An Impact of the Internal Paygap among Listed Company Executives on Earnings Management

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Abstract

The separation of ownership and management rights in modern enterprises leads to principal-agent problems. As an effective incentive tool, management compensation contracts have gradually attracted more and more attention to the consequences caused by their unfairness. This article selects China's Shanghai and Shenzhen A-share listed companies from 2010 to 2021 as the initial research sample to explore the impact of executive internal pay gaps on earnings management. The research results show that the internal pay gap among executives promotes corporate earnings management behavior; the heterogeneous institutional investors and heterogeneous top management teams fault zone play the moderating role in the relationship between the pay gap and earnings management. After the robustness and endogeneity test, the above conclusion remain unchanged. Companies should improve their salary setting and salary information disclosure systems, and at the same time give full play to the role of external supervision and internal governance to help companies improve their earnings quality.

Keywords: Salary Contract, Earnings Management, Institutional Investors, Fault Zone

1. Introduction

1.1 Background and Importance of the Problem

Due to the separation of ownership and management rights of modern enterprises, the principal-agent problem has always been the focus of research in the field of modern enterprise management. Shareholders hand over management rights to management and entrust their agents to make decisions, which is conducive to improving the professionalism of business operations. However, conflicts of interest arise between the two parties due to differences in interest demands, information asymmetry, and agency conflicts, thereby damaging the company's value and affecting the enterprise—long-term development (Berle & Means, 1932). Incentives are an important channel to alleviate agency problems caused by the separation of ownership and management rights. Incentive mechanisms such as salary, equity, and bonuses have become a common choice for listed companies (Jensen & Murphy, 1990; Laffont & Martimort, 2002). However, these compensation contract design mechanisms related to accounting earnings or stock prices may induce company executives to choose to manipulate earnings data, whitewash financial statements, and manipulate earnings data through various methods and channels to maximize profits under the conditions of information asymmetry. they were ultimately increasing their relative compensation (Edmans & Gabaix, 2016). To sum up, this paper systematically explores the impact of the internal pay gap of executives on accrued earnings management and real earnings management. In addition, this study

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incorporates the heterogeneous institutional investors and heterogeneous top management team fault zone into the research framework and analyzes the moderating role they play in the impact of internal executive pay gaps on corporate earnings management.

1.2 Research Question

1) In the Chinese cultural context, what impact does the internal pay gap of senior executives have on accrued earnings management and real earnings management.

2) Whether institutional investors and top management teams fault zone play the moderating role between the internal pay gap of executives and corporate earnings management. An empirical study is conducted based on the two perspectives of external governance mechanisms and internal characteristics of management.

1.3 Research Objective

This study incorporates the heterogeneous institutional investors and heterogeneous top management team fault zone into the research framework and analyzes the moderating role they play in the impact of internal executive pay gaps on corporate earnings management.

2. Literature Review

2.1 Related Concepts and Theories

According to the principal-agent theory, the separation of enterprise ownership and management rights under the modern enterprise system leads to conflicts of interest and contradictions between company operators and owners in the process of maximizing their interests. Managers often seek personal gain out of self-interest motives. (Jensen & Mecking, 1976). At the same time, under multiple pressures such as salary contracts, careers, and performance appraisal pressures, management has incentives to profit for themselves through various channels, such as through inefficient investments, mergers and acquisitions, and tax avoidance behaviors to divert the value of shareholders and companies to themselves. part of the income, damaging corporate value (Li et al., 2022). The pursuit of maximizing personal interests can also be achieved through the manipulation of financial data such as earnings management (Cohen et al., 2008), accounting manipulation (Efendi et al., 2007), accounting fraud (Hass et al., 2016), etc. Among them, compared with accounting fraud and other behaviors, earnings management is one of the most common and secretive accounting manipulation methods used by managers. The enhancement of China's national supervision and the improvement of accounting standards have made it increasingly difficult for executives to hide how they manipulate accrued earnings management to achieve their personal goals. Therefore, real earnings management, as another means of earnings management, has become increasingly popular in recent years.

There are currently two contradictory theories on the impact of executive pay gap on earnings management: tournament theory and behavioral theory. Tournament theory identifies the positive role executive pay gaps play in inhibiting earnings management. When the pay gap between different executives within the enterprise widens, it will reduce the collusion and cooperation of executives and thereby inhibit earnings management behavior (Yu & Feng, 2010). At the same time, a large pay gap attracts more attention from external information agencies such as analysts and the media, which will improve the company's external supervision quality and corporate governance level to a certain

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extent, and can also reduce earnings management (Miller, 2006; Yang et al., 2019).

However, compared to the incentive effect produced by tournament theory in the executive decision-making process, behavioral theory believes that people will feel the fairness and rationality of distribution through comparison with the same or similar and available reference objects. Once they perceive unfairness, individuals will adjust their perception of inputs or outputs, change their actual inputs or actual benefits to relieve the tension caused by unfairness, thereby in turn negatively affects the teamwork, productivity and profitability of the business(Kini & William, 2012; Firth et al., 2015).

2.2 Literature Surveys and Research Hypothesis

This article believes that compared with the incentive effect produced by tournament theory in the decision-making process of executives, counter-incentive behavior caused by executive pay gaps is more common under China's tradition of emphasizing fairness(Cui, 2022). The executive pay gap is more likely to bring unfairness and exploitation to executives, thereby exacerbating executives' earnings management motivation and increasing the degree of corporate earnings management. Therefore, this article puts forward the following hypotheses:

H1a: The greater the pay gap among executives, the higher the degree of accrued earnings management.

H1b: The greater the pay gap among executives, the higher the degree of real earnings management.

The earnings management behavior of executives due to unfair pay will be affected by corporate governance mechanisms. The share of institutional investors in the capital market continues to rise and they play an active role in corporate governance, which can alleviate the agency problem between shareholders and executives and effectively reduce the opportunistic behavior of executives (Garel et al., 2021).

Compared with ordinary institutional investors, pressure-resistant institutional investors, as external shareholders who pursue the long-term value of the company, tends to spend more time and resources understanding the dynamics of the enterprise and fishery decisions and behaviors. Meanwhile, as the common shareholder of multiple companies, they have a greater voice and can exert greater pressure on major shareholders or the board of directors in terms of the appointment and removal of senior executives (He et al., 2019), thus inhibiting executives' earnings management behavior.

The preference for short-term interests makes pressure-sensitive institutional investors inclined to stop investing in time once they believe that the cost of investment cannot bring expected returns, and therefore are relatively passive in participating in corporate governance and supervising management behavior (Dong & He, 2016). Therefore, this article believes that pressure-resistant institutional investors and pressure-sensitive institutional investors play different moderating roles in the impact of the executive pay gap on earnings management. Therefore, this article proposes the following hypothesis:

H2: Compared with pressure-sensitive institutional investors, only pressure-resistant institutional investors can inhibit the promotion effect of the executive pay gap on earnings

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management.

The fault zone of the senior management team is a set of virtual dividing lines that divide the team into different subgroups based on characteristics such as gender, age, shareholding ratio, etc. According to different individual characteristics, team fault zones can be further divided into two types: social classification characteristic fault zones formed by the innate trait differences of group members and task-related fault zones formed by differences in work tasks and professional background knowledge and opinions class (Williams & O'Reilly, 1998). Social categorization fault lines often cause individuals with different characteristics in the team to stereotype each other and trigger group bias (Bezrukova, 2009), exacerbating the sense of unfairness already caused by excessive internal pay gaps. The task-related fault zone means that the cognition within the executive team with different educational and work backgrounds is quite different, and they can brainstorm ideas in the decision-making process (Liang et al., 2020), increase the information content within the team, so that reduce the executive team's irrational decision-making and providing a stricter supervisory environment to reduce the occurrence of earnings management behavior.

Therefore, this paper believes that social categorization fault zones and task-related fault zones play different moderating roles in the impact of the executive pay gap on earnings management, and proposes the following hypothesis:

H3a: Social classification fault zones strengthen the promotion effect of the executive pay gap on earnings management.

H3b: Task-related fault zones inhibit the promotion effect of the executive pay gap on earnings management.

3. Research Methodology

3.1 Research Design

This article used the initial research sample to explore the impact of executive internal pay gaps on earnings management.

3.2 Population and Sample

This article selects China's Shanghai and Shenzhen A-share listed companies from 2010 to 2021 as the initial research sample. After screening the original data, a total of 19,801 valid observation samples were obtained. To avoid the interference of extreme values on the research conclusions, this article performs a two-sided 1% winsorization process on all continuous variables involved. The relevant data involved in this article all come from the CSMAR database, and data processing is implemented through Excel and Stata software.

3.2 Variable Measurement

3.2.1 Interpreted Variables

(1) Accrual earnings management

The article uses the modified Jones model to calculate controllable accruals as a measurement indicator of accrual earnings management. First, refer to the research of Dechow et al.

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(1995), use the Jones model to estimate the coefficients for industry and annual samples, then substitute the estimated coefficients into the model, and use the modified Jones model to calculate controllable accruals.

$$\frac{TA_{i,t}}{Ass_{i,t}} = \alpha_1 \frac{1}{Ass_{i,t-1}} + \alpha_2 \frac{\Delta Rev_{i,t}}{Ass_{i,t-1}} + \alpha_3 \frac{Ppe_{i,t}}{Ass_{i,t-1}} + \varepsilon_{i,t}$$

$$DA_{i,t} = \frac{TA_{i,t}}{Ass_{i,t}} - (\alpha_1 \frac{1}{Ass_{i,t-1}} + \alpha_2 \frac{\Delta Rev_{i,t} - \Delta Rec_{i,t}}{Ass_{i,t-1}} + \alpha_3 \frac{Ppe_{i,t}}{Ass_{i,t-1}})$$

i is the company, t is the year; DA is the controllable accrued profit, TA is the total accrued profit, Ass is the total assets, ΔRev is the change in operating business income, Ppe is the net value of fixed assets, ΔRec is the company's should The change in accounts collected, ε is the residual. The study mainly focuses on the scale rather than the direction of earnings management, so the absolute value of DA is taken. The larger the value, the higher the degree of accrued earnings management.

(2) Real earnings management

This article refers to the model of Roychowdhury (2006) and uses abnormal cash flow, abnormal product costs, and abnormal discretionary expense measurements in the company's operating activities to estimate real earnings management.

$$\frac{Cfo_{i,t}}{Ass_{i,t-1}} = \beta_1 \frac{1}{Ass_{i,t-1}} + \beta_2 \frac{Sal_{i,t}}{Ass_{i,t-1}} + \beta_3 \frac{\Delta Sal_{i,t}}{Ass_{i,t-1}} + \emptyset_{i,t}$$

$$\frac{Pro_{i,t}}{Ass_{i,t-1}} = \gamma_1 \frac{1}{Ass_{i,t-1}} + \gamma_2 \frac{Sal_{i,t}}{Ass_{i,t-1}} + \gamma_3 \frac{\Delta Sal_{i,t}}{Ass_{i,t-1}} + \gamma_4 \frac{\Delta Sal_{i,t-1}}{Ass_{i,t-1}} + \varphi_{i,t}$$

$$\frac{Dis_{i,t}}{Ass_{i,t-1}} = \delta_1 \frac{1}{Ass_{i,t-1}} + \delta_2 \frac{\Delta Sal_{i,t-1}}{Ass_{i,t-1}} + \mu_{i,t}$$

REM=PRO-CFO-DIS

3.2.2 Explanatory Variables

Drawing on the research of Dong and Pan (2020), this article uses the ratio of the average salary of core executives to the average salary of remaining executives to measure the internal salary gap among executives. Core executives are defined as the top three highest-paid directors, supervisors, and executives.

The average salary of core executives = salary of top three executives/3

Average remuneration of remaining executives = (Total executive remuneration - Core executive remuneration) / (Total number of executives - 3)

Inter-executive pay gap = average pay of core executives/average pay of remaining executives

3.2.3 Adjustment Variables

(1) Institutional investors

From the perspective of heterogeneous institutional investor shareholdings, based on the research of Peng & Zhang (2022), the article classifies institutional investors into pressure-resistant institutional investors and pressure-sensitive institutional investors based on whether they have commercial relationships with enterprises. Pressure-resistant institutional investors do not have commercial relations with enterprises, and are measured by the sum of shareholding ratios of securities investment funds, social security funds, and QFII; pressure-sensitive institutional investors

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have commercial relations with enterprises and are measured by insurance companies, trust companies, and securities dealers. Measured by the sum of shareholding ratios of products, financial companies, and other institutions.

(2) Senior management team fault zone

This article draws on Hutzschenreuter & Horstkotte (2013) to study the definition of the task fault zone of the executive team and uses the tenure and academic qualifications of senior management members as the basis for dividing the task fault zone of the executive team. The tenure is measured by the length of time the executive has served in his or her team. If the tenure is less than 1 year, the tenure is 0; the educational background refers to the highest degree obtained by the executive during the statistical period, including junior college or below, junior college, bachelor's degree, master's degree, and There are five categories of doctorates, assigned values 1-5 respectively. Existing research usually uses three physiological attributes such as gender, age, and race to measure social classification fault zones. However, since the race variable is not obvious in this study, it is only measured by two indicators: gender and age. Gender is divided into two categories: male and female. In the corresponding gender category, a value of 1 or 0 is assigned; age is measured by dividing the member's actual age by 10.

For the measurement of the fault zone of the senior management team, this article uses the current mainstream method in the academic circle, drawing on the measurement formula of Thatcher et al. (2003), and uses the ratio of the sum of squares between sub-team groups to the overall sum of squares to examine the strength of the fault zone of the senior management team.

$$Fau = \frac{\sum_{j=1}^{q}\sum_{k=1}^{2} n_k^{|}(\bar{x}_{jk} - \bar{x}_j)^2}{\sum_{j=1}^{q}\sum_{k=1}^{2}\sum_{i=1}^{n_k^g}(x_{ijk} - \bar{x}_j)^2}, \quad g=1, 2, \ldots, S$$

Among them, n represents the total number of senior management members; q represents the total number of characteristic values under investigation; g represents the classification method; n_k^g represents the number of members in subgroup k under the 9th classification method; $\bar{x}_j$ represents the characteristics of all senior management members; $\bar{x}_{jk}$ represents the average value of the members in sub-team k on feature j; x_{ijk} represents the value of the i-th member in sub-team k on feature j. Fau represents the strength of the fault zone of the senior management team. The larger the value, the higher the strength of the fault zone. The value is the maximum value under all classification methods.

3.2.4 Control Variables

Referring to previous relevant research, this research selected seven main business related control variables include the natural logarithm of the company's total assets (Size), the company's listing age (ListAge), the ratio of total liabilities to total assets (Lev), the ratio of net profit to average total assets (ROA), the revenue growth rate (Growth) and the ratio of book value to total market capitalization (BM). This article also controls year-fixed effects and industry-fixed effects respectively. Among them, the year is the research period of this article, which is 2010-2021; the industry adopts the 2012 industry classification standards of the China Securities Regulatory Commission. The manufacturing industry is subdivided into secondary indicators and other industries are not subdivided.

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3.3 Model Settings

To examine the impact of the internal executive pay gap on earnings management, and at the same time, to better explore the role of institutional investor heterogeneity and top management team fault zone heterogeneity in the relationship between the executive pay gap and earnings management, this paper constructs The following model performs regression:

$$DA_{i,t}/REM_{i,t} = \alpha_1 Exp_{i,t} + \alpha_2 Size_{i,t} + \alpha_3 ListAge_{i,t} + \alpha_4 Lev_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 Growth_{i,t} + \alpha_7 BM_{i,t} + \alpha_8 Oc_{i,t} + Year + Ind + \varepsilon_{i,t}$$

$$DA_{i,t}/REM_{i,t} = \beta_1 Exp_{i,t} \times Adj_{i,t} + \beta_2 Size_{i,t} + \beta_3 ListAge_{i,t} + \beta_4 Lev_{i,t} + \beta_5 ROA_{i,t} + \beta_6 Growth_{i,t} + \beta_7 BM_{i,t} + \beta_8 Oc_{i,t} + Year + Ind + \varepsilon_{i,t}$$

In the above formula, $Exp_{i,t}$ is the explanatory variable executive internal pay gap (Inter_Gap), which is expressed by the ratio of the average pay of core executives to the average pay of remaining executives; $DA_{i,t}$ and $REM_{i,t}$ are the explained variables, respectively expressed by the company's available Control the performance of abnormal cash flows, abnormal product costs, and abnormal discretionary expenses in accruals and company operating activities. Judge the correlation between the independent variable and the dependent variable by observing the sign and significance of α_1. If α_1 is significantly greater than 0, it indicates that there is a significant positive correlation between the two. $Adj_{i,t}$ is adjustment variable, including heterogeneous institutional investors and heterogeneous top management team fault zone two types. Among them, institutional investors are divided into pressure-resistant institutional investors (Res_Ins) and pressure-sensitive institutional investors (Sen_Ins). the top management team fault zone is divided into a social classification fault zone (BDF) and a task-related fault zone (TRF). If α_1 is significantly greater than 0 and β_1 is also significantly greater than 0, it indicates that the adjusting variable plays a positive regulatory role; while α_1 is significantly greater than 0 and β_1 is significantly less than 0, it indicates that the adjusting variable plays a negative regulatory role. The control variables mentioned above are also controlled in the model. In addition, this article also controls the two-way fixed effects of year and industry.

4. Data Analysis and Findings

4.1 Introduction

The article conducts descriptive statistics on all relevant variables of the executive pay gap and earnings management model and obtains the statistical results in Table 1. As can be seen from Table 1, the maximum and minimum values of the explained variable DA are 0.25 and -0.28 respectively, and the maximum and minimum values of REM are 0.52 and -0.59 respectively, indicating that listed companies have both accrued and real earnings management behaviors. The degree of real earnings management is higher than that of accrued earnings management, and the manipulation of earnings has both positive and negative results. The maximum value of the salary gap within the executive team is 7.1, which shows that there is still a large gap in the salary levels of listed companies' executives, and the internal fairness of salary needs to be improved urgently. The average shareholding of pressure-sensitive institutional investors is 43%, which is higher than the shareholding of pressure-resistant institutional investors. The mean values of social classification fault zone intensity and task-related fault zone intensity are 0.52 and 0.51 respectively, proving that

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the fault zones of top management teams of listed companies are generally strong.

Table 1 Descriptive Statistics of Main Variables

VARIABLES	N	Mean	SD	Min	P50	Max
DA	19801	0.000	0.080	-0.280	0.000	0.250
REM	19801	0.010	0.180	-0.590	0.020	0.520
Inter_Gap	19801	1.790	0.940	0.830	1.520	7.100
Res_Ins	19801	0.000	0.010	0.000	0.000	0.110
Sen_Ins	19801	0.430	0.240	0.000	0.450	0.900
BDF	19801	0.520	0.240	0.000	0.580	0.880
TRF	19801	0.510	0.260	0.000	0.550	1.000
Size	19801	22.32	1.260	19.99	22.14	26.02
ListAge	19801	2.350	0.610	1.100	2.400	3.330
Lev	19801	0.450	0.200	0.060	0.450	0.890
Roa	19801	0.030	0.060	-0.230	0.030	0.190
Growth	19801	0.160	0.370	-0.510	0.090	2.030
BM	19801	1.150	1.150	0.110	0.770	6.710
Oc	19801	0.330	0.150	0.090	0.310	0.730

Before model regression, the article first tested the correlation between the explained variables, explanatory variables, moderator variables, heterogeneous institutional investors, and heterogeneous top management team fault zone. The results of the correlation analysis between variables are shown in Table 2. The results show that the correlation coefficient between the internal pay gap and accrued earnings management and real earnings management is positively related and significant at the 1% level, which is consistent with the hypothesis of the article. In addition, the correlation coefficients between the control variables selected in this article and the explained variables show different significance levels, indicating that the control variables selected in this article are reasonable.

Table 2 Main Variable Correlation Coefficient

VARIABLES	Abs DA	Abs REM	Inter Gap	Res Ins	Sen Ins	BDF	TRF
AbsDA	1						
AbsREM	0.258***	1					
Inter_Gap	0.040***	0.028***	1				
Res_Ins	0.173***	0.085***	0.014**	1			
Sen_Ins	-0.041***	0.031***	-0.002	0.000	1		
BDF	-0.013*	-0.016**	-0.038***	-0.011	-0.079***	1	
TRF	-0.105***	-0.042***	-0.035***	-0.014**	-0.035***	0.666***	1
Size	-0.077***	-0.033***	0.017**	0.068***	0.445***	0.016**	0.016**
ListAge	0.013*	0.019***	0.024***	0.024***	0.262***	-0.201***	-0.208***

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Lev	0.104***	0.031***	0.000	0.006	0.220***	-0.058***	-0.068***
Roa	-0.222***	0.130***	-0.035***	0.057***	0.102***	0.029***	0.050***
Growth	0.075***	0.173***	0.013*	0.030***	0.036***	0.030***	0.024***
BM	-0.051***	-0.076***	-0.010	-0.039***	0.257***	0.011	0.008
Oc	-0.053***	0.002	-0.007	0.020***	0.541***	-0.031***	0.012*

4.2 Data Analysis of the Quantitative Data

4.2.1 Main Effect Analysis

Table 3 reflects the test results of the relationship between executive internal pay gap and real earnings management. Year and industry are controlled in the regression analysis to improve the robustness of the regression results. The regression coefficients of Inter_Gap, DA and REM are 0.002 and 0.003 respectively, and are both positive and significant at the 1% level, indicating that the internal salary gap among executives plays a positive role in promoting the occurrence of corporate accrued and real earnings management. The above regression results support the explanation of behavioral theory, indicating that the increase in the executive pay gap can stimulate the generation of a sense of unfairness and exploitation, and then they prefer to compensate for their interests through accrued and real earnings manipulation to restore fair, which is not conducive to the long-term development of the enterprise, verifying hypothesis 1.

Table 3 Main Effects Regression Analysis Results

VARIABLES	AbsDA (1)	AbsREM (2)
Inter_Gap	0.002***	0.003***
	(3.667)	(3.024)
Size	-0.002***	-0.003***
	(-4.034)	(-3.104)
ListAge	-0.001	0.002
	(-1.065)	(1.330)
Lev	0.028***	0.078***
	(9.843)	(14.145)
Roa	-0.241***	0.228***
	(-29.686)	(14.249)
Growth	0.020***	0.046***
	(17.335)	(20.408)
BM	-0.007***	-0.009***
	(-12.125)	(-7.728)
Oc	-0.003	0.007
	(-0.898)	(1.132)
Constant	0.100***	0.156***
	(8.536)	(6.738)

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YEAR	YES	YES
IND	YES	YES
Observations	19,801	19,801
R^2	0.124	0.156

Note: *, **, and *** represent significant at the 10%, 5%, and 1% significance levels respectively.

4.2.2 Moderating Effect Analysis

According to the regression results in Table 4, the regression coefficients of the explanatory variables executive internal pay gap in columns (1) and (2) are 0.001 and 0.002 respectively, and are significant at the 1% level. The regression coefficients of the interaction term (Inter_Gap*Res_Ins) are -0.049 and -0.041 respectively and are significant at the 5% and 10% levels respectively. The signs of the coefficients of the explanatory variables and the interaction term are opposite, indicating that pressure-resistant institutional investors will negative regulation the positive impact of executive internal pay gaps on accrued earnings management and real earnings management. The regression coefficients of the explanatory variable executive internal pay gap in columns (3) and (4) are 0.002 and 0.003 respectively and are significant at the 1% level, but the regression coefficients of the interaction term (Inter_Gap*Sen_Ins) are not significant, indicating that pressure-sensitive institutional investors do not play a moderating role between the internal executive pay gap and accrued earnings management and real earnings management, which supports hypothesis 2.

Table 4 Regression Analysis Results on the Moderating Role of Heterogeneous Institutional Investors

VARIABLES	AbsDA	AbsREM	AbsDA	AbsREM
	pressure-resistant institutional investors		pressure-sensitive institutional investors	
	(1)	(2)	(3)	(4)
Inter_Gap	0.001***	0.002***	0.002***	0.003***
	(3.421)	(2.920)	(3.708)	(3.017)
Inter_Gap×Res_Ins	-0.049**	-0.041*		
	(-2.122)	(-1.826)		
Res_Ins	-0.829***	-0.574***		
	(-26.704)	(-9.232)		
Inter_Gap×Sen_Ins			-0.001	0.000
			(-0.647)	(0.094)
Sen_Ins			0.001	0.016***
			(0.337)	(3.387)
Size	-0.003***	-0.004***	-0.002***	-0.004***
	(-6.864)	(-4.055)	(-3.979)	(-3.901)
List Age	-0.001	0.002	-0.001	0.001
	(-1.358)	(1.238)	(-1.108)	(0.678)
Lev	0.026***	0.077***	0.028***	0.078***
	(9.472)	(13.983)	(9.827)	(14.065)

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VARIABLES	AbsDA	AbsREM	AbsDA	AbsREM
	pressure-resistant institutional investors		pressure-sensitive institutional investors	
	(1)	(2)	(3)	(4)
Roa	-0.247***	0.225***	-0.241***	0.227***
	(-30.882)	(14.043)	(-29.670)	(14.145)
Growth	0.020***	0.046***	0.020***	0.046***
	(17.334)	(20.341)	(17.330)	(20.317)
BM	-0.006***	-0.008***	-0.007***	-0.008***
	(-9.863)	(-6.871)	(-12.064)	(-7.454)
Oc	-0.003	0.006	-0.003	-0.005
	(-1.053)	(1.088)	(-0.931)	(-0.677)
Constant	0.079***	0.056**	0.048***	0.059**
	(6.779)	(2.388)	(3.848)	(2.415)
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
Observations	19,801	19,801	19,801	19,801
R^2	0.155	0.160	0.124	0.157

Note: *, **, *** represent significant at the 10%, 5%, and 1% significance levels respectively.

According to the regression results in Table 5, the regression coefficients of the explanatory variables executive internal pay gap in columns (1) and (2) are 0.002 and 0.003 respectively, and are significant at the 1% level. The interaction term (Inter_Gap*BDF) and the regression coefficients of both types of earnings management are not significant, indicating that the social classification fault zone does not play a moderating role between the internal pay gap of executives and earnings management. The hypothesis 3a does not be verified. The regression coefficients of the explanatory variable executive internal pay gap in columns (3) and (4) are 0.001 and 0.002 respectively, and are significant at the 1% and 5% levels respectively; the regression coefficient of the interaction term (Inter_Gap*TRF) is -0.004 and -0.008 and both significant at the 1% level. The signs of the coefficients of the explanatory variables and the interaction term are opposite, indicating that the executive task-related fault zone will inhibit the positive effect of the executive internal pay gap on accrued earnings management and real earnings management. Hypothesis 3b is verified.

Table 5 Regression Analysis Results on the Moderating Role of Heterogeneous Top Management Team Fault Zone

VARIABLES	AbsDA	AbsREM	AbsDA	AbsREM
	social classification fault zone		task-related fault zone	
	(1)	(2)	(3)	(4)
Inter_Gap	0.002***	0.003***	0.001***	0.002**
	(3.644)	(3.171)	(2.857)	(2.497)
Inter_Gap×BDF	0.000	-0.027		
	(0.016)	(-1.511)		
BDF	0.000	-0.003		

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VARIABLES	AbsDA	AbsREM	AbsDA	AbsREM
	social classification fault zone		task-related fault zone	
	(1)	(2)	(3)	(4)
	(0.262)	(-0.835)		
Inter_Gap×TRF			-0.004***	-0.008***
			(-2.647)	(-2.698)
TRF			-0.020***	-0.012***
			(-12.429)	(-3.893)
Size	-0.002***	-0.003***	-0.002***	-0.003***
	(-4.042)	(-3.084)	(-3.311)	(-2.863)
ListAge	-0.001	0.002	-0.003***	0.001
	(-0.991)	(1.215)	(-3.525)	(0.551)
Lev	0.028***	0.078***	0.026***	0.077***
	(9.846)	(14.117)	(9.398)	(13.949)
Roa	-0.241***	0.228***	-0.240***	0.228***
	(-29.684)	(14.238)	(-29.648)	(14.256)
Growth	0.020***	0.046***	0.020***	0.047***
	(17.328)	(20.420)	(17.517)	(20.479)
BM	-0.007***	-0.009***	-0.007***	-0.009***
	(-12.123)	(-7.691)	(-11.601)	(-7.529)
Oc	-0.003	0.007	-0.003	0.007
	(-0.886)	(1.110)	(-0.978)	(1.102)
Constant	0.046***	0.032	0.041***	0.029
	(3.942)	(1.396)	(3.500)	(1.258)
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
Observations	19,801	19,801	19,801	19,801
R^2	0.124	0.157	0.131	0.157

Note: *, **, and *** represent significant at the 10%, 5%, and 1% significance levels respectively.

4.2.3 Endogeneity Test and Robustness Test

Propensity score matching method (PSM test)

Considering the possible interference of the endogeneity problem of sample self-selection bias on the regression results, the article uses the propensity score matching method to verify the robustness of the results. First, the total sample of the explanatory variable is divided into two groups according to the median. The high group takes 1 and the low group takes 0. Secondly, the explained variable is set as the outcome variable, the control variables selected in the article are set as covariates, the nearest neighbor matching method is used for 1:1 matching, and then re-conduct the main test.

The final regression results are shown in Table 6. It can be found that the internal pay gap of executives has a positive correlation with accrued earnings management (β=0.001) and real earnings

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management (β=0.004) at the 10% and 1% levels respectively. The results of the main regression are consistent, indicating that after overcoming the endogeneity problem of selection bias, the internal gap in executive compensation can still stimulate earnings management problems.

Table 6 Regression Results of PSM Test

VARIABLES	AbsDA (1)	AbsREM (2)
Inter_Gap	0.001*	0.004***
	(1.805)	(2.941)
Size	-0.003***	-0.007***
	(-4.505)	(-4.966)
ListAge	0.002**	0.011***
	(2.315)	(5.216)
Lev	0.035***	0.091***
	(9.625)	(12.057)
Roa	-0.240***	0.291***
	(-21.937)	(12.810)
Growth	0.022***	0.041***
	(14.002)	(12.843)
BM	-0.006***	-0.010***
	(-8.322)	(-6.336)
Oc	0.003	0.003
	(0.753)	(0.410)
Constant	0.113***	0.191***
	(8.404)	(6.813)
YEAR	YES	YES
IND	YES	YES
Observations	10,823	10,823
R-squared	0.093	0.061

Note: *, **, and *** represent significant at the 10%, 5%, and 1% significance levels respectively.

Quantile Regression

To further verify the robustness of the conclusion, this article refers to the existing practice (Shao & Chen, 2018), changing the measurement method of the explained variable earnings management into a categorical variable. Accrued earnings management and real earnings management are grouped according to the median respectively. When the degree of earnings management is higher than the sample median, the value is assigned to 1, otherwise, it is set to 0, and the regression is re-run according to the established model and regression method.

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Table 7 Results of Quantile Regression

VARIABLES	Xt_AbsDA (1)	Xt_AbsREM (2)
Inter_Gap	0.018**	0.017**
	(2.408)	(2.432)
Size	-0.026***	-0.004
	(-4.975)	(-0.865)
ListAge	-0.008	0.014**
	(-1.168)	(2.079)
Lev	0.178***	0.188***
	(7.293)	(7.837)
Roa	-0.889***	0.373***
	(-12.678)	(5.415)
Growth	0.073***	0.098***
	(7.342)	(10.017)
BM	-0.034***	-0.029***
	(-7.098)	(-6.186)
Oc	-0.039	0.003
	(-1.488)	(0.110)
Constant	2.081***	1.540***
	(17.862)	(13.454)
YEAR	YES	YES
IND	YES	YES
Observations	19,801	19,801
R-squared	0.049	0.083

Note: *, **, and *** represent significant at the 10%, 5%, and 1% significance levels respectively.

Table 7 shows that there is a significant positive correlation between the executive internal pay gap and the categorical variables of accrued earnings management (β=0.018) and real earnings management (β=0.017) at the 5% level, indicating that after change earning management into categorical variables, the internal gap in executive compensation still significantly increases the occurrence of earnings management behavior, which is consistent with the main regression test results before.

4.3 Summary of the Results

The research results show that the internal pay gap among executives promotes corporate earnings management behavior; the heterogeneous institutional investors and heterogeneous top management teams fault zone play the moderating role in the relationship between the pay gap and earnings management.

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5. Conclusion, Discussion, and Recommendation

5.1 Conclusion

Previous studies have reached inconsistent conclusions on the impact of executive pay gaps on corporate earnings management. This paper further explores the impact of pay gaps within the executive team on accrued and real earnings management respectively. Empirical test results prove that the internal pay gap among executives has a significant promotion effect on corporate earnings management, validating the perspective of behavioral theory, that is, in China's traditional culture that emphasizes fairness, compared with the positive effect of pay incentives, executive pay the gap is more likely to give executives a sense of unfairness and exploitation, thereby exacerbating their earnings management motivations. At the same time, taking into account the impact of external supervision and internal executive characteristics, this paper introduces heterogeneous institutional investors and heterogeneous top management team fault zone as moderators. The study proves that pressure-resistant institutional investors can significantly suppress executive pay gaps and earnings management, while pressure-sensitive institutional investors have no moderating effect on the relationship between the two; executive task-related fault zone can significantly inhibit the positive impact between executive pay gap and earnings management, while social classification fault zone does not play a moderating role.

5.2 Discussion and Recommendation

In practice, senior executives are key figures in ensuring the normal operation of the company. When formulating policies, companies must not only pay attention to the positive role of salary incentives but also pay attention to whether they will cause excessive pay gaps and thus have negative impacts so as to prevent management from seeking personal gain. At the same time, it is necessary to give full play to the role of external supervision and internal governance, carry out effective screening during the introduction of institutional investors and the selection and recruitment of senior management teams, strengthen the participation and communication of institutional investors in corporate governance and decision-making, and improve the personnel structure and knowledge structure to help companies improve earnings quality and reduce the occurrence of earnings management behaviors.

References

Berle, A. A., & Means, G. G. C. (1932). The modern corporation and private property. Transaction Publishers.

Bezrukova, K., Jehn, K. A., Zanutto, E. L., & Thatcher, S. M. (2009). Do workgroup faultlines help or hurt? A moderated model of faultlines, team identification, and group performance. *Organization Science*, 20(1), 35-50. https://doi.org/10.1287/orsc.1080.0379

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre - and post - Sarbanes - Oxley periods. *The Accounting Review*, 83(3), 757-787. https://doi.org/10.2308/accr.2008.83.3.757

Cui, Y. (2022). Understanding the pay equity from the idea of universal equality in traditional Chinese philosophy. *Frontiers in Psychology*, 13, 998553.

Received: 9 November 2023 / Revised: 14 February 2024 / Accepted: 3 April 2024

https://doi.org/10.3389/fpsyg.2022.998553

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review*, 70(2), 193-225. https://www.jstor.org/stable/248303

Dong, H. N., & He, Q. (2016). The impact of institutional investor shareholdings on internal control deficiencies. *Journal of Shanxi University of Finance and Economics*, (5), 90-100.

Dong, W. W., & Pan, J. (2020). Research on the relationship between executive pay gap, property rights nature and corporate risk taking. *Prediction*, 39(06), 25-31.

Edmans, A., & Gabaix, X. (2016). Executive compensation: A modern primer. *Journal of Economic Literature*, 54(4), 1232-1287. https://doi.org/10.1257/jel.20161153

Efendi, J., Srivastava, A., & Swanson, E. P. (2007). Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics*, 85(3), 667-708. https://doi.org/10.1016/j.jfineco.2006.05.009

Firth, M., Leung, T. Y., Rui, O. M., & Na, C. (2015). Relative pay and its effects on firm efficiency in a transitional economy. *Journal of Economic Behavior & Organization*, 110(C), 59-77. https://doi.org/10.1016/j.jebo.2014.12.001

Garel, A., Martin-Flores, J. M., Petit-Romec, A., & Scott, A. (2021). Institutional investor distraction and earnings management. *Journal of Corporate Finance*, 66(C), 101801. https://doi.org/10.1016/j.jcorpfin.2020.101801

Hass, L. H., Tarsalewska, M., & Zhan, F. (2016). Equity incentives and corporate fraud in China. *Journal of Business Ethics*, 138(4), 723-742. https://doi.org/10.1007/s10551-015-2774-2

He, J. J., Huang, J., & Zhao, S. (2019). Internalizing governance externalities: The role of institutional cross-ownership. *Journal of Financial Economics*, 134(2), 400-418. https://doi.org/10.1016/j.jfineco.2018.07.019

Hutzschenreuter, T., & Horstkotte, J. (2013). Performance effects of top management team demographic faultlines in the process of product diversification. *Strategic Management Journal*, 34(6), 704-726. https://doi.org/10.1002/smj.2035

Jensen, M., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. http://ssrn.com/abstract=94043

Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of Political Economy*, 98(2), 225-264. https://doi.org/10.1086/261677

Kini, O., & Williams, R. (2012). Tournament incentives, firm risk, and corporate policies. *Journal of Financial Economics*, 103(2), 350-376. https://doi.org/10.1016/j.jfineco.2011.09.005

Laffont, J., & Martimort, D. (2002). *The Theory of Incentives*: The Principal-Agent Model. Princeton University Press. https://doi.org/10.1515/9781400829453

Received: 9 November 2023 / Revised: 14 February 2024 / Accepted: 3 April 2024

Li, Z., Daspit, J. J., & Marler, L. E. (2022). Executive pay dispersion: Reconciling the differing effects of pay inequality and pay inequity on firm performance. *The International Journal of Human Resource Management*, 33(15), 3056-3084. https://doi.org/10.1080/09585192.2021.1925324

Liang, S. K., Xu, C. Y., & Wang, R. H. (2020). The fault zone of the board of directors and the risk of company stock price crash. *China Industrial Economy*, (03), 155-173. https://doi.org/10.19581/j.cnki.ciejournal.2020.03.019

Miller, G. S. (2006). The press as a watchdog for accounting fraud. *Journal of Accounting Research*, 44(5), 1001-1033. https://doi.org/10.1111/j.1475-679X.2006.00224.x

Peng, L. D., & Zhang, W. X. (2022). Equity pledge and dividend policy of controlling shareholders of listed companies - A test of the moderating effect based on heterogeneous institutional investors. *Research on Financial Issues*, (06), 72-80.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370. https://doi.org/10.1016/j.jacceco.2006.01.002

Shao, J. B., & Chen, Y. H. (2018). Corporate strategy, tax avoidance and earnings management. *Economics and Management Review*, (06), 60-72.

Thatcher, S. M., Jehn, K. A., & Zanutto, E. (2003). Cracks in diversity research: The effects of diversity faultlines on conflict and performance. *Group Decision and Negotiation*, 12(3), 217-241. https://doi.org/10.1023/A:1023325406946

Williams, K. Y., & O'Reilly III, C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, 20(C), 77-140.

Yang, W., Xu, M. L., & Kong, D. M. (2019). Internal pay gap and earnings management. *Journal of Sun Yat-sen University (Social Science Edition)*, 59(01), 177-187.

Yu, Z., & Feng, Q. G. (2010). Pay gap: impact on corporate earnings management and operating performance. *Xuehai*, (01), 118-123. https://doi.org/10.16091/j.cnki.cn32-1308/c.2010.01.029