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## Beyond the Threshold: The Role of Corporate Governance and Growth Opportunities in Earnings Management

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### Abstract

Earnings management is one of the most significant issues in accounting and finance literature, referring to managers' behavior in manipulating discretionary accruals or making real operational decisions in order to achieve desired levels of reported earnings. Among different types of earnings management, pre-threshold earnings management represents a specific form in which managers adjust reported earnings with the aim of avoiding losses or surpassing commonly recognized earnings benchmarks. On the other hand, internal control and monitoring mechanisms within firms, particularly Corporate Governance (CG), play a crucial role as an effective mechanism for aligning the interests of managers and shareholders and limiting opportunistic managerial behavior. Moreover, firms' growth opportunities may influence managers' incentives toward more conservative financial reporting or, conversely, greater engagement in earnings management, as firms with higher growth opportunities are generally subject to greater expectations from investors. Therefore, simultaneously examining these two factors and their effects on pre-threshold earnings management can contribute significantly to understanding firms' financial reporting behaviors and earnings quality. This study aims to investigate the impact of CG and growth opportunities on pre-threshold earnings management in companies listed on the Tehran Stock Exchange (TSE). The temporal scope of the study covers the period from 2014 to 2024. The independent variables of the research are CG and firms' growth opportunities, while pre-threshold earnings management is considered as the dependent variable. The study consists of two hypotheses: The first hypothesis examines the effect of growth opportunities on pre-threshold earnings management, and the second hypothesis investigates the impact of CG on pre-threshold earnings management. Data were collected through library research and document analysis methods. To test the research hypotheses, a multiple linear regression model using the Generalized Least Squares (GLS) approach was employed. The results of the hypothesis tests indicate that both growth opportunities and CG have a significant negative effect on pre-threshold earnings management.

**Keywords:** Corporate governance, Growth opportunities, Pre-threshold earnings management.

## 1 | Introduction

Earnings management is defined as the discretion exercised by firms in selecting “accounting policies” to achieve specific objectives determined by corporate managers. Earnings management refers to the artificial manipulation of earnings by managers in order to achieve a desired level of reported profit for particular purposes, including meeting analysts' forecasts or maintaining previously observed earnings trends to facilitate

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the prediction of future earnings. Managers are aware of the significant importance of earnings for corporate stakeholders and consider their compensation as a natural outcome of accounting earnings. Changes in accounting earnings and stock prices are interrelated; in other words, accounting earnings information contains factors that influence stock prices and can provide valuable information for decision-making [1].

Pre-threshold earnings management represents an intermediate mechanism used by managers to ensure a safe or unsafe distance from earnings benchmarks. Accordingly, a firm experiencing “unsafe” earnings, which are close to the target earnings level or forecasted earnings within a specific reporting period, may engage in earnings management practices [2]. The evaluation of firms’ accounting earnings and their conformity with earnings thresholds is based on the premise that when earnings are distributed around certain psychological thresholds, anomalies may occur, such as situations where firms avoid reporting losses and disclose only positive earnings. Furthermore, pre-threshold earnings management is influenced by accounting standards and the degree of flexibility provided by these standards.

When earnings are close to a specific threshold, managers are strongly motivated to manipulate reported earnings, as the market reaction to earnings announcements differs between firms that achieve the earnings threshold and those that fail to meet it [3]. The underlying theories supporting this approach to earnings management are the expectation theory and transaction cost theory [4]. Several factors influence threshold-based earnings management, among which Corporate Governance (CG) mechanisms and growth opportunities can be considered as important determinants [2]. Managers engage in earnings management practices to avoid reporting losses and to prevent earnings declines relative to specific earnings benchmarks.

CG and its mechanisms refer to a set of approaches that encourage corporate management to act in accordance with the interests of external investors. These mechanisms include factors such as ownership concentration, managerial ownership, institutional ownership, corporate ownership, board composition, and board size [5]. Independent (non-executive) directors and major institutional investors can constrain opportunistic earnings management behavior. When unmanaged earnings are below the earnings threshold of the previous period, the presence of independent directors reduces the likelihood of such behaviors. Non-executive board members and major institutional investors, as important components of CG, can mitigate earnings management practices aimed at achieving specific earnings thresholds, particularly when managers have strong incentives to manipulate earnings [6]. Institutional investors closely monitor managerial performance and can exert pressure on managers and firms through their decisions regarding stock purchases and sales or through their influence over management. Independent board members, who act as external monitors and are not influenced by internal managers, can prevent managerial opportunism and contribute to enhancing shareholder wealth. By addressing agency problems and protecting their reputational capital, they can effectively supervise managerial behavior through the establishment of appropriate employment contracts with executives [7]. Major institutional shareholders discourage managers from using income-increasing abnormal accruals when managers have incentives to overstate earnings in order to achieve specific earnings thresholds. Likewise, they constrain income-decreasing accrual manipulation when managers attempt to reduce earnings to reach desired earnings benchmarks or to improve future profitability levels. However, when managers lack incentives to increase or decrease earnings, institutional investors do not exhibit a significant relationship with earnings management.

Growth opportunities refer to all potential investment opportunities available to a firm, or more specifically, the firm’s access to future growth prospects. These opportunities serve as a driving force that creates incentives for managers and represent a potential reward for investors. High-growth firms attempt to avoid earnings declines, indicating that growth-oriented companies are more likely to engage in earnings management and present an upward trend in reported earnings to prevent a decrease in earnings relative to the previous period’s earnings threshold [8]. The existence of growth opportunities may create significant challenges in the process of maximizing firm value for shareholders. Moreover, higher growth opportunities can lead to greater information asymmetry within firms. Consequently, agency costs are also expected to be higher in such companies. Therefore, firms with higher growth opportunities have a greater need to adopt

equity-based incentive mechanisms to enhance the transparency of financial reporting and strengthen monitoring mechanisms [9]. Moreover, managers in firms with lower growth opportunities face financial constraints and tend to seek additional sources of financing, particularly external financing. Consequently, they are less likely to pursue opportunistic incentives for earnings manipulation [10]. A significant relationship exists between dividend policy and firm value; however, this relationship varies depending on the firm's growth opportunities. Specifically, the relationship is negative and significant in firms with growth opportunities, whereas it is positive and significant in firms without growth opportunities. Therefore, dividend policy has a significant association with firm value, and this association is influenced by the existence or absence of growth opportunities [11]. Managers may manage investment opportunities and earnings toward their own objectives in order to present a favorable and optimal image of the firm and preserve their reputation and credibility. Their findings indicate that firm growth opportunities are positively associated with managers' incentives to engage in earnings management.

The consequences of neglecting the effects of CG and growth opportunities on threshold-based earnings management can be explained as follows: Investors may use observed earnings thresholds, including management earnings forecast thresholds and prior-period earnings thresholds, to evaluate a firm's future performance and efficiency. However, firms that significantly rely on earnings thresholds may face future failure because they do not achieve these earnings benchmarks through actual operating performance and instead utilize discretionary accruals to avoid missing such benchmarks. Accordingly, managerial practices become focused on achieving specific earnings thresholds. Managers may conceal earnings manipulation through improved firm performance; however, once these thresholds are exceeded, they lose the ability to conceal such opportunistic behaviors [12]. Identifying growth opportunity variables and CG mechanisms, as well as evaluating the impact of each of these factors on managerial behavior, can provide valuable insights for investors in identifying and assessing the future prospects of firms and preventing potential investment losses. Based on the aforementioned discussions, this study aims to answer the following research question: What is the effect of CG and growth opportunities on threshold-based earnings management in firms listed on the Tehran Stock Exchange (TSE)?

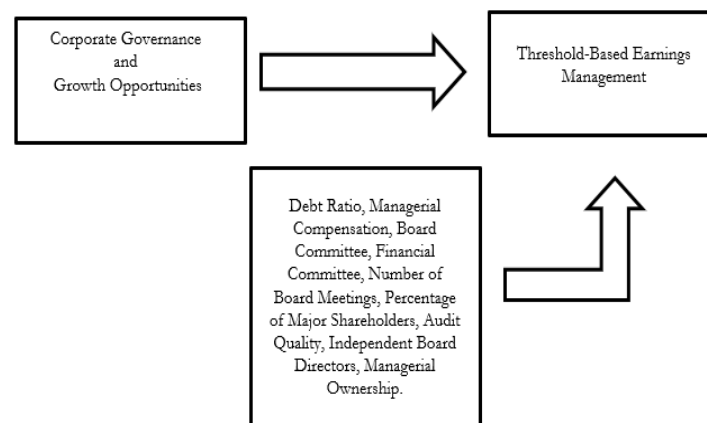
## **2| Literature Review**

### **2.1| The Effect of Corporate Governance on Threshold-Based Earnings Management**

Managers' tendency to engage in earnings management and manipulate financial statements within a specific time period and around targeted earnings thresholds in order to achieve desired earnings levels may result in the misuse of financial reporting practices. Such actions can lead to the disclosure of misleading information to shareholders, seriously undermine investor confidence, and cause financial losses for thousands of shareholders, ultimately discouraging participation in the stock market. This issue may also result in adverse economic consequences. Therefore, in order to preserve shareholder confidence and contribute to maintaining economic stability, CG seeks to establish mechanisms through which capital providers can ensure that they obtain an appropriate return on their investments in firms. This is because CG aims to enhance fairness, transparency, and accountability within organizations. Through external governance mechanisms, which primarily consist of laws and regulations, as well as internal governance mechanisms, which are largely voluntary in nature, CG can contribute to effective managerial practices, reduce information asymmetry problems, increase shareholder confidence, and ultimately mitigate earnings management practices. The increasing tendency of individuals to invest in publicly listed companies has further emphasized the importance of CG. By reducing information asymmetry and promoting timely reporting by managers to shareholders, CG mechanisms can enhance investors' confidence and provide assurance regarding the prevention of earnings management within the context of targeted earnings thresholds.

## 2.2|The Effect of Growth Opportunities on Threshold-Based Earnings Management

Based on previous studies examining the effect of growth opportunities on firm characteristics and earnings-related factors, it can be inferred that a firm's growth opportunities are associated with managers' incentives to achieve or exceed specific earnings thresholds. According to signaling theory, firms that report losses or experience earnings declines are likely to face negative and significant changes in stock prices. Moreover, this negative earnings surprise has a greater impact on stock prices for high-growth firms compared with low-growth firms. Therefore, firms with greater growth opportunities incur higher costs when they fail to achieve their targeted earnings thresholds. Consequently, managers in growth-oriented firms have stronger incentives to manipulate earnings in order to avoid reporting losses and achieve specific earnings benchmarks. Specifically, these firms attempt to upwardly manipulate their actual earnings before reaching the desired threshold because growth firms are expected to demonstrate an increasing earnings trend. Accordingly, it is expected that growth opportunities have a positive effect on threshold-based earnings management. Based on the above discussion, the conceptual model of the study is presented as follows:



**Fig. 1. Conceptual model of growth opportunities and threshold-based earnings management.**

## 2.3| Background

Salehi et al. [13] investigated the effect of managerial ability on firm performance with an emphasis on the moderating role of growth opportunities. The study examined data firms over a six-year period and analyzed the information using simple and multiple regression techniques. The findings confirmed that managerial ability has a significant impact on firm performance, and that growth opportunities moderate the relationship between managerial ability and firm performance. Shafiei et al. [14] conducted a study entitled "Investigating Earnings Management for Achieving Earnings Thresholds." The study employed an earnings management perspective to examine managers' attempts to avoid reporting losses and analyzed listed firms over an eight-year period. The results indicated that firms engage in earnings management practices to avoid reporting losses and achieve specific earnings benchmarks.

Dastgir and Tabousian [15] examined the effect of CG system characteristics on earnings management and tax management in TSE-listed firms. The study analyzed 160 listed companies using multiple regression analysis and panel data techniques over a seven-year period. The findings indicated that board size, board independence, and board compensation contribute to reducing both tax management and earnings management. Sajjadi and Zarezadeh Mehrizi [10] investigated the effect of growth opportunities on the relationship between managerial compensation and earnings management. Using a sample of 151 listed firms over a seven-year period, the study employed descriptive and inferential statistical methods to identify the appropriate structure of the combined data. The results revealed a positive relationship between managerial compensation and earnings management and a negative relationship between growth opportunities and earnings management. This finding suggests that firms with fewer growth opportunities have stronger

incentives to engage in earnings management to obtain managerial compensation. Moradzadeh Fard et al. [8] conducted a study entitled “The relationship between firm characteristics and managers' preference for profit threshold selection.” Three logit models were estimated to examine the relationship between firm characteristics and managers' perceptions of the importance of different earnings thresholds. The study investigated 104 firms listed on the TSE. The findings indicated that specific firm characteristics influence managers' selection, prioritization, and choice of the three earnings thresholds.

Degeorge et al. [12] examined the importance of achieving the previous year's earnings threshold from investors' perspectives. Their study focused on investors' reactions to the achievement of prior-year earnings benchmarks at the time of earnings announcements. Using a four-year period, a sample of 75 listed companies, panel data analysis, and multiple regression models, they found that forecasted earnings thresholds have a positive relationship with abnormal stock returns. However, the previous year's earnings threshold was not considered a significant reference point for investors' investment decisions. Izadinia et al. [16] investigated the effect of financial leverage and liquidity on earnings management among firms listed on the TSE. Using panel data analysis, they concluded that financial leverage has a negative effect on real earnings management measures. Ansari et al. [17] examined the effect of conservatism on different types of earnings management. Using panel data from TSE-listed firms, they found a significant negative relationship between accounting conservatism and accrual-based earnings management. Moreover, a significant positive relationship was observed between conservatism and real earnings management, while conservatism had a negative relationship with the overall level of earnings management.

Ilhan et al. [18], in a study entitled “CG and firm performance in emerging markets: Evidence from Turkey,” investigated the effect of internal CG mechanisms on firm performance in an emerging market characterized by weak and flexible institutional structures. Their findings indicated that board members do not have a significant impact on firm performance. George et al. [19], in a study entitled “cash holdings and earnings quality: Evidence from the UK Market,” examined the importance of earnings quality as a determinant of corporate cash holdings. The findings indicated that firms with higher growth opportunities tend to maintain higher levels of cash holdings. Tulcanaza-Prieto et al. [20] investigated the relationship between CEO turnover and earnings management in Chinese firms. Using regression analysis and stock market data, their findings demonstrated a significant negative relationship between CEO turnover and earnings management. Tulcanaza-Prieto et al. [20] examined the mediating role of growth opportunities in the relationship between managerial compensation and earnings management. Their results showed that managers in firms with lower growth opportunities have stronger incentives to engage in earnings management in order to receive higher compensation.

Sama [2], in a study entitled “earnings management to exceed thresholds in continental and Angl Saxon accounting models,” investigated factors affecting threshold-based earnings management. The findings indicated that firms manage earnings by targeting zero earnings, particularly when prior-year earnings are considered as the benchmark. An and Yu [21] examined the effect of earnings management on financial leverage and how this relationship is influenced by institutional environments in China. Using a large panel dataset consisting of 25,777 firms from 37 countries, their findings revealed that earnings management activities are associated with higher levels of financial leverage. Hao et al. [22], in a study entitled “incremental information content of earnings and operating cash flows in the Chinese market,” used panel data analysis and found that when earnings thresholds exist, reported earnings provide lower information content. In other words, when earnings are affected by threshold-based incentives, market participants rely more on the information content of operating cash flows. Norfahane et al. [23], in a study entitled “monitoring financial risk ratios and earnings management: Evidence from Malaysia and Thailand,” employed the Yang model to investigate the relationship between financial risk indicators and earnings management. The results indicated that there was no significant relationship between the average levels of earnings management, financial leverage, and financial distress in these two countries; however, a significant relationship was observed between free cash flow levels and earnings management. Based on the objectives of the study, the following research hypotheses are examined:

Hypothesis 1: Growth opportunities have a positive effect on threshold-based earnings management.

Hypothesis 2: CG has a negative effect on threshold-based earnings management.

### 3 | Research Methodology

In terms of purpose, the present study is classified as an applied research. Since it describes existing phenomena and the prevailing conditions without any manipulation or intervention, it falls within the category of descriptive research. Furthermore, because historical data are utilized in this study to test the research hypotheses and identify the relationships among variables, the research is categorized as descriptive-causal research.

#### 3.1 | Statistical Population

**Table 1. Number of sample firms.**

| Total Number of Companies Listed on the TSE at the End of 2024                                                                   | 627   |
|----------------------------------------------------------------------------------------------------------------------------------|-------|
| Criteria:                                                                                                                        |       |
| Number of companies that were not active on the stock exchange during the period 2017–2024                                       | (217) |
| Number of companies listed on the stock exchange after 2017                                                                      | (129) |
| Number of companies classified as holding companies, investment companies, financial intermediaries, banks, or leasing companies | (41)  |
| Number of companies whose fiscal year did not end on 29/12/XX or changed their fiscal year during the research period            | (60)  |
| Number of companies that experienced trading suspensions of more than six months during the research period                      | (34)  |
| Number of companies for which the required information was unavailable during the research period                                | -     |
| Number of sample firms                                                                                                           | 146   |

After applying all of the aforementioned criteria, a total of 146 firms remained as the screened statistical population, and all of these firms were selected as the research sample.

#### 3.2 | Data Collection Instruments

The required information and data for this study were collected from various sources based on their nature. The data related to the theoretical foundations of the research were gathered through a review of books, scientific journals, and Persian and international articles using the library research method. In contrast, the data utilized in the empirical section of the study, which were employed to examine the relationships among variables, were based on actual firm information and extracted from the financial statements of companies listed on the TSE. To collect financial data, computerized databases, including the Rahavard Novin software and the comprehensive database of publishers (codal), were utilized. The research data were collected annually in the form of cross-sectional information over the examined period. Data analysis was conducted using Stata statistical software and multiple regression models. Furthermore, to select the appropriate model and ensure the accuracy and reliability of the obtained results, various statistical tests were employed, including the F-Limer test and Hausman test for determining the appropriate panel data model, as well as multicollinearity, correlation, unit root, and other regression diagnostic tests. The application of these tests enhances the reliability of the research findings and provides an appropriate basis for interpreting the empirical results.

#### 3.3 | Models

To test the first research hypothesis, the following regression model is employed in this study:

$$\text{TRSD}_{it} = \alpha + B_1\text{OPPC}_{it} + B_2\text{DEBT}_{it} + B_3\text{REMD}_{it} + B_4\text{MOWN}_{it} + B_5\text{DUAL}_{it} + B_6\text{COMN}_{it} \\ + B_7\text{COMR}_{it} + B_8\text{NBRC}_{it} + B_9\text{CCAP}_{it} + B_{10}\text{ADEX}_{it} + B_{11}\text{BIGA}_{it} + \varepsilon$$

To test the second research hypothesis, the following regression model is employed in this study:

$$\text{TRSD}_{it} = \alpha + B_1 \text{CG}_{it} + B_2 \text{DEBT}_{it} + B_3 \text{REMD}_{it} + B_4 \text{MOWN}_{it} + B_5 \text{DUAL}_{it} + B_6 \text{COMN}_{it} \\ + B_7 \text{COMR}_{it} + B_8 \text{NBRC}_{it} + B_9 \text{CCAP}_{it} + B_{10} \text{ADEX}_{it} + B_{11} \text{BIGA}_{it} + \varepsilon$$

### 3.3.1 | Dependent variable: Threshold-based earnings management

In this study, discretionary accruals are estimated based on the modified cross-sectional Jones model, as described by Dechow et al. [24] The following equation *Eq. (1)* is used for the calculation:

$$\frac{\text{TACC}_{it}}{\text{TA}_{i,t-1}} = B_0 \left( \frac{1}{\text{TA}_{i,t-1}} \right) + B_1 \left( \frac{\Delta \text{REV}_{it}}{\text{TA}_{i,t-1}} \right) + B_2 \left( \frac{\text{PPP}_{it}}{\text{TA}_{i,t-1}} \right) + B_3 (\text{ROA}_{it}) + \epsilon_{it} \quad (1)$$

TACC: Total accruals for firm *i* in year *t*. TA: Total assets of firm *i* in year *t*–1.  $\Delta \text{REV}$ : Sales revenue in year *t* minus sales revenue in the previous year for firm *i*. PPE: Net property, plant, and equipment of firm *i* in year *t*. Return on Assets (ROA): Calculated as net income divided by total assets. The residual values obtained from the above model are considered as threshold-based earnings management. TRSD: The independent variable in *Model (2)* is considered as the distance from the threshold, including zero earnings, previous year's earnings, and management earnings forecasts, which represents threshold-based earnings management.

### 3.3.2 | Independent variables

I. CG:

The CG index is measured based on controlling shareholders, board members' independence, and internal auditing. The CG index is calculated by summing the scores assigned to firms based on their compliance with CG mechanisms. Firms with controlling shareholders are assigned a value of 1, while firms without controlling shareholders receive a value of 0. Board independence is measured by the ratio of non-executive directors to the total number of board members. A value closer to 1 indicates a higher level of board independence, whereas a value closer to 0 represents a lower level of board independence. The existence of an internal audit function is assigned a value of 1, and its absence is assigned a value of 0. For example, a firm that has both a controlling shareholder and an internal audit function receives 2 points. By adding this score to the ratio of non-executive directors to total board members, the CG index of the firm is calculated. Accordingly, the CG index is measured for all sample firms.

II. Firm growth opportunities (OPPC):

Growth opportunities are measured as the ratio of the firm's market value to its book value at the end of the fiscal year. The market value of the firm is calculated as the year-end stock price multiplied by the number of outstanding shares, while the book value of the firm is measured based on the book value of shareholders' equity.

$$\text{OPPC}_{it} = M/B$$

### 3.3.3 | Control variables

The control variables used in the present study are described as follows:

Debt Ratio (DEBT): The ratio of long-term liabilities to total assets at the beginning of the fiscal period. Managerial Compensation (REMD): A dummy variable that takes the value of 1 if the firm provides compensation to shareholders and 0 otherwise. Board Committee (COMN): A dummy variable that takes the value of 1 if the firm has a board committee and 0 otherwise. Financial Committee (COMR): A dummy variable that takes the value of 1 if the firm has a financial committee for bonus payments and 0 otherwise. Number of Board Meetings (NBRC): The number of board meetings held during the fiscal year. Percentage of Major Shareholders (CCAP): The percentage of ownership held by major shareholders. Independent Board Directors (ADEX): The total number of independent directors on the board. Audit Quality (BIGA): A dummy variable that takes the value of 1 if the firm is audited by the Audit Organization and 0 otherwise.

## 4 | Findings

### 4.1 | Descriptive Statistics

The mean is the most important measure of central tendency, representing the equilibrium point and the center of distribution. It is a suitable indicator for demonstrating the centrality of data. For example, the mean value of the firm growth opportunities variable is 2.625, indicating that most observations are concentrated around this value. The median is another measure of central tendency that reflects the characteristics of the population. As observed, the median value of this variable is 2.279, indicating that half of the observations are below this value and the other half are above it. In general, dispersion parameters are used to determine the extent of variability among observations or their deviation from the mean. One of the most important dispersion measures is the standard deviation. Among the variables, the ratio of long-term debt to assets has the lowest dispersion, while managerial ownership has the highest level of dispersion. This indicates that these two variables, respectively, have the lowest and highest levels of variation. The degree of asymmetry in the frequency distribution curve is referred to as skewness. If the skewness coefficient is zero, the distribution is completely symmetric. A positive coefficient indicates right-skewness, while a negative coefficient indicates left-skewness. The variable number of board meetings has the highest degree of asymmetry, whereas the variable percentage of major shareholders has the lowest degree of asymmetry compared with the normal distribution. The degree of peakedness or flatness of a frequency distribution curve relative to the standard normal curve is referred to as kurtosis. The variable number of board meetings has the highest kurtosis, while CG has the lowest kurtosis compared with the normal distribution. When the kurtosis value equals zero, the data distribution is considered normal; that is, the distribution curve is tall and upward-shaped, with observations relatively close to each other and low variance. If kurtosis is positive, the peak of the data distribution curve becomes more pronounced.

**Table 2. Descriptive statistics of research variables.**

| Variable Name                                | Variable Symbol | Mean   | Median | Max    | Min    | S.D    | Skewness | Kurtosis |
|----------------------------------------------|-----------------|--------|--------|--------|--------|--------|----------|----------|
| Number of independent directors on the board | ADEX            | 3.304  | 3.000  | 7.000  | 1.000  | 0.980  | 0.205    | 3.720    |
| Percentage of major shareholders             | CCAP            | 35.764 | 36.096 | 83.810 | 1.630  | 12.357 | 0.205    | 3.554    |
| Corporate governance                         | CG              | 2.642  | 2.600  | 2.875  | 2.200  | 0.166  | -0.637   | 2.612    |
| Debt ratio                                   | DEBT            | 0.099  | 0.054  | 1.217  | 0.000  | 0.122  | 3.205    | 19.710   |
| Managerial ownership                         | MOWN            | 48.870 | 49.670 | 82.030 | 2.650  | 15.950 | -0.288   | 3.274    |
| Number of board meetings                     | NBRC            | 12.211 | 12.000 | 27.000 | 8.000  | 1.398  | 7.605    | 66.412   |
| Firm growth opportunities                    | OPPC            | 2.625  | 2.279  | 11.309 | -5.325 | 1.862  | 1.054    | 7.247    |
| Return on assets                             | ROA             | 0.121  | 0.106  | 0.622  | -1.063 | 0.157  | -0.804   | 11.469   |
| Pre-threshold earnings management            | TRSD            | 0.0003 | -0.005 | 0.927  | -0.854 | 0.155  | 0.346    | 9.530    |

For dummy variables, descriptive statistics as presented in *Table 2* are not meaningful. Therefore, the descriptive information for these variables is provided in *Table 3*.

**Table 3. Descriptive statistics of dummy variables in the model.**

| Variable Name                           | Variable Symbol | Number of Ones | Number of Zeros | Total Observations |
|-----------------------------------------|-----------------|----------------|-----------------|--------------------|
| Auditor quality                         | BIGA            | 182            | 986             | 1168               |
| Board committee<br>dummy variable       | COMN            | 805            | 363             | 1168               |
| Financial committee<br>dummy variable   | COMR            | 789            | 379             | 1168               |
| Director compensation<br>dummy variable | REMD            | 436            | 732             | 1168               |

## 4.2 | Normality Test of Variables

To examine the normality of the research variables, the Jarque–Bera test is employed. The null hypothesis in this test assumes that the variables are normally distributed. If the significance level is greater than 0.05, the null hypothesis is accepted, indicating that the variable has a normal distribution. The following table presents the results of the normality test for the variables used in the models. As observed, the significance level for all variables is less than 0.05; therefore, the null hypothesis is rejected, and the variables are not normally distributed. However, due to the large number of observations, based on the Central Limit Theorem, non-normality of the data distribution does not create a problem for estimating the regression models.

**Table 4. Results of the normality test for variables.**

| Variable Name                                | Stat    | Sig  |
|----------------------------------------------|---------|------|
| Number of independent directors on the board | 17.61   | 0.00 |
| Percentage of major shareholders             | 12.20   | 0.00 |
| CG                                           | 45.59   | 0.00 |
| Debt ratio                                   | 8221.25 | 0.00 |
| Managerial ownership                         | 10.47   | 0.01 |
| Number of board meetings                     | 1091.45 | 0.00 |
| Firm growth opportunities                    | 577.02  | 0.00 |
| Return on assets                             | 1907.27 | 0.00 |
| Pre-threshold earnings management            | 1106.86 | 0.00 |

## 4.3 | Multicollinearity Test

Multicollinearity is a problem related to statistical data and can occur in two forms: perfect and imperfect multicollinearity. Perfect multicollinearity refers to a situation in which the independent variables in a model have a complete correlation with each other, while imperfect multicollinearity indicates a strong correlation among independent variables. In this study, the Variance Inflation Factor (VIF) criterion is used to examine multicollinearity among the independent variables. If the VIF value is approximately less than 10, the independent variable is not considered a source of multicollinearity. The VIF values for the independent variables of the two models are presented in the following table. As can be observed, the VIF values for all variables are below 10, indicating that there is no multicollinearity problem in the research models.

**Table 5. VIF values.**

| Variable | Model 1 | Model 2 |
|----------|---------|---------|
| OPPC     | 1.059   | -       |
| CG       | -       | 1.837   |
| DEBT     | 1.105   | 1.108   |
| REMD     | 1.751   | 1.748   |
| MOWN     | 1.038   | 1.038   |
| DUAL     | 1.789   | 1.716   |
| COMN     | 1.068   | 1.101   |
| COMR     | 1.433   | 1.434   |
| NBRC     | 1.219   | 1.240   |
| CCAP     | 1.138   | 1.135   |
| ADEX     | 1.790   | 1.784   |
| BIGA     | 1.129   | 1.148   |

#### 4.4 | Stationarity Test of Variables

Before estimating the regression model using the data, it is necessary to examine the stationarity of each variable individually. If the variables are non-stationary, they may lead to the problem of spurious regression. In this study, the Levin–Lin–Chu (LLC) test is employed to examine the stationarity of variables in panel data. The null hypothesis of this test assumes the existence of a unit root, or equivalently, the non-stationarity of variables. If the significance level is less than 0.05, the null hypothesis is rejected, indicating that the variables are stationary. A summary of the results of this test is presented in *Table 6*.

**Table 6. Results of the stationarity test for model variables.**

| Variable Parameter                          | Stat   | Sig  |
|---------------------------------------------|--------|------|
| Total number of independent board directors | -7.9   | 0.00 |
| Percentage of major shareholders            | -78.0  | 0.00 |
| CG                                          | -7.5   | 0.00 |
| Debt ratio                                  | -32.9  | 0.00 |
| managerial ownership                        | -105.6 | 0.00 |
| Number of board meetings                    | -23.5  | 0.00 |
| ROA                                         | -16.0  | 0.00 |
| Pre-threshold earnings management           | -28.1  | 0.00 |

According to *Table 6*, the significance level of the LLC test for all variables is less than 0.05 ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis is rejected, and the variables are stationary.

#### 4.5 | F-Limer Test

Since the data used in this study are panel data (firm-year observations), and panel data can be analyzed using either pooled data or panel data approaches, the F-Limer test is applied to determine the appropriate estimation method between the pooled regression model and the panel data model. To interpret the results of the F-Limer test, if the probability value of the F-statistic is greater than 0.05, the pooled data method should be used. Otherwise, the panel data method is considered more appropriate. A summary of the F-Limer test results is presented in *Table 7*. As observed, the  $p$ -value for both models is greater than 0.05; therefore, the pooled data regression method is accepted. Given that the pooled data approach is selected, the Breusch–Pagan and Hausman tests are not performed.

**Table 7. F-Limer test.**

| Model  | F-Limer Test |             |        |
|--------|--------------|-------------|--------|
|        | F-Limer Stat | Probability | Result |
| First  | 0.78         | 0.35        | Pooled |
| Second | 0.70         | 0.41        | Pooled |

#### 4.6 | Heteroscedasticity Test of Residuals

One of the fundamental assumptions of an appropriate regression model is the homoscedasticity (constant variance) of residuals. To examine this assumption, considering the pooled nature of the data in this study, the White test is employed using the Stata software. The null hypothesis of this test assumes the existence of homoscedasticity of residuals. If the significance level is greater than 0.05, the null hypothesis is accepted. According to *Table 8*, the obtained significance levels of the White test for both models are 0.000, which are less than 0.05 ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis (existence of homoscedasticity) is rejected, indicating the presence of heteroscedasticity in the residuals. Consequently, to address this problem, the Generalized Least Squares (GLS) regression method is applied.

**Table 8. Test of homoscedasticity of the model.**

| Model  | Stat-Value | Sig  |
|--------|------------|------|
| First  | 13.57      | 0.00 |
| Second | 13.41      | 0.00 |

## 4.7 | Serial Correlation Test of Residuals

In the present study, the Wooldridge test is employed to identify the presence or absence of serial correlation among residuals. The null hypothesis of this test assumes that there is no serial correlation in the residuals. If the significance level is greater than 0.05, the null hypothesis is accepted. The results of this test for the two models are presented in the following table.

**Table 9. Wooldridge test.**

| Model  | Test- Stat | Sig  |
|--------|------------|------|
| First  | 1.88       | 0.17 |
| Second | 2.78       | 0.10 |

According to *Table 9*, the obtained significance level for the Wooldridge test in both models is greater than 0.05 ( $p\text{-value} > 0.05$ ). Therefore, the null hypothesis is accepted, indicating that there is no serial correlation problem among the residuals.

## 4.8 | Cross-Sectional Correlation Test of Residuals

In the present study, the Pesaran test is used to detect the presence or absence of correlation among cross-sectional units. The null hypothesis of this test assumes no cross-sectional dependence. If the  $p$ -value is greater than 0.05, the null hypothesis is accepted. The results of this test for the two models are presented in the following table.

**Table 10. Pesaran test.**

| Model  | Test- Stat | p-Value |
|--------|------------|---------|
| First  | 0.064      | 0.949   |
| Second | -0.273     | 0.875   |

According to the above table, the obtained  $p$ -value of the test for both models is greater than the significance level of 0.05 ( $p\text{-value} > 0.05$ ). Therefore, the null hypothesis is accepted, indicating that there is no cross-sectional correlation problem.

## 4.9 | Normality Test of Residuals

One of the fundamental assumptions of a regression model is the normality of residuals. To examine this assumption, the Jarque–Bera test is applied in this study. The null hypothesis of this test assumes that the residuals are normally distributed. If the significance level is greater than 0.05, the null hypothesis is accepted. The following table presents the results of the normality test for the residuals. As can be observed, the significance level ( $p$ -value) for both models is greater than 0.05. Therefore, the null hypothesis is accepted, indicating that the residuals of both models are normally distributed.

**Table 11. Jarque–Bera normality test results.**

| Model  | Test- Stat | p-Value |
|--------|------------|---------|
| First  | 0.52       | 0.77    |
| Second | 0.44       | 0.80    |

## 4.10 | Results of the First Hypothesis Test

The results of estimating the regression model for testing the first research hypothesis are presented in *Table 12*.

**Table 12. Results of data analysis for testing the first research hypothesis.**

| Variable Name                               | Variable Symbol | Coeffi   | S.t                   | z-Stat | p-Value |
|---------------------------------------------|-----------------|----------|-----------------------|--------|---------|
| Constant coefficient                        | CONS            | 0.001    | 0.025                 | 0.050  | 0.964   |
| Growth opportunities                        | OPPC            | -0.001   | 0.001                 | -1.960 | 0.050   |
| Debt ratio                                  | DEBT            | 0.056    | 0.010                 | 5.770  | 0.000   |
| Director compensation                       | REMD            | 0.121    | 0.015                 | 8.080  | 0.000   |
| Managerial ownership                        | MOWN            | -0.00002 | 0.0001                | -0.270 | 0.790   |
| CEO duality dummy variable                  | DUAL            | -0.045   | 0.010                 | -4.690 | 0.000   |
| Board committee dummy variable              | COMN            | -0.041   | 0.016                 | -2.560 | 0.011   |
| Financial committee dummy variable          | COMR            | 0.128    | 0.015                 | 8.660  | 0.000   |
| Number of board meetings                    | NBRC            | -0.004   | 0.001                 | -4.930 | 0.000   |
| Percentage of major shareholders            | CCAP            | -0.001   | 0.000                 | -8.910 | 0.000   |
| Total number of independent board directors | ADEX            | -0.006   | 0.001                 | -4.850 | 0.000   |
| auditor quality                             | BIGA            | 0.022    | 0.002                 | 9.510  | 0.000   |
| R <sup>2</sup>                              |                 | 57.0     | Likelihood ratio stat |        | 74.400  |
| F-stat                                      |                 | 0.000    |                       |        |         |

Based on the p-value obtained for the Likelihood Ratio (LR) statistic, which indicates the overall significance of the model, the value is equal to 0.000 ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis ( $H_0$ ) is rejected, indicating that the regression coefficients are not jointly equal to zero. Accordingly, the independent variables, taken together, have a statistically significant relationship with the dependent variable. According to Table 12, the p-value of the z-statistic for the company growth opportunities (OPPC) variable is 0.05, which is equal to the 5% significance level ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis (i.e., the hypothesis that company growth opportunities have no effect on pre-threshold earnings management) is rejected. This finding indicates that company growth opportunities have a statistically significant effect on pre-threshold earnings management. Furthermore, since the estimated coefficient of the company growth opportunities variable is negative, it can be concluded that growth opportunities have a negative effect on pre-threshold earnings management. Therefore, the first research hypothesis is not supported. The coefficient of determination ( $R^2$ ) of the model is 0.57, indicating that 57% of the variation in the dependent variable is explained by the independent variables. In other words, 57% of the changes in pre-threshold earnings management are accounted for by the explanatory variables included in the model.

#### 4.11 | Results of the Second Hypothesis Test

The results of estimating the regression model for testing the second research hypothesis are presented in Table 13.

**Table 13. Results of data analysis for testing the second research hypothesis.**

| Variable Name                               | Variable Symbol | Coeffi    | S.t     | z-Stat | p-Value |
|---------------------------------------------|-----------------|-----------|---------|--------|---------|
| Constant coefficient                        | CONS            | 0.210     | 0.053   | 3.970  | 0.000   |
| CG                                          | CG              | -0.105    | 0.023   | -4.490 | 0.000   |
| Debt ratio                                  | DEBT            | 0.052     | 0.010   | 5.420  | 0.000   |
| Director compensation                       | REMD            | 0.125     | 0.015   | 8.360  | 0.000   |
| Managerial ownership                        | MOWN            | -0.000003 | 0.00007 | -0.040 | 0.966   |
| CEO duality dummy variable                  | DUAL            | -0.044    | 0.010   | -4.570 | 0.000   |
| Board committee dummy variable              | COMN            | -0.039    | 0.016   | -2.430 | 0.015   |
| Financial committee dummy variable          | COMR            | 0.132     | 0.015   | 8.950  | 0.000   |
| Number of board meetings                    | NBRC            | -0.004    | 0.001   | -4.920 | 0.000   |
| Percentage of major shareholders            | CCAP            | -0.001    | 0.0001  | -9.110 | 0.000   |
| Total number of independent board directors | ADEX            | 0.012     | 0.004   | 2.850  | 0.004   |
| Auditor quality                             | BIGA            | 0.022     | 0.002   | 9.790  | 0.000   |
| R <sup>2</sup>                              |                 | 58.0      | LR Stat |        | 07.417  |
| F-stat                                      |                 | 0.000     |         |        |         |

Based on the p-value obtained for the LR statistic, which indicates the overall significance of the model, the value is 0.000 ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis ( $H_0$ ) is rejected, indicating that the regression coefficients are not jointly equal to zero. Accordingly, the independent variables, taken together, have a statistically significant relationship with the dependent variable. According to Table 13, the p-value of the z-

statistic for the CG variable is 0.000, which is lower than the 0.05 significance level ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis (i.e., the hypothesis that CG has no effect on pre-threshold earnings management) is rejected. This finding indicates that CG has a statistically significant effect on pre-threshold earnings management. Furthermore, since the estimated coefficient of the CG variable is negative, it can be concluded that CG has a negative effect on pre-threshold earnings management. Therefore, the second research hypothesis is supported. The coefficient of determination ( $R^2$ ) of the model is 0.58, indicating that 58% of the variation in the dependent variable is explained by the independent variables. In other words, 58% of the changes in the dependent variable are accounted for by the explanatory variables included in the model.

## 5 | Conclusion

The first hypothesis of this study examined the positive effect of company growth opportunities on pre-threshold earnings management among firms listed on the TSE. Based on the regression results, the  $p$ -value and the  $z$ -statistic for the growth opportunities variable are equal to 0.05, leading to the rejection of the null hypothesis. Furthermore, the model's coefficient of determination ( $R^2 = 0.57$ ) indicates that 57% of the variation in the dependent variable is explained by the independent variables. Accordingly, company growth opportunities have a statistically significant effect on pre-threshold earnings management. However, since the estimated coefficient of the growth opportunities variable is negative, it can be concluded that company growth opportunities exert a negative effect on pre-threshold earnings management. Therefore, the first research hypothesis, which predicted a positive relationship, is rejected. These findings suggest that growth opportunities do not constitute a sufficiently strong incentive for managers of Iranian listed firms to manipulate earnings in order to achieve specific earnings thresholds. One possible explanation is that independent members of the board of directors, as an internal CG mechanism, play an effective monitoring role in constraining such managerial behavior. The findings of this study are consistent with those reported by Li et al. [25], Lu et al. [26], and Li and Sun [27]. However, they are inconsistent with the findings of George et al. [19] and Moradzadeh Fard [8].

The second hypothesis of this study examined the negative effect of CG on pre-threshold earnings management among firms listed on the TSE. Based on the regression results, the  $p$ -value of the  $z$ -statistic for the CG variable is 0.000, which is below the 0.05 significance level ( $p\text{-value} \leq 0.05$ ). Therefore, the null hypothesis is rejected. In addition, the model's coefficient of determination ( $R^2 = 0.58$ ) indicates that 58% of the variation in the dependent variable is explained by the independent variables. Accordingly, CG has a statistically significant effect on pre-threshold earnings management. Furthermore, since the estimated coefficient of the CG variable is negative, it can be concluded that CG negatively affects pre-threshold earnings management. Therefore, the second research hypothesis is supported. Among the control variables, the board committee and CEO duality appear to play important monitoring roles. The findings suggest that when incentives for earnings manipulation are high, particularly when unmanaged earnings fall below or exceed the specified earnings thresholds, these two governance mechanisms act symmetrically in constraining such opportunistic managerial behavior. The findings of this study are consistent with those reported by Dastgir and Tabousian [15]. However, they are inconsistent with the findings of Roodposhti et al. [28], and Zamanianfar et al. [29]. Earnings management reflects the degree of flexibility and managerial discretion available in financial reporting. Managers may exploit this discretion to engage in pre-threshold earnings management when reported earnings approach a specific earnings benchmark. Moreover, because meeting or failing to meet an earnings threshold conveys important information regarding the firm's future earnings prospects to shareholders and the capital market, managers may have incentives to manipulate reported earnings before the threshold is reached in order to achieve the targeted earnings benchmark. Therefore, the presence and effective implementation of CG mechanisms are essential, particularly in firms characterized by growth opportunities and information asymmetry. These governance mechanisms serve as critical monitoring tools that help mitigate opportunistic earnings management and enhance the transparency and reliability of financial reporting.

Based on the findings of this study, the following suggestions are provided:

Investors, shareholders, and current and potential creditors are recommended to consider companies' growth opportunities when valuing firms and making investment and credit-related decisions. However, when evaluating growth opportunities, they should pay close attention to abnormal accruals and should not be misled solely by high levels of abnormal accruals and firms' investment opportunities, because the earnings of such companies may have been increasingly recognized through discretionary practices. Although the first hypothesis of this study indicates a negative relationship between growth opportunities and pre-threshold earnings management, it is suggested that investors and analysts should incorporate the likelihood of earnings management into their decision-making processes by considering firm-specific characteristics. For instance, when the company under evaluation has high growth opportunities, there may be a greater possibility that management manipulates earnings to achieve specific thresholds. Therefore, appropriate caution should be exercised in such circumstances. Although the findings of this study demonstrate a negative effect of CG mechanisms on pre-threshold earnings management, it appears that the role of non-executive directors and institutional investors as two CG mechanisms in controlling managerial opportunistic behavior is relatively weak. Therefore, it is recommended that companies provide more extensive disclosures regarding CG structures and mechanisms through notes to financial statements and other reporting channels. This would enhance users' confidence regarding the quality and reliability of the information provided in financial statements.

## 5.1 | Suggestions for Future Research

- I. Conducting similar studies using other measurement criteria for pre-threshold earnings management in order to compare and reconcile the results with each other.
- II. Examining the effect of other firm characteristics on pre-threshold earnings management.
- III. Investigating the impact of growth opportunities on the selection of specific earnings thresholds.
- IV. Considering other factors affecting the monitoring dimension of non-executive board members in similar studies.

## 5.2 | Research Limitations

In conducting any research, there are certain limitations that may affect the results of the study. The limitations of this research are as follows:

This study was conducted on companies operating in various industries. Since companies active in different industries have distinct characteristics, if this test had been performed separately for companies in each industry, the value of  $R^2$  for each industry would likely have been different from the overall value reported in this study. Various factors can affect the main variables of the research model, including political, economic, and cultural conditions governing the growth and financing environment. These factors are among the limitations that cannot be controlled by the researcher. The financial ratios and financial statements provided by companies are based on historical information, whereas decision-makers require current company information or inflation-adjusted information to make appropriate decisions. Therefore, the results of the research based on inflation-adjusted data may differ from the current findings. The lack of sufficient and reliable data required for calculating research variables for some companies, as well as the limited operating history of some companies listed on the TSE, has resulted in restrictions on the statistical sample. This limitation affects the ability to generalize the findings to the entire statistical population. If this limitation did not exist, it would have been possible to examine a larger number of companies, and the results could have been generalized to the entire population with greater confidence.

## Abbreviation

|                           |     |
|---------------------------|-----|
| Corporate Governance      | CG  |
| Tehran Stock Exchange     | TSE |
| Generalized Least Squares | GLS |
| Variance Inflation Factor | VIF |
| Levin–Lin–Chu             | LLC |
| Likelihood Ratio          | LR  |

## Reference

- [1] Sukeecheep, S., Yarram, S. R., & Farooque, O. Al. (2013). Earnings management and board characteristics in thai listed companies. *International conference on business, economics and accounting* (pp. 1–14). IBEA. [https://www.caal-inteduorg.com/ibea2013/ejournal/116---Supawadee\\_S&Subba\\_Reddy\\_Y&Omar\\_Al\\_Farooque---Earnings\\_Management\\_and\\_Board.pdf](https://www.caal-inteduorg.com/ibea2013/ejournal/116---Supawadee_S&Subba_Reddy_Y&Omar_Al_Farooque---Earnings_Management_and_Board.pdf)
- [2] Halaoua, S., Hamdi, B., & Mejri, T. (2017). Earnings management to exceed thresholds in continental and Anglo-Saxon accounting models: The British and French cases. *Research in international business and finance*, 39, 513–529. <https://doi.org/10.1016/j.ribaf.2016.09.019>
- [3] Skinner, D. J., & Sloan, R. G. (2002). Earnings surprises, growth expectations, and stock returns or don't let an earnings torpedo sink your portfolio. *Review of accounting studies*, 7(2), 289–312. <https://doi.org/10.1023/A:1020294523516>
- [4] Barth, M. E., Elliott, J. A., & Finn, M. W. (1999). Market rewards associated with patterns of increasing earnings. *Journal of accounting research*, 37(2), 387–413. <https://doi.org/10.2307/2491414>
- [5] Setayesh, M. H., & Ebrahimi, F. (2021). Investigating the impact of corporate governance mechanisms on the information content of earnings of companies listed on the Tehran Stock Exchange. *Journal of accounting knowledge*, 3(8), 31–48. **(In Persian)**. <https://doi.org/10.22103/jak.2011.2>
- [6] Ahmadpour, A., & Ghahramani Saghir, H. (2009). An investigation into the qualitative characteristic of information reliability in assessing corporate earnings quality. *Journal of accounting and auditing review*, 16(4), 3–20. **(In Persian)**. [https://journals.ut.ac.ir/article\\_20797\\_f126a36acc1144ddade56fca3cd710f5.pdf](https://journals.ut.ac.ir/article_20797_f126a36acc1144ddade56fca3cd710f5.pdf)
- [7] Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and economics*, 26(2), 301–325. <https://doi.org/10.1086/467037>
- [8] Moradzadeh Fard, M., Ebrahimi Meymand, M., & Moradi, M. (2014). The relationship between firm characteristics and managers' preference for profit threshold selection. *Journal of financial accounting research*, 6(1), 75–88. **(In Persian)**. <https://www.noormags.ir/view/ar/articlepage/1075298>
- [9] Yermack, D. (1995). Do corporations award CEO stock options effectively? *Journal of financial economics*, 39(2), 237–269. [https://doi.org/10.1016/0304-405X\(95\)00829-4](https://doi.org/10.1016/0304-405X(95)00829-4)
- [10] Sajjadi, S. H., & Zarezadeh Mehrizi, M. S. (2011). Investigating the relationship between managers' remuneration plans and economic criteria for performance evaluation in companies listed in Tehran Stock Exchange. *Journal of financial accounting research*, 3(4), 41–54. **(In Persian)**. <https://dor.isc.ac/dor/20.1001.1.23223405.1390.3.4.4.9>
- [11] Sinai, H. A., Salgi, M., & Mohammadi, K. (2011). The effect of growth opportunities on the relationship between capital structure, dividend and ownership structure with firm value. *Financial accounting research*, 3(4), 87–102. **(In Persian)**. <https://www.noormags.ir/view/ar/articlepage/913857/>
- [12] Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The journal of business*, 72(1), 1–33. <https://doi.org/10.1086/209601>
- [13] Salehi, M., Daemi, A., & Akbari, F. (2020). The effect of managerial ability on product market competition and corporate investment decisions: Evidence from Iran. *Journal of islamic accounting and business research*, 11(1), 49–69. <https://doi.org/10.1108/JIABR-10-2016-0113>
- [14] Shafiei, S., Rahnamae-Rodposhti, F., Kordloui, H., Shahvardiani, S., & Ghasemi, M. (2022). Examining real earnings management at the threshold of critical earnings values. *Quarterly scientific research journal*, 11(41), 229–242. **(In Persian)**. [https://www.jmaak.ir/article\\_19163\\_39e35a939bc4df155a47e39dcda9b72c.pdf](https://www.jmaak.ir/article_19163_39e35a939bc4df155a47e39dcda9b72c.pdf)

- [15] Dastgir, M., & Tabousian, A. (2017). Investigating the impact of corporate governance characteristics on earnings management and tax management in the Tehran Stock Exchange. *Journal of accounting knowledge*, 4(14), 77-96. **(In Persian)**. <https://doi.org/10.22055/jiar.2017.20466.1083>
- [16] Izadinia, N., Rabiei, H., & Hamidian, N. (2013). Investigating the relationship between financial leverage and real earnings management in companies listed on the Tehran Stock Exchange. *Journal of social sciences*, 5(1), 33-54. **(In Persian)**. <https://ensani.ir/file/download/article/20140722143002-9778-22.pdf>
- [17] Ansari, A., Dorri, S. M., Shirzad, A. L. I. (2014). The effect of conservatism over the accrual based, real and aggregate earnings management in the companies listed in tehran stock exchange (TSE). *Management accounting*, 5(1), 33-54. **(In Persian)**. <https://www.magiran.com/paper/1577982/>
- [18] Ciftci, I., Tatoglu, E., Wood, G., Demirbag, M., & Zaim, S. (2019). Corporate governance and firm performance in emerging markets: Evidence from Turkey. *International business review*, 28(1), 90-103. <https://doi.org/10.1016/j.ibusrev.2018.08.004>
- [19] Farinha, J., Mateus, C., & Soares, N. (2018). Cash holdings and earnings quality: Evidence from the main and alternative UK markets. *International review of financial analysis*, 56, 238-252. <https://doi.org/10.1016/j.irfa.2018.01.012>
- [20] Tulcanaza-Prieto, A., Lee, Y. H., & Koo, J. H. (2020). Leverage, corporate governance and real earnings management: Evidence from Korean market. *Global business & finance review (GBFR)*, 25(4), 51-72. <https://doi.org/10.17549/gbfr.2020.25.4.51>
- [21] An, Z., Li, D., & Yu, J. (2016). Earnings management, capital structure, and the role of institutional environments. *Journal of banking & finance*, 68, 131-152. <https://doi.org/10.1016/j.jbankfin.2016.02.007>
- [22] Haw, I.-M., Qi, D., & Wu, W. (2001). The nature of information in accruals and cash flows in an emerging capital market: The case of China. *The international journal of accounting*, 36(4), 391-406. [https://doi.org/10.1016/S0020-7063\(01\)00107-8](https://doi.org/10.1016/S0020-7063(01)00107-8)
- [23] Selahudin, N. F., Zakaria, N. B., Sanusi, Z. M., & Budsaratragoon, P. (2014). Monitoring financial risk ratios and earnings management: Evidence from Malaysia and Thailand. *Procedia - social and behavioral sciences*, 145, 51-60. <https://doi.org/10.1016/j.sbspro.2014.06.010>
- [24] Dechow, P. M., Richardson, S. A., & Tuna, I. (2003). Why are earnings kinky? an examination of the earnings management explanation. *Review of accounting studies*, 8(2), 355-384. <https://doi.org/10.1023/A:1024481916719>
- [25] Li, Y., Wang, P., & Zhang, W. (2023). Individual investors matter: The effect of investor-firm interactions on corporate earnings management. *Journal of corporate finance*, 83, 102492. <https://doi.org/10.1016/j.jcorpfin.2023.102492>
- [26] Lu, X., Qi, T., & Xie, W. (2023). Earnings management of Chinese listed multinational corporations. *China & world economy*, 31(6), 179-206. <https://doi.org/10.1111/cwe.12513>
- [27] Li, J., & Sun, Z. (2023). Cost stickiness, earnings forecast accuracy, and the informativeness of stock prices about future earnings: Evidence from China. *Humanities and social sciences communications*, 10(1), 112. <https://doi.org/10.1057/s41599-023-01592-3>
- [28] Roodposhti, F. R., & Chashmi, S. A. N. (2010). The effect of board composition and ownership concentration on earnings management: Evidence from Iran. *World academy of science, engineering and technology*, 66(5), 165-171. [https://www.researchgate.net/publication/286127067\\_The\\_effect\\_of\\_board\\_composition\\_and\\_ownership\\_concentration\\_on\\_earnings\\_management\\_Evidence\\_from\\_Iran](https://www.researchgate.net/publication/286127067_The_effect_of_board_composition_and_ownership_concentration_on_earnings_management_Evidence_from_Iran)
- [29] Zamanianfar, L., Rahnamay Roodposhti F., Banimahd, B., Nikoomaram, H., Dianati, D. Z., & others. (2021). The Role of Earnings Management in Economic Growth and Corporate Growth Illusion. *Advances in mathematical finance & applications*, 6(4), 769-787. **(In Persian)**. <https://doi.org/10.22034/AMFA.2020.1900232.1430>