

Investigating the Effect of Corporate Governance and Social Responsibility on the Relationship between Earnings Management and Board Compensation in Firms Listed on the Tehran Stock Exchange

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Abstract

Objectives: The purpose of this research is to examine the relationship between the board of directors' compensation and earnings management in companies listed on the Tehran Stock Exchange. The moderating effects of corporate governance and social responsibility are also examined.

Design/methodology/approach: To measure corporate governance, criteria such as ownership concentration, institutional investors, and the presence of internal auditors are utilized. Earnings management is measured using Jones' modified model (1991), and accountability is assessed by using a checklist. The statistical population for this research includes 147 firms over 8 years from 2012 to 2019. Research hypotheses are tested using multiple regressions based on the panel data method.

Results: The findings indicate a positive and significant relationship between earnings management and Board compensation. Additionally, the company's social responsibility, ownership concentration, institutional investors, and internal auditors influence the relationship between earnings management and board compensation.

Innovation: This research examines the relationship between earnings management and board compensation, while also considering the moderating role of corporate governance and social responsibility in firms listed on the Tehran Stock Exchange. This study aims to contribute by providing new evidence to existing research and enriching the theoretical foundations in the field of earnings management relationships.

Keywords: Board Compensation, Earnings Management, Corporate Governance, Social Responsibility.

1. Introduction

Considering the rationality of people's behavior, it can be assumed that all individuals seek to maximize their wealth. Managers are not exempt from this principle, and given their freedom to use accounting procedures, they strive to increase their wealth. Nowadays, due to the representation problems caused by the separation of ownership from management, aligning the interests of owners and managers has become an important challenge. If compensation is not proportional to the real performance of the managers, not only will it fail to increase the value of the company, but it will also be a tool to transfer wealth from the owners to the managers. Higher executive compensation can result from the lack of effective corporate governance mechanisms. In general, it can be said that in institutions with stronger corporate governance, the CEO's compensation depends on their performance. Additionally, strong corporate governance mechanisms allow managers to influence remuneration regulations for their benefit (Khalsizadeh and Barzegar, 2016). Sufficient monitoring and oversight should be conducted to ensure the accountability of companies and managers in front of the public and interested parties. Applying supervision and oversight in this area requires the presence of effective mechanisms, which include the design and implementation of appropriate management systems in firms and economic enterprises (Chang et al., 2017). On the other hand, social responsibility is also a moral framework and scope in which various duties are defined for the benefit of the public and are assigned to a specific individual, organization, or institution. The concept of corporate social responsibility involves the connection and alignment between an organization's activities and values in a way that reflects the interests of all stakeholders, including shareholders, customers, employees, investors, and the public, in the organization's policies and performance. In essence, the organization should always view itself as a part of the community, feel responsible towards the community, and strive to improve public welfare

regardless of the company's direct interests (Mashaikhi et al., 2014).

In general, the presence of high levels of responsibility in the management of a company can also be effective in determining the compensation of managers. Previous studies have investigated the two-way relationship between earnings management and board compensation (Bagheri et al., 2021; Quaidi and Mir Abbasi, 2016; Mahmoudi et al., 2016; Khosh Taynet and Khani, 2003; Harris et al., 2019). Additionally, the impact of social responsibility on board compensation has been examined (Rahnamay Roodpashti and Zandi, 2019).

However, research that examines the impact of corporate governance on board compensation and explores the moderating role of corporate governance and social responsibility on the relationship between earnings management and board compensation is lacking, representing an aspect of innovative work. The purpose of this research is to examine the relationship between earnings management and board compensation, considering the moderating role of corporate governance and social responsibility in firms listed on the Tehran Stock Exchange. This study aims to enrich the theoretical foundations in the field of earnings management relationships, as well as explore the compensation of managers and the role of corporate governance and social responsibility mechanisms. In this regard, the presence of institutional investors, ownership concentration, and an internal auditor are used as criteria for the corporate governance mechanism, and accountability is assessed using a checklist (Khodai, 2016).

In addition to enhancing backgrounds, it enriches theoretical foundations in the field of earnings management relationships. The compensation of managers as well as the roles of corporate governance and social responsibility mechanisms are interconnected. The presence of institutional investors, ownership concentration, and an internal auditor are used as criteria for evaluating the corporate governance mechanism, with accountability assessed through a checklist (Khodai, 2016).

This paper begins by outlining the theoretical foundations and backgrounds, followed by the methodology and findings, and concludes with a discussion, conclusions, and sources.

2. Literature review

First, the theoretical background is introduced, followed by the literature review.

2.1. Earnings management and compensation

Earnings management is a targeted intervention in the financial reporting process aimed at personal benefits, but it comes with risks. Risks include damaging the company's credit and managers' reputations, as well as potential lawsuits. Manager will only engage in earnings management if the benefits outweigh the costs and risks. Motivations for earnings management included:

- 1) Increasing stock returns by creating a stable earnings flow and reducing company risk.
- 2) Presenting an optimal image of the company's future to secure better financing terms in the market (Zarei et al., 2016).
- 3) Avoiding violations of debt contracts, as some contracts have restrictions on certain ratios like working capital or current ratio (Khushtaint and Khani, 2012).
- 4) Companies in politically sensitive industries may engage in earnings management to mitigate risks (Hass Yeganeh and Yazdani, 2012).
- 5) Managing tax payments effectively (Bagheri et al., 2021).
- 6) Signaling earnings continuity or growth to attract investors through targeted information (Hossain and Khodadadi, 2021).

In addition to these motivations, managers also seek to increase their well-being by enhancing their earning potential. Compensation plans tied to accounting earnings, job security, job category, and company size impact management welfare and can lead to earnings manipulation (Bones and Cruz, 2011).

2.2. Social Responsibility

Social responsibility is defined as a trans-organizational behavior or task, separate from the traditional duties of companies. This means that companies should not only focus on their earnings but also on increasing social welfare and providing a foundation for increasing the productivity and satisfaction of stakeholders, which can also be defined as part of a company's social responsibility (Mehrvan and Kargar, 2018). Among the theories of social responsibility, we can mention social contracts, which are used to explain the behavior of companies. Managers, due to the social contract with other stakeholders, must, in exchange for accepting them, take measures to fulfill some social and environmental goals and provide economic resources to society; otherwise, legal requirements will be determined for them. Another theory is organizational legitimacy; it refers to the condition that the value system of the company is aligned with the value system of a larger social network called society, which does not mean moral or legal success; finally, it is a theory of politics and economy that discloses information. Considered by the company as a tool to prevent others from interfering in the company's affairs. In other words, the company is an active and powerful participant in its performance (Mehrani, 2015). Social responsibility in this research has four dimensions: social participation, employee relations, environment, and product characteristics, which are measured based on the criteria of the American KLD Institute (Khodai, 2016) and its impact on the relationship between earnings and compensation management is measured.

2.3. Corporate governance

Corporate governance can be defined as the set of rules, regulations, institutions, and procedures that determine how companies are run and for what benefit (Beaver, 1996). Corporate governance is the set of laws, regulations, structures, processes, cultures, and systems that aim to achieve accountability, transparency, justice, and respect for the rights of stakeholders (Hassayeganeh, 2016).

Among the theories that govern corporate governance, the following can be listed: based on agency theory, managers prefer to pursue their own benefits, such as obtaining the highest possible compensation, which leads to their focus and investment in projects with short-term benefits. This is especially true when managers' salaries, benefits, and compensations are tied to earnings and do not consider the long-term interests of shareholders. According to stakeholder theory, companies have grown significantly, affecting society profoundly, and must be accountable to various parts of society in addition to shareholders. Stakeholders include shareholders, employees, vendors, customers, creditors, related companies, and the public, all of whom should be considered by managers. The transaction cost theory suggests that people are often opportunistic, and managers arrange transactions opportunistically to gain personal benefits (Gafran et al., 2022). This research aims to investigate the impact of different types of corporate governance on the relationship between earnings management and board compensation. The study will focus on ownership concentration, institutional investors, and the presence of an internal auditor as key criteria.

2.4. Research background

In the field of the relationship between earnings and compensation management, as well as the influence of accountability variables on corporate governance, research has been conducted and is presented below.

Hesaam and Khodadadi (2021) investigated the relationship between corporate governance and various dimensions such as board size, board independence, accounting quality, and company size with earnings management in companies listed on the Tehran Stock Exchange. The data from 142 companies over the past six years was analyzed using multivariate regression. The results indicated a significant relationship between company size and earnings management, while board size, board independence, and accounting quality did not show a significant relationship with earnings management.

Bagheri et al. (2021) studied the effect of managers' board compensation plans and financial performance on earnings management in companies listed on the Tehran Stock Exchange. They collected financial statements from 104 companies between 2010 and 2015 and analyzed them using regression methods. The results revealed that institutional ownership had a significant impact on earnings management.

Rahnema Roudpashti and Zandi (2019) explored the impact of corporate social responsibility performance on the compensation structure of senior managers in a sample of 152 companies between 2010 and 2015. Their findings showed that corporate social responsibility positively influenced the bonuses of senior executives, leading to a reduction in agency problems and an increase in the company's value.

Mehravar and Kargar (2018) examined the relationship between social responsibility, tax evasion, and earnings management in companies listed on the Tehran Stock Exchange. They analyzed data from 82 companies using regression analysis and found a significant relationship between social responsibility and earnings management.

Dabbagh et al. (2018) investigated the effect of corporate governance mechanisms on earnings management and social responsibility reporting in companies listed on the Tehran Stock Exchange. Their analysis of 69 companies over five years from 2013 to 2017 showed that corporate governance mechanisms, such as institutional ownership and audit committee independence, had a negative impact on earnings management and a positive impact on corporate social responsibility reporting.

Qaidi and Mir Abbasi (2016) explored the relationship between board compensation and earnings management. They examined 201 firms listed on the Tehran Stock Exchange from 2009 to 2015 using regression analysis, which revealed a significant relationship between board compensation and earnings management.

Gaffran et al. (2022) investigated the effect of corporate governance, specifically the audit

committee, on earnings management in English companies between 2007 and 2013. Their regression analysis showed that the busyness of audit committee members had a negative impact on earnings quality, indicating that members with more board seats had less oversight over managers.

Harris et al. (2019) examined the relationship between earnings management among female CEOs and their compensation. They collected data from 147 female managers in American companies between 2010 and 2018 and analyzed it using a structural equation approach. The results indicated that female CEOs did not necessarily reduce earnings management, but at lower compensation levels, female CEOs manipulated earnings to a lesser extent than their male counterparts.

Tahir et al. (2019) investigated the relationship between board compensation contracts and earnings management. They analyzed a sample of 1570 firm-years among companies with the Dow Jones index from 2005 to 2014 using multiple regression. Their results showed that including non-financial performance criteria in managers' board compensation contracts, along with financial performance criteria, reduced manipulation to increase earnings through accruals and discretionary expenses. Additionally, the use of long-term performance measures led to lower earnings management.

Mills et al. (2017) explored the relationship between corporate governance, earnings management, and tax management. Their research from 2005 to 2010 included, 1478 selected firms from Thailand. The regression results indicated that corporate governance mechanisms could be effective factors in both earnings management and tax management.

Considering the theoretical foundations and the backgrounds mentioned above, the research hypotheses were formulated as follows:

Hypothesis 1: there is a significant relationship between earnings management and managers' compensation.

Hypothesis 2: corporate social responsibility affects the relationship between earnings management and board compensation.

Hypothesis 1: corporate governance affects the relationship between earnings management and board compensation.

Sub-hypothesis 1-3: Ownership concentration affects the relationship between earnings management and board compensation.

Sub-hypothesis 2-3: Institutional investors affect the relationship between earnings management and board compensation.

Sub-hypothesis 3-3: An internal auditor affects the relationship between earnings management and board compensation.

3. Methodology

The purpose of this research is practical. In terms of inference, the research method used is descriptive-analytical, and in terms of research design, it is a post-event type of research. Additionally, the research philosophy is positivist, the approach is inductive, and the methodology is quantitative. The research goals and strategy are descriptive in nature. Data collection is done through library research, using document searches to collect information on theoretical foundations and backgrounds. Field research is also conducted using the new Rehavard software and the Codal site. Data is then entered into Excel software for analysis using Eviews software.

The statistical population for this research consists of all companies listed on the Tehran Stock Exchange, with a sample of 147 companies selected using the systematic elimination method outlined in Table 1.

Table 1. Statistical sample selection process

Number	Number	Description
612		Total number of companies accepted in the stock market until the end of 2019
	131	They were not present in the stock market in the periods from 1392 to 1399
	124	Their fiscal year does not end at the end of March
	117	The company has changed the financial year between 2019 and 2019
	93	Financial intermediation, investment, and analytical companies due to their special nature
465		Total companies removed
147		Number of sample companies

3.1. Variables and research model

Research variables in the form of independent and dependent variables and control and adjustment are proposed:

independent variable _ Earnings management ($DACC_{it}$)

According to the modified model of Jones (1in firms listed on the Tehran Stock Exchange991) which was also used in the research of Okofu et al. (2021), in this research, the variable of discretionary accruals is to be managed for discovery. The company is used

$$\frac{TA_{ccri,t}}{ASSETS_{i,t-1}} = \alpha + \beta_0 \frac{1}{ASSETS_{i,t-1}} + \beta_1 \frac{(\Delta REV_{i,t})}{ASSETS_{i,t-1}} + \beta_2 \frac{PPE_{it}}{ASSETS_{i,t-1}} + \varepsilon_{it} \quad (1)$$

$TA_{ccri,t}$ =Total accrual items for the current year (the difference between operating cash flow and earnings before unexpected items)

$ASSETS_{i,t-1}$ =Total assets at the beginning of the period

$\Delta REV_{i,t}$ =Difference in operating income of the current year compared to the previous year

PPE_{it} = Property, Plant, and equipment

ε_{it} = error component (accrual items)

After estimating the parameters of model number 1, non-discretionary accrual items (NDA) are calculated as follows:

$$NDA_{it} = \alpha + \beta_0 \frac{1}{ASSETS_{i,t-1}} + \beta_1 \frac{(\Delta REV_{i,t} - \Delta REC_{it})}{ASSETS_{i,t-1}} + \beta_2 \frac{PPE_{it}}{ASSETS_{i,t-1}} + \varepsilon_{it} \quad (2)$$

$\Delta REC_{i,t}$ It represents the change in the net Accounts Receivable for the current year compared to the previous year. In the last step, discretionary accruals (DA) are calculated as described in equation (3).

$$DA = \frac{TA_{ccri,t}}{ASSETS_{i,t-1}} - NDA_{it} \quad (3)$$

3.2. Dependent variable compensation managers

According to Article 241 of the Business Law, which amends certain provisions of commercial law, the annual general meeting has the authority to allocate a specific percentage of the company's annual net profit as board compensation for board members, provided it is outlined in the company's articles of association. Under this provision, the board compensation for executives must not exceed 3% of the dividends distributed to shareholders in the same year for public corporations and 6% for private joint stock companies. This calculation method was utilized in a study conducted by Haidari and Ranjbari in 2014.

3.3. Moderator variables

Corporate governance is measured using three criteria, as follows:

A- Concentration of ownership [CON] _it: The ownership concentration percentage refers to the total percentage of shareholders who own more than 5% of the company's shares. If there is a concentration of ownership, the number is one; otherwise, the number is zero (Azadi and Mohammadi, 2014).

B. Existence of institutional investors [INST] _it: Institutional investors refer to banks, insurance companies, holding companies, investment companies, pension funds, capital providers, and investment funds registered with the Securities and Exchange Organization, as well as government and public organizations, institutions, and government-owned companies. According to Khodadadi and Tucker

(2012), if there are institutional investors present, the value is one; otherwise, it is zero.

C- Presence or absence of internal auditor [INAUDIT] _it company: It is a dummy variable. If a company has an internal auditor in the year, the number 1 is assigned to it; otherwise, the number 0 is assigned to it (Hass Yeganeh and Yazdani, 2016).

Social responsibility: Social responsibility in this research encompasses four dimensions: social participation, employee relations, environment, and product characteristics. Each dimension is evaluated

on a scale of one for relevant weaknesses or strengths, and zero for none. By comparing strengths and weaknesses within each dimension, a score is calculated. The total social responsibility score is then determined by summing up scores across all dimensions. If the company's responsibility score surpasses the midpoint, it is assigned a value of one; otherwise, it is assigned zero (Khodaei, 2016).

$$SG_{it} = COM_{it} + PRO_{it} + EMP_{it} + ENV_{it} \quad (4)$$

Table2. Dimensions of social responsibility

Dimension of product's specification		Dimension of environment		Dimensions of employee relations		Dimensions of social participation	
Negative items	Positive items	Negative items	Positive items	Negative items	Positive items	Negative items	Positive items
Paying fines for regarding product safety	Product Quality	Production of hazardous waste	clean energy	Poor health and safety	Sharing Dividend	Factory shutdowns	Charitable donations
Paying advertising penalties Paying	product security	Paying penalties	Air pollution control	Labor force reduction	Retirement benefits	Failure to pay taxes	Innovative contributions

Source: (Khodayi, 2016)

3.4. Control variables

Financial leverage (LEV) is the ratio of total liabilities divided by equity (Qalibaf Asl and Rezaei, 2016).

The ratio of book value to the market value of equity BM_{it}

RET_{it} : annual changes in the rate of return on assets. The rate of return on assets is measured as the ratio of net earnings after tax divided by total assets (Efza et al., 2016).

Company size [SIZE] _it: natural logarithm of the company's total sales (Qalibaf Asl and Rezaei, 2016).

The main research models are as follows:

Research model for testing hypotheses

The research model is designed, according to Okofu et al. (2021), as follows:

The first main hypothesis test model

$$COM_{it} = \alpha_0 + \alpha_1 DACC_{it} + \alpha_2 RET_{it} + \alpha_3 \Delta ROA_{it} + \alpha_4 SIZE_{it} + \alpha_5 LEV_{it} + \alpha_6 BM_{it} + \varepsilon_{it}$$

The second main hypothesis test model

$$COM_{it} = \alpha_0 + \alpha_1 DACC_{it} + \alpha_2 CSR_{it} + \alpha_3 DACC_{it} \times CSR_{it} + \alpha_4 RET_{it} + \alpha_5 \Delta ROA_{it} + \alpha_6 SIZE_{it} + \alpha_7 LEV_{it} + \alpha_8 BM_{it} + \varepsilon_{it}$$

Third hypothesis test models:

Sub-hypothesis 3-1:

$$COM_{it} = \alpha_0 + \alpha_1 DACC_{it} + \alpha_2 CON_{it} + \alpha_3 DACC_{it} \times CON_{it} + \alpha_4 RET_{it} + \alpha_5 \Delta ROA_{it} + \alpha_6 SIZE_{it} + \alpha_7 LEV_{it} + \alpha_8 BM_{it} + \varepsilon_{it}$$

Sub-hypothesis 3-2:

$$COM_{it} = \alpha_0 + \alpha_1 DACC_{it} + \alpha_2 INST_{it} + \alpha_3 DACC_{it} \times INST_{it} + \alpha_4 RET_{it} + \alpha_5 \Delta ROA_{it} + \alpha_6 SIZE_{it} + \alpha_7 LEV_{it} + \alpha_8 BM_{it} + \varepsilon_{it}$$

Sub-hypothesis 3-3:

$$COM_{it} = \alpha_0 + \alpha_1 DACC_{it} + \alpha_2 INAUDIT_{it} + \alpha_3 DACC_{it} \times INAUDIT_{it} + \alpha_4 RET_{it} + \alpha_5 \Delta ROA_{it} + \alpha_6 SIZE_{it} + \alpha_7 LEV_{it} + \alpha_8 BM_{it} + \epsilon_{it}$$

example, the average and median size of the company are 13.752 and 14.808, respectively, falling within the range of 9.866 to 16.307. Additionally, the data shows acceptable skewness and kurtosis.

4. Findings

4.1. Descriptive Statistics

The results of the descriptive characteristics of the research variables are presented in Table 3. For

Table 3- Descriptive statistics of research variables

Prominence	crookedness	maximum	Minimum	standard deviation	Middle	Average	
-0.400	-0.10	83.3	0	16.3	2.5	2.8	Board Compensation
0.480	0.190	307.16	9.866	311.2	808.14	752.13	Company size
0.640	-0.520	101.2	-0.718	0.146	0.0821	0.1054	The rate of return on assets
0.010	0.330	0.883	0.017	740.2	0.243	0.266	Assets book to the market value
-0.400	-0.10	0.894	0.066	0.1998	0.416	0.671	Leverage ratio
914.50	611.6	330.8	8.76-	216.1	1.115	295.1	Stock returns
172.2	337.2	0.6482	0.3316	0.1304	0.2114	0.2549	Earnings management

Source: Research calculations

4.2. The results of research hypothesis testing

Initially, the normality of the compensation-dependent variable was assessed using the Jarque-Bera test, yielding a Jarque-Bera statistic of 5.033 with a significance level of 0.048. Subsequently, the presence

of collinearity between variables was examined using the Variance Inflation Factor (VIF) test. A VIF test statistic close to one indicates the absence of collinearity. The results of these tests are displayed in Table 4.

Table 4 - VIF test results to check the absence of collinearity between variables

The fifth model		The fourth model		The third model		The second model		The first model	
VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable
----	Fixed model	---	Fixed model	---	Fixed model	---	Fixed model	----	Fixed model
1.84	DACC	1.84	DACC	1.31	DACC	1.81	DACC	1.81	DACC
1.116	COM	1.150	COM	1.129	COM	1.156	COM	1.03	COM
1.005	ΔROA	1.011	ΔROA	1.004	ΔROA	1.004	ΔROA	1.015	ΔROA
1.576	SIZE	1.573	SIZE	1.576	SIZE	1.576	SIZE	1.576	SIZE
1.603	LEV	1.511	LEV	1.603	LEV	1.602	LEV	1.623	LEV
1.91	RET	1.84	RET	1.141	RET	1.41	RET	1.192	RET
1.05	INST	1.126	INST	1.012	INST	1.025	INST	1.014	INST
1.085	BM	1.015	BM	1.593	BM	1.586	BM	1.516	BM

significant at the 5% level
Source: Research calculations

4.3. The first hypothesis test

Initially, the non-homogeneity of the variance of the residuals was assessed using the LR test. The LR chi2 statistic yielded a value of 198.75, with a significance level of 0.059, indicating no issue of heterogeneity. Subsequently, the type of model was determined through Chow and Hausman tests. The Chow test statistic was 35.716, with a significance level of 0.0001, suggesting the necessity of employing a panel model for this dataset. Additionally, the Hausman test statistic was 135.918, with a significance level of 0.0001, leading to the selection of the fixed effect method. The results of the significance test of the coefficients can be found in Table 5.

The first hypothesis is accepted in this case, considering the β -1 coefficient in the regression model, which is equal to 0.134 and statistically significant. In other words, it can be concluded that there is a direct relationship between the amount of earnings management in the company and the increase in managers' compensation. Additionally, the results indicate a positive impact of company size and the ratio of market to book value of the company's shares on managers' compensation. A larger company and a higher stock market value directly influence the board's compensation.

Table 5. Summary of the regression model results of the first hypothesis

$COM_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 RET_{it} + \beta_3 \Delta ROA_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 BM_{it} + \varepsilon_{it}$				
P - Value	statistics <i>t</i>	The standard deviation	Coefficient	Variable
***0.0001	1.970	0.241	0.474	Fixed model(β_0)
***0.0001	2.410	0.056	0.134	Earnings management ($DACC_{it}$)
0.432	0.710	0.008	0.006	Stock rate of return (RET_{it})
0.657	0.220	1.455	0.320	Change in the rate of return on assets(ΔROA_{it})
***0.0001	2.910	0.014	0.041	size of the company($SIZE_{it}$)
0.890	0.066	1.318	0.087	Financial Leverage (LEV_{it})
***0.0001	2.920	0.018	0.054	Book value over the market value of equity(BM_{it})
19.26	F- statistic		2.18	N - Durbin-Watson statistic
0.41	Adjusted coefficient of determination		0.44	The coefficient of determination

Significant at the 5% level
Source: Research calculations

4.4. The results of the second hypothesis test

Initially, the non-homogeneity of the variance of the residuals was assessed using the LR test. The LR chi2 statistic yielded a value of 183.18 with a significance level of 0.056, indicating no heterogeneity issue. Subsequently, the model type was determined through Chow and Hausman tests. The Chow test statistic was 39.651 with a significance level of 0.0001, suggesting the use of a panel model for this dataset. The Hausman test statistic was 139.358, with a significance level of 0.0001, leading to the selection of the fixed effect

method. The significance test results of the coefficients can be found in Table 6.

Table 6 indicates that earnings management has a positive effect on Board compensation, with a coefficient of 0.147. Social responsibility was not effective, with a significant value of 0.415, and the presence of responsibility in the company did not impact Board compensation. Additionally, when examining the interactive role of social responsibility and earnings management with a coefficient of 0.129, it is significant compared to the coefficient of earnings management of 0.147. If there is social responsibility in the company, the relationship between earnings management and compensation will decrease. In other

words, accountability in the company will lead to a decrease in earnings management.

Sub-hypothesis test results

Initially, the non-homogeneity of the variance of the residuals was assessed using the LR test, with the LR chi-squared statistic yielding a value of 221.64 and a significance level of 0.109, indicating no heterogeneity issue. Subsequently, the type of model was determined through Chow and Hausman tests. The Chow test statistic was 41.125 with a significance level of 0.0001, necessitating the use of a panel model for this dataset. The Hausman test statistic was 161.221, with a significance level of 0.0001, leading to the selection of the fixed effect method. The significance test results of the coefficients can be found in Table 7.

Table 7 indicates that earnings management has a positive effect on board compensation, with a coefficient of 0.106. While the concentration of ownership was not effective, with a significant value of 0.025, it can be said that the presence of ownership concentration in the company did not affect board compensation. Additionally, examining the interactive role of ownership concentration and earnings management with a coefficient of 0.121 is significant compared to the earnings management coefficient of 0.106. If there is ownership concentration in the company, the relationship between earnings management and compensation will be incremental. In other words, if there is a concentration of ownership in the company, earnings management towards increasing bonuses will increase.

Sub-hypothesis test results

Initially, the non-homogeneity of the variance of the residuals was assessed using the LR test. The LR chi2 statistic yielded a value of 221.11 with a significance level of 0.071, indicating no issue of heterogeneity. Subsequently, the type of model was determined through Chow and Hausman tests. The Chow test statistic was 39.141 with a significance level of 0.0001, necessitating the use of a panel model for this dataset. The Hausman test statistic of 115.281, with a

significance level of 0.0001, led to the selection of the fixed effect method. The results of the significance test of the coefficients can be found in Table 8.

Table 8 shows that earnings management positively impacts board compensation, with a coefficient of 0.146. The presence of institutional investors, however, did not have a significant effect, as indicated by a value of 0.484. This suggests that institutional shareholders did not influence board compensation. Furthermore, analyzing the interaction between institutional shareholders and earnings management did not yield meaningful results. Therefore, it can be concluded that the presence of institutional shareholders in a company does not affect the relationship between earnings management and compensation.

Sub-hypothesis test results

Initially, the non-homogeneity of the variance of the residuals was assessed using the LR test, with a LR chi2 statistic value of 242.35 and a significance level of 0.121, indicating no heterogeneity issue. Subsequently, the model type was determined through Chow and Hausman tests. The Chow test statistic was 32.129 with a significance level of 0.0001, indicating the need for a panel model for this dataset. The Hausman test statistic was 191.251 with a significance level of 0.0001, leading to the selection of the fixed effect method. The results of the coefficient significance test are detailed in Table 9.

Based on the findings in Table 9, it is evident that earnings management has a positive impact on Board compensation, with a coefficient of 0.182. Interestingly, the presence of an internal auditor did not show a significant effect, with a value of 0.711, indicating that having an internal auditor in the company does not influence the board's compensation. Furthermore, when considering the combined influence of an internal auditor and earnings management, the coefficient is 0.155, slightly lower than the coefficient for earnings management alone. This suggests that if there is an internal auditor present, the relationship between earnings

management and compensation is weakened. tends to reduce the extent of earnings management. Essentially, having an internal auditor in the company

Table 6. Summary of the Results of the Regression Model of the Second Hypothesis

$$COM_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 CSR_{it} + \beta_3 DACC_{it} \times CSR_{it} + \beta_4 RET_{it} + \beta_5 \Delta ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 BM_{it} + \varepsilon_{it}$$

P – Value	statistics <i>t</i>	The standard deviation	Coefficient	Variable
***0.041	1.985	0.210	0.416	Fixed model(α_0)
***10.000	2.415	0.061	0.147	Earnings management ($DACC_{it}$)
0.415	0.713	0.017	0.012	Social Responsibility (CSR_{it})
***10,000	2.290	0.056	0.129	The interaction of social responsibility and earnings management ($DACC_{it} \times CSR_{it}$)
***0.032	1.987	0.016	0.032	Stock rate of return (RET_{it})
0.512	0.118	0.332	0.039	Change in the rate of return on assets (ΔROA_{it})
0.098	1.716	0.049	0.084	The size of the partnership ($SIZE_{it}$)
.	1.513	0.060	0.091	Financial Leverage (LEV_{it})
0.362	0.596	0.050	0.030	Book value over the market value of equity (BM_{it})
18.25804	F statistic		2.178697	N - Durbin-Watson statistic
0.440105	Adjusted coefficient of determination		0.468384	The coefficient of determination

significant at the 5% level

Source: Research calculations

Table 7- Summary of regression model results of hypothesis 1-3

$$COM_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 CON_{it} + \beta_3 DACC_{it} \times CON_{it} + \beta_4 RET_{it} + \beta_5 \Delta ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 BM_{it} + \varepsilon_{it}$$

P – Value	statistics <i>t</i>	The standard deviation	Coefficient	Variable
***0.001	1.965	0.161	0.316	Fixed model (β_0)
***10.000	2.465	0.043	0.106	Earnings management ($DACC_{it}$)
0.918	0.187	0.135	0.025	Concentration of ownership (CON_{it})
***10.000	2.216	0.055	0.121	Interaction of ownership concentration and earnings management ($DACC_{it} \times CON_{it}$)
***10.000	2.327	0.015	0.036	Stock rate of return (RET_{it})
***10.000	2.418	0.007	0.018	Change in the rate of return on assets (ΔROA_{it})
***0.012	1.915	0.040	0.077	The size of the partnership ($SIZE_{it}$)
***10.000	2.264	0.039	0.089	Financial Leverage (LEV_{it})
0.832	0.169	0.242	0.041	Book value over the market value of equity (BM_{it})
19.08304	F – statistic		2.49113	N - Durbin-Watson statistic
0.311105	Adjusted coefficient of determination		0.3301384	The coefficient of determination

significant at the 5% level

Source: Research calculations

Table 8- Summary of regression model results

$$COM_{it} = \alpha_0 + \beta_1 DACC_{it} + \beta_2 INST_{it} + \beta_3 DACC_{it} \times INST_{it} + \beta_4 RET_{it} + \beta_5 \Delta ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 BM_{it} + \varepsilon_{it}$$

P – Value	statistics <i>t</i>	The standard deviation	Coefficient	Variable
***10.000	2.912	0.277	0.806	Fixed model (α_0)
***10.000	2.301	0.063	0.146	Earnings management ($DACC_{it}$)
0.484	0.632	0.056	0.035	The presence of institutional investors ($INST_{it}$)
0.793	0.21	0.184	0.039	The interaction between the presence of institutional investors and earnings management ($DACC_{it} \times INST_{it}$)
***10,000	2.143	0.006	0.012	Stock rate of return (RET_{it})
0.413	0.224	0.112	0.025	Change in the rate of return on assets (ΔROA_{it})
***10.000	2.511	0.049	0.122	The size of the partnership ($SIZE_{it}$)
0.541	1.289	0.066	0.085	Financial Leverage (LEV_{it})
0.689	0.189	0.169	0.032	Book value over the market value of equity (BM_{it})
17.33304	F- statistic		2.079685	N - Durbin-Watson statistic
0.520105	Adjusted coefficient of determination		0.538384	The coefficient of determination

significant at the 5% level
Source: Research calculations

Table 9- Summary of regression model results of hypothesis 3-3

$$COM_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 INAUDIT_{it} + \beta_3 DACC_{it} \times INAUDIT_{it} + \beta_4 RET_{it} + \beta_5 \Delta ROA_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 BM_{it} + \varepsilon_{it}$$

P – Value	statistics <i>t</i>	The standard deviation	Coefficient	Variable
***10.000	2.085	0.191	0.398	Fixed model (β_0)
***10.000	2.406	0.075	0.182	Earnings management ($DACC_{it}$)
0.711	0.181	0.196	0.036	Having an internal auditor ($INAUDIT_{it}$)
***10.000	2.226	0.070	0.155	The interaction between the internal auditor and earnings management ($DACC_{it} \times INAUDIT_{it} + \beta_4$)
***10.000	2.363	0.020	0.046	Stock rate of return (RET_{it})
***10.000	2.422	0.008	0.020	Change in the rate of return on assets (ΔROA_{it})
***10.000	1.931	0.006	0.011	The size of the partnership ($SIZE_{it}$)
0.345	1.369	0.069	0.095	Financial Leverage (LEV_{it})
0.839	0.120	0.433	0.052	Book value over the market value of equity (BM_{it})
18.18215	F- statistic		2.249931	N - Durbin-Watson statistic
0.1589502	Adjusted coefficient of determination		0.281635	The coefficient of determination

significant at the 5% level
Source: Research calculations

5. Discussion and conclusion

According to the results of the first main hypothesis, as earnings management increases, managers' compensation also increases. Financial reports are crucial sources of information for economic decisions, utilized by managers, investors, creditors, and other users to fulfill their needs. Due to unequal access to information between users and managers, with managers possessing more undisclosed information about the company's operations and future prospects compared to investors, there exists an information asymmetry. This information gap creates an opportunity for managers to engage in earnings management. Essentially, managers have exclusive access to certain information and can manipulate financial data, aided by features like accrual accounting, incentives such as compensation incentives, earnings smoothing, and regulation avoidance. This situation motivates managers to potentially increase their compensations and benefits, conflicting with the interests of other stakeholders, and initiating earnings management. These findings align with the research of Qaidi and Mir Abbasi (2016) and agency theory. Based on these results, it is recommended for company shareholders and accounting standard setters to implement measures like strengthening corporate governance, high-quality independent auditing, and establishing appropriate accounting standards to regulate managers' earnings management.

The results of the second hypothesis suggest that the presence of social responsibility within a company leads to a reduction in earnings management for managers' bonuses. Companies that disclose more information about their social activities experience lower levels of earnings management. Social responsibility acts as a deterrent for managers seeking compensation through manipulation. According to organizational legitimacy theory, when a company upholds social responsibility, its values align with those of society, resulting in increased board compensations. High social performance positions managers as role models, leading to pride and

recognition for doing the right things, along with non-cash benefits. These outcomes are consistent with the research of Roud Pashti and Zandi (2019) and political economic theory. Stakeholders and analysts are advised to acknowledge that while responsible companies may still engage in earnings manipulation for board compensation, the extent is significantly lower compared to other companies. Therefore, social responsibility can be viewed as a positive aspect in analyzing companies' conditions.

The results of hypotheses 1-3 indicate a significant positive relationship between earnings management and board compensation, with ownership concentration playing a moderating role. When ownership is concentrated in a company, manipulating earnings to increase compensation becomes more prevalent. As ownership percentage rises, investors become more interested in monitoring management decisions. In today's companies, with a large number of owners and shareholders, direct monitoring of performance is not feasible for shareholders. Therefore, emphasizing the role of ownership concentration in corporate governance is logical to protect the interests of all groups and ensure optimal management control. These results contradict Ahmedpour and Javan's (2014) research and align with the transaction cost theory. It is recommended that shareholders do not reduce ownership concentration to control manager's opportunistic activities but instead involve a more diverse group of shareholders in the company.

The results of hypotheses 2-3 show no significant relationship between earnings management and board compensation when institutional investors moderate ownership. The presence of institutional shareholders does not affect the positive relationship between earnings management and board compensation. Using institutions and organizations in the company's ownership structure to control the relationship between earnings manipulation and manager compensation is ineffective. Shareholders should assess the company's status and monitor earnings management to influence board compensation, considering factors like

managerial responsibility, ownership concentration, and the presence of internal auditors instead of relying on institutional shareholders.

The results of hypotheses 3-3 reveal a positive and significant relationship between earnings management, board compensation, and the moderating role of internal auditors. If a company has internal auditors, managers may still manipulate earnings to increase board compensation, but to a lesser extent. A stronger internal auditor role creates a fair system for determining executive managers' salaries, benefits, and compensations, promoting long-term value creation and manager reputation while reducing the impact of earnings management on compensation. These results align with Okofu et al. (2021) and Dabbagh et al. (2018) research.

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