems that one reason for the insignificant relationship between board independence and restatement is that the non-executives are not aware of their jobs. These managers do not perceive themselves as accountable to the others; therefore, they don't accomplish their monitoring task perfectly. Managerial ownership, as another corporate governance variable, has no significant relationship with the restatement. The findings of this study show that the percentage of the stocks held by the board is 0.67. Regardless of this high percentage, managerial ownership of the firms listed on the Tehran Stock Exchange does not mitigate or prevent the agency costs and misstatements. However, there have been no evidences found about the effectiveness of the corporate governance measures. There are no regular laws enacted in Iran for the corporate governance and there is no definition provided for the best practice of the corporate governance. These might be attributed to the insignificant relationship between corporate governance variables and restatement. By enacting such a law in Iran, it might be effective only when the information about the usefulness of the corporate governance best practice is provided for the firms listed on the Tehran Stock Exchange. On the other hand, the insignificant relationship between corporate governance variables and restatements might be due to the specific and abnormal situations of the restatement. The restatement should be used in specific situations; however, it is currently used in Iran and even most of the investors and regulators are not aware of the problems and deficiencies associated with the restatement. These situations cover the disadvantages of restatement from

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the perspective of controlling and monitoring systems. As a result, monitoring mechanisms are not able to control the restatements.

Accordingly, the regulators are suggested to consider the restatement and create specific situations in which the restatements are controlled and the abuses are limited. In addition, the investors and shareholders are offered to pay special attention to the restatement in their decision making. The Audit Organization, as a regulator governmental agent, should develop patterns for enhancing the audit quality to mitigate the misstatements and restatements by the firms. The directions for the future studies are as follows:

1. Investigating the reasons for the many restatements in Iran and the factors associated with the lack of independent restatements.
2. Examining the corporate governance characteristics in the investment firms and financial agents.
3. Investigating the relationship with the other corporate governance variables such as the existence or non-existence of the internal audit and effectiveness of the internal control systems with the restatement.

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