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THE MODERATING EFFECTS OF OUTSIDE DIRECTORS ON THE RELATIONSHIP BETWEEN MANAGERIAL OVERCONFIDENCE AND EARNINGS MANAGEMENT: EVIDENCE FROM KOREA

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Abstract. The subjective judgment and discretionary actions of a manager can influence the core strategy, investment, operations, and decision-making of a company. Managerial actions from the top, particularly the board, plays a vital role in addressing this inclination. While scholars have shown interest in examining managers' overconfidence tendencies in recent years, few have explored the characteristics of the board members. According to the study, a high proportion of outside directors on the board of Korean companies has been observed to alleviate upward earnings management driven by managerial overconfidence. The obtained results emphasize the significance of the board of directors in enterprises and contribute to theories related to managerial characteristics. This study aims to bridge the research gap concerning managers' tendencies of overconfidence while expanding the existing knowledge in this field. Firstly, this study aims to address the need to identify cognitive characteristics of managers. Secondly, it investigates the impact of the board of directors' characteristics on managers' tendencies towards overconfidence.

Keywords: managerial overconfidence, outside directors, earnings management, board characteristics, management characteristics, corporate governance.

JEL Classification: M41, D03, G30.

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1. Introduction

Overconfidence, a trait that can be found among many managers, refers to the tendency to excessively believe in one's abilities and status. This characteristic can cause firms to make overly optimistic judgments about new investments, leading to negative cash flows (Hambrick & Fredrickson, 2001). The success and sustainability of the organization are impacted by the characteristics of its managers (Hermalin & Weisbach, 2012; Hitt et al., 2019). Research has consistently demonstrated the detrimental impact of managerial overconfidence on companies (Tversky & Kahneman, 1974; Heath & Tversky, 1991; Moore & Cain, 2007; Ben-David et al., 2007; Malmendier et al., 2011; Heavey et al., 2022). According to Malmendier et al. (2011), overconfidence is strongly correlated with increased risk-taking, the pursuit of aggressive growth strategies, and the tendency to disregard potential risks. These behaviors pose a threat to the long-term stability of a company (Roll, 1986; Heath & Tversky, 1991; Malmendier & Tate, 2005). In addition, managers' overconfidence propensity increases agent costs (Galari-

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otis et al., 2023) and causes over-investment (Alidadi et al., 2023) and bears a high acquisition price in the acquisition of an entity (Pavićević & Keil, 2021). On the other hand, there are studies that have reported some positive effects of overconfidence as well. According to a study conducted by Burkhard et al. (2023), managers' propensity for overconfidence positively influences corporate value. However, limitations arise due to the nature of meta-analytic data.

Outside directors play a crucial role in the boardroom as they are able to bring in fresh ideas, unbiased viewpoints, and diverse experiences (Fama & Jensen, 1983; Yermack, 1996; Dalton et al., 1998; Daily et al., 2003; Gerged et al., 2023). Unlike inside directors, who are typically part of the company's management team, outside directors have no direct connections to the organization, allowing them to provide an impartial evaluation of managerial decisions. In their role as impartial overseers, they have the ability to question the assumptions of managers and offer valuable oversight for potentially overconfident actions.

The purpose of this study is to investigate the impact of managerial behavioral traits on earnings management within firms and assess the potential of outside directors in mitigating managerial overconfidence in the corporate environment. This research aims to contribute to the ongoing discourse on corporate governance practices by highlighting the pivotal role that outside directors play in mitigating managerial overconfidence.

The paper is organized to seek a deeper understanding of how diverse and independent board compositions can enhance corporate decision-making processes, making them more resilient and resulting in sustainable business outcomes. The paper is organized as follows: The first section provides a theoretical examination of managers' tendency towards overconfidence and its relationship to earnings management. Moreover, it formulates hypotheses. The second section covers the research sample, variables, and methods employed. The confirmation of the hypotheses is substantiated by the quantitative research through multivariate regression analysis. In the third section, details of the results shall be presented. Finally, in the last section, a general discussion will be presented followed by conclusions.

2. Theoretical framework and hypotheses development

Managerial overconfidence refers to a cognitive bias in which a manager exhibits excessive confidence in their abilities and judgment. The manifestation of such behavioral characteristics can lead to biased decision-making, causing an inclination to overestimate project outcomes and underestimate potential risks. As a result, managers' overconfidence tendencies can significantly influence earnings management decisions and the portrayal of a company's financial performance through the manipulation and presentation of financial information (Roll, 1986; Malmendier & Tate, 2005, 2008; Graham et al., 2015). The propensity of managers plays a significant role in corporate decision-making, encompassing areas like product development, financial stability, investment decisions, and business expansion. In general, overconfident managers tend to believe they have control over adverse consequences due to their optimistic outlooks and overestimations of their abilities (Brown & Sarma, 2007).

Managers' cognitive characteristics in this context will likely lead them to make aggressive decisions, particularly when dealing with accounting estimates and discretionary judgments. Additionally, there may be several incentives for earnings management while preparing financial statements. The deliberate interventions of managers to manipulate reported earnings to influence stakeholders' decisions or personal gains are defined as earnings management (Schipper, 1989). According to Buckmaster (1997), companies have the potential to engage in both upward and downward earnings management. Upward earnings management is employed

for income smoothing when managerial performance exceeds compensation contract ceilings (Healy, 1985) and for delaying excessive performance reporting (Payne & Robb, 2000). Downward management occurs prior to stock repurchases at prices lower than market values (Vafeas et al., 2003), as well as for performing big-bath restructuring to enhance future performance under new management (Strong & Meyer, 1987; Pourciau, 1993; Godfrey et al., 2003).

On the other hand, when managers fail to achieve the company's objectives, they are motivated to practice upward earnings management (Bhojraj et al., 2009). This practice is employed to attain target profits (Hribar & Yang, 2016), generate positive market responses (DeAngelo, 1981; DeAngelo et al., 1994; Dechow et al., 1995, 1996), utilize deferred tax liabilities for tax avoidance (Badertscher et al., 2006), meet profit forecasts made by financial analysts (Dechow et al., 2000), and evade reporting losses. Managers are motivated to engage in upward earnings management due to their desire to report better performance than the actual results. Among the various motives for earnings management, the adjustment driven by overconfidence is especially sensitive to the incentives for increasing earnings. This is due to the fact that managers with tendencies of overconfidence are more likely to underestimate the possibility of detecting profit manipulation and hold optimistic expectations regarding future performance. As a result, their pronounced overconfidence may lead them to rely on subjective judgments instead of proper evaluation of the situation based on objective standards and outlooks.

This elevates the likelihood of making decision errors. Managers who display heightened overconfidence tend to have an optimistic outlook on the future and an inflated perception of their capabilities. Subjectivity in judgment can consequently lead to mistakes in decision-making, thus contributing to the adoption of upward earnings management practices. According to Hribar and Yang (2016), decisions fueled by overconfidence can subsequently result in inaccuracies in accounting information, an overestimation of corporate performance metrics, and an increase in incentives for upward earnings management.

In addition, managers with overconfidence tend to overestimate their abilities and make optimistic predictions about the future, ultimately leading to errors in predictions. They also tend to believe that the outcomes of their decisions will be better than average and that they have control over risks (Ben-David et al., 2013). The occurrence of overconfidence in managers can be attributed to the subjective nature of their decision-making, which is often influenced by the ease of making subjective judgments in certain environments. This often leads to frequent inefficient decisions (Baker & Wurgler, 2000). Moreover, managers can develop overconfidence post hoc due to factors such as enhanced confidence in performance, status, and compensation within the organization (Hayward & Hambrick, 1997).

Heaton (2002) and Hribar and Yang (2016) have discussed prediction errors resulting from managerial overconfidence in their respective studies. Prediction errors occur when the expected outcomes differ from the actual results. In this context, overconfidence can be seen as a type of misjudgment. Empirical analysis has shown that managers with overconfidence tendencies tend to overestimate their predictions and investment decisions, leading to significant prediction errors arising from their overconfidence. Managerial overconfidence may undermine corporate value, especially in the context of mergers and acquisitions, highlighting the necessity for a nuanced understanding of its implications on financial standing and refining strategic decision-making processes in the corporate landscape (Gu, 2023).

Errors in predictions are likely to stem from the previously mentioned overconfidence. First and foremost, errors tend to emerge in investment decisions. According to Jensen (1986), managers have a tendency to expand their businesses beyond the optimal scale rather than

maintaining an optimal size. Managers' tendency to pursue ambitious growth objectives, rather than practical ones, often leads to excessive investments and a growth trajectory that exceeds the sustainable capacity of the business. As a consequence, uncontrolled external expansion without considering the company's inherent size limitations can lead to higher capital costs and asset losses, ultimately undermining the overall corporate value. Managerial overconfidence, acknowledged as a pervasive factor in decision-making (Kumar & Prince, 2023), significantly shapes investment strategies within corporate contexts. This influence is particularly notable in the willingness of overconfident managers to engage in uncertain option investments (Lee et al., 2023). Such investment decisions, driven by an optimistic yet potentially misguided outlook, contribute to the observed impairment of corporate value, underscoring the intricate interplay between managerial psychology and financial outcomes in organizational settings.

The second type of prediction error, which is caused by overconfidence bias, involves overestimating earnings and underestimating losses. According to Schrand and Zechman (2012), it was found that companies operated by managers with strong overconfidence tendencies generate more accounting errors. As a result of such errors, overconfident managers tend to overestimate the company's future returns, leading to a delayed recognition of losses and less conservative accounting (Ahmed & Duellman, 2013).

Reported factors related to managers' overconfidence propensity include over-investment, decreased dividends, increased capital expenditure, higher debt ratio, increased accounting errors, reduced incentives for stock option exercises, interest in media exposure, and profit prediction. In addition, it has been reported that the managers' proclivity significantly impacts decision-making errors throughout the entire process of corporate management, including actual investments, accounting decisions, and capital raising. Managerial characteristics, such as overconfidence, are believed to affect decision-making errors that occur throughout the entire business management process, ranging from actual investment decisions to the procurement of capital and accounting decisions. Therefore, it is evident that overconfidence has a considerable impact on critical company decisions.

Contrary to conventional assumptions, recent meta-analysis results illuminate the favorable nexus between managerial overconfidence and firm performance (Burkhard et al., 2023), with an added dimension of risk alleviation noted in the findings (Sutrisno et al., 2023).

Boards plays a crucial role in corporate governance and decision-making within the company, providing oversight and guidance to executives and managers in order to ensure the effective and responsible achievement of corporate objectives (Fama & Jensen, 1983; Daily & Dalton, 1993, 1995; Finkelstein & D'aveni, 1994; Yermack, 1996; Eisenberg et al., 1998; Hermalin & Weisbach, 2001; Hillman & Dalziel, 2003; Adams & Ferreira, 2009). One of the key aspects of corporate decision-making is managers' overconfidence. The board of directors, particularly the outside directors, can play a crucial role in overseeing and balancing the decision-making of the managers. Their independent perspectives and expertise in diverse fields can aid in mitigating the adverse effects of managers' overconfidence in decisions related to earnings management. Therefore, comprehending the role of the board in the association between managerial overconfidence and earnings management becomes a significant focus in the field of corporate governance. According to the aforementioned theoretical framework, we can hypothesize the following:

H1: The overconfidence tendencies of managers have a significant impact on upward earnings management decisions.

Managers who are overconfident are expected to engage more in earnings management practices and adjust reported profits to align with their optimistic beliefs about the company's performance.

H2: As the proportion of outside directors within the board increases, the tendency for upward earnings management due to managerial overconfidence will decrease.

We hypothesize that the presence of outside directors, who challenge management decisions, weakens the impact of overconfident managers on upward earnings management decisions. This study aims to provide empirical evidence of the significant role of the board of directors in shaping earnings management decisions, and to examine its influence in the context of managers' overconfidence.

3. Samples, variables, and methods

3.1. Sample selection

The financial data used for this analysis was collected from TS2000, provided by the Korea Listed Companies Association, and DataGuide 5.0, provided by FnGuide.com. A total of 16,614 firm-year observations were downloaded from KRX-listed firms between 2012 to 2019. 9,958 observations were deleted for three reasons. First, to improve comparability, financial institutions and insurance companies were excluded from the study due to their differing financial structures compared to non-financial firms. Secondly, companies that had inappropriate audit opinions or fiscal year-end dates other than December were excluded. Third, industries and years with fewer than 10 observations were omitted from the sample because estimating earnings management types through cross-sectional analysis would not be appropriate with such a small sample size. The final dataset consists of 6,656 firm-year observations, based on these criteria.

3.2. Variables

Schrand and Zechman (2012) defined managerial overconfidence, with the level of financial activity as the basis. The criteria for assessing overconfidence in financial activity levels are as follows: 1) surpassing the industry median for overinvestment, 2) demonstrating a strong propensity for mergers and acquisitions, 3) maintaining a debt ratio (total debt/equity) higher than the industry average, 4) showing a preference for riskier debt and long-term borrowing, leading to the issuance of convertible bonds or preferred stock, and 5) displaying a preference for investment over dividends, resulting in a dividend ratio of 0 for companies with overconfident managers. In this study, companies were classified as exhibiting managerial overconfidence if they met at least 2 out of the 5 criteria at the firm-year level in a given year.

The details are as follows. First, we utilized the methodology proposed by Schrand and Zechman (2012) to identify instances of excessive managerial investment. We initiated our analysis by performing a regression analysis to extract residuals, with the growth rate of total assets as the dependent variable and sales as the independent variable. If the resulting residual value exceeds the industry-specific median, we assign a value of 1 to the company-year, indicating active investment and a pronounced sense of managerial overconfidence. A value of 0 was assigned for the remaining company-years. A value exceeding the median indicates a higher proportion of investment allocated to asset expansion compared to other firms within the same industry.

Secondly, Malmendier and Tate (2005) proposed that managers with high tendencies of overconfidence are more likely to display a proactive inclination towards engaging in mergers and acquisitions (M&A) with other firms. It is important to note that M&A activities in domestic companies often lack transparent disclosure of cash outflows. Therefore, we considered the presence of net cash outflows associated with M&A as a crucial criterion in this study. We assigned a value of 1 to indicate company-years with a high level of managerial overconfidence when net cash outflows were identified. Conversely, a value of 0 was assigned when net cash outflows were absent, indicating company-years with low managerial overconfidence.

Thirdly, we employed a specific measure based on prior research that suggests managers with tendencies toward overconfidence often prefer debt issuance over capital injections or asset sales to fund their business operations (Heaton, 2002; Malmendier et al., 2011). Schrand and Zechman (2012) define a company-year as exhibiting high managerial overconfidence if its debt ratio exceeds the average debt ratio of other firms within the same industry. Managers with a strong inclination for overconfidence tend to overestimate profitability, which leads to excessive investments, resulting from their optimistic outlook. Therefore, if the debt ratio (total debt/total equity) surpasses the industry average, we assign a value of 1, indicating a company-year with high managerial overconfidence. A value of 0 was assigned for all other company-years.

Fourthly, we found that companies issuing convertible bonds or preferred shares demonstrate strong managerial overconfidence annually. In their study, Schrand and Zechman (2012) regarded firms that resorted to the issuance of convertible bonds or preferred shares as possessing a disadvantageous characteristic similar to perpetual debt when compared to common shares. During those company-years, robust managerial overconfidence was indicated as they associated these companies with higher risk due to such issuance. In this study, we classified company years with the issuance of convertible bonds or preferred shares as indicative of strong managerial overconfidence.

Fifthly, Ben-David et al. (2013) and Schrand and Zechman (2012) presented prior research suggesting that managers with overconfidence tendencies tend to avoid paying dividends. Accordingly, if there was a year in which a company did not decide to distribute dividends, we assigned that company-year a value of 1, indicating a company-year with strong managerial overconfidence.

This study identified company-years with at least two met criteria as having strong tendencies of managerial overconfidence, based on the five criteria related to investment and financial activities discussed earlier.

To measure overconfidence, we utilized established criteria (Schrand & Zechman, 2012; Seo & Lee, 2021; Seo, 2022). Especially, Seo and Lee (2022) conducted a comparative analysis of the measurement method, emphasizing its superiority in representing relevant variables compared to alternative metrics. Research indicates that managers' overconfidence propensity is associated with various factors, including overinvestment, reduced dividends, increased capital expenditure, higher debt ratio, accounting errors, decreased incentives for stock option exercise, interest in media exposure, and profit prediction. Additionally, it has been reported that the propensity of managers affects errors in decision-making throughout the entire process of corporate management, including actual investments, accounting decisions, and capital raising. Therefore, it is clear that one characteristic of managers, the tendency to overconfidence, profoundly impacts the important decision-making processes of a company.

We used the performance-adjusted model proposed by Kothari et al. (2005) as a proxy for earnings management. Additionally, to minimize potential measurement errors in the

equation suggested by Kothari et al. (2005), we included ROA (Return on Assets). Specifically, we estimated the regression equation, similar to Equation (1), at the industry-year level using an industry sample that contained over 10 observations.

$$\frac{TAC_{it}}{Asset_{it-1}} = \beta_1\left(\frac{1}{Asset_{it-1}}\right) + \beta_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{Asset_{it-1}}\right) + \beta_3\left(\frac{PPE_{it}}{Asset_{it-1}}\right) + \beta_4 ROA_{it-1} + \epsilon_{it}, \quad (1)$$

where: TACC – Total accruals (Net income – cash flow from operations); Asset – Total Assets; Δ REV – Change in Sales; Δ REC – Changes in accounts receivables; PPE – Property, Plant, Equipment; ROA – Return on assets.

Based on agency theory, the role and responsibilities of the board of directors involve monitoring personal interests of the executives, maintaining an independent position with regards to corporate mergers and management changes, and reducing agency costs. Independent outside directors exercise effective control over top executives, acting on behalf of shareholders by monitoring and controlling management and evaluating corporate performance (Fama & Jensen, 1983; Rosenstein & Wyatt, 1990). Finkelstein and Mooney (2003) suggest that the composition of the board, whether consisting of internal members or not, may face challenges in expressing dissenting views against their superiors, specifically top executives. Conversely, outside members who are formally independent of the management are more likely to provide objective opinions, thereby enhancing the effectiveness of executive control.

The characteristics of the board of directors have been studied in relation to earnings management (Zalata et al., 2022; Le & Nguyen, 2023; Usman & Yahaya, 2023). Gender, age, and knowledge are factors that were found to be related to earnings management. According to prior research, the independence of a board of directors is determined by calculating the ratio of outside directors. This variable quantifies the proportion of directors on the board who are considered as outside directors, meaning they have no affiliation with the executives or employees of the company. Outside directors are independent of the company's management and are expected to provide unbiased oversight and strategic guidance. A higher ratio of outside directors indicates a greater level of independence in the decision-making processes of the board, which is often considered a key indicator of governance in corporate governance research. In this study, the following Equation (2) was used to measure the proportion of outside directors.

$$ROD_{it-1} = \text{Number of outside directors / Number of registered directors.} \quad (2)$$

3.3. Research methods

The purpose of Equation (3) is to analyze the effect of managerial overconfidence on earnings management. Our regression model considers managerial overconfidence as the primary independent variable of interest and earnings management as the dependent variable. We have included other relevant factors as control variables that could potentially influence the decisions regarding earnings management. These control variables include tangible assets (TANG), foreign ownership (FOR) as a proxy for investment structure, the leverage ratio (LEV) as a proxy for default risk, company size (SIZE) represented by the natural logarithm of total assets, cash flow from operating activities divided by total assets (CFO), the growth ratio of assets (GRA) as a proxy for future growth options, industry fixed effects (IND) and year fixed effects (YD). The independent variables used in our analysis were sourced from previous

studies on earnings management (Jones, 1991; Dechow et al., 1996; Healy & Wahlen, 1999; Seo, 2022).

$$AEM_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 TANG_{it} + \beta_3 FOR_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \beta_6 CFO_{it} + \beta_7 GRA_{it} + \sum IND + \sum YD + \epsilon_{it}, \quad (3)$$

where: **Dependent variables** AEM – Abnormal accruals earnings management, suggested by Kothari et al. (2005); **Variable of our interest** OC – Overconfidence, suggested by Schrand and Zechman (2012).

The purpose of Equation (4) is to examine how the proportion of outside directors moderates the relationship between OC and AEM. By incorporating this interaction term into our regression analysis, we aim to comprehensively assess the dynamic interplay between the presence of independent outside directors and managerial overconfidence, along with their influence on the decision-making process for earnings management within a corporate context. This investigation enables us to quantitatively assess the critical role of outside directors as a governance mechanism that can potentially mitigate the influence of overconfident managers on financial reporting practices. In employing this analytical approach, the main aim is to provide robust empirical evidence that highlights the crucial significance of board composition in effectively addressing biases that may arise from managerial overconfidence.

$$AEM_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 ROD_{it} + \beta_3 OC_{it} \times ROD_{it} + \beta_4 FOR_{it} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 CFO_{it} + \beta_8 GRA_{it} + \sum IND + \sum YD + \epsilon_{it}, \quad (4)$$

where, **Variable of our interest** ROD – Ratio of outside directors.

3. Result

The Korean National Statistical Office's Korean Standard Industrial Classification (10th edition) was used to classify sample companies by industry. The sample included 15 industries: construction, wholesale and retail, transportation and warehousing, professional, science and technology services, information and communication, and manufacturing. These industries comprised 200 (3.00%), 612 (9.19%), 86 (1.29%), 229 (3.44%), 645 (9.69%), and 483 (7.25%) companies, respectively. Manufacturing accounted for approximately 4,884 (73.38%) of the total. The average number of employees in the sample was 852.18, and the average lifespan was 15.40 years. Regarding the sample characteristics, these figures provide insights into the workforce scale and the longevity of the entities under consideration, shedding light on key aspects of the organizations that were covered by this study. The sample belongs to an industry with more than 10 industry-specific yearly observations. Table 1 shows the results of the correlation between the descriptive statistics and the variables. The examination of descriptive statistics and correlations has led to several conclusions regarding the relationships between the variables.

The analysis results indicate a meaningful relationship between the variables. The OC shows a relationship between overconfidence to AEM and the ROD. These insights reveal the dynamics between managerial behavior, board composition, and financial reporting practices within Korean companies. VIF tests were conducted to assess multicollinearity. The average VIF value observed was 1.02, while the most correlated variables had a value of 1.15. This suggests that multicollinearity does not exert a significant influence on our results.

Table 1. Descriptive and correlation data

	1	2	3	4	5	6	7	8	9
1. AEM	1								
2. OC	.056***	1							
3. ROD	.054***	–.064***	1						
4. TANG	–.020	–.068***	–.056***	1					
5. FOR	–.013	.053***	–.037***	–.052***	1				
6. LEV	–.167**	–.039***	.067***	.047***	–.173***	1			
7. SIZE	–.091***	–.060***	.057***	.035***	.258***	.129***	1		
8. CFO	–.020*	.043***	.014	–.070***	.155***	–.162***	.145***	1	
9. GRA	.085***	.173***	–.048***	–.036***	.019	–.033***	.036***	.023***	1
Min	–0.5772	0.0000	0.0000	0.0000	0.0000	0.0035	22.6847	–.0684	–.8186
Max	0.4641	1.0000	0.8571	22.3764	74.2400	3.4299	31.1009	0.6191	4.8591
Mean	–0.0047	0.1720	0.3513	0.4573	5.3047	0.3876	25.6636	0.0385	0.0584
SD	0.0926	0.3774	0.1434	0.6075	9.1141	0.2066	0.9634	0.0853	0.2459

Notes: Definitions of Variables
AEM – Accruals computed from the performance adjusted model, suggested by Kothari et al. (2005); OC – Overconfidence; ROD – Ratio of outside directors; TANG – Tangible assets/ sales; FOR – Foreign ownership; LEV – Leverage ratio (total liabilities / total assets); SIZE – Size of a company(In total assets); CFO – Cash flow of operating / total assets; GRA – Growth ratio of assets.
***, **, * t test indicate significance level at 1%, 5%, 10% respectively.

The research results using multivariate OLS regression analysis are presented in Table 2.

Table 2. Multvariate OLS regression analysis

DEP.V / Indep.V	AEM			
	Model 1		Model 2	
	Coef	t-value	Coef	t-value
Intercept	4.012	4.012***	1.664	1.519
OC	0.008	2.766***	0.026	3.657***
ROD			0.053	5.677***
OC × ROD			–0.050	–2.579***
TANG	–0.001	–0.631	–0.001	–0.320
FOR	0.000	–1.654*	0.000	–1.558
LEV	–0.076	–13.443***	–0.076	–13.547***
SIZE	–0.005	–4.349***	–0.006	–4.835***
CFO	–0.047	–3.470***	–0.045	–3.340***
GRA	0.030	6.563***	0.031	6.660***
Industry dummy	included		included	
Year dummy	included		included	
F	31.250***		31.426***	
Adj.R2	0.043		0.048	
N	6,656			

Note: ***, **, * t test indicate significance level at 1%, 5%, 10% respectively.

Model 1 is dedicated to the testing of Hypothesis 1. Through this process, we have found a positive association between AEM in OC. The relation between AEM in OC is statistically significant at a significance level of 1%. It was found that overconfident managers tend to overestimate the company's performance measures by underestimating the optimistic outlook for performance in the next year and the possibility of detecting AEM. Therefore, the correlation between OC and reported income raises concerns about the quality and reliability of financial reporting. Taken together, the results suggest that higher levels of managerial overconfidence are associated with an increase in AEM, which is consistent with hypothesis 1.

Model 2 is dedicated to the testing of Hypothesis 2, revealing a negative relationship in the interaction term (OC × ROD). The importance of the relationship between AEM in (OC × ROD) is underscored by its statistical significance at a significance level of 1%. These results demonstrate that an independent board of directors can effectively mitigate AEM arising from OC, providing a crucial counterbalance that strengthens control over AEM practices. Furthermore, these findings confirm Hypothesis 2 and further corroborate that the interaction between ROD and OC indeed produces a negative relationship. This aligns with the expectation for a more controlled approach to earnings management.

4. Discussion

Our research examined the prevalence of managerial overconfidence and its potential impact on earnings management. Our findings support the idea overconfident managers may engage in earnings management practices. Our study aligns with several previous research efforts that have explored the relationship between managerial overconfidence and its impacts on various aspects of corporate behavior. Malmendier and Tate (2005) provided valuable insights into the prevalence of managerial overconfidence, as well as significant information about its potential consequences. These studies have successfully established a link between overconfidence and earnings management, which is consistent with the findings presented in this study. They underscore the necessity for a deeper understanding of managerial overconfidence and its implications for corporate outcomes, further highlighting the significance of our research in this area. Both upward and downward incentives exist for earnings management; however, managers' overconfidence tends to be more influenced by upward incentives, leading to an asymmetry. This occurs because significant downward profit incentives often arise during exceptional circumstances, such as abnormally high or low operating performance, or in the case of managerial replacements. However, upward earnings management, which involves meeting target profits, reducing taxes, and manipulating stock prices, may occur on a daily basis.

Furthermore, managers who tend to be overconfident are likely to possess an optimistic outlook for future performance and generally overestimate their abilities, naturally becoming more inclined towards the immediate effects of upward earnings management rather than the delayed effects caused by downward adjustment. Overconfident managers are also likely to underestimate the risks of detection, as well as the potential side-effects that may accompany earnings management. Thus, the findings suggest that managers with tendencies towards overconfidence are more likely to experience increased profits.

Furthermore, there has been significant focus in corporate governance research on the role of outside directors as a moderating factor in the context of managerial overconfidence. The works of Daily et al. (2003) and Fama and Jensen (1983) have scrutinized the effectiveness of outside directors in enhancing board independence and decision-making. Our

study empirically demonstrates that outside directors can effectively mitigate the influence of managerial overconfidence on firm performance, thus proving their role as a governance mechanism, all while building on this foundation. This finding supports Yermack's (1996) proposal that a diverse and independent board of directors is crucial in mitigating potential biases that may arise from overconfident managers.

Our research significantly contributes to the corporate governance literature by shedding light on the complex relationship between managerial overconfidence, earnings management, and the influential role of outside directors in shaping corporate behavior. This enhanced understanding of corporate behavior has practical implications for organizations, emphasizing the need for careful consideration when structuring the board of directors, especially in situations involving overconfident managers. It ensures effective oversight and governance, particularly in the context of diverse business environments that possess unique characteristics. Additionally, the tendencies of overconfidence are more prevalent, and the significant impact of outside directors on earnings management could be most pronounced, especially when they cater to the unique characteristics of diverse business environments. This aligns with the suggestion put forth by Adams et al. (2010) for future research to delve into the specifics of various governance mechanisms, assessing their effectiveness in mitigating the adverse effects of managerial overconfidence and enhancing overall corporate performance.

5. Conclusions

This study emphasizes the crucial role played by the board of directors, specifically the outside directors, in managing the overconfidence tendencies of managers and their influence on decision-making regarding earnings management. Our examination of the relationship between managers' overconfidence and earnings management has revealed significant insights. The results of this study indicate that managers' tendencies of overconfidence can indeed influence earnings management decisions, consequently resulting in biased reporting and excessively optimistic portrayals of company performance. However, a key finding reveals that the negative consequences of managerial overconfidence can be effectively mitigated by the presence of outside directors on the board. Their independent perspectives and diverse expertise act as vital checks and balances, offering crucial insights, challenging management decisions, and ensuring a more rational and objective approach to earnings management.

The empirical evidence strongly supports the critical role of the board in shaping earnings management decisions, especially in the context of managerial overconfidence. As organizations strive for sustainable growth and financial stability, it is imperative for boards to carefully consider their member composition, paying special attention to including independent outside directors. By fostering a diverse and knowledgeable board of directors, companies become better equipped to address challenges that arise from managerial overconfidence, thereby increasing overall decision-making efficiency. The crucial role of the board in managing managers' overconfidence is paramount for the sustained success of companies. By cultivating a culture of meticulous decision-making and independence, the board can guide companies toward improved financial performance and the creation of enduring value. To enhance effective corporate governance, we recommend both appointing qualified outside directors and cultivating a culture of active involvement in reviewing financial practices. In the pursuit of continued growth and value creation, an attentive board is indispensable in navigating the complexities of managerial behavior and steering companies toward long-term success.

While this study provides valuable insights into corporate governance and decision-making, there are still opportunities for further research. Further investigation should delve into additional factors that can potentially mitigate the relationship between overconfidence and earnings management by exploring specific mechanisms that have a significant influence on managers' decision-making. By combining the insights from this study with ongoing research, this comprehensive approach will undoubtedly contribute to a more robust understanding of how managerial overconfidence impacts corporate behavior, and how effective governance mechanisms can counteract these effects.

This study has certain limitations that warrant acknowledgment. The restricted nature of our sample, confined to specific regions or industries, may hinder the broader generalization of our findings. Additionally, the validity of the examined role of external directors may be contingent on specific conditions, thereby limiting its applicability across diverse scenarios. Furthermore, the challenge arises from the impact of external environmental factors on managerial behavior, introducing difficulties in achieving effective control. Recognizing these limitations is crucial for a comprehensive understanding of the study's scope and implications.

Further research considers the following. This study emphasizes the crucial role of the board of directors, specifically the external directors, in overseeing managerial overconfidence and its effect on decisions regarding earnings management. Our research shows that when managers are overly confident, they tend to report information in a biased and overly positive way. However, having outside directors helps to balance this behavior by promoting a more logical decision-making process. To achieve sustainable growth, companies shall prioritize having a diverse board with independent outside directors to improve decision-making and tackle issues related to overconfident management.

To strengthen corporate governance, we support the hiring of experienced external directors and promoting a culture of active evaluation of financial practices. There is still plenty of opportunity for future studies to investigate other factors that could affect the connection between overconfidence and earnings manipulation. By combining the findings of this study with current research, we can achieve a better understanding and identify effective governance strategies to mitigate the effects of managerial overconfidence.

Author contributions

All authors made the same contribution to the article. All authors have read and agreed to the published version of the manuscript.

Disclosure statement

The authors declare no conflict of interest.

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