

## **The Effects of Corporate Characteristics on Managerial Entrenchment**

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### **Abstract**

The present study aims to assess the relationship between some corporate factors and managerial entrenchment in companies listed on the Tehran Stock Exchange during 2011-2017. Panel data regression models were used to test the hypotheses. The obtained results indicated that four corporate factors, namely real earnings management, predictable earnings management, institutional ownership, and board independence, have a significant relationship with the managerial entrenchment. In this study, the mixed index of managerial entrenchment is calculated using the principal component analysis based on four governance mechanisms of the percentage of shares available to the CEO, CEO duality, CEO compensation logarithm, and CEO tenure. This process has made the present study distinct from the previous ones, in which individual indexes were used for evaluating the entrenchment.

### **Keywords**

Corporate governance, Managerial entrenchment, Earnings management.

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## **1. Introduction**

Agency costs are derived from a conflict of interests; hence providing motivation and monitoring on managers' behaviors is a matter of utmost importance to converge the interests of managers with that of the shareholders (as more personal interests). In case the managerial entrenchment is severe, it could not be controlled even by the independent boards, and it exerts devastating effects on corporate performance. In this case, the CEO will seek for some ways to neutralize the regulatory systems and expand his/her authorities. However, in case of the existence of a mild managerial entrenchment, we could even control that by other managers (Ammari et al., 2016). Managerial entrenchment means a considerable portion of the corporate share is under the control of the management, and its performance conflicts with that of the other shareholders (Baratiyan & Salehi, 2013), they have more authority in determining corporate strategies (Salas, 2010). Experimental studies have shown that the entrenched managers prefer lower than optimum financial leverage, longer-term debt, more cash holding, less pay for a cash benefit, and more investment (Florackis & Ozkan, 2009). The entrenched managers invest less in long-term vital activities, like research and development (Ammari et al., 2016). Chakraborty et al. (2014) indicated that those entrenched managers who are not under market surveillance had shown a weak performance in innovative activities. In general, managerial entrenchment does not always have negative effects. Hirshleifer (1993) declared that entrenched managers might invest in projects with higher risks to yield more revenue for shareholders and other corporate partners because only those managers can maintain their positions that produced enough revenue. Further, Salas (2010) revealed that as the stock price response to the sudden death of an efficient CEO is negative, such response is positive in the case of the death of an entrenched manager. In this study, the effect of some corporate factors will be assessed on the managerial entrenchment of companies listed on the Tehran Stock Exchange.

A few studies conducted on the topic of the study around the world; however, the current research almost is a unique study that mixes the index of managerial entrenchment with factor analyses based on four governance mechanisms of the percentage of shares available to the

CEO, CEO duality, CEO compensation logarithm, and CEO tenure. By calculating managerial entrenchment, the current study has made itself distinct from the previous ones in which individual indexes were used for the evaluation of the entrenchment.

## **2. Theoretical Principles and Literature Review**

### **2.1. Tax Avoidance and Managerial Entrenchment**

According to agency theory, managers of companies are pursuing their interests instead of that of the owners, which is in contrast to maximizing shareholder's wealth (Ma et al., 2010). The conflict of interest between managers and shareholders has caused an information asymmetry and has produced the agency costs (Mustapha & Che Ahmad, 2011). Managerial entrenchment means the management has a considerable amount of the corporate share, and its performance is in contrast to maximizing the corporate earnings (Baratiyan & Salehi, 2013). According to this theory, corporate managers are afraid of takeover pressures and are more inclined to perform antitakeover provisions to preserve them from such pressures (Chakraborty et al., 2014). By adopting specific policies, entrenched managers can maximize their interests, and this could be even detrimental to other shareholders (Lin et al., 2014). Implicitly, managerial entrenchment refers to corporate governance and is gaining increasing importance (Salas, 2010). During the past years, most attention has been directed toward different aspects of corporate governance as a monitoring and controlling mechanism for the authorities of managers. Tax avoidance has considerable potential in/direct effects. Tax cost reduction, cash flow increase, and shareholders' wealth increase are among the direct consequences, while the probability of imposing more tax, considering tax crimes, a probable pressure from the stateside for putting more tax on such firms, the reduction of the social accountability of firms and consequently, the reduction of firm value is among the indirect consequences of tax avoidance (Hanlon & Heitzman, 2010). Minnick and Noga (2010) indicated that smaller and more independent boards, less managerial entrenchment, and higher managerial compensation could affect tax management. Halioui et al. (2016) observed that the board size, CEO duality, and CEO compensation have an inverse relationship with tax aggressiveness. Young (2016) discovered that

the improvement of corporate governance could increase tax avoidance. Khan et al. (2017) believed that in the relationship between institutional ownership and tax avoidance, the increase of the former could enhance the latter. Kiesewetter and Manthey (2017) noticed that strong corporate governance could reduce the effective tax rate. In a more recent study, Akbari et al. (2018) investigated the effect of managerial ability on tax avoidance. They found that it has a significant impact on the relationship between managerial ability and tax avoidance.

**H1: There is a significant relationship between tax avoidance and managerial entrenchment.**

## **2.2. Financial Restatement and Managerial Entrenchment**

Financial restatement could put the credit of the future financial statements at high risk (Jiang et al., 2015). According to Mande and Son (2012), the number of financial restatements is growing increasingly, such that during 2003-2005 the index moved from 3.7% in 2002 to 6.8% in 2005. Financial restatement casts some doubts on management honesty, the adequacy of a company's internal control, the efficiency audit committee, the independence of external auditors, and audit quality.

Nahar Abdullah et al. (2010) discovered that the increase of institutional ownership could cause the reduction of financial restatement probability. Rakoto (2012) indicated that CEO duality, weak independence of the board and audit committee, CEO compensation, and low-quality external auditing have a significant relationship with the interest restatement. Mande and Son (2012) illustrated that companies, due to their responsiveness to the pressures, will change their auditor in case of financial restatement not only to increase their audit quality but to regain their fame. Hogan and Jonas (2016) declared that restatement enjoys high transparency, and revision has less clarity. Chin et al. (2017) indicated that after amending the law related to corporate governance, financial restatement could generally lead to the attenuation of firm performance, the decreasing effect of financial restatement would be completely removed from family companies, and the decreasing effect

of financial restatement would be intensified on non-family companies with no CEO duality.

**H2: There is a significant relationship between financial restatement and managerial entrenchment.**

### **2.3. Audit Fees and Managerial Entrenchment**

The audit fee is defined based on the range of effort the auditor should make to decrease the audit risk to an acceptable level. Under a sound and reliable strategic system, the evaluation risk would be declined, and they would be able to rely on the internal control of their customers more strongly, so the required time for the content test would be declined and fewer audit fees are needed (Lin & Liu, 2013). Hassan et al. (2014) observed a positive relationship between corporate governance and audit fee, while Griffin et al. (2008) reported both a positive and negative relationship between these two elements.

Bliss (2011) concluded that CEO duality could limit board independence. Wang and Yang (2011) used the index of Bebchuk et al. (2009) to measure the managerial entrenchment. According to the results, there is a positive and significant relationship between audit fees and the index above. This study is conducted using information on the American Capital Market. Lin and Liu (2013) revealed that the impact of managerial ownership on the audit fee is not linear. Hassan et al. (2014) realized that corporate governance has a positive relationship with the audit fee. According to their obtained results, the audit fees have no association with firm size. Karim et al. (2016) found that the classified board (one of the aspects of managerial entrenchment) has a positive relationship with the audit fees.

**H3: There is a positive relationship between audit fees and managerial entrenchment.**

### **2.4. Earnings Management and Managerial Entrenchment**

Real earnings management includes the manipulation of the actual operations of a business firm to distinguish the reported profit of the current period (Mitra et al., 2013). When earnings management goes up, managers would be exposed to the risk of scrutiny by the auditors and legislators, so they are prone to litigation (Banko et al., 2013).

Waweru and Riro (2013) assessed the relationship between corporate governance mechanisms and accrued earnings management based on the model proposed by Kothari et al. (2005). They noticed that the ownership structure could influence the accrue earnings management of the Kenyan companies. Contrary to the present study, Banko et al. (2013) showed that when the annual general assembly is held, the entrenched managers try significantly to perform the earnings management. Kamran and Shah (2014) concluded that the growth of managerial entrenchment could cause the managers to affect the firm decisions more easily and to change the accounting digits for their benefit. In this study, however, no significant relationship was observed between discretionary accruals and CEO duality. Liu and Wang (2015) realized that there is an inverse relationship between the corporate governance index and discretionary accruals. Salehi and Kamardin (2015) concluded that CEO duality has a significant relationship with the discretionary accruals. Zhou et al. (2016) found no significant relationship between these two variables. Atiqah and Wahab (2016) illustrated that the number of board sessions has an inverse and significant relationship with optional discretionary accruals. Elghuweel et al. (2017) showed that companies with strong corporate governance are significantly less engaged with earnings management. Alghamdi and Salimi (2012) found that among the governance mechanisms, except for three variables of the board size, external managers, and the number of the board sessions, other mechanisms have no significant effect on the prevention of opportunistic management. Chouaibi and Ibrahim (2015) showed that the type of earnings management is the most efficient. Yu-na (2013) showed that the board size, the number of the board session, and the board compensation motivation could significantly affect the real earnings management. Zgarni et al. (2014) indicated that although the board size has a significant relationship with the manufacturing costs and optional abnormal costs, sales manipulation has no such relationship. Finally, CEO duality has a significant relationship with the real earnings management. Lovata et al. (2016) realized that managers with shorter tenure are more willing to manufacturing increase. Moreover, CEO compensation has a significant relationship with optional abnormal costs. Zhou et al. (2016) discovered that real

earnings management could cause excessive CEO compensation. Geertsema et al. (2016) found that as the CEO is replaced, the companies decreasingly manage their profit through the manipulation of actual activities and discretionary accruals. Supriyaningsih and Fuad (2017) indicated that the financial and accounting expertise of the audit committee members and the size of the committee have a positive effect on the real earnings management. Finally,

Salehi et al. (2018) found a negative and significant relationship between managerial entrenchment and accrual-based earnings management in Iran. Further, they highlighted that entrenched managers are less likely to engage in manipulating real activities accruals.

**H4: There is a significant relationship between accrual earnings management and managerial entrenchment.**

**H5: There is a significant relationship between predictive earnings management and managerial entrenchment.**

**H6: There is a significant relationship between real earnings management and managerial entrenchment.**

### **2.5. Ownership Concentration and Managerial Entrenchment**

Weak corporate governance will provide the opportunity for managers to reduce the quality of the reported interest, and this is an obvious sign of the collapse of business morality (Gonzalez & Garcia-Meca, 2014). Ownership concentration will motivate the shareholders to monitor the management activities, and this could solve the free-rider problem, which is created due to the dispersion of ownership, a condition in which the minor owners are not motivated enough to tolerate the surveillance costs. Thus, it is forecasted that companies with ownership concentration would have a higher market value (Harada & Nguyen, 2011).

Nguyen (2011) indicated that the CEO change has an inverse and significant relationship with the previous performance of the company. Beyer et al. (2012) noted that managers with no ownership in the company, compared with other managers, are suffering from underinvestment in the research and development department. Pinto and Leal (2013) found an inverse and significant relationship between

ownership concentration and CEO compensation. Alves and Leal (2016) discovered that boards with lower ownership concentration and bigger size pay more to the CEO. Dardour and Boussada (2017) realized that there is a u-shape relationship between these two variables, which means that initially, there is an inverse relationship between the CEO compensation and state ownership, and after the increase of the latter, the direction is reversed.

**H7: There is a significant relationship between ownership concentration and managerial entrenchment.**

### **2.6. Institutional Investors and Managerial Entrenchment**

Croci et al. (2012) declared that in companies with family shareholders, the managerial entrenchment might be placed at the lowest level in that such shareholders are motivated enough to monitor the reduction of entrenchment. Such investors are better supervisors than individual shareholders because they have more information and are more effective. Due to their abilities in public advertising and voting right, institutional investors can affect management performance (Scott, 2014). The presence of institutional investors in the ownership structure of companies has resulted in the control of management authorities and the improvement of information efficiency. This could restrict the opportunistic behaviors and decrease agency costs (Gonzalez & Garcia-Meca, 2014). In general, institutional investors with different characteristics have different motivations for conducting high-priced monitoring.

Aggarwal et al. (2011) noted that changes in institutional ownership over time could affect any alteration in corporate governance positively, but the inverse is not true. Croci et al. (2012) found that there is such a relationship in these companies. Reddy et al. (2015) showed that institutional investors do not affect CEO compensation. The authors concluded that such investors did not apply the monitoring needed on managerial decisions and only concentrated on short-term decisions to satisfy their interests. Mazur and Salganik-Shoshan (2016) showed that when institutional investors are close geographically, companies are more willing to use the performance-based compensation systems.



**H8: There is a significant relationship between institutional investors and managerial entrenchment.**

### **2.7. Board Independence and Managerial Entrenchment**

According to Dalton and Dalton (2011), the board's willingness and competency for accountable monitoring on a firm depends on the board members' independence. An independent board can monitor a manager independently and consult with him/her to protect the interests of shareholders (Brickley & Zimmerman, 2010). When managerial entrenchment is not controlled by the unbound boards (independent members), it is more probable that managers show the opportunistic behaviors and pursue their interests, which could cause the decline of shareholders' wealth (Ammari et al., 2016).

Bliss (2011) indicated that there is a positive relationship between these two variables. However, such a positive relationship is only evident in companies whose CEO is the director of the board. Li et al. (2015) suggested that ownership concentration could affect the relationship between board independence and firm performance. Tan et al. (2015) indicated that there is a significant relationship between these two variables. Duru et al. (2016) indicated that CEO duality could significantly debilitate the firm performance, such that the board independence affects this relationship significantly. Supangco (2016) showed that there is a direct relationship between CEO duality and board independence.

A recent study by Salehi and Mohammadi Moghadam (2019) shows that management characteristics, namely management capability and overconfidence, are positively associated with the firm performance and improve the level of performance.

**H9: There is a significant relationship between board independence and managerial entrenchment.**

### **2.8. Overconfidence and Managerial Entrenchment**

The combination of agency differences, managerial entrenchment, and overconfidence causes such firm biases to be more clarified (Mohamed et al., 2012). Innovations and more risk-taking are among the consequences of such a characteristic (Humphery-Jenner et al., 2016). Overconfidence and optimism are two major hidden features of psychological resources, which are proposed recently in the financial and economic resources

(Otto, 2014). Experimental evidence revealed that people are overconfident because they believe that their consciousness and knowledge is broader than what exists in reality. This phenomenon is more common among managers than other people. Overconfidence could directly affect decision-making (Gervais et al., 2011).

Mohamed et al. (2012) discovered that internal governance mechanisms could influence CEO optimism. The governance mechanisms studied in this article include CEO tenure, CEO ownership, ownership concentration, CEO duality, board independence, and board size. Baccar et al. (2013) indicated that the board independence, board size, and absence of CEO duality contribute to the decline of CEO overconfidence. Otto (2014) found that overconfident managers generally gain less compensation than other managers do. Li and Perez (2016) illustrated that CEO optimism is of great importance for explaining management compensation, such that the range of its significant changes during the time. Zhao and Ziebart (2017) indicated that the market could cause the decline of CEO overconfidence through the increase in borrowing costs. Moreover, results showed that boards often prefer an intelligent CEO to an overconfident one. Lai et al. (2017) noticed that the overconfidence of a manager could cause the CEO to prefer the full ownership to a minor one to enter the foreign markets. Such a positive relationship, especially in uncertain settings with no information asymmetry, becomes stronger between overconfidence and managerial ownership.

**H10: There is a significant relationship between overconfidence and managerial entrenchment.**

### 3. Research Methodology

#### 3.1. Statistical Model

The following regression model is used for testing the hypotheses:

$$ME = a_0 + b_1TA + b_2RESTAT + b_3FEE + b_4AEM + b_5PEM + b_6REM + b_7OC + b_8IO + b_9BI + b_{10}OVERC + b_{11}SIZE + b_{12}LOSS + b_{13}AUDIT + e$$

where, ME is managerial entrenchment, TA is tax avoidance, RESTAT is a financial restatement, FEE is audit fees, AEM is accrual earnings management, PEM is predictive earnings management, REM

is real earnings management, OC is ownership concentration, IO is institutional ownership, BI is board independence, OVERC is overconfidence, SIZE is firm size, LOSS is losing company, and AUDIT is the type of audit firm.

### **3.2. Research Variables**

Managerial entrenchment is the dependent variable of the study. Managerial entrenchment is, in fact, the CEO's abuse of corporate governance mechanisms, in a way that he/she creates the entrenchment and pursues his/her own goals. In this paper, considering Lin et al. (2014) and following the availability of Iranian Capital Market information, the following four variables are used for the analysis of principal components to measure the entrenchment:

The share available to the CEO (CEO-SHARE): this variable is calculated according to the number of shares available to the CEO divided by the total number of the shares published.

CEO duality (CEO-CHAIR): this variable is used as an indicator, in a way that if the CEO is the director of the board, it will be 1, otherwise 0.

CEO compensation (B-COM): this variable is defined as the natural logarithm of CEO compensation.

CEO tenure (CEO-TENURE): is the number of years an individual is present as the CEO in the board of directors.

In this study, the effect of corporate factors is studied on managerial entrenchment, so the following corporate factors have the role of the independent variable:

Financial restatement (RESTATE): this variable is naturally qualitative, but by attributing numbers 0 and 1 to its occurrence or non-occurrence, it is turned into a discrete quantitative variable.

Audit fee (FEE): the natural logarithm of audit fee is used in this study.

Corporate governance mechanisms: three variables of board independence, ownership concentration, and institutional investor are used as the mechanisms of corporate governance.

Board Independence (BI): this is the percentage of unbounded managers on the board, which is calculated by dividing the number of unbounded members into the total board members (Rashid, 2015).

Ownership concentration (OC): this is a percentage of total corporate shares, in the hands of five major shareholders (Gonzalez & Garcia-Meca, 2014).

Institutional ownership (IO): this is a percentage of total corporate shares, which is in the hand of institutional investors (including banks, insurance, and financial institutions) (Rashid, 2015).

Tax avoidance (TA): according to Kim et al. (2011), the ratio of tax paid to earnings before tax is used to measure the tax avoidance of companies. The higher the index, the less is the tax avoidance.

Accrue earnings management (AEM): to measure the accrue earnings management, the model of Kothari et al. (2005) is used as follows:

$$\frac{TAC_t}{TA_{t-1}} = a \frac{1}{TA_{t-1}} + b_1 \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} + b_2 \frac{PPE_t}{TA_{t-1}} + b_3 ROA_{t-1} + e_t$$

where TAC is total discretionary accrual (operational profit minus operational cash flow), TA is a total asset,  $\Delta REV$  is a sales change,  $\Delta REC$  is changes of accounts receivable, PPE is property, machinery, and instrument value, and ROA is assets return. The accrued earnings management is defined as the absolute value of the residuals of the above model.

Real earnings management (REM): according to Mitra et al. (2013), three introduced models are used to measure real earnings management. These models are as follows:

1) The model of abnormal operational cash follows

$$CFO_t = a + b_1 Sales_t + b_2 \Delta Sales_t + e_t$$

where CFO is the operational cash flow ratio to the assets at the beginning of the period, Sales is the sales ratio to the assets at the beginning of the period, and  $\Delta sales$  show the sales changes ratio to the assets at the beginning of the period.

2) The model of abnormal manufacturing costs

$$PROD_t = a + b_1 Sales_t + b_2 \Delta Sales_t + b_3 \Delta Sales_{t-1} + e_t$$

where PROD is the total manufacturing costs ratio to the assets at the beginning of the period, Sales is the sales ratio to the assets at the

beginning of the period, and  $\Delta sales$  show the sales changes ratio to the assets at the beginning of the period.

3) The model of abnormal optional costs

$$DISCEXP_t = a + b_1 Sales_{t-1} + e_t$$

where DISCEXP is the ratio of general costs, research, development, and advertisement on assets at the beginning of the period, and Sales is sales ratio to the assets at the beginning of the period.

Predictive earnings management (PEM): to determine the type of earnings management, in opportunistic and predictive terms, the following regression model is used:

$$DACC_t = a + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + b_4 REV_t + b_5 PPE_t + e_t$$

where DACC is optional discretionary accruals, CFO is operational cash flow on the assets of the previous year, REV is sales on the assets of the previous year, and PPE is property, machinery, and instrument value on the assets of the previous year. Companies with positive (negative)  $b_3$  are considered as companies with predictive (opportunistic) earnings management.

Overconfidence (OVERC): Ben-David et al. (2013) indicated that companies with overconfident managers have investment costs more than other companies, so Duellman et al. (2015) defined one of the criteria of recognizing overconfident managers as follows. In case the investment costs ratio on average assets is higher than the industry median, the company has an overconfident manager. In this paper, the investment costs ratio is used.

In addition to the abovementioned corporate factors, the effect of the following three variables is controlled as the control variables in the research model:

Firm size (SIZE): the logarithm of total assets,

Losing company (LOSS): indicator variable (1 for year-companies with a negative net profit, otherwise 0), and

Type of audit firm (AUDIT): indicator variable (1 for year-companies of audit organization, firm auditor, otherwise 0).

### 3.3. Statistical Sample and Population

The statistical population includes all listed companies on the Tehran Stock Exchange during 2011-2017. The statistical sample is based on

the following criteria: 1) the company should be listed on the Tehran Stock Exchange before 2011; 2) the company should have a financial yearend in March; 3) the company should have proposed the required information for computing the research variables; 4) the company should not have changed its fiscal year; and 5) the company should not be affiliated with investment companies, banks, and insurances. A total of 110 companies were selected based on the above-said criteria.

#### 4. Findings

Descriptive indices of the main variables, as displayed in Table 1, involve minimum, maximum, mean, and standard deviation. Given the obtained results, managerial entrenchment (ME) among the sample companies is equal to 0.000 on average, and the standard deviation is 0.571. This index is achieved by analyzing the main components of four variables of CEO percentage of share (COE-SHARE), CEO duality (CEO-CHAIR), CEO compensation (B-COM), and CEO tenure (CEO-TENURE), the descriptive indexes of which are shown in Table 1. Findings related to financial restatement (RESTAT) indicated that, on average, in 77.9% of year-sample companies, the financial restatement occurs. The natural logarithm of the audit fee and its standard deviation, on average, is equal to 6.480 and 80.9, respectively.

**Table 1. Descriptive indexes of research variables**

Variable	Sign	Min	Mean	Median	Max	S.D
Managerial entrenchment	ME	-0.684	0.000	-0.109	2.710	0.571
Percentage of share available to the CEO	CEO_SHARE	0.000	0.493	0.000	15.900	2.152
CEO duality	CEO_CHAIR	0.000	0.332	0.000	1.000	0.471
CEO compensation logarithm	B_COM	0.000	4.992	6.686	8.949	3.336
CEO tenure	CEO_TENURE	1.000	2.770	3.000	6.000	1.451
Financial restatement	RESTAT	0.000	0.779	1.000	1.000	0.415
Audit fee	FEE	4.710	6.480	6.377	9.438	0.809
Board independence	BI	0.000	67.190	60.000	100.000	20.267
Ownership concentration	OC	1.700	73.780	78.040	99.450	18.039
Institutional ownership	IO	0.000	71.160	82.000	99.450	27.352
Tax avoidance	TA	0.000	0.101	0.097	0.373	0.089
Overconfidence	OVERC	0.000	0.564	1.000	1.000	0.496
Firm size	SIZE	10.350	13.920	13.740	19.010	1.478
Losing company	LOSS	0.000	0.148	0.000	1.000	0.355
Type of audit firm	AUDIT	0.000	0.218	0.000	1.000	0.413

Figure 1 shows the rectangular diagram of managerial entrenchment. As can be seen, the drawn diagram has asymmetries. The presence of deviated observation is evident, which could cause the normality of this variable to be rejected statistically. To assess the issue more precisely, the Kolmogorov-Smirnov test is depicted along with skewness and prominence coefficients in Table 2. According to the results, the normality hypothesis of managerial entrenchment is rejected statistically (Sig. <0.05), such that skewness and prominence coefficients illustrated that distribution characteristics are far from the corresponding values of the normal distribution.

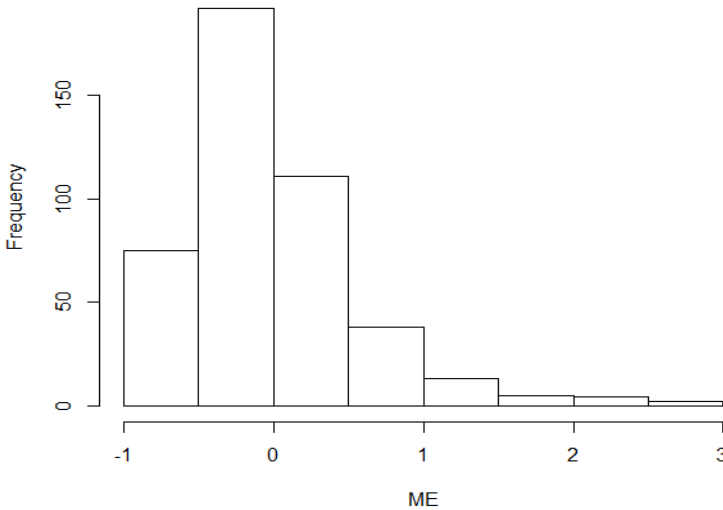


Fig. 1. The rectangular diagram of managerial entrenchment

Table 2. The results of the Kolmogorov-Smirnov test

Variable	Sign	The test statistic (D)	Sig.	Skewness coefficient	Prominence coefficient
Managerial entrenchment	ME	0.247	0.000	1.439	6.286

Johnson's conversion is used to normalize the statistical distribution of dependent variables. Besides, before performing the conversion, the deviated observations are replaced with the mean or median of variables to eliminate their effects on the Kolmogorov-Smirnov test. Table 3 shows the results along with the skewness and prominence

coefficients after Johnson’s conversion. Based on the results achieved, after performing Johnson’s conversion on managerial entrenchment (ME), its normality hypothesis at 0.01 level of error is accepted (D=0.100, Sig. >0.01).

**Table 3. The results of the Kolmogorov-Smirnov test after Johnson’s conversion**

Variable	Sign	The test statistic (D)	Sig.	Skewness coefficient	Prominence coefficient
Managerial entrenchment	ME	0.100	0.030	0.217	2.534

Table 4 illustrates the Pearson correlation coefficient. As can be seen, except for two correlation coefficients, all calculated correlation coefficients are small and do not exceed the average number of 0.5. The largest calculated correlation coefficient is between the firm size and audit fee (r=0.662). Hence, it is rarely possible that linearity exists among the descriptive variables (independent, control), and it is unlikely that the statistical models of the study have such a problem.

**Table 4. Pearson correlation coefficients among descriptive variables**

	Tax avoidance	Restatement	Audit fee	Accrue earnings management	predictive earnings management	Real earnings management	Ownership concentration	Institutional ownership	Board independence	Overconfidence	Firm size	Losing company	Audit firm
Tax avoidance	1												
Restatement	-0.079	1											
Audit fee	-0.121	0.067	1										
Accrue earnings management	0.007	-0.018	0.020	1									
predictive earnings management	0.102	0.025	-0.128	0.013	1								
Real earnings management	-0.117	0.050	0.012	0.500	0.006	1							
Ownership concentration	0.121	-0.051	0.087	0.003	-0.070	0.071	1						
Institutional ownership	0.103	0.115	0.308	0.014	-0.137	0.069	0.602	1					
Board independence	0.086	0.066	-0.008	-0.037	-0.058	0.031	0.014	0.235	1				
overconfidence	0.120	0.041	0.037	-0.008	0.049	-0.069	0.036	0.097	0.016	1			
Firm size	-0.166	0.073	0.662	-0.008	-0.048	0.054	0.119	0.390	0.066	0.152	1		
Losing company	-0.475	0.051	-0.051	-0.059	-0.052	-0.026	-0.039	-0.056	-0.161	0.099	0.130	1	
Audit firm	-0.080	0.042	0.511	0.049	-0.097	0.102	0.150	0.206	-0.035	-0.001	0.326	-0.003	1



The following regression model is used to test the research hypotheses:

$$ME = a_0 + b_1TA + b_2RESTAT + b_3FEE + b_4AEM + b_5PEM + b_6REM + b_7OC + b_8IO + b_9BI + b_{10}OVERC + b_{11}SIZE + b_{12}LOSS + b_{13}AUDIT + e$$

The Limer and Hausman tests were employed to determine the estimation method of the above model. The results of the Limer test are shown in Table 5. According to the obtained results, the hypothesis of the equality of corporate effects is accepted from the Limer test at 0.05 level of error.

**Table 5. The results of Limer and Hausman test in the first model of the study**

Test	Test statistic	Significance level	Result
Limer	1.08	0.300	Equal effects

Table 6 shows the results of model estimation using the equal effects method.

According to the results, about 10.4% of the dependent variable variance is related to descriptive variables available in the model (R2=10.4%). In other words, corporate factors, along with existing control variables in the model, can elucidate about 10.4% of managerial entrenchment changes. The estimated model was significant statistically (F=3.809, Sig. <0.05), and the hypothesis of serial correlation among the residuals is rejected (1.5<DW<2.5). Based on the results obtained, the regression coefficients of the two variables of predictive earnings management (PEM) and institutional ownership (IO) and the regression coefficients of real earnings management (REM) and board independence (BI) are significant at 0.05 and 0.01 level of error, respectively. So, hypothesis 5, 6, 8, and 9 are accepted, and there is no credible evidence to confirm other hypotheses.

**Table 6. The results of model estimation based on the equal effects method**

Control/independent variable	Sign	Regression coefficient	T statistic	Significance level (Sig.)
Tax avoidance	TA	0.590	1.05	0.295
Financial restatement	RESTAT	-0.011	-0.11	0.915
Audit fee	FEE	-0.00	0.36	0.717
Accrue earnings management	AEM	0.640	1.38	0.169
predictive earnings management	PEM	0.331	3.76	0.000
Real earnings management	REM	-0.386	-1.74	0.082
Ownership concentration	OC	0.002	0.95	0.341
Institutional ownership	IO	-0.007	-4.19	0.000
Board independence	BI	0.004	1.86	0.063
CEO overconfidence	OVERC	-0.025	-0.28	0.779
Firm size	SIZE	0.015	0.41	0.679
Losing company	LOSS	0.164	1.17	0.241
Type of Audit firm	AUDIT	0.090	0.78	0.434
Coefficient of determination (R <sup>2</sup> )			0.104	
F statistic			3.809	
F level of significance			0.000	

### 5. Results and Discussion

The result indicates that there is no significant relationship between tax avoidance and managerial entrenchment. The results are in contrast to that of the foreign studies, like Minnick and Noga (2010), Young (2016), and Kiesewetter and Manthey (2017). Minnick and Noga (2010) showed that there is a significant relationship between managerial entrenchment and long-term tax management. Moreover, Young (2016) concluded that the improvement of corporate governance could increase tax avoidance. Kiesewetter and Manthey (2017) concluded that there is a significant relationship between strong corporate governance and tax rate. One of the most important reasons for such a contrast could be the difference in the manner of entrenchment measurement. The results are roughly related to that of the Nahar Abdullah et al. (2010). They declared that institutional ownership has a significant relationship with the financial restatement, while managerial ownership and CEO duality has no association with the restatement. The results are in contrast with that of the Rakoto (2012), Hogan and Jonas (2016), and Chin et al. (2017). Rakoto (2012) and Chin et al. (2017) showed that CEO duality and

Hogan and Jonas (2016) substantiated that CEO compensation, has a significant relationship with the financial restatement. The most important reason for the conflict of results is that these studies investigated the relationship between each governance mechanism and financial restatement discretely. In contrast, the present study provided a mixed relationship between governance mechanisms and financial restatements.

The results also illustrated that there is no significant relationship between audit fees and managerial entrenchment. Zaman et al. (2011) noticed that there is only a significant relationship between audit fees and the quality of corporate governance in large corporations. Makni et al. (2012) discovered that CEO ownership (one of the aspects of entrenchment) does not affect audit quality.

The results confirmed that there is no significant relationship between accrue earnings management and managerial entrenchment. This result is in line with that of the Zhou et al. (2016) and Shayan Nia et al. (2017). Zhou et al. (2016) did not observe a significant relationship between accrue earnings management and CEO compensation in the Chinese Capital Market, and Shayan Nia et al. (2017) did not see a relationship between ownership structures and accrue earnings management in the Malaysian Capital Market. Kamran and Shah (2014) achieved no significant relationship between discretionary accruals and CEO duality in the Pakistani Capital Market. However, the obtained results from the fourth hypothesis testing conflict with that of the Elghuweel et al. (2017), Ebadi et al. (2016), and Salihi and Kamardin (2015). The reason for such a conflict is the calculation method of accrue earnings management.

The results further indicated that there is a significant relationship between predictive earnings management and managerial entrenchment. The results are in line with that of the Chouaibi and Ibrahim (2015) on the Canadian companies and that of the Talebi et al. (2015). Moreover, Ebrahimi and Abdoli (2013) concluded that there is a significant relationship between opportunistic earnings management and CEO compensation in the Tehran Stock Exchange.

The results revealed that there is a significant relationship between real earnings management and managerial entrenchment. Such a result is in line with that of the Yu-na (2013), Zgarni et al. (2014), Lovata et

al. (2016), Zhou et al. (2016), Geertsema et al. (2016), and Supriyaningish and Fuad (2017). A significant relationship is approved between one or some governance mechanisms and real earnings management.

The results also indicated that there is no significant relationship between ownership concentration and managerial entrenchment. This result conflicts with that of the Pinto and Leal (2013) and Alves and Leal (2016). The main reason for such a difference is in the manner of managerial entrenchment measurement, such that in both projects, CEO compensation is used.

The results showed a significant relationship between institutional investment and managerial entrenchment. The obtained result is in line with that of Croci et al. (2012) and Mazur and Salganik-Shoshan (2016). It is shown in these studies that institutional ownership (investor) has a significant relationship with CEO compensation and CEO duality. Besides, within extensive research, Aggarwal et al. (2011) showed that the changes in institutional ownership could positively affect the change of corporate governance.

The results also showed that there is a significant relationship between board independence and managerial entrenchment. The result of this study is totally in line with that of the Bliss (2011), Li et al. (2015), Tan et al. (2015), Duru et al. (2016), and Supangco (2016).

The results revealed that there is no significant relationship between the overconfidence and managerial entrenchment. The obtained result conflicts with that of the Mohamed et al. (2012), Baccar et al. (2013), Otto (2014), Humphery\_Jenner et al. (2016), Lai et al. (2017), and Zhao and Ziebart (2017). Such a difference may be justified by the study of Li and Perez (2016) because the result of this study showed that the relationship between overconfidence and management compensation would be changed during the time. Thus, any changes in the time interval may confirm the relationship between overconfidence and managerial entrenchment in the Tehran Stock Exchange. The other reason is due to a difference in the manner of measurement of overconfidence. For example, Zhao and Ziebart (2017) have used the management optimism for earnings predictions, while the present study employed the capital expenditure ration for this purpose.

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