

Executive Incentives and Corporate Performance in China: The Moderating Role of Real Earnings Management

Li Dingzhao¹, Hafizah Abdul Rahim^{1*}, Aliana Shazma Amir Amir¹

¹ Department of Business, Faculty of Business & Communications, Universiti Malaysia Perlis, 02100 Padang Besar, Malaysia

*Corresponding Author: hafizahrahim@unimap.edu.my

Received: 29 November 2025 | Accepted: 2 January 2026 | Published: 1 March 2026

DOI: <https://doi.org/10.55057/ijaref.2026.8.1.3>

Abstract: *Executive incentive contracts are designed to align managers' decisions with shareholder interests, yet their effectiveness may depend on how firms shape reported outcomes through real activities. Against this backdrop, this study examines whether four common incentive channels, salary, equity, perks, and the external executive pay gap, are associated with corporate performance, and whether real earnings management conditions these relationships. Using panel data for 917 Chinese listed firms from 2012 to 2023, estimate firm and year fixed-effects models and cluster standard errors at the firm level to account for unobserved heterogeneity and within-firm correlation. Corporate performance is regressed on the four incentive measures and real earnings management, with interaction terms to test the moderating role of real earnings management. Robustness checks include alternative performance proxies, additional control structures, and winsorization. Results show that executive salary, executive equity, and the external pay gap are positively related to corporate performance, whereas executive perks are negatively related. Real earnings management is positively associated with performance and significantly moderates the incentive-performance links. Specifically, real earnings management strengthens the positive effects of salary and equity, attenuates the negative association between perks and performance, and weakens the positive association between the external pay gap and performance. These patterns remain stable across robustness tests. The findings indicate that incentive schemes do not operate in isolation: their governance value is closely tied to firms' reporting behaviour. By documenting how real earnings management reshapes the performance implications of different incentive components, the study offers evidence that helps reconcile competing views on incentives and highlights the importance of considering real activities when evaluating executive pay design.*

Keywords: Executive Incentives, Corporate Performance, Earnings Management

1. Introduction

Executive incentives are pivotal in corporate governance because they shape managerial choices inside firms and, in turn, firm outcomes. Agency theory (Jensen & Meckling, 1976) treats compensation as a tool to align managers' interests with those of shareholders, easing conflicts that arise when ownership and control diverge. Not surprisingly, executive pay remains at the center of academic and policy debate today, particularly when pay-performance links appear weak. Yet the evidence base is skewed toward developed settings such as the United States and the United Kingdom (Ozkan, 2011; Sun et al., 2013), leaving emerging markets less examined. China is especially informative: as the world's second-largest economy

and a major destination for foreign investment (Chen et al., 2020), its rapidly evolving institutions can reshape how incentive contracts work in practice.

Evidence from China offers no settled view on how tightly executive cash pay tracks performance. Using Chinese listed-firm panel data, some studies document a clear positive pay-performance link (El-Sayed & Elbardan, 2016; Bin et al., 2020), yet others report effects that weaken once governance features and market conditions are accounted for (Erick et al., 2014). Sector-level pay caps add another layer, and critics contend that binding ceilings can blunt incentives and tilt managers toward short-horizon choices rather than long-term strategy (Spindler, 2016). If cash pay is constrained, do equity awards fill the gap? Interest in equity-based compensation has grown, but the Chinese evidence remains mixed, including positive and inverted U-shaped patterns that vary with ownership concentration (Shufang et al., 2012; Jianfeng, 2016; Tang et al., 2022).

A third dimension of incentives involves executive perks, which are especially salient in China's relationship-oriented business setting, where *guanxi* can shape access to information, resources, and contracting opportunities (Ai, 2006). In practice, such spending is often justified as a way to maintain stakeholder ties, yet it also creates room for private benefits and weak monitoring. Empirical work therefore links perks to allocative inefficiency and even a higher likelihood of stock price crashes, consistent with the idea that opaque benefit consumption can coincide with bad-news hoarding and abrupt corrections (Xu et al., 2014). These effects are not uniform across ownership forms: governance structures and political objectives in state-owned enterprises can alter both the scope of perk use and its consequences relative to private firms (Cheng et al., 2018).

Compensation structure also matters within the executive team. Tournament theory implies that wider pay differentials can sharpen promotion incentives, prompting greater effort and stronger innovation-oriented behaviour (Chen & Zhang, 2006; Lin et al., 2009). However, when gaps become too large, they may be read as unfair, dampening morale and weakening coordination-mechanisms that can offset any motivational gains (Zhang & Huang, 2011). However, existing studies focus mainly on internal dispersion within firms, while evidence on external pay gaps remains comparatively scarce.

Despite this rich body of work, the role of earnings management in conditioning incentive effectiveness remains systematically underdeveloped. Among Chinese listed firms, accrual-based manipulation and real activities management are widely observed (Zhou et al., 2018), which matters because many contracts hinge on accounting targets. When bonus thresholds or promotion criteria reference reported earnings, managers can shift numbers to meet them, weakening the mapping from incentives to underlying economic performance (Ding et al., 2018; Farouk & Ahmed, 2023). Does this behavior merely secure short-term rewards, as some argue (Yan-Jun & Yan-Xin, 2017), or invite misallocation and longer-run value erosion (Sial et al., 2018; Savitri et al., 2020).

This study fills these gaps by testing whether earnings management conditions the incentive-performance link among Chinese listed firms. Executive incentives are captured along four channels, salary, equity, perks, and the external pay gap, estimated within one coherent empirical design. Modelling them jointly reduces omitted-variable concerns and enables comparison of incentive types within the same firm setting. The analysis then treats earnings management as a moderator, connecting agency and tournament mechanisms to firms'

financial reporting choices. Using panel data for 917 firms over 2012-2023, implement firm fixed effects and a battery of robustness checks to assess stability.

2. Literature Review and Hypotheses Development

2.1 Executive salary and corporate performance

Executive remuneration is commonly viewed as a key governance device for aligning managerial incentives with shareholder interests. From an agency-theoretic perspective, compensation contracts can curb agency conflicts by tying managerial rewards to firm outcomes (Jensen & Meckling, 1976). Consistent with this logic, empirical evidence often reports a positive association between executive pay and corporate performance. Frydman and Saks (2010), for instance, show that performance-based compensation is linked to stronger firm outcomes, and Conyon and He (2011) further suggest that independent boards can reinforce the pay-performance relation. Similar patterns appear across diverse settings, including large corporations (Ozkan, 2011), South African firms (Scholtz & Smit, 2012), Jordanian companies (Ramadan, 2013), and U.S. multinationals (Nulla, 2014), indicating that higher pay tends to coincide with better financial results. Moreover, evidence from multiple contexts, including the UK (El-Sayed & Elbardan, 2016), China (Bin et al., 2020), Korea (Park & Byun, 2021), and global energy firms (Wang et al., 2021), likewise links higher executive salaries with improved performance. In China's new energy sector, where innovation and long-horizon investment are central, Han and Yu (2023) additionally find that performance-based pay is particularly consequential. Taken together, prior findings imply that salary-based incentives can motivate executives and support corporate growth, leading to the following hypothesis:

H1a: Executive salary is positively related to corporate performance.

2.2 Executive equity and corporate performance

Equity-based incentives are often framed as a core device for aligning managers' and shareholders' interests, thereby easing agency conflicts. By linking a portion of executive wealth to firm value, equity compensation is expected to strengthen commitment to long-term performance rather than short-run accounting targets. Empirical evidence generally supports this view. Aboody et al. (2010) report that equity incentive programs are associated with stronger cash flow and profit growth, and Ding et al. (2012) argue that equity-based pay improves agency efficiency by tightening alignment between managers and owners. Related work likewise documents a positive association between managerial equity incentives and firm performance (Jianfeng, 2016; Shengjun, 2016; Bhagat & Bolton, 2019).

Even so, equity incentives do not operate in a vacuum, and their effects can depend heavily on institutional and ownership conditions. Evidence from China is therefore more mixed. Chen and Jia (2015) suggest that state ownership can dilute the disciplining role of equity-based pay, while Tang et al. (2022) identify an inverted U-shaped pattern, implying that overly strong equity stakes may foster entrenchment or induce short-termism. Where equity exposure is moderate, however, the incentive appears more likely to encourage innovation and sustained growth, consistent with the view that carefully calibrated schemes can support long-horizon strategies (Ma & Wang, 2022; Sun et al., 2023). Taken together, the literature implies that equity compensation can enhance corporate performance when it is designed to balance near-term financial discipline with longer-term strategic objectives, leading to the following hypothesis:

H2a: Executive equity is positively related to corporate performance.

2.3 Executive perks and corporate performance

Executive perks constitute another channel through which managers may be motivated. In relationship-oriented settings, these expenditures are sometimes defended as facilitating stakeholder interaction and guanxi-based exchange (Ai, 2006), yet the empirical literature more often treats them as a symptom of weak monitoring. When perks become a vehicle for private benefit consumption, they can divert corporate resources from productive uses, reduce efficiency, and ultimately weaken shareholder value. Evidence from China suggests that executives, particularly in state-owned enterprises, may use perks to conceal unfavorable information, which can distort incentives and increase the likelihood of abrupt negative price adjustments (Xu et al., 2014). Related studies also link rising perk intensity to adverse market reactions, interpreting such spending as a signal of governance problems that can deter outside investment (Gul et al., 2011; Grinstein et al., 2008).

Subsequent work reinforces this governance-based interpretation. Cai et al. (2011) argue that perk expenditures often reflect rent-seeking behavior, while Yang et al. (2023) show that the costs become more pronounced when firms operate under financial constraints. In those circumstances, discretionary spending competes directly with investment and operating needs, leaving fewer resources for innovation, capacity, or risk management and thereby weakening longer-run competitiveness. Although limited perks might occasionally function as a noncash motivator, the weight of evidence points to detrimental effects once such benefits are excessive. Accordingly, expect perks to be associated with poorer firm outcomes, leading to the following hypothesis:

H3a: Executive perks are negatively related to corporate performance.

2.4 Executive external pay gap and corporate performance

The executive pay gap, has long been examined as a governance-relevant incentive. Tournament theory predicts that wider differentials sharpen promotion incentives: executives exert greater effort when the prize for moving up is larger, which can translate into stronger organizational outcomes (Chen & Zhang, 2006; Lin et al., 2009). In line with this mechanism, empirical work links larger pay gaps to higher innovation intensity and better firm performance in several settings (Lee et al., 2008; Pissaris et al., 2010).

Yet a larger gap does not automatically imply a better outcome, and the same structure can generate countervailing behavioral responses. When dispersion becomes excessive, it may be interpreted as unfair, depress cooperation, or even invite sabotage, offsetting motivational gains and weakening performance (Harbring & Irlenbusch, 2011). Evidence from China reflects this nonlinearity: state-owned enterprises may benefit from a moderate pay gap, whereas overly large disparities appear to undermine governance effectiveness and harm longer-term performance (Liu & Sun, 2010; Zhang & Huang, 2011). Recent studies further show that pay dispersion relates to variation in returns on equity and overall earnings, implying that compensation structure can either support or distort value creation depending on context (Xu et al., 2017; Osiichuk, 2022). Taken together, prior findings suggest that extreme gaps are more likely to be harmful, while moderate external differentials can operate as incentives in competitive industries, motivating the following hypothesis:

H4a: Executive external pay gap is positively related to corporate performance.

2.5 Moderating role of earnings management

Earnings management (EM) refers to managerial actions that shift reported financial results toward pre-specified benchmarks, achieved either through accrual choices or through real activities such as discretionary spending, production decisions, and revenue timing (Roychowdhury, 2006; Wenfang & Ayisi, 2020). Although these practices can deliver short-run benefits, they may also blur the firm's underlying economic performance and weaken the foundations of long-term value creation (Shivakumar, 2010; Li et al., 2011; Tang & Chang, 2015).

When compensation contracts are linked to financial indicators, managers may have stronger motives to manage earnings in order to protect bonuses, promotion prospects, or equity-based wealth. Prior work finds that higher executive paying, particularly equity incentives, is associated with greater discretionary accruals and more real earnings management, consistent with reward-maximizing behavior (Fakhfakh, 2010; Kadan & Yang, 2016; Chou & Chan, 2018). Pay dispersion can amplify these pressures by raising the stakes of relative performance, creating additional incentives to meet targets and secure higher compensation (Byun et al., 2016). Perks may also interact with opportunism: excessive entertainment and travel spending can facilitate resource diversion and concealment, increasing the likelihood of misreporting or crash risk (Cai et al., 2011; Xu et al., 2014). In the short term, EM can make incentives appear more tightly linked to performance as reported, yet heavy reliance on manipulation may induce risk-taking and erode longer-run outcomes (Gill et al., 2013; Tabassum et al., 2015).

Beyond these direct channels, EM can shape how governance mechanisms translate into performance by altering informational transparency. Studies report, for example, that EM can weaken the apparent effectiveness of corporate social responsibility (CSR) activities and obscure the true impact of governance practices, making performance improvements harder to interpret and sustain (Suteja et al., 2016; Sial et al., 2018; Savitri et al., 2020). EM therefore plays a dual role: it can help managers meet short-term objectives while simultaneously reducing the credibility and durability of reported gains.

Given these dynamics, this study posits that earnings management moderates the relationship between executive incentives and corporate performance. Specifically, propose:

- H1b: The executive salary and corporate performance is moderated by earnings management.
- H2b: The executive equity and corporate performance is moderated by earnings management.
- H3b: The executive perks and corporate performance is moderated by earnings management.
- H4b: The executive external pay gap and corporate performance is moderated by earnings management.

3. Data and Method

3.1 Data and sample

The empirical tests draw on a firm-level panel of Chinese A-share listed companies spanning 2012-2023. All variables are obtained from the CSMAR (China Stock Market & Accounting Research) database, which reports firm financials, governance characteristics, and executive compensation in a standardized format. Sample construction applies widely used filters. Financial firms (banks, securities, and insurance) are excluded because their business models and regulatory regimes differ materially from those of non-financial firms. Companies designated as special treatment (ST) on the Shanghai and Shenzhen Stock Exchanges are removed to avoid abnormal financial conditions. Observations with missing or incomplete

values for the variables of interest are also dropped. After these screens, the final sample contains 917 firms and a balanced panel of 11004 firm-year observations. Because the data span many industries and regulatory cycles, they support within-firm comparisons while reducing the risk that estimates reflect a single sector or episode. Moreover, baseline regressions rely on the original, non-winsorized data to preserve the sample’s full distributional characteristics. Robustness checks then winsorize all continuous variables at the 1st and 99th percentiles to limit the influence of extreme values and confirm result stability.

3.2 Measurement

Dependent variable:

Corporate performance (ROE): Firm performance is captured by return on equity (ROE), calculated as net income scaled by average shareholders’ equity (Zhang et al., 2017). Because ROE and ROA may diverge when leverage is high, return on assets (ROA) is employed as a substitute in robustness checks (Soliman, 2008).

Independent variable: executive incentive

Four executive incentive dimensions are examined. Executive salary (salary): which is operationalized as the natural log of the aggregate cash compensation received by the three highest-paid executives (Zhu et al., 2024). Executive equity (Equity): which is measured as executives’ total shareholdings divided by the firm’s total shares outstanding. (Ding et al., 2012). Executive perks (perks) are proxied by management expenses net of executive compensation and amortization of intangible assets, scaled by operating revenue, capturing entertainment and travel related benefits (Bo et al., 2022). External pay gap (exgap) is measured as the ratio of the firm-year growth rate in average compensation of the top three executives to the industry’s long-run average growth rate computed under the 2012–2023 industry classification; this growth-normalized, peer-benchmarked construction follows executive-pay research that benchmarks compensation to industry peers and studies compensation growth over long horizons (Faulkender & Yang, 2010).

Moderating variable: earnings management

Earnings management (REM) follows the real activities manipulation framework in Roychowdhury (2006). Using the AIQ-based REM measures from the CSMAR database, that is constructed using abnormal operating cash flows, discretionary expenses, and production costs. Using the absolute value of REM to capture the intensity of real earnings management.

Control variables

Following prior studies, the regressions include firm size (size), leverage (lev), ownership concentration (own), tangibility ratio (tgr), board independence (dir), non-debt tax shield (tax), and a state-ownership dummy (state) (Bin et al., 2020; Park & Byun, 2021).

The specific variable measurement and calculation methods are shown in Table 1.

Table 1: Variable measurement

Variable	Abbreviation	Measurement
Corporate performance	Corp	Net profit divided by average shareholders’ equity
Earnings management	REM	Absolute value of the real earnings management measure from the CSMAR database
Executive salary	salary	LN(Total top 3 executive salary)
Executive equity	equity	Executive share/total share
Executive perks	perks	(Administrative expenses-total salary of executive-amortization of intangible assets) / operating income

Executive external pay gap	exgap	Ratio of the salary growth rate of the firm's top three executives to the industry average for the top three executives.
firm size	size	LN(total asset)
Leverage	lev	Total liabilities / total assets
Ownership concentration	own	Ownership stake of the largest shareholder
Tangibility ratio	tgr	Total Tangible Assets / Total Assets
Independent directors ratio	dir	Proportion of Independent Directors
Non-debt tax shield	tax	Depreciation and amortization divided by total assets
State-own	state	Dummy variable equal to 1 for state-owned firms and 0 otherwise

3.3 Methodology

The empirical model adopts a two-way fixed-effects panel design, including firm and year fixed effects to control for unobserved firm-specific attributes and economy-wide shocks that vary over time. To address heteroskedasticity and within-firm serial correlation, standard errors are computed as firm-level robust standard errors. The dependent variable is firm performance, measured by ROE in the baseline regressions, with ROA substituted as an alternative proxy in robustness analyses. Explanatory variables comprise the four incentive measures in Section 3.2 (salary, equity, perks, and the external pay gap), the moderator REM, and the standard controls (size, lev, own, tgr, dir, tax, state). All variable definitions follow Section 3.2.

Baseline model (Model 1; tests H1a-H4a). Model (1) regresses corporate performance on the four incentive measures and the control set, while incorporating firm and year fixed effects. Evidence in favor of H1a, H2a, and H4a is indicated by significantly positive estimates on Salary, Equity, and Exgap, respectively, whereas a significantly negative estimate on Perks is consistent with H3a.

$$Corp = \beta_0 + \beta_1 salary_{it} + \beta_2 equity_{it} + \beta_3 perks_{it} + \beta_4 exgap_{it} + \beta_5 size_{it} + \beta_6 lev_{it} + \beta_7 own_{it} + \beta_8 tgr_{it} + \beta_9 dir_{it} + \beta_{10} tax_{it} + \beta_{11} state_{it} + YearFE + FirmFE + \varepsilon_{it} \quad (1)$$

Moderation model (Model 2; tests H1b-H4b). Model (2) augments Model (1) with REM and the interaction terms REM*salary, REM*equity, REM*perks, and REM*exgap to evaluate whether earnings management conditions the incentive-performance links. Following best practice, continuous variables entering interactions are mean-centered to mitigate multicollinearity in product terms (Haans et al., 2016). Significance of the interaction coefficients indicates that REM strengthens or weakens the corresponding baseline relation, thus testing H1b-H4b.

$$Corp = \alpha_0 + \alpha_1 REM_{it} + \alpha_2 REM * salary_{it} + \alpha_3 REM * equity_{it} + \alpha_4 REM * perks_{it} + \alpha_5 REM * exgap_{it} + \alpha_6 salary_{it} + \alpha_7 equity_{it} + \alpha_8 perks_{it} + \alpha_9 exgap_{it} + \alpha_{10} size_{it} + \alpha_{11} lev_{it} + \alpha_{12} own_{it} + \alpha_{13} tgr_{it} + \alpha_{14} dir_{it} + \alpha_{15} tax_{it} + \alpha_{16} state_{it} + YearFE + FirmFE + \varepsilon_{it} \quad (2)$$

4. Empirical Results

4.1 Descriptive statistics

Table 2 shows that the average corporate performance (Corp) of the sample companies is 0.061, with a minimum of -6.58 and a maximum of 1.117, indicating significant variation in corporate performance among the sample companies. Real earnings management (REM) ranges from 0 to 6.728, with a mean of 0.157, indicating substantial cross-firm and intertemporal variation in

real activities manipulation. Executive salary (salary) averages 14.734, ranging from 11.321 to 18.292, suggesting that top-executive cash compensation is relatively high across the sampled firms. Executive equity (equity) has a mean of 8.287, spanning from 0 to 84.942, reflecting substantial heterogeneity in executives' ownership stakes across the sample firms. The mean of executive perks (perks) is 0.071, with a minimum of -0.585 and a maximum of 1.319, suggesting a right-skewed distribution consistent with discretionary administrative and entertainment outlays. The external pay gap (exgap) averages 0.877, ranging from -7.129 to 95.98, pointing to pronounced dispersion and a heavy upper tail. And subsequent robustness checks will address potential tail influence.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
Corp	11004	0.061	0.151	-6.58	1.117
REM	11004	0.157	0.19	0	6.728
salary	11004	14.734	0.75	11.321	18.292
equity	11004	8.287	14.922	0	84.942
perks	11004	0.071	0.066	-0.585	1.319
exgap	11004	0.877	3.212	-7.129	95.98
size	11004	22.706	1.312	19.341	28.697
lev	11004	0.441	0.197	0.008	0.967
own	11004	33.057	14.76	1.844	87.705
tgr	11004	0.929	0.081	0.337	1
dir	11004	37.359	5.7	16.67	80
tax	11004	0.02	0.014	-0.006	0.119
state	11004	0.436	0.496	0	1

4.2 Regression result

Model (1) results are reported in Table 3, column (1). The coefficient on executive salary (salary) is 0.0445 and statistically significant at the 1% level, indicating that higher executive salary is associated with stronger firm performance, consistent with H1a. The coefficient on executive equity (equity) is 0.0007 and significant at the 5% level, implying that greater executive ownership is linked to improved performance, supporting H2a. The coefficient on executive perks (perks) is -0.4416 and significant at the 1% level, indicating that higher perk intensity is associated with lower corporate performance, consistent with H3a. The regression coefficient for the executive external pay gap (exgap) is 0.0012 and is significant at the 5% level, suggesting that as the external pay gap increases, corporate performance also improves, thus validating hypothesis H4a.

The regression results for Model (2) are shown in Table 3 (2). The coefficient on earnings management (REM) is 0.1058 and significant at the 1% level, suggesting that higher REM is associated with higher measured corporate performance. Turning to the moderation effects, the interaction between REM and executive salary (REM*salary) is positive (0.0448) and significant at the 5% level, indicating that REM amplifies the salary-performance association and supporting H1b. Similarly, REM*equity is positive (0.0020) and significant at the 5% level, implying that REM strengthens the equity-performance link, consistent with H2b. The interaction term for REM*perks is also positive (0.3428) and significant at the 10% level; given the negative main effect of perks, this pattern indicates that REM attenuates the adverse association between perks and performance, supporting H3b. By contrast, REM*Exgap is negative (-0.0035) and significant at the 1% level, implying that REM dampens the positive relationship between the external pay gap and performance, in line with H4b.

Table 3: Regression result

VARIABLES	(1)	(2)
	Corp	Corp
salary	0.0445*** (6.43)	0.0420*** (6.02)
equity	0.0007** (2.01)	0.0007** (2.18)
perks	-0.4416*** (-5.02)	-0.4340*** (-4.81)
exgap	0.0012** (2.57)	0.0012** (2.42)
REM		0.1058*** (7.81)
REM*salary		0.0448** (2.54)
REM*equity		0.0020** (2.57)
REM*perks		0.3428* (1.91)
REM*exgap		-0.0035*** (-3.05)
size	0.0244*** (3.27)	0.0250*** (3.39)
lev	-0.3331*** (-7.59)	-0.3368*** (-7.71)
own	0.0014*** (3.93)	0.0014*** (4.04)
tgr	0.0064 (0.18)	-0.0018 (-0.05)
dir	0.0003 (0.91)	0.0003 (0.86)
tax	-2.3279*** (-2.87)	-2.2506*** (-2.78)
state	-0.0179 (-1.35)	-0.0152 (-1.15)
constant	-0.9866*** (-5.13)	-0.9717*** (-5.25)
Firm	YES	YES
Year	YES	YES
Observations	11004	11004
R-squared	0.314	0.324

Notes: *, **, *** Significant at 10%, 5% and 1% level, t-statistics in parentheses, firm-clustered robust

4.3 Robustness test

The article implements three robustness exercises. First, replace ROE with ROA as the performance measure. Second, extend the baseline model by introducing industry fixed effects, so the specification includes firm, industry, and year effects to absorb unobserved sectoral heterogeneity. Third, we winsorize all continuous variables at the 1st and 99th percentiles to reduce the influence of extreme observations.

To assess sensitivity to the performance proxy, Table 4, columns (1) and (2) re-estimate the models using ROA in place of ROE. The coefficients on salary, equity, and exgap remain positive and significant at the 1% level, while perks stay negative and significant at the 1% level, providing consistent support for H1a-H4a. The interaction terms REM*salary, REM*equity, REM*perks, and REM*exgap are also statistically significant at the 1%, 1%, 10%, and 5% levels, respectively, indicating that REM moderates all four incentive-performance relationships and supporting H1b–H4b under the alternative performance measure.

Adding industry fixed effects. Table 4, columns (3) and (4) present estimates after adding industry fixed effects in addition to firm and year effects. The signs and significance levels mirror the baseline: perks remain negative at the 1% level, while salary, equity, and exgap are positive and significant at the 1%, 10%, and 5% levels, respectively, reaffirming H1a-H4a. The four interaction terms are significant at the 5%, 5%, 5%, and 1% levels, again supporting H1b-H4b.

Table 4, columns (5) and (6) report re-estimations after winsorizing all continuous variables at the 1st and 99th percentiles. The coefficient on Perks remains negative and significant at the 1% level, while salary, equity, and exgap stay positive and significant at the 1% level. All four interaction terms are significant at the 1% level, indicating that the moderating effects are robust and not driven by tail observations.

Table 4: Robustness test

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Replace dependent variable Corp	Corp	Industry fixed effects Corp	Corp	Winsorized at the 1%- 99% Corp	Corp
salary	0.0169*** (8.64)	0.0156*** (8.41)	0.0449*** (6.26)	0.0421*** (5.89)	0.0370*** (9.41)	0.0348*** (8.95)
equity	0.0004*** (2.87)	0.0005*** (3.12)	0.0005* (1.65)	0.0006* (1.81)	0.0008*** (3.51)	0.0008*** (3.71)
perks	-0.2079*** (-4.87)	-0.2025*** (-4.73)	-0.4616*** (-5.47)	-0.4569*** (-5.25)	-0.5843*** (-13.44)	-0.5789*** (-14.01)
exgap	0.0006*** (2.79)	0.0005** (2.50)	0.0012** (2.49)	0.0012** (2.39)	0.0019*** (4.69)	0.0018*** (4.51)
REM		0.0667*** (7.26)		0.1069*** (7.82)		0.0832*** (8.64)
REM*salary		0.0250*** (3.50)		0.0445** (2.36)		0.0282*** (2.65)
REM*equity		0.0013*** (2.96)		0.0020** (2.57)		0.0018*** (3.10)
REM*perks		0.1741* (1.81)		0.4082** (2.28)		0.6245*** (3.99)
REM*exgap		-0.0015** (-2.27)		-0.0035*** (-2.90)		-0.0061*** (-3.41)
size	0.0105*** (3.61)	0.0106*** (4.13)	0.0263*** (3.22)	0.0269*** (3.34)	0.0119*** (2.76)	0.0136*** (3.19)
lev	-0.1703*** (-15.87)	-0.1724*** (-16.97)	-0.3368*** (-7.74)	-0.3408*** (-7.88)	-0.2062*** (-12.46)	-0.2113*** (-12.92)
own	0.0004***	0.0004***	0.0014***	0.0014***	0.0008***	0.0008***

	(3.35)	(3.37)	(3.87)	(4.02)	(3.62)	(3.67)
tgr	0.0124	0.0068	0.0109	0.0023	-0.0000	-0.0002
	(0.64)	(0.38)	(0.32)	(0.07)	(-0.00)	(-0.01)
dir	0.0001	0.0001	0.0004	0.0004	0.0002	0.0002
	(0.63)	(0.59)	(1.11)	(1.08)	(0.57)	(0.52)
tax	-0.9743***	-0.9240***	-2.3491***	-2.2810***	-1.4775***	-1.4294***
	(-6.65)	(-6.35)	(-2.95)	(-2.85)	(-6.99)	(-6.83)
state	-0.0043	-0.0028	-0.0160	-0.0133	-0.0246**	-0.0231**
	(-0.77)	(-0.51)	(-1.21)	(-1.01)	(-2.37)	(-2.28)
constant	-0.3716***	-0.3621***	-1.0356***	-1.0180***	-0.6209***	-0.6373***
	(-5.10)	(-5.72)	(-5.08)	(-5.20)	(-6.09)	(-6.37)
Firm	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES
Ind	NO	NO	YES	YES	NO	NO
Observations	11004	11004	11004	11004	11004	11004
R-squared	0.507	0.532	0.321	0.331	0.476	0.488

Notes: *, **, *** Significant at 10%, 5% and 1% level, t-statistics in parentheses, firm-clustered robust

5. Conclusion

This paper examines how four executive incentive dimensions: salary, equity, perks, and the external executive pay growth gap, relate to firm performance in China, and how real earnings management (REM) conditions these relations. Using panel data on 917 listed firms from 2012 to 2023 and two-way fixed effects with firm-clustered inference, finding that salary, equity, and the external pay growth gap are positively associated with ROE, whereas perks are negatively associated. REM is positively associated with ROE and significantly moderates all four links: it strengthens the effects of salary and equity, attenuates the adverse association of perks, and weakens the positive association of the external pay growth gap. These patterns align with agency theory and tournament theory while highlighting that the governance value of incentive schemes depends on firms' reporting behavior.

The results are robust to several checks. Replacing ROE with ROA yields the same signs and significance for baseline and moderating effects. Adding industry fixed effects, in addition to firm and year effects, leaves the conclusions unchanged, indicating that the findings are not driven by sectoral composition. Winsorizing all continuous variables at the 1st and 99th percentiles indicates that the results are robust and not driven by extreme observations. Together, these analyses reinforce the stability of the core inferences.

The study offers practical implications. Boards should balance cash and equity incentives with effective oversight of reporting choices, constrain discretionary perks, and calibrate external benchmarking so that compensation policies motivate effort without encouraging short-term manipulation that may erode long-term value. In our setting, the findings support regulatory efforts to improve transparency in perk spending and to provide clearer guidance on peer pay benchmarking, which may help align incentives without encouraging short-term reporting manipulation.

Limitations point to avenues for future work. The evidence is drawn from Chinese listed firms over 2012-2023 and relies on specific proxies for incentives and REM; generalization to other markets and institutional settings should be made with caution. Future research could incorporate additional outcomes (such as investment efficiency and innovation), consider

alternative earnings management measures (including accrual-based metrics), address potential endogeneity with stronger identification strategies, and explore heterogeneity across ownership types and industries.

Acknowledgement

The authors would like to thank CSMAR for providing access to the data used in this study.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this study.

References

- Aboody, D., Johnson, N. B., & Kasznik, R. (2010). Employee stock options and future firm performance: Evidence from option repricings. *Journal of accounting and economics*, 50(1), 74-92.
- Ai, J. (2006). Guanxi networks in China: Its importance and future trends. *China & World Economy*, 14(5), 105-118.
- Bhagat, S., & Bolton, B. (2019). Corporate governance and firm performance: The sequel. *Journal of Corporate Finance*, 58, 142-168.
- Bin, L., Chen, J., & Ngo, A. X. (2020). Revisiting executive pay, firm performance, and corporate governance in China. *Economics, Management and Financial Markets*, 15(1), 9-32.
- Bo, L., Tang, D., Zhang, J., & Bethel, B. J. (2022). An Investigation of the Transmission Mechanism of Executive Compensation Control to the Operating Performance of State-Owned Listed Companies. *Sustainability*, 14(10), 5819.
- Byun, S., Lee, Y., & Kwon, O. (2016). The effect of abnormal pay dispersion on earnings management. *Journal of Applied Business Research (JABR)*, 32(2), 687-702.
- Cai, H., Fang, H., & Xu, L. C. (2011). Eat, drink, firms, government: An investigation of corruption from the entertainment and travel costs of Chinese firms. *The journal of law and Economics*, 54(1), 55-78.
- Chen, W., & Jia, S. (2015). State owned holding, market competition and equity incentive effect--An Empirical Study Based on propensity score matching method. *Journal of Zhejiang University*, 9, 101-118.
- Chen, X., Cheng, Q., Hao, Y., & Liu, Q. (2020). GDP growth incentives and earnings management: evidence from China. *Review of Accounting Studies*, 25, 1002-1039.
- Chen, Z., & Zhang, M. (2006). A research on the top executive's pay distributions. *China Accounting Review*, 4(1), 15-28.
- Cheng, L. T., Chan, R. Y., & Leung, T. (2018). Impact of perk expenditures and marketing expenditures on corporate performance in China: The moderating role of political connections. *Journal of Business Research*, 86, 83-95.
- Chou, Y.-Y., & Chan, M.-L. (2018). The impact of CEO characteristics on real earnings management: Evidence from the US banking industry. *Journal of Applied Finance and Banking*, 8(2), 17-44.
- Conyon, M. J., & He, L. (2011). Executive compensation and corporate governance in China. *Journal of Corporate Finance*, 17(4), 1158-1175.
- Ding, H., Cai, J., & Niu, Y. (2012). Correlations between executive pay, equity incentive and corporate performance: Empirical analysis based on panel data of China's listed companies. *International Journal of Financial Research*, 3(3), 24-31.

- Ding, R., Li, J., & Wu, Z. (2018). Government affiliation, real earnings management, and firm performance: The case of privately held firms. *Journal of Business Research*, 83, 138-150.
- El-Sayed, N., & Elbardan, H. (2016). Executive Compensation, Corporate Governance and Corporate Performance: Evidence from the UK. *Journal of Organisational Studies & Innovation*, 3(2).
- Erick, T. K., Kefah, B. A., & Nyaoga, R. B. (2014). The relationship between executive compensation and financial performance of insurance companies in Kenya. *Research Journal of Finance and Accounting*, 5(1), 113-122.
- Fakhfakh, I. (2010). Impact of CEO compensation on earnings management. Available at SSRN 1621807.
- Farouk, M. A., & Ahmed, Z.-R. A. (2023). Executive compensation, share ownership, and earnings management of banks in Nigeria. *Journal of Economics & Management*, 45, 26-43. doi:<https://doi.org/10.22367/jem.2023.45.02>
- Faulkender, M., & Yang, J. (2010). Inside the black box: The role and composition of compensation peer groups. *Journal of Financial Economics*, 96(2), 257-270.
- Frydman, C., & Saks, R. E. (2010). Executive compensation: A new view from a long-term perspective, 1936–2005. *The Review of Financial Studies*, 23(5), 2099-2138.
- Gill, A., Biger, N., Mand, H. S., & Mathur, N. (2013). Earnings management, firm performance, and the value of Indian manufacturing firms. *International Research Journal of Finance and Economics*, 116(1), 121-131.
- Grinstein, Y., Weinbaum, D., & Yehuda, N. (2008). Perks and excess: Evidence from the new executive compensation disclosure rules. Unpublished working paper, Cornell University. Johnson School Research Paper Series, 04-09.
- Gul, F. A., Cheng, L. T. W., & Leung, T. Y. (2011). Perks and the informativeness of stock prices in the Chinese market. *Journal of Corporate Finance*, 17(5), 1410-1429. doi:<https://doi.org/10.1016/j.jcorpfin.2011.07.005>
- Haans, R. F., Pieters, C., & He, Z. L. (2016). Thinking about U: Theorizing and testing U-and inverted U-shaped relationships in strategy research. *Strategic management journal*, 37(7), 1177-1195.
- Han, L., & Yu, H.-H. (2023). An empirical study from Chinese energy firms on the relationship between executive compensation and corporate performance. *Nurture*, 17(3), 378-393. doi:<https://doi.org/10.55951/nurture.v17i3.356>
- Harbring, C., & Irlenbusch, B. (2011). Sabotage in tournaments: Evidence from a laboratory experiment. *Management science*, 57(4), 611-627.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial Economics*, 3(4), 305-360. doi:[https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jianfeng, M. (2016). Research on the relationship between management equity incentive, R & D expenditure and corporate performance. *Statistics & Decisions*, 9, 186-188.
- Kadan, O., & Yang, J. (2016). Executive stock options and earnings management: a theoretical and empirical analysis. *Quarterly Journal of Finance*, 6(02), 1650003.
- Lee, K. W., Lev, B., & Yeo, G. H. H. (2008). Executive pay dispersion, corporate governance, and firm performance. *Review of Quantitative Finance and Accounting*, 30, 315-338.
- Li, Z., Zheng, Y., & Lian, Y. (2011). Equity refinancing, earnings management and the performance decline of China listed companies: viewpoint from accruals and real activities manipulation. *Chinese Journal of Management Science*, 19(2), 49-56.
- Lin, C., Shen, W., & Su, D. (2009). Corporate tournament and executive compensation in a transition economy: evidence from publicly listed firms in China. Available at SSRN 1393507.

- Liu, C., & Sun, L. (2010). A study on relation of salary difference and firm performance: evidence from state-owned enterprises. *Nankai Business Review*, 13(2), 30-39.
- Ma, J., & Wang, H. (2022). Equity Incentive Model, Source of Subject Matter and Enterprise Performance: Modification Effect Based on Equity Incentive Intensity. *Mathematical Problems in Engineering*, 2022. doi:<https://doi.org/10.1155/2022/8905259>
- Nulla, Y. (2014). The comparative study between CEO compensation, CEO/chairman role and accounting performance in New York Stock Exchange (NYSE) companies: An empirical study. *Strategic Management Quarterly*, 2(1), 47-62.
- Osiichuk, D. (2022). The Driver of Workplace Alienation or the Cost of Effective Stewardship? The Consequences of Wage Gap for Corporate Performance. *Sustainability*, 14(13), 8006.
- Ozkan, N. (2011). CEO compensation and firm performance: An empirical investigation of UK panel data. *European Financial Management*, 17(2), 260-285.
- Park, W., & Byun, C. (2021). Effect of SME's Managerial Ability and Executive Compensation on Firm Value. *Sustainability*, 13(21), 11828. doi:<https://doi.org/10.3390/su132111828>
- Pissaris, S., Jeffus, W., & Gleason, K. C. (2010). The joint impact of executive pay disparity and corporate governance on corporate performance. *Journal of Managerial Issues*, 306-329.
- Ramadan, I. Z. (2013). Jordanian evidence for the pay-performance relation. *International Business Research*, 6(3), 174.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, 42(3), 335-370.
- Savitri, E., Andreas, A., Syahza, A., Gumanti, T. A., & Abdullah, N. H. N. (2020). Corporate governance mechanism and financial performance: Role of earnings management. *Entrepreneurship and Sustainability Issues*, 7(4), 3395.
- Scholtz, H., & Smit, A. (2012). Executive remuneration and company performance for South African companies listed on the Alternative Exchange (AltX). *Southern African Business Review*, 16(1), 22-38.
- Shengjun, C. (2016). Research on the influencing factors of equity incentive plan implementation effect of A-share listed companies. *Journal of Central University of Finance & Economics*, 12, 121-128.
- Shivakumar, L. (2010). Discussion of aggregate market reaction to earnings announcements. *Journal of Accounting Research*, 48(2), 335-342.
- Shufang, X., Tian, J., & Yang, L. (2012). Equity Incentive, Ownership Concentration and Corporate Performance. *Journal of Beijing Institute of Technology (Social Sciences Edition)*(3), 18-26.
- Sial, M. S., Chunmei, Z., Khan, T., & Nguyen, V. K. (2018). Corporate social responsibility, firm performance and the moderating effect of earnings management in Chinese firms. *Asia-Pacific Journal of Business Administration*, 10(2/3), 184-199.
- Soliman, M. T. (2008). The use of DuPont analysis by market participants. *The accounting review*, 83(3), 823-853.
- Spindler, J. C. (2016). Long-Term Incentives to Underperform in the Short Term. Available at SSRN 2811320.
- Sun, F., Wei, X., & Huang, X. (2013). CEO compensation and firm performance: Evidence from the US property and liability insurance industry. *Review of Accounting and Finance*, 12(3), 252-267.
- Sun, Y., Zhao, L., & Lin, C. (2023). The Impacts of Executive Equity on Green Corporate Innovation. *Sustainability*, 15(13), 9887. doi:<https://doi.org/10.3390/su15139887>

- Suteja, J., Gunardi, A., & Mirawati, A. (2016). Moderating effect of earnings management on the relationship between corporate social responsibility disclosure and profitability of banks in Indonesia. *International Journal of Economics and Financial Issues*, 6(4), 1360-1365.
- Tabassum, N., Kaleem, A., & Nazir, M. S. (2015). Real earnings management and future performance. *Global business review*, 16(1), 21-34.
- Tang, H.-W., & Chang, C.-C. (2015). Does corporate governance affect the relationship between earnings management and firm performance? An endogenous switching regression model. *Review of Quantitative Finance and Accounting*, 45, 33-58.
- Tang, L., Zhang, S., Ding, C., & Huan, J. (2022). How Can the Sustainable Motivational Effect of Equity Incentives on Corporate Performance Be Exploited?—A Study Based on the Moderating Effect of Aspiration Level. *Sustainability*, 14(24), 16485.
- Wang, C., Zhang, S., Ullah, S., Ullah, R., & Ullah, F. (2021). Executive compensation and corporate performance of energy companies around the world. *Energy Strategy Reviews*, 38, 100749.
- Wenfang, Z., & Ayisi, A. L. (2020). Earnings management and corporate performance: An empirical evidence from Ghana. *Res. J. Financ. Account*, 11.
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press.
- Xu, M., Kong, G., & Kong, D. (2017). Does wage justice hamper creativity? Pay gap and firm innovation in China. *China Economic Review*, 44, 186-202.
- Xu, N., Li, X., Yuan, Q., & Chan, K. C. (2014). Excess perks and stock price crash risk: Evidence from China. *Journal of Corporate Finance*, 25, 419-434.
- Yang, W., Xu, J., Zhang, Y., Wei, X., & Wang, S. (2023). The incentive role of media companies' executive compensation system in transformation and upgrading: Evidence from listed media companies in China. *Plos one*, 18(6), e0286729.
- Yan-Jun, X., & Yan-Xin, C. (2017). Executive compensation and real earnings management: Perspective of managerial power. *International Journal of Advances in Management and Economics*, 2(19), 19-37.
- Zhang, B., & Huang, H. (2011). Internal salary gap, government intervention and enterprise performance: Evidence from Chinese listed companies. Paper presented at the 2011 IEEE 18th International Conference on Industrial Engineering and Engineering Management.
- Zhang, B., Yuan, H., & Zhi, X. (2017). ROE as a performance measure in performance-vested stock option contracts in China. *Frontiers of Business Research in China*, 11, 1-17.
- Zhou, F., Wang, L., Zhang, Z., & An, Y. (2018). The impacts of accrual-based and real earnings management on executive compensation: evidence from Chinese public firms in the private sector. *Asia-Pacific Journal of Accounting & Economics*, 25(1-2), 128-144.
- Zhu, C., Liu, X., Chen, D., & Yue, Y. (2024). Executive compensation and corporate sustainability: Evidence from ESG ratings. *Heliyon*, 10(12).