

The Effect of the CEO Power and the Increase of Directors' and Supervisors' Compensations in Loss-making Firms on Earnings Management

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Abstract

Following the Financial Supervisory Commission's 2020 regulatory announcement regarding the compensation of directors and supervisors in loss-making firms, this study examines the impact of CEO power and the increase in director and supervisor compensation on earnings management. Earnings management is primarily measured using discretionary accruals (AEM) as a proxy variable. This study utilizes data from listed companies in Taiwan obtained from the Taiwan Economic Journal (TEJ) database from 2020 to 2022. The empirical results indicate a significantly positive relationship between CEO power and earnings management and between the increase in director and supervisor compensation in loss-making firms and earnings management.

Keywords: CEO Power, The Increase of Directors' and Supervisors' Compensations in Loss-making Firms, Earnings Management.

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1. Introduction

Previous studies have focused on the impact of compensation committee quality and operational effectiveness on director and supervisor compensation or have directly examined the relationship between increased compensation for directors and supervisors in loss-making firms and earnings management. Firms that increase director and supervisor compensation despite incurring losses often have strong incentives to engage in earnings management to avoid being listed again in the regulatory disclosure of such firms. In this context, corporate profitability and compensation governance mechanisms do not necessarily improve; instead, such actions may contradict corporate governance principles.

Existing literature has rarely explored the complex relationship between CEO power, increased director and supervisor compensation in loss-making firms, and earnings management, as this issue involves multiple aspects of corporate governance, business strategy, and financial reporting. This study aims to analyze whether variations in CEO power influence earnings management behaviors. Moreover, director and supervisor compensation in loss-making firms should theoretically be adjusted based on the company's financial performance. If compensation unexpectedly increases, the CEO, as the highest decision-maker, should be aware of and address such an issue. Therefore, this study focuses on the interplay between CEO power, increased director and supervisor compensation in loss-making firms, and earnings management.

If directors and supervisors accept or fail to properly oversee earnings management practices, it contradicts the corporate governance principles outlined in Environmental, Social, and Governance (ESG) frameworks. This study investigates the level of CEO power and increased director and supervisor compensation in loss-making firms to determine whether a rent-seeking relationship exists between CEOs and board members or whether such issues stem from directors' failure to fulfill their supervisory responsibilities, resulting in corporate governance deficiencies.

Examining earnings management from two perspectives offers several advantages. It allows for an analysis of the interaction between CEOs and directors in corporate governance, an exploration of whether CEOs in loss-making firms wield excessive power, and an assessment of whether directors prioritize their interests over those of general shareholders. This study further examines the effectiveness of corporate governance, supervision, and management in light of contemporary ESG principles.

First, this study investigates the relationship between CEO power and earnings management. Feng et al. (2011) indicated that CFOs engage in significant accounting manipulation primarily due to pressure from CEOs. That is, the greater the CEO's power, the more pressure they exert on CFOs, compelling them to engage in earnings management. Similarly, Friedman (2014) developed a theoretical model suggesting that the impact of CEO power on CFOs' financial reporting quality depends on the regulatory environment. Without regulatory constraints, more powerful CEOs exert greater pressure on CFOs to manipulate financial information, leading to biased financial statements.

In the context of debt financing decisions, Liu and Jiraporn (2010) examined the influence of CEO power on credit ratings and loan spreads, finding that firms with more powerful CEOs tend to have lower credit ratings and are more inclined to maintain an opaque information environment, possibly to achieve specific objectives or maximize personal benefits.

This study also explores the relationship between increased director and supervisor compensation in loss-making firms and earnings management. Taiwan's Financial Supervisory Commission (FSC) has mandated enhanced disclosure of individual director and supervisor compensation to strengthen corporate governance in alignment with ESG principles. Disclosure requirements apply to firms that have reported net losses in their standalone or individual financial statements for the past three years or have received poor corporate governance evaluations.

Logically, directors and supervisors of financially underperforming firms will likely face compensation restrictions or reductions. Under regulatory scrutiny, their compensation is subject to public and stakeholder review. Fama and Jensen (1983) argued that directors in firms with poorly designed board structures are more likely to approve earnings management practices for personal gain, artificially enhancing the firm's financial performance and securing unjustifiably high compensation. When directors and supervisors of loss-making firms should, in theory, experience compensation reductions, it raises questions about whether managerial influence dictates compensation decisions. Does maintaining a certain level of compensation incentivize directors and supervisors to support or tolerate CEO-led earnings management practices, weakening their supervisory role? Alternatively, do they uphold their responsibilities and ensure sound corporate governance?

This study uses discretionary accruals as a proxy for earnings management. Huang et al. (2015) found that firms that increase director and supervisor compensation despite incurring losses tend to prefer accrual-based earnings management over real earnings management due to their weaker financial position. In some cases, accrual-based earnings management may be legally permissible, including techniques such as revenue recognition, expense provisions, asset and liability adjustments, related-party transactions, impairment adjustments, and earnings smoothing.

In the context of Taiwan's regulatory environment, the Financial Supervisory Commission (FSC) issued a directive in 2020 emphasizing that director and supervisor compensation in loss-making firms should align with financial performance, thereby reinforcing the principle of pay-for-performance in corporate governance. When financially distressed firms increase compensation for directors and supervisors, such actions deviate from expected governance norms and may signal opportunistic behavior or rent-seeking motives. This discrepancy becomes particularly problematic under heightened regulatory scrutiny, as stakeholders and regulators anticipate remuneration adjustments that reflect poor firm performance. Moreover, compensation increases in loss-making firms may incentivize earnings management as a means to obscure financial underperformance and justify the augmented remuneration. Thus, focusing on compensation practices in loss-making firms

offers valuable insights into governance anomalies and serves as a salient indicator for detecting potential earnings manipulation and weakened oversight.

In summary, this study explores whether CEO power and increased director and supervisor compensation in loss-making firms contribute to earnings management practices.

2. Literature Review and Hypotheses Development

2.1 Earnings management

Schipper (1989) defined earnings management from an economic perspective as the strategic manipulation of financial reporting by corporate management within the boundaries of Generally Accepted Accounting Principles (GAAP). This involves adjusting actual transactions or altering the timing of profit and loss recognition under asymmetric information conditions to achieve specific earnings objectives. Healy and Wahlen (1999) further elaborated that earnings management refers to managers' use of accounting discretion and deliberate transaction arrangements to manipulate corporate earnings, thereby misleading stakeholders' perceptions of the firm's performance.

Earnings management is commonly classified into accrual-based (AEM) and real (REM) management. Accrual-based earnings management can be further divided into discretionary and non-discretionary components. Discretionary accrual-based earnings management is widely used due to its ease of execution and relative difficulty in detection by auditors (Healy, 1985). Due to the varying costs of managing earnings, Peasnell (2000) argued that corporate executives are more likely to employ discretionary accruals to manipulate financial results. This aligns with Beaver's (2002) assertion that discretionary factors primarily reflect managerial behavior. In contrast, Jones (1991) posited that changes mainly influence non-discretionary components in the firm's economic environment.

In certain cases, accrual-based earnings management can be legally applied through various accounting techniques, including:

1. Revenue recognition: Delaying or accelerating revenue recognition to influence profit levels in a specific period.
2. Expense provisions: Delaying or accelerating expense recognition to adjust profitability.
3. Asset and liability adjustments: Modifying asset and liability valuation to impact net assets and liabilities.
4. Related-party transactions: Engaging with affiliated entities to manipulate pricing or conditions affects profitability.
5. Impairment adjustments: Adjusting impairment of fixed or intangible assets to maintain asset value.
6. Earnings smoothing: Adjusting income and expenses to ensure relatively stable earnings trends and avoid excessive fluctuations.

While reasonable accounting policies and estimates can reflect a firm's financial condition, excessive use of accrual-based earnings management beyond reasonable limits may constitute fraudulent behavior, leading to ethical and legal risks. Fama and Jensen (1983) indicated that firms with poorly structured boards are likelier to have directors who prioritize personal gains over corporate integrity, approving earnings management practices to enhance perceived performance and justify excessive compensation for directors and supervisors.

In contrast, real earnings management (REM) involves modifying actual business operations rather than merely adjusting accounting treatments to achieve managerial objectives. Real earnings management focuses on altering corporate strategies, business decisions, or operational activities to influence reported earnings in the real economic environment. Roychowdhury (2006) identified three primary methods of real earnings management: sales manipulation, discretionary expense reduction, and overproduction.

Key characteristics of real earnings management in practice include:

1. Strategic business adjustments: Management may modify business strategies, such as expanding product lines, entering new markets, or cutting costs, to influence actual earnings.
2. Investment decisions: Adjustments in investment plans, including delaying or accelerating capital expenditures or selecting high-return projects, to manipulate earnings figures.
3. Capital expenditures: Increasing or decreasing capital spending within a specific accounting period to affect reported profitability.
4. Seasonal adjustments: Some industries or firms may time financial adjustments within specific quarters to minimize earnings volatility or achieve annual earnings targets.
5. Timing of product sales: Management may strategically shift the timing of product sales to accelerate or defer revenue recognition, thereby influencing reported earnings.

By examining accrual-based and real earnings management, this study aims to provide a comprehensive analysis of how corporate executives engage in earnings manipulation and the implications for corporate governance.

2.2 Director and Supervisor Compensation in Loss-Making Firms and Earnings Management

Director and supervisor compensation generally consists of fixed and variable compensation. Fixed compensation is the remuneration directors and supervisors receive for providing oversight services to the company, including salaries and position allowances. This compensation is paid regardless of the company's financial performance. In contrast, variable compensation is adjusted based on the company's profitability or financial losses (Lin et al., 2012). A study by Lin et al. (2018) on Taiwan's listed firms in 2015 found that 229 firms (19.1%) provided only fixed compensation, 400 firms (33.4%) offered only variable compensation, and 364 firms (30.4%) employed a mixed compensation structure. These findings indicate that Taiwanese listed companies favor variable compensation structures for directors and supervisors.

Fama and Jensen (1983) suggested that in firms with poorly structured boards, directors are more likely to approve earnings management practices for personal gain, thereby inflating perceived corporate performance and securing excessive compensation. However, Huang et al. (2015) examined the relationship between increased director and supervisor compensation in loss-making firms and earnings management, revealing that such firms have stronger incentives to manipulate organizational performance to avoid being repeatedly classified as loss-making firms subject to additional disclosure requirements. Their study also found that, compared to non-loss-making firms with increased director and supervisor compensation, loss-making firms that increase director and supervisor compensation are more inclined to engage in accrual-based earnings management rather than real earnings management, likely due to their weaker financial health. Similarly, Lin et al. (2018), using the Benford's Law analysis, further confirmed that firms with increased director and supervisor compensation despite financial losses exhibit a higher degree of earnings management.

To enhance disclosure transparency and reduce information asymmetry, Taiwan's Legislative Yuan amended Article 14 of the Securities and Exchange Act in 2020, requiring listed companies to disclose additional details in their annual financial reports, including: (1) corporate compensation policies and (2) individual compensation data for directors and supervisors. In line with these regulatory changes, the Financial Supervisory Commission (FSC) revised the Guidelines for the Disclosure of Annual Reports of Public Companies in 2020. The amendments mandate individual disclosure of director, supervisor, and managerial compensation for firms that (1) report post-tax losses for the year or (2) rank in the bottom 20% of corporate governance evaluations. Furthermore, the FSC increased the compensation disclosure tiers from eight to ten, expanding the number of firms required to disclose individual director and managerial compensation.

Based on these regulatory changes and prior research findings, this study posits that examining the compensation changes of directors and supervisors in loss-making firms is an appropriate indicator of corporate governance effectiveness. Such an analysis provides insights into firms' long-term adherence to compensation policies and governance principles, ultimately contributing to corporate sustainability.

2.3 CEO Power and Earnings Management

The CEO power variable is primarily constructed based on the framework developed by Lisic et al. (2016), which defines CEO power through structural power, ownership power, experience power, and reputation power. In the context of debt financing decisions, Liu and Jiraporn (2010) examined the impact of CEO power on credit ratings and loan spreads, finding that firms with more powerful CEOs tend to have lower credit ratings. Furthermore, they found that CEOs with greater power are more likely to maintain an opaque information environment to achieve specific objectives or maximize personal benefits. In the context of financial reporting quality, Feng et al. (2011) and Friedman (2014) examined the impact of CEO power on CFOs' financial reporting decisions. Feng et al. (2011) highlighted that CFOs engage in significant accounting manipulations primarily due to

pressure from CEOs, suggesting that the greater the CEO's power, the more pressure they exert on CFOs, thereby compelling them to engage in earnings management.

Several key factors are commonly used to measure managerial power, primarily assessing a CEO's influence and control within the organization, as well as their impact on corporate decision-making:

1. **Equity ownership:** The proportion of shares held by the CEO is a critical indicator of power, with higher ownership translating into greater control over corporate decisions.
2. **Board position:** The CEO's role on the board is another significant indicator. Serving as both CEO and chairman or holding an independent directorship can enhance internal influence.
3. **Compensation structure:** The CEO's remuneration, including high salaries, bonuses, and stock options, reflects their influence over corporate operations and strategic decisions.
4. **Appointment and dismissal procedures:** The process of appointing and removing the CEO also reflects their power. If their appointment and dismissal require the approval of specific stakeholders, their power may be relatively constrained.
5. **Stakeholder influence:** The CEO's power may extend to influencing stakeholders' interests and forming complex relationships between top management and the board.
6. **Corporate performance:** The impact of CEO decisions on company performance is a crucial factor. If a CEO's strategic choices significantly affect financial results, including earnings and mergers and acquisitions, their authority within the company is likely to be substantial.

The motivations for earnings management have been categorized by Healy and Wahlen (1999) into three main incentives: capital market motivations, contracting motivations, and regulatory motivations.

1. **Capital market motivations:** Firms engaged in initial public offerings (IPOs) lack a historical market price to determine stock valuation, incentivizing managers to inflate earnings to achieve higher offering prices and maximize benefits (Pan et al., 2021).
2. **Contracting motivations:** Healy (1985) found that when managers' bonus plans are tied to company earnings, they may manipulate discretionary accruals to reduce earnings in the current period (if below or above the predetermined bonus threshold) to increase future bonus potential, or enhance earnings if within the target range.
3. **Regulatory motivations:** Firms in regulated industries may manage earnings to avoid regulatory constraints or mitigate political costs associated with government investigations. Cahan (1992) found that firms manipulate discretionary accruals to influence financial statements in response to antitrust laws and political scrutiny.

The interaction between CEO power and the increase in director and supervisor compensation in loss-making firms may jointly amplify the risk of earnings management through weakened

corporate governance mechanisms. CEOs with substantial power often exert significant influence over board decisions, including compensation policies. Such influence may erode the board's independence, leading directors and supervisors to prioritize personal benefits over fiduciary responsibilities. In the context of financially distressed firms, where compensation reductions are generally expected due to poor performance, an increase in compensation may serve as a signal of rent-seeking behavior or collusion between CEOs and board members.

Powerful CEOs may pursue personal gains, such as maintaining their positions or enhancing their own compensation, by engaging in earnings management to obscure poor financial performance. If directors and supervisors acquiesce to such practices in exchange for increased remuneration, the governance system effectively fails, allowing for opportunistic behavior to persist. The simultaneous presence of high CEO power and increased compensation in loss-making firms suggests a dual incentive structure that facilitates the manipulation of financial reports. This interaction may not only signal severe agency problems but also reflect a breakdown in the checks and balances that are essential to sound governance.

Based on the literature review, this study proposes the following hypotheses:

H1: CEO power has a positive impact on earnings management.

H2: Increased director and supervisor compensation in loss-making firms positively impact earnings management.

H3: The interaction between CEO power and increased director and supervisor compensation in loss-making firms positively impacts earnings management.

3. Research Methodology

3.1 Research Model

The research model is designed in three parts to test the hypotheses proposed in this study. The first part examines the impact of CEO power on earnings management. The second part investigates the effect of director and supervisor compensation in loss-making firms on earnings management. The third part explores the interaction effect of CEO power and increased director and supervisor compensation in loss-making firms on earnings management.

$$AEM_{it} = \alpha_0 + \alpha_1 CEOP_{it} + \alpha_2 SIZE_{it} + \alpha_3 BHR_{it} + \alpha_4 INDR_{it} + \alpha_5 INST_{it} + \alpha_6 LEV_{it} + IndFE + YearFE + \varepsilon_{it} \quad (1)$$

In the model, the variables are defined as follows:

AEM_{it} : A binary variable representing discretionary accruals for firm i in period t

$CEOP_{it}$: CEO power for firm i in period t

$SIZE_{it}$: The natural logarithm of net sales revenue at the end of the fiscal year for firm i in period t

BHR_{it} : The percentage of shares held by directors and supervisors for firm i in period t

$INDR_{it}$: The proportion of independent directors on the board for firm i in period t

$INST_{it}$: The institutional ownership ratio for firm i in period t

LEV_{it} : The leverage ratio for firm i in period t , calculated as total debt divided by total assets

IndFE: Industry fixed effects

YearFE: Year fixed effects

ε_{it} : The error term for firm i in period t

This model aims to examine the relationship between CEO power and earnings management, while controlling for firm-specific characteristics and accounting for industry and year fixed effects.

The second part of this study examines the impact of increased director and supervisor compensation in loss-making firms on earnings management. The research model is formulated as Equation (2). Based on H2, which posits that an increase in director and supervisor compensation in loss-making firms is positively associated with earnings management, the coefficient α_1 is expected to be significantly positive.

$$AEM_{it} = \alpha_0 + \alpha_1 DFcat_{it} + \alpha_2 SIZE_{it} + \alpha_3 BHR_{it} + \alpha_4 INDR_{it} + \alpha_5 INST_{it} + \alpha_6 LEV_{it} + IndFE + YearFE + \varepsilon_{it} \quad (2)$$

In the model, $DFcat_{it}$ is a dummy variable indicating whether the director and supervisor compensation increased for loss-making firm i in period t . If compensation increased, the variable is set to 1; otherwise, it is 0.

Finally, to examine the interaction effect of CEO power and increased director and supervisor compensation in loss-making firms on earnings management, this study introduces an interaction term. The analytical model is formulated as Equation (3). Based on H3, which posits that CEO power and increased director and supervisor compensation in loss-making firms jointly contribute to earnings management, the coefficient α_3 is expected to be significantly positive.

$$AEM_{it} = \alpha_0 + \alpha_1 CEOP_{it} + \alpha_2 DFcat_{it} + \alpha_3 CEOP_{it} \times DFcat_{it} + \alpha_4 SIZE_{it} + \alpha_5 BHR_{it} + \alpha_6 INDR_{it} + \alpha_7 INST_{it} + \alpha_8 LEV_{it} + IndFE + YearFE + \varepsilon_{it} \quad (3)$$

3.2 Variable Definitions

3.2.1 Discretionary Accruals (AEM)

This study considers the flexibility available to management and the preference for using discretionary accruals in practical applications. Therefore, discretionary accruals are used as a proxy for accrual-based earnings management. Following the approach of Kothari, Leone, and Wasley (2005), this study incorporates the prior period's return on assets (ROA) as a control variable in the Modified Jones Model to mitigate potential model specification errors. Non-discretionary accruals

are first estimated using the model, and discretionary accruals are then obtained by subtracting non-discretionary accruals from total accruals.

$$\frac{TAC_{it}}{ASSET_{it-1}} = \widehat{\beta}_0 + \widehat{\beta}_1 \left(\frac{1}{ASSETS_{it-1}} \right) + \widehat{\beta}_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{ASSETS_{it-1}} \right) + \widehat{\beta}_3 \left(\frac{PPE_{it}}{ASSETS_{it-1}} \right) + \widehat{\beta}_4 ROA_{it} + \varepsilon_{it} \quad (4)$$

$$NDAC_{it} = \widehat{\beta}_0 + \widehat{\beta}_1 \left(\frac{1}{ASSETS_{it-1}} \right) + \widehat{\beta}_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{ASSETS_{it-1}} \right) + \widehat{\beta}_3 \left(\frac{PPE_{it}}{ASSETS_{it-1}} \right) + \widehat{\beta}_4 ROA_{it} + \varepsilon_{it} \quad (5)$$

$$AEM_{it} = \frac{TAC_{it}}{ASSETS_{it-1}} - NDAC_{it} \quad (6)$$

3.2.2 CEO Power

CEO power is a multidimensional construct reflecting the CEO's ability to influence corporate decision-making and control organizational resources. Following the methodology of Lisic et al. (2016) and Wang et al. (2022), this study operationalizes CEO power through four key dimensions: structural power, ownership power, experience power, and reputation power.

Structural Power: This dimension captures the CEO's formal authority within the organizational hierarchy, particularly whether the CEO also serves as the chairperson of the board (CEO duality). CEO duality is a widely used proxy for structural dominance, suggesting stronger internal control and decision-making influence.

Ownership Power: Measured by the CEO's shareholding ratio in the firm, higher equity ownership is assumed to reflect greater influence over strategic and operational decisions, and potentially weaker oversight from the board.

Experience Power: This refers to the CEO's tenure and professional experience. CEOs with longer tenure are likely to have accumulated more internal knowledge and informal authority, enabling them to exert greater control over both management and board decisions.

Reputation Power: This dimension is proxied by the CEO's educational background and prior executive roles. Higher academic qualifications and notable professional experience can enhance the CEO's credibility and influence, both internally and externally.

We apply Principal Component Analysis (PCA) to the indicators corresponding to the four dimensions mentioned above to construct a comprehensive CEO power variable. PCA enables the reduction of dimensionality by extracting a principal component score that captures the overall level of CEO power for each firm-year observation. CEOs with power scores in the top two quartiles (i.e.,

third and fourth quartiles) are classified as having high power (assigned a value of 1), while those in the bottom two quartiles are classified as having low power (assigned a value of 0). This binary classification facilitates the examination of the differential impact of CEO power on earnings management across firms.

3.2.3 Director and Supervisor Compensation in Loss-Making Firms

The second part of this study examines the impact of increased director and supervisor compensation in loss-making firms on earnings management. Data is collected from the Market Observation Post System (MOPS), specifically identifying firms where annual post-tax losses were reported, yet total director and supervisor compensation or average compensation per director increased. A binary variable is assigned: If director and supervisor compensation increases despite company losses, the variable is set to 1. If compensation does not increase, the variable is set to 0.

3.2.4 Definitions of Control Variables

Investment analysts typically provide financial forecasts for large-scale companies, and management often strives to meet these forecasts to satisfy shareholder expectations and market performance. Larger companies are more inclined to manage earnings to achieve their financial targets than smaller firms. Loomis (1999) suggested that larger firms face greater pressure to maintain strong financial performance, leading them to adopt higher discretionary accruals. However, Watts and Zimmerman (1986) presented a somewhat opposing view, arguing that due to heightened scrutiny from government agencies, regulatory bodies, and the public, larger firms may adopt more conservative accounting policies and accrual management practices to mitigate potential political costs and reputational risks.

Therefore, this study defines SIZE as the natural logarithm of the company's market capitalization at the end of the fiscal year to control for the impact of firm size on discretionary accruals.

The board and supervisor shareholding ratio refers to the proportion of a company's total shares owned by its board members and supervisors. This ratio reflects the degree of alignment between management's financial interests and the company's operational and financial performance.

According to the interest convergence hypothesis, a higher shareholding ratio suggests greater alignment of interests between directors, supervisors, and general shareholders. When directors and supervisors hold significant company shares, they are more incentivized to make decisions that promote long-term corporate growth and sustainability while ensuring effective oversight to protect their own investments.

Conversely, the entrenchment hypothesis suggests that a higher insider ownership ratio or more concentrated ownership structure may lead insiders to prioritize their own interests, potentially engaging in rent-seeking behavior or even expropriating corporate wealth. This excessive control could increase the risk of managerial entrenchment, ultimately harming the firm's development.

In this study, the board and supervisor shareholding ratio (BHR) is defined as the total number of shares held by directors and supervisors at the end of the year divided by the total outstanding shares at year-end.

The independent director ratio refers to the proportion of independent directors on a company's board relative to the total number of board members. Independent directors are professionals who are not affiliated with the company and have no financial or personal ties that could compromise their objectivity. They are crucial in providing unbiased advice, overseeing management, and ensuring corporate accountability.

The independent director ratio (INDR) is a key corporate governance indicator, as its level can influence governance quality, decision-making balance, risk management, and the protection of investor interests. A higher ratio of independent directors is generally associated with stronger oversight and improved corporate governance mechanisms.

The institutional ownership ratio (INST) refers to the proportion of a company's shares held by institutional investors, such as investment funds, insurance companies, banks, and pension funds. Institutional investors typically play an active role in corporate governance and oversight, as they represent the interests of many stakeholders. Their involvement can enhance corporate monitoring and managerial discipline.

However, since institutional investors encompass various entities with varying investment objectives, conflicts of interest among shareholders may arise. Additionally, if institutional ownership is highly concentrated, these investors may exert significant influence over corporate decisions, potentially leading to corporate governance issues. The institutional ownership ratio is a crucial indicator for understanding shareholder structure and corporate governance dynamics.

The leverage ratio (LEV), also known as the debt ratio, measures the proportion of a company's total assets financed by debt. It is calculated as total liabilities divided by total assets at the end of the fiscal year. This financial indicator is commonly used to assess a company's debt levels and financial risk.

3.3 Sample Selection and Data Period

This study is based on the Financial Supervisory Commission (FSC) of Taiwan's amendment to the Guidelines for the Disclosure of Annual Reports of Public Companies, which took effect on January 22, 2020. The amendment expanded the disclosure requirements for individual director and supervisor compensation, particularly for firms that (1) reported post-tax losses in their individual or consolidated financial statements for the past three years or (2) received poor corporate governance evaluations.

The sample consists of Taiwanese-listed firms from 2020 to 2022. To ensure data reliability and consistency, the study excludes financial, insurance, and securities firms, as their financial statements

and accounting standards differ significantly from those of other industries. Furthermore, firms with incomplete financial data or missing values are required for the computation of discretionary accruals.

The primary dataset is obtained from the Taiwan Economic Journal (TEJ) database, which provides comprehensive financial and governance-related information on Taiwan's listed firms.

4. Empirical Results

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the study variables, with a total sample of 366 observations. The mean value of discretionary accruals (AEM) is -0.0109. The mean value of CEO power (CEOP) is 0.5, indicating that in 50% of the sample firms, CEO power is classified as high, suggesting a greater likelihood of earnings management. The mean value of increased director and supervisor compensation in loss-making firms (DFcat) is 0.69, showing that 69% of firms in the sample experienced increased director and supervisor compensation despite reporting financial losses, implying a potential association with earnings management.

In addition, the mean values for firm size (SIZE), board and supervisor shareholding ratio (BHR), independent director ratio (INDR), institutional ownership ratio (INST), and leverage ratio (LEV) are 13.1, 22.1, 0.38, 33.7, and 46.3, respectively. The median values for discretionary accruals (AEM), CEO power (CEOP), increased director and supervisor compensation (DFcat), firm size (SIZE), board and supervisor shareholding ratio (BHR), independent director ratio (INDR), institutional ownership ratio (INST), and leverage ratio (LEV) are 0.019, 0.500, 1.000, 13.311, 18.690, 0.429, 29.665, and 48.690, respectively. The standard deviations for these variables are 0.336, 0.501, 0.465, 1.847, 15.260, 0.089, and 21.567, respectively.

These descriptive statistics provide insight into the sample firms' characteristics and financial and governance structures, illustrating the variations in firm size, board ownership, governance mechanisms, and leverage levels. The findings suggest that CEO power and increased director and supervisor compensation in loss-making firms may be critical in influencing earnings management behaviors.

Table 1. Descriptive Statistics

	Mean	Median	Std. Dev.	Min.	Max.
N	366	366	366	366	366
AEM	-0.011	0.019	0.336	-3.333	2.348
CEOP	0.500	0.500	0.501	0.000	1.000
DFcat	0.600	1.000	0.465	0.000	1.000
SIZE	13.105	13.311	1.847	6.111	17.270
BHR	22.187	18.690	15.260	0.000	77.720
INDR	0.385	0.429	0.089	0.167	0.750
INST	33.721	29.665	21.567	0.000	97.920
LEV	46.339	48.690	23.323	0.380	97.100

Note: AEM is a dummy variable representing the discretionary accruals for firm i in period t ; CEOP refers to CEO power; DFcat represents director and supervisor compensation in loss-making firms; SIZE denotes firm size; BHR indicates the board and supervisor shareholding ratio; INDR represents the independent director ratio; INST refers to the institutional ownership ratio; and LEV denotes the leverage ratio.

4.2 Discussion of Findings

Table 2 presents the Pearson correlation coefficient analysis, which is primarily used to examine the bivariate relationships between variables and to assess potential collinearity issues among them. The results show a significant positive correlation between discretionary accruals (AEM) and CEO power (CEOP), with a correlation coefficient of 0.369 (p-value = 0.000). From a univariate perspective, this indicates that firms with greater CEO power are more likely to engage in earnings management.

Similarly, discretionary accruals (AEM) and firm size (SIZE) exhibit a significant positive correlation (coefficient 0.18, p-value = 0.001), suggesting that larger firms are more prone to earnings management behaviors. Likewise, discretionary accruals (AEM) and institutional ownership ratio (INST) also show a significant positive correlation (coefficient 0.18, p-value = 0.001), indicating that a higher institutional ownership ratio is associated with a greater likelihood of earnings management.

Regarding collinearity concerns among the independent variables, the only relatively high correlation is observed between the board and supervisor shareholding ratio (BHR) and the institutional ownership ratio (INST), with a correlation coefficient of 0.485. However, all other variable correlations remain below 0.4, suggesting that collinearity is not a significant issue in this study.

Table 2. Pearson Correlation Coefficient Analysis

	AEM	CEOP	DFcat	SIZE	BHR	INDR	INST	LEV
AEM	1							
CEOP	0.369***	1						
DFcat	0.015	0.006	1					
SIZE	0.18**	-0.049	-0.124	1				
BHR	-0.027	0.01	0.051	-0.093*	1			
INDR	-0.041	0.073	-0.061	-0.145***	-0.107**	1		
INST	0.18**	-0.094*	0.05	-0.05	0.485***	-0.071	1	
LEV	0.072	0.009	-0.077	0.33***	-0.028	-0.08	0.035	1

Note: (1)AEM is a dummy variable representing the discretionary accruals for firm i in period t ; CEOP refers to CEO power; DFcat represents director and supervisor compensation in loss-making firms; SIZE denotes firm size; BHR indicates the board and supervisor shareholding ratio; INDR represents the independent director ratio; INST refers to the institutional ownership ratio; and LEV denotes the leverage ratio. (2)Values in parentheses indicate p-values, where ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

4.3 Main Regression Analysis Results

Table 3 presents the results of the multiple linear regression analysis. The results for Model 1, which tests H1, indicate that CEO power has a significant positive relationship with earnings management (coefficient = 0.228, p-value = 0.000), suggesting that firms with greater CEO power are more likely to engage in earnings management. Therefore, H1 is supported.

The results for Model 2, which tests H2, show that increased director and supervisor compensation in loss-making firms is significantly positively associated with earnings management (coefficient = 0.017, p-value = 0.041), indicating that when director and supervisor compensation increases despite financial losses, the likelihood of earnings management also increases. As a result, H2 is supported.

In Model 3, this study examines the interaction effect of CEO power and increased director and supervisor compensation in loss-making firms on earnings management. The results reveal a significant positive relationship between the interaction term and earnings management (coefficient = 0.016, p-value = 0.001). This finding suggests that high CEO power and increased director and supervisor compensation in loss-making firms contribute to earnings management behaviors, supporting H3.

Additionally, Table 3 highlights several key findings. First, firm size (SIZE) shows a significant positive relationship across all three models—Model 1 (coefficient = 0.040, p-value = 0.000), Model 2 (coefficient = 0.044, p-value = 0.000), and Model 3 (coefficient = 0.041, p-value = 0.000). This

result suggests that larger firms are more likely to manage earnings. In contrast, board and supervisor shareholding ratio (BHR) exhibits an opposite trend, showing a significant negative relationship in Model 1 (coefficient = -0.001, p-value = 0.039), Model 2 (coefficient = -0.002, p-value = 0.024), and Model 3 (coefficient = -0.001, p-value = 0.004). Similarly, independent director ratio (INDR) also has a significant negative relationship in Model 1 (coefficient = -0.045, p-value = 0.003), Model 2 (coefficient = -0.035, p-value = 0.009), and Model 3 (coefficient = -0.054, p-value = 0.008). These findings indicate that a higher board and supervisor shareholding ratio (BHR) and a higher independent director ratio (INDR) reduce the likelihood of earnings management, likely due to stronger monitoring mechanisms and corporate governance effectiveness.

Another notable finding is the institutional ownership ratio (INST), which exhibits a significant positive relationship with earnings management across all models—Model 1 (coefficient = 0.003, p-value = 0.001), Model 2 (coefficient = 0.004, p-value = 0.000), and Model 3 (coefficient = 0.003, p-value = 0.001). This result suggests that higher institutional ownership is associated with an increased likelihood of earnings management, indicating that institutional investors may not effectively constrain earnings manipulation.

Lastly, leverage ratio (LEV) also shows a significant positive relationship with earnings management in Model 1 (coefficient = 0.002, p-value = 0.003), Model 2 (coefficient = 0.002, p-value = 0.003), and Model 3 (coefficient = 0.002, p-value = 0.004). This finding supports Huang et al. (2015), which suggests that firms engaging in self-serving behaviors by directors and supervisors tend to manipulate earnings through accrual-based earnings management when given the opportunity. This result further highlights the importance of corporate governance and financial monitoring, suggesting that observing a firm's leverage ratio (LEV) may provide insights into earnings management risks.

Finally, the Adjusted R² values in Table 3 indicate that the regression models explain 19.4% of the variance in Model 1, 8% in Model 2, and 19% in Model 3, using only five control variables (SIZE, BHR, INDR, INST, and LEV) to predict discretionary accruals (AEM). The computed F-values for Model 1 (15.656), Model 2 (6.258), and Model 3 (11.736) are all statistically significant (p-values < 0.001), rejecting the null hypothesis. These results confirm the regression models' statistical significance and predictive power, providing valuable insights into the relationship between CEO power, director and supervisor compensation in loss-making firms, and earnings management.

In addition to the main variables of interest, the control variables in our regression models yield significant findings that warrant further discussion. Firm size (SIZE) exhibits a consistently positive and significant relationship with earnings management across all models. This result aligns with Loomis (1999), who argued that larger firms face greater pressure from capital markets to meet earnings expectations, thereby increasing the likelihood of adopting discretionary accruals. Conversely, Watts and Zimmerman (1986) noted that large firms might adopt more conservative accounting policies to mitigate political costs. Our findings suggest that in the Taiwanese context, the

incentive to meet performance benchmarks may outweigh concerns about regulatory scrutiny, prompting earnings manipulation among larger firms.

The institutional ownership ratio (INST) also shows a significant positive association with earnings management, which appears counterintuitive given the expectation that institutional investors serve as effective monitors. A possible explanation lies in the nature of institutional investors in Taiwan, where a considerable proportion may engage in passive investment strategies or pursue short-term returns, thereby lacking the incentive or capacity to curb managerial opportunism. This finding is consistent with Lin and Lu (2016), who observed similar patterns in emerging markets.

In contrast, both board and supervisor shareholding ratio (BHR) and independent director ratio (INDR) exhibit significant negative relationships with earnings management, indicating that greater ownership by insiders and higher board independence are associated with reduced earnings manipulation. These results support the alignment-of-interest hypothesis, which posits that when board members hold significant equity stakes, they are more likely to align with shareholder interests and enforce stricter monitoring. Likewise, a higher proportion of independent directors strengthens the board's ability to resist managerial pressure and uphold financial reporting integrity.

Lastly, leverage (LEV) is positively associated with earnings management, suggesting that highly leveraged firms may face stronger incentives to manipulate earnings in order to maintain debt covenants or reduce the perceived risk profile among creditors. This finding is consistent with Huang et al. (2015), who noted that leverage constraints often induce managers to engage in accrual-based earnings management to present a more favorable financial position.

Table 3. The Impact of CEO Power and Director & Supervisor Compensation in Loss-Making Firms on Earnings Management

	Model 1	Model 2	Model 3
(Constant)	-0.416	-0.560	-0.435
CEOP	0.228*** (7.162)	-	0.240*** (4.209)
DFcat	-	0.017** (2.467)	0.012*** (3.240)
CEOP X DFcat	-	-	0.016*** (4.237)
SIZE	0.040*** (4.341)	0.044*** (4.410)	0.041*** (4.372)
BHR	-0.001** (-1.775)	-0.002** (-2.182)	-0.001*** (-3.778)
INDR	-0.045*** (-3.249)	-0.035*** (-4.179)	-0.054*** (-2.294)
INST	0.003** (3.426)	0.004*** (3.980)	0.003*** (3.377)
LEV	0.002*** (2.959)	0.002*** (2.987)	0.002*** (2.909)
N	366	366	366
Adjusted- R²	0.194	0.080	0.190
F-Value	15.656	6.258	11.736

Note: (1)AEM is a dummy variable representing the discretionary accruals for firm i in period t ; CEOP refers to CEO power; DFcat represents director and supervisor compensation in loss-making firms; SIZE denotes firm size; BHR indicates the board and supervisor shareholding ratio; INDR represents the independent director ratio; INST refers to the institutional ownership ratio; and LEV denotes the leverage ratio. (2)Values in parentheses indicate p-values, where ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

5. Conclusions

This study focuses on a highly debated corporate governance issue, examining the complex relationship between CEO power, increased director and supervisor compensation in loss-making firms, and earnings management. Since this topic intersects with multiple aspects of corporate governance, business strategy, and financial reporting, the study systematically explores these issues. Accordingly, H1 is proposed to test whether CEO power positively impacts earnings management, investigating whether variations in CEO authority influence the likelihood of earnings management behavior. Furthermore, as director and supervisor compensation increases in financially distressed firms, it raises concerns about whether such increases are driven by self-serving motives rather than corporate interests. This leads to H2, which posits a positive relationship between increased director and supervisor compensation in loss-making firms and earnings management. Theoretically, when a company is already in financial distress, the CEO, being fully aware of the firm's financial status,

should act prudently. However, if compensation increases counterintuitively for directors and supervisors despite company losses, it contradicts corporate governance principles. Hence, H3 is formulated, proposing that CEO power and increased director and supervisor compensation in loss-making firms jointly contribute to earnings management behaviors, focusing on the interaction effect between these factors.

The findings of this study confirm the hypotheses through multiple linear regression analysis, demonstrating that greater CEO power is associated with a higher tendency for earnings management. Notably, the leverage ratio (LEV) also shows a significant positive relationship with earnings management, suggesting that firms with higher debt levels are more inclined to manipulate earnings. An intriguing finding of this research is that institutional ownership ratio (INST) positively correlates with earnings management, indicating that institutional investors may have limited influence in enhancing corporate governance.

From a governance perspective, if a firm experiences prolonged poor financial performance, it is advisable to start with CEO power adjustments to align authority with accountability. While increasing CEO power may enhance decision-making efficiency, it should be accompanied by strengthened monitoring mechanisms. The statistical results reveal that higher board and supervisor shareholding ratios (BHR) and independent director ratios (INDR) reduce the likelihood of earnings management, suggesting that effective oversight mechanisms may deter opportunistic behaviors. Therefore, this study recommends that firms facing financial distress improve governance structures by focusing on CEO power (CEOP), board and supervisor shareholding ratios (BHR), and independent director ratios (INDR).

Additionally, stakeholders should closely monitor director and supervisor compensation changes in financially distressed firms, as this study finds a significant positive relationship between increased compensation in loss-making firms and earnings management. Detecting corporate governance deficiencies early can help prevent self-serving behaviors by CEOs and board members, ensuring that financial reports accurately reflect corporate performance and avoiding irreparable financial damage. Ultimately, this study highlights the importance of corporate governance, emphasizing that each corporate role should contribute positively to governance practices to maintain transparency, accountability, and long-term sustainability.

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