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ORIGINAL RESEARCH

Independent directors' reputation incentives and executive pay tournaments

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Abstract
We provide evidence of a positive association between independent directors' reputation incentives and the magnitude of the CEO pay gap, defined as the difference in compensation between the CEO and lower-ranked executives. The CEO pay gap serves as a proxy for the strength of executive pay tournaments within the firm. Using a sample of S&P 1500 firms, we show that independent directors with stronger reputation incentives employ larger pay gaps to encourage executive risk-taking, thereby enhancing firm performance and protecting their own reputation in the labor market. This relationship holds for both short- and long-term pay gaps and is supported by propensity score matching and difference-in-differences analyses. Cross-sectional results indicate that the association is stronger in settings characterized by higher information asymmetry, lower institutional ownership, weaker product-market competition, and smaller firm size, consistent with reputation incentives substituting for weaker external monitoring. Overall, our findings highlight tournament-based compensation as a strategic governance mechanism and demonstrate that directors' reputation incentives, particularly in opaque information environments, can help align incentives and improve firm outcomes.

Keywords CEO pay · Director reputation · CEO pay gap · Executive risk-taking · Information environment

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1 Introduction

Executive compensation has long been a central topic in accounting and finance research (Adams et al. 2024; Aldawsari et al. 2024; Du et al. 2025; Hsieh and Lin 2024; Kini and Williams 2012). Much of this literature explains compensation in terms of agency problems, emphasizing how powerful CEOs influence pay arrangements to extract rents from shareholders (Bebchuk and Fried 2004; Core et al. 1999). In this view, CEO pay reflects managerial power, potentially leading to excessive compensation, weak governance, and misaligned incentives. However, high executive compensation can also serve a more constructive purpose. Directors may design generous pay packages to encourage executives to exert greater effort and take risks that improve firm performance (Kini and Williams 2012; Rosen 1986). Given that independent directors' reputations depend on observable firm outcomes, they may employ visible compensation structures, such as the CEO pay gap, to motivate executives and demonstrate effective oversight. We examine this alternative perspective by analyzing whether independent directors deliberately design higher CEO pay and widen the pay gap as a governance mechanism to enhance firm performance and protect their reputations.

A growing body of research highlights the critical role of reputation in independent directors' decision-making (Zattoni and Cuomo 2010). Their career prospects, wealth, and influence depend on maintaining credibility with shareholders, markets, and other boards (Fama 1980; Ferris et al. 2003). Consequently, directors with strong reputation incentives are more likely to promote corporate social responsibility (Mallin and Michelon 2011), select auditors who deliver high-quality audits (Bryan and Mason 2020; Fredriksson et al. 2020), encourage voluntary disclosure (Sila et al. 2017), and distance themselves from firms facing accounting restatements (Arthaud-Day et al. 2017) or financial distress (Cowen and Marcel 2011; Marcel and Cowen 2014).

Despite these insights, much of the literature focuses on defensive strategies, i.e., how directors react to reputational threats, rather than on proactive mechanisms used to influence firm outcomes. Reputation, however, can be strengthened not only by avoiding failure but also by taking visible actions that signal effectiveness to shareholders and markets. Compensation design is particularly important in this case. Unlike traditional monitoring, which is often opaque and reactive, pay arrangements are transparent, widely scrutinized, and provide directors with a direct instrument to shape managerial incentives and demonstrate governance quality (Ryan and Wiggins 2004).

Within this context, we examine the CEO pay gap as a strategic governance mechanism. A wider pay gap functions as a tournament incentive, offering substantial rewards for promotion and encouraging internal competition (Lazear and Rosen 1981). Research shows that such tournament structures can increase managerial effort and risk-taking, enhance firm performance (Burns et al. 2017; Kale et al. 2009), and stimulate innovation and R&D investment (Amore and Failla 2020; Shen and Zhang 2018). Building on this literature, we argue that the CEO pay gap serves as an obvious mechanism through which directors can encourage value-enhancing risk-taking, improve firm performance, and maintain their reputation in the labor market.

We analyze 27,444 firm-year observations from S&P 1500 firms between 2000 and 2022 to examine the relationship between directors' reputation incentives and the CEO pay gap. Director reputation is measured following the approach by Masulis and Mobbs (2014), who rank directorships based on the market capitalization of the firms directors serve. A directorship offers greater reputational benefits when the firm's market capitalization is at least 10% larger than that of the director's smallest board seat. We focus on independent directors given their particularly strong incentives to maintain a reputation for effective monitoring (Ryan and Wiggins 2004; Shivdasani 1993).

Using OLS fixed-effects regressions, we document a significant positive association between directors' reputation incentives and the CEO pay gap. We show that a higher proportion of reputation-sensitive directors is associated with a wider pay gap, and this relationship holds for both short-term and long-term components of compensation. A one standard deviation increase in the proportion of directors with strong reputation incentives is associated with a 4.7% increase in the overall CEO pay gap, including a 2.7% increase in the short-term pay gap, which mainly reflects differences in salary, bonus, and other annual payments, and a 5.3% increase in the long-term pay gap, driven by differences in stock awards, option awards, and long-term incentive payouts.

To ensure robustness and mitigate concerns that firm size or other observable characteristics drive our results, we perform several additional analyses. First, we apply propensity score matching (PSM) to create a sample matched on board, firm, CEO, and industry characteristics and re-estimate our baseline models. Second, we implement a difference-in-differences (DiD) approach exploiting exogenous shocks that alter directors' prioritization of specific board seats. Both methods yield results consistent with our baseline findings. Finally, we replicate our analyses using alternative measures of director reputation based on total assets and sales, again obtaining results consistent with those derived from market capitalization.

In line with the governance-substitution view (Agrawal and Knoeber 1996), our cross-sectional tests indicate that the link between directors' reputation incentives and the CEO pay gap is stronger when outside monitoring is weak and information quality is low. In practical terms, this means that when firms lack strong external monitors (fewer institutional owners or weaker product-market competition) and performance is harder to assess (greater information asymmetry), directors who care about their reputation rely more on internal incentive design, i.e., larger pay differentials, to spur effort and manage agency risk to protect their reputation in the labor market. By contrast, when external monitoring is stronger and the information environment is more transparent, outside mechanisms already discipline managers, reducing the incremental role of reputation-driven tournament design.

Our study makes three main contributions. First, we extend the director-reputation literature by shifting the focus from reputational defense to reputational investment (Gow et al. 2018; Sila et al. 2017). Rather than emphasizing how directors avoid affiliation with poorly governed firms, we demonstrate that directors actively build their reputation through visible, proactive choices, most notably, the design of executive compensation structures. Second, we contribute to the executive compensation literature by identifying director reputation as a determinant of the CEO pay gap. While prior research has primarily examined the economic and behavioral consequences of tournament incentives (Main et al. 1993; Nalebuff and Stiglitz 1983), we demonstrate that directors' reputational concerns shape these incentives, reframing the pay gap as a deliberate governance tool. Finally, we point out the mechanism and conditions under which reputation matters: consistent with the governance substitution view (Agrawal and Knoeber 1996; Giroud and Mueller 2010),

the relationship between directors' reputation incentives and the CEO pay gap is stronger when external monitoring is weaker and information is more opaque. In these settings, boards rely more on internal pay design to monitor and motivate executives.

The remainder of the paper is organized as follows. The next section reviews the literature on tournament incentives and director reputation and develops the theoretical mechanisms linking reputation incentives to the CEO pay gap. We then present the sample, data, and methodology, followed by the empirical results. The paper concludes with a discussion of implications for theory and practice.

2 Related literature and hypothesis development

2.1 Reputation incentives of independent directors

Reputation is the outcome of a long-standing social evaluation that shapes perceptions of the quality and capabilities of individuals and firms (Jensen et al. 2012). While a strong reputation yields numerous advantages, it can also become a liability over time, inviting increased scrutiny and expectations. Corporate directors play a critical role in governance, with their personal reputation often tied to the performance and public perception of the firms they oversee (Yermack 2004). Should any of these firms encounter adverse events, the directors' reputation may be at risk, signaling possible deficiencies in their oversight or advisory roles (Gow et al. 2018).

Research shows that directors frequently lose other board positions following financial fraud lawsuits or proxy contests (Fich and Shivdasani 2007; Fos and Tsoutsoura 2014). To protect their reputation and avoid market penalties, directors commonly resign from boards after adverse events, such as negative media exposure and firm downgrades by leading equity analysts (Harrison et al. 2018), or accounting restatements (Arthaud-Day et al. 2017). Resignations may also follow major crises or poor performance outcomes (Cowen and Marcel 2011; Marcel and Cowen 2014).

Directors holding multiple board seats face the additional challenge of allocating their limited time and attention across firms. Masulis and Mobbs (2014) demonstrate that a director's prestige is enhanced by the market capitalization of the firms they serve. Thus, directors with multiple board memberships tend to devote more attention and effort to monitoring managers in firms with higher market capitalization within their portfolios. Consequently, these larger firms receive greater oversight, which is associated with better performance (Masulis and Mobbs 2014, 2017), improved information environments (Sila et al. 2017), and a reduced likelihood of earnings restatements (Masulis and Mobbs 2017). The literature generally suggests that independent directors motivated by reputation may employ various tools to achieve their objectives. However, whether directors endorse internal pay tournaments that incentivize executives to work diligently and take on greater risk in their investment decisions remains unexplored.

2.2 Tournament incentives (the CEO pay gap)

The recent substantial increase in managerial pay has brought executive compensation to the forefront of academic research (e.g., Afzali and Silvola 2025; Geiler and Renneboog 2016;

Hrazdil et al. 2023). Baker et al. (1988) separate executive pay into two core categories: performance-based and promotion-based incentives. Performance-based incentives directly connect an executive's pay to their achievements, usually in the form of bonuses or stock options. In contrast, promotion-based incentives, also known as tournament incentives, encourage lower-ranked executives (e.g., Vice Presidents, hereafter VPs) to compete for promotion to the CEO position, which offers substantial rewards. The VP who demonstrates the highest relative performance is usually promoted. When VPs believe they have equal chances of promotion, their effort levels and commitment are heavily influenced by the value of the promotion reward or the tournament incentives, which is the pay gap between the CEO and the VPs (Baker et al. 1988; Jensen and Murphy 1990).

The concept of tournament incentives has been extensively examined for its role in driving firm outcomes. VPs, motivated by promotion opportunities and financial rewards, and CEOs, incentivized to secure their positions, often increase their efforts and take on more strategic risk in their investments. The increased efforts and risk-taking are associated with several positive outcomes, such as higher firm performance (Burns et al. 2017; Deller and Sandino 2020; Kale et al. 2009; Lee et al. 2008), lower IPO failure rates (Colak et al. 2021), and an increased focus on innovation, research, and development (Amore and Failla 2020; Shen and Zhang 2018).

However, without careful oversight, tournament incentives can lead to self-serving behavior among VPs, potentially harming corporate reputation and firm performance. Promotion brings higher compensation, authority, and prestige, leading some VPs to justify risky or opportunistic actions for financial gain (Shi et al. 2016). Evidence suggests that tournament incentives relate to behaviors such as higher corporate tax aggressiveness (Kubick and Masli 2016) and an increased risk of fraud or securities litigation (Haß et al. 2015; Shi et al. 2016). Experimental studies also highlight that tournament incentives can lead to sabotage, as individuals may attempt to reduce competitors' performance to improve their own chances of promotion (Harbring and Irlenbusch 2011).

2.3 Hypothesis development

Competition for CEO promotions drives executives to adopt riskier strategies in pursuit of greater rewards in compensation, status, and other benefits. As VPs strive to stand out, they are likely to embrace greater risk, creating a collective environment in which risk-taking becomes prevalent (Goel and Thakor 2008). Prior research supports this argument, showing that stronger tournament incentives encourage VPs to take on more risk, thereby improving their chances of advancing to the CEO position (Kini and Williams 2012). At the same time, CEOs who have advanced through such tournaments are motivated to sustain strong performance to protect their positions (Henderson and Fredrickson 2001). Collectively, these dynamics reinforce a culture of executive risk-taking that can enhance firm performance.

We propose that directors with strong reputation incentives utilize executive pay tournaments to stimulate risk-taking, improve firm performance, and protect their reputation in the labor market. Tournament-style incentives, especially a wider CEO pay gap, offer a transparent and controllable reward structure that is often more effective than alternatives such as strict oversight or broad pay equity, which tend to generate weaker motivational effects. Highly visible pay structures also signal governance effectiveness to both executives and shareholders (Ryan and Wiggins 2004). In this way, a carefully designed pay gap can align executive incentives with firm performance, address shareholder interests, and reinforce

directors' reputations as competent monitors. By contrast, governance strategies that rely solely on operational oversight may not provide the same degree of transparency or alignment. Based on this discussion, we propose:

> Hypothesis 1 (H1): A higher proportion of independent directors who perceive their directorship as prestigious is associated with a larger CEO pay gap within the firm.

A large CEO pay gap may not necessarily stimulate executive risk-taking. As Chen et al. (2013) note, such a gap may instead reflect CEO power rather than a genuine tournament structure. When powerful CEOs shape compensation packages, pay disparities may arise from their influence over the board rather than from incentive alignment. In these cases, CEO dominance or weak board oversight enables rent extraction, reduces firm risk-taking, impedes succession planning, and ultimately diminishes incentives to improve efficiency (Bebchuk et al. 2011; Bertrand and Mullainathan 2003; Masulis and Mobbs 2011).

In contrast to the CEO power argument, empirical evidence indicates that directors motivated by reputation and financial incentives actively monitor managerial activities. Gilson (1990) shows that only 46% of incumbent directors remain on the board following bankruptcy or debt restructuring, while Harford (2003) finds that takeover bids often impose financial losses and reduced board opportunities on target directors. Yermack (2004) further demonstrates that independent directors with longer tenures benefit financially as firm value increases. Building on this evidence, we argue that directors concerned with reputation and career prospects carefully structure executive compensation to elicit greater effort and calculated risk-taking from managers. This leads to our second hypothesis:

> Hypothesis 2 (H2): A wider CEO pay gap enhances executive risk-taking behavior when independent directors have stronger reputation incentives.

3 Data and methodology

3.1 Data

We conduct our empirical analysis using a sample of S&P 1500 firms from 2000 to 2022. We gather accounting data from Compustat, stock price data from the Center for Research in Security Prices (CRSP), and executive compensation and governance data from Execucomp and Boardex. Additionally, we collect institutional ownership data from Thomson Reuters Institutional Holdings (13 F).

As outlined in Table 1, our sample selection begins with collecting executive compensation and characteristics data from Execucomp. To ensure accurate measurement of the pay gap and related variables, we exclude firms with fewer than five annual observations and remove those with negative pay gap values, in line with Kini and Williams (2012). We then remove duplicates to convert executive-level data into firm-level data, and merge it with board, financial, and accounting data to construct variables for Eqs. 1–3. Following these steps, we drop some observations due to missing data, resulting in a final sample of 2,360 unique firms and 27,444 firm-year observations.

Table 1 Sample selection procedure

All S&*P* 1500 firms from 2000 to 2022	
All executive-level firm data in Execucomp	255,676
Less firms with fewer than five observations each year	(37,174)
Total number of observations from Execucomp	218,502
Less firms with negative *Pay Gap* values, following Kini and Williams (2012)	(9,207)
Less duplicates: the Execucomp data are at the executive level	(169,839)
Less firms with missing director reputation, financial, and accounting data	(12,012)
The sample size for the main tests	27,444

3.2 Tournament incentives (Pay Gap) – the dependent variable

We define *Pay Gap*, the total compensation differential between the CEO and the median-paid VP, as the measure of tournament incentives (Bloom 1999; Bognanno 2001; Kini and Williams 2012).[1] Total compensation (captured by Execucomp variable TDC1) includes both short-term elements, such as salary, bonus, and fixed annual payments, and long-term components like stock and option awards. Alongside the primary *Pay Gap* measure, we calculate *ST Gap*, focused on short-term compensation, and *LT Gap*, based on long-term compensation.

Following Kini and Williams (2012), we construct the tournament incentives measure with specific exclusions. First, we omit compensation for former CEOs who continue in executive roles within the firm, as they typically receive higher compensation than the current CEO without competitive promotion incentives. Second, we exclude observations with negative pay gaps, which often occur when founder CEOs, like Steve Jobs with his one-dollar salary, assign themselves minimal compensation.[2]

3.3 Reputation incentives of independent directors – the main explanatory variable

Directors are motivated by various incentives to oversee senior management. In larger firms, directors benefit from increased visibility and prestige, which enhances their recognition and association with prominent business roles. This visibility not only enhances personal satisfaction but also corresponds to higher compensation. Additionally, such prestigious roles create more career opportunities, positioning directors as attractive candidates for future board positions or other senior roles (Adams and Ferreira 2008; Fich and Shivdasani 2006, 2007; Yermack 2004).

When considering board appointments, directors also take into account the firm's reputation (Fahlenbrach et al. 2010; Knyazeva et al. 2013; Levit and Malenko 2016). Well-regarded firms are more likely to attract experienced and highly sought-after directors because board appointments at such firms are perceived as safer and more valuable career opportunities. In contrast, directors may be reluctant to join boards of firms with poor reputations or those

[1] We define the CEO as the individual identified as the firm's Chief Executive Officer in Execucomp using the variable CEOANN = "CEO".

[2] Coffey, B. (2011, May 16). *CEOs who make one dollar (or less) a year.* Forbes. [https://www.forbes.com/sites/brendancoffey/2011/05/16/ceos-who-make-one-dollar-or-less-year/?sh=20ace7083ad9]

in financial distress. Given their limited time and demanding schedules, directors allocate effort toward positions that offer the greatest potential benefits. Appointments at larger, prestigious firms are typically prioritized because they offer higher compensation, greater reputational capital, and stronger career prospects (Masulis and Mobbs 2014).

As firm size is a key determinant of where directors allocate most of their effort, we use market capitalization to construct our measure of directors' reputation incentives. Using BoardEx data from 2000 to 2022, we measure director reputation incentives by ranking each independent director's portfolio of directorships based on market capitalization of the firm, following Masulis and Mobbs (2014). We then aggregate director data into firm-level variables. Consistent with Masulis and Mobbs (2014), we utilize *%High Ranked* and *%Low Ranked*, representing the proportion of independent directors for whom the firm's directorship is at least 10% larger or smaller than their smallest or largest directorship, respectively.

For example, consider Howard Pien, who served on the boards of three firms in 2014: Immunogen Inc., Sage Therapeutics Inc., and Vanda Pharmaceuticals Inc., with respective market capitalizations of approximately $1.017 billion, $937 million, and $594 million. In assessing Pien's reputation incentives at Immunogen Inc., we observe that its market capitalization is over 10% larger than that of Vanda Pharmaceuticals Inc., so *High Ranked* is assigned a value of 1, and *Low Ranked* is set at 0. The same applies to Sage Therapeutics Inc., as its market capitalization exceeds Pien's smallest firm by over 10%. Conversely, because Vanda Pharmaceuticals Inc.'s market capitalization is more than 10% smaller than Immunogen Inc., it is classified as *Low Ranked* and assigned a value of 1, while *High Ranked* is assigned a value of 0. This process is applied across all directors, ultimately yielding firm-level measures indicating the relative significance of each directorship to its directors.

3.4 Control variables

In examining the relationship between director reputation incentives and the level of executive pay tournaments, we control for various board, CEO, and firm characteristics that may influence CEO pay and the CEO pay gap. We follow Masulis and Mobbs (2014) for board-related controls, including *Solo Directorship*, an indicator variable set to one when most independent directors hold only one directorship and zero otherwise. We also control for *Board Size* and *Board Independence*.

For CEO characteristics, we include *CEO Ownership* and *CEO Duality*. *CEO Ownership* aligns executive interests with shareholders, potentially affecting the firm's pay structure (Mehran and Carroll 1995). In contrast, *CEO Duality*, where a CEO also holds the board chair position, can concentrate power, enabling rent extraction at the expense of shareholders. CEOs with dual roles may dominate pay-setting, increasing their compensation and widening the CEO pay gap (Finkelstein and D'Aveni 1994). Additionally, CEOs with longer tenure may gain influence over the board and compensation committee, enhancing their pay and reducing pay sensitivity to performance (Hou et al. 2014). Therefore, we also control for *CEO Tenure* and *CEO Age* to account for these dynamics. Following Kale et al. (2009), we include *CEO Inside*, as compensation gaps are often smaller when the CEO is an insider.

We also control for *Firm Size* and *Leverage*, given their potential effects on CEO compensation (Faleye et al. 2013), as well as institutional ownership *(Inst. Ownership)* to cap-

ture the impact of ownership structure on executive pay (Khan et al. 2005). In line with Core et al. (1999), we control for stock return volatility *(STD Return)*. Additionally, we include industry concentration *(Ind. Concentration)*, measured using the revenue-based Herfindahl index, to reflect the extent to which a few firms dominate an industry. This variable captures how limited external employment opportunities and reduced bargaining power may influence executive compensation.

3.5 Main empirical model

To test H1, which posits that tournament incentives increase as a greater proportion of independent directors perceive the board as more significant, we estimate the following regression models:

$$Pay\ Gap_{it} = \beta_0 + \beta_1 \%High\ Ranked_{it} + \beta_2 \%Low\ Ranked_{it} + \beta_n \boldsymbol{X}'_{\mathrm{it}} + \alpha_i + \gamma_t + \epsilon_{it} \quad (1)$$

$$ST\ Gap_{it} = \delta_0 + \delta_1 \%High\ Ranked_{it} + \delta_2 \%Low\ Ranked_{it} + \delta_n \boldsymbol{X}'_{\mathrm{it}} + \alpha_i + \gamma_t + \epsilon_{it} \quad (2)$$

$$LT\ Gap_{it} = \lambda_0 + \lambda_1 \%High\ Ranked_{it} + \lambda_2 \%Low\ Ranked_{it} + \lambda_n \boldsymbol{X}'_{\mathrm{it}} + \alpha_i + \gamma_t + \epsilon_{it} \quad (3)$$

where, *Pay Gap* represents the natural log of the total compensation difference between the CEO and the median-paid VP. *ST Gap* refers to the short-term compensation gap, driven by differences in salary, bonus, and other annual payments, while *LT Gap* represents the long-term compensation gap, driven by differences in stock awards, option awards, and long-term incentive payouts, between the CEO and the median-paid VP. Additionally, *%High Ranked* and *%Low Ranked* are variables indicating the proportion of independent directors whose current directorship is at least 10% larger or smaller than their smallest or largest directorship, respectively.

We include *X* as a set of control variables discussed earlier, covering board, firm, and CEO characteristics. Additionally, we control for firm and year fixed effects, represented by α and γ, respectively, as shown in Eqs. 1–3. Including firm fixed effects is essential for several reasons. First, it accounts for unobservable firm-specific factors that do not change over time, such as organizational culture and management practices, which may influence CEO pay and the CEO pay gap. Second, firm fixed effects help reduce omitted-variable bias by accounting for firm-specific characteristics that may correlate with directors' reputation incentives and the executive pay structure. A positive (negative) coefficient estimate for *%High Ranked (%Low Ranked)* would indicate a positive relationship between director reputation incentives and the CEO pay gap. We provide detailed definitions for all variables in Appendix A.

4 Results

4.1 Descriptive statistics and univariate analysis

Table 2 provides a detailed summary of descriptive statistics across executive pay, reputation, board, firm, and CEO-related variables based on a dataset of 27,444 firm-year observations. The *Pay Gap* has a mean of approximately $4.572 million, highlighting the significant compensation gap between CEOs and median-paid VPs. The average *CEO Pay i*s around

Table 2 Summary statistics. Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in Appendix A

	Mean	Std. Dev.	P25	Median	P75
Pay-related variables (in $million)[3]					
Pay Gap	4.572	4.595	1.426	3.157	6.049
CEO Pay	6.683	6.079	2.437	4.821	8.810
Median VP Pay	2.083	1.857	0.854	1.500	2.625
ST Gap	0.627	0.663	0.299	0.451	0.650
LT Gap	3.928	4.295	0.953	2.569	5.324
Reputation variables					
%High Ranked	0.145	0.142	0.000	0.111	0.250
%Low Ranked	0.115	0.124	0.000	0.100	0.182
Board variables					
Sole Directorship	0.674	0.469	0.000	1.000	1.000
Board Size	9.686	2.435	8.000	9.000	11.000
Board Independence	0.720	0.127	0.667	0.750	0.800
Board Busyness	0.097	0.296	0.000	0.000	0.000
Board Co-option	0.467	0.304	0.222	0.444	0.714
Board Tenure	8.219	3.773	5.670	7.867	10.371
Board Qualifications	2.110	0.445	1.850	2.118	2.375
Female Directors	0.159	0.117	0.091	0.143	0.231
Foreign Directors	0.029	0.063	0.000	0.000	0.000
Board Age	60.390	4.106	57.818	60.400	63.000
Firm characteristics					
Number of VPs	5.424	0.698	5.000	5.000	6.000
Firm Size (log)	8.142	1.687	6.927	8.048	9.239
Inst. Ownership	0.763	1.643	0.638	0.800	0.911
STD Return	0.310	0.173	0.191	0.267	0.378
Leverage	0.250	0.197	0.083	0.230	0.369
Ind. Concentration	0.065	0.065	0.029	0.039	0.073
CEO variables					
CEO Tenure	7.266	7.059	2.000	5.000	10.000
Inside CEO	0.639	0.480	0.000	1.000	1.000
CEO Ownership (in $million)	1.509	17.949	0.103	0.256	0.679
CEO Age	56.393	6.860	52.000	56.000	61.000
CEO Duality	0.566	0.496	0.000	1.000	1.000
Vega (in $thousand)	0.145	0.277	0.006	0.049	0.161

[3]In all of our regressions, we employ the natural logarithm transformation for pay-related variables

$6.683 million, with a high standard deviation, reflecting considerable variation in executive compensation across firms. The *Median VP Pay* averages $2.083 million, further underscoring the substantial gap between CEO and VP compensation.

Regarding reputation variables, the averages for *%High Ranked* and *%Low Ranked* are 0.145 and 0.115, respectively, aligning with Masulis and Mobbs (2014). Board-related statistics reveal that *Solo Directorship* has a high mean of 0.674, indicating that most directors hold only one directorship. *Board Size* shows an average of ten directors per board, and *Board Independence* averages 72%, suggesting that boards consist predominantly of inde-

pendent directors. The low standard deviations for these variables indicate relatively little variation in board composition across sample firms.

CEO-related data shows an average *CEO Tenure* of seven years, an average *CEO Age* of 56 years, and that 64% of CEOs are internal hires. Additionally, around 57% of CEOs also serve as board chairs.

4.2 Baseline results

In Table 3, to assess H1, we estimate Eqs. 1–3 and present OLS regression results, including firm and year fixed effects. We report robust standard errors clustered by firm. In column 1, we begin with a univariate regression that excludes control variables, using *Pay Gap* as the dependent variable and reputation measures as the primary explanatory variables. The coefficient for *%High Ranked* is positive and significant at the 1% level, while the coefficient for *%Low Ranked* is negative and significant at the 1% level. The result supports H1, suggesting that *Pay Gap* is positively associated with the proportion of directors who view the directorship as prestigious and negatively associated with those who view it as less prestigious.

In column 2, we add board-level controls, confirming that reputation incentives have a significant influence on *Pay Gap*. Additionally, larger boards and those with more independent directors show a higher *Pay Gap*. In column 3, after incorporating firm-level controls, the relationship between directors' reputation incentives and a higher pay gap remains consistent. The results also indicate that larger firms and those with higher institutional ownership exhibit a wider *Pay Gap*, whereas firms with higher leverage and greater stock return volatility tend to have a narrower *Pay Gap*. In column 4, we add CEO characteristics, which do not alter the previously observed results. Finally, columns 5 and 6 show that director reputation incentives are positively and significantly associated with both short-term (ST Gap) and long-term (LT Gap) pay gaps, with a relatively larger coefficient for the *LT Gap*.

Regarding economic significance, a one standard deviation increase in *%High Ranked* corresponds to approximate increases of 4.7% (0.145×0.326), 2.7% (0.145×0.186), and 5.3% (0.145×0.367) in *Pay Gap*, *ST Gap*, and *LT Gap*, respectively. Control variables in the final two columns indicate that the short-term pay gap between the CEO and the median-paid VP increases with CEO tenure, ownership, and age. In contrast, an internal CEO appointment reduces the long-term pay gap. Additionally, larger firms and those with greater institutional ownership are more likely to exhibit both short- and long-term pay gaps, whereas firms with higher debt levels and more volatile stock returns tend to have lower short- and long-term pay gaps.

4.3 Alternative measures and model specifications

Table 4 confirms that our main result holds under various model specifications and reputation incentive measures. Panel A examines alternative measures of reputation incentives. In column 1, we use lagged reputation measures to address concerns about simultaneity between reputation measures and *Pay Gap*. Columns 2 and 3 substitute sales and total assets for market capitalization as ranking variables. In columns 4 and 5, we adjust the market capitalization threshold from 10% to 5% and 20%, respectively.

Table 3 Baseline results: the relationship between director reputation incentives and the CEO pay gap

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Pay Gap	Pay Gap	Pay Gap	Pay Gap	ST Gap	LT Gap
%High Ranked	0.575***	0.532***	0.322***	0.326***	0.186***	0.367***
	(9.65)	(8.83)	(5.56)	(5.67)	(3.45)	(4.22)
%Low Ranked	-0.406***	-0.440***	-0.284***	-0.270***	-0.030	-0.319***
	(-6.71)	(-7.22)	(-4.89)	(-4.70)	(-0.58)	(-3.49)
Sole Directorship		-0.006	-0.008	-0.007	-0.001	-0.009
		(-0.68)	(-0.88)	(-0.81)	(-0.07)	(-0.67)
ln(Board Size)		0.212***	-0.024	0.002	0.048	0.033
		(4.18)	(-0.49)	(0.03)	(1.12)	(0.42)
Board Independence		0.225***	0.215***	0.169**	0.054	0.268**
		(2.72)	(2.71)	(2.14)	(0.75)	(2.09)
Number of VPs			-0.005	0.009	0.011*	-0.032***
			(-0.66)	(1.31)	(1.69)	(-2.80)
Firm Size			0.315***	0.306***	0.127***	0.382***
			(17.85)	(17.42)	(7.74)	(13.94)
Inst. Ownership			0.006***	0.006***	0.003**	0.008***
			(4.34)	(4.24)	(2.39)	(3.29)
STD Return			-0.120***	-0.115**	-0.078*	-0.220***
			(-2.62)	(-2.50)	(-1.96)	(-3.00)
Leverage			-0.299***	-0.302***	-0.218***	-0.398***
			(-4.94)	(-4.99)	(-4.22)	(-4.14)
Ind. Concentration			0.173	0.183	0.545	0.132
			(0.48)	(0.50)	(1.53)	(0.23)
ln(CEO Tenure)				0.059***	0.083***	0.025
				(4.97)	(7.70)	(1.36)
Inside CEO				-0.046**	0.022	-0.057**
				(-2.51)	(1.33)	(-2.15)
ln(CEO Ownership)				0.016***	0.012**	0.018*
				(2.70)	(2.22)	(1.78)
ln(CEO Age)				0.043	0.250***	0.003
				(0.43)	(2.70)	(0.02)
CEO Duality				0.056**	0.018	0.053
				(2.17)	(0.78)	(1.30)
Intercept	7.825***	6.961***	5.298***	4.882***	4.214***	3.743***
	(48.70)	(35.14)	(24.31)	(11.18)	(10.81)	(5.36)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.592	0.676	0.690	0.693	0.581	0.605
Observations	27,444	27,444	27,444	27,444	27,444	27,444

This table presents OLS regression results examining the relationship between director reputation incentives and the CEO pay gap. Appendix A defines all variables. The t-statistics based on robust standard errors clustered at the firm level are in parentheses. *, **, *** denote significance at the 10%, 5%, and 1% levels (two-tailed), respectively

Table 4 Alternative measures and model specifications

Panel A: Alternative measures for independent director reputation incentives								
	Lagged value of reputation measures	Reputation measures based on total sales	Reputation measures based on total assets	5% high/low ranked threshold	20% high/low ranked threshold	Reputation measures of compensation committee members	Firms other than financials	Only financial firms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%High Ranked	0.238***	0.178***	0.124**	0.313***	0.317***	0.179***	0.305***	0.351**
	(4.33)	(3.26)	(2.16)	(5.46)	(5.47)	(3.28)	(5.03)	(2.19)
%Low Ranked	-0.175***	-0.069	0.034	-0.253***	-0.278***	-0.085*	-0.261***	-0.332**
	(-3.13)	(-1.14)	(0.53)	(-4.43)	(-4.76)	(-1.67)	(-4.19)	(-2.17)
Board Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.703	0.692	0.692	0.693	0.693	0.694	0.687	0.719
Observations	26,051	27,444	27,444	27,444	27,444	23,970	22,004	5,440
Panel B: Additional board variables								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%High Ranked	0.293***	0.314***	0.322***	0.321***	0.325***	0.325***	0.324***	0.326***
	(5.08)	(3.39)	(5.11)	(5.58)	(5.67)	(5.66)	(5.65)	(5.68)
%Low Ranked	-0.306***	-0.287***	-0.279***	-0.270***	-0.279***	-0.272***	-0.270***	-0.259***
	(-5.23)	(-3.08)	(-4.20)	(-4.69)	(-4.86)	(-4.74)	(-4.70)	(-4.47)
Board Busyness	0.067***							
	(3.13)							
Co-opted Directors			0.025					
			(0.70)					
ln(Board Tenure)				-0.010***				
				(-3.38)				
Board Qualifications					0.082***			
					(3.10)			
Female Directors						0.121		
						(1.32)		

Table 4 (continued)

Foreign Directors							-0.291*	
							(-1.93)	
ln(Board Age)								-0.006**
								(-2.06)
Board Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.693	0.683	0.702	0.694	0.694	0.693	0.693	0.693
Observations	27,444	8,950	27,444	27,444	27,444	27,444	27,444	27,444

In both panels, the CEO pay gap is the dependent variable. Panel A explores alternative measures of independent director reputation incentives and also presents subsample analysis. Column 1 uses lagged reputation measures, while columns 2 and 3 rank incentives by sales and assets, respectively. Column 4 measures the percentage of independent directors whose directorship size varies by at least 5%, while column 5 applies a 20% threshold to identify high- and low-ranked directors. Column 6 uses a compensation committee-level reputation measure, and columns 7 and 8 present baseline regressions excluding and including financial firms, respectively

Panel B adds board characteristics as control variables, such as the number of board appointments for independent directors, the presence of directors on multiple boards, post-CEO appointments, and averages for tenure, qualifications, gender ratio, nationality, and age of independent directors. Other control variables align with column 4 of Table 3. Appendix A defines all variables. The t-statistics based on robust standard errors clustered at the firm level are in parentheses. *, **, *** denote significance at the 10%, 5%, and 1% levels (two-tailed), respectively

Column 6 narrows the focus to directors on the compensation committee, as they primarily influence executive compensation decisions (Laux and Laux 2009). In columns 7 and 8, we perform subsample analyses: first, we exclude financial firms (SIC codes 6000–6999) due to regulatory specifics. Next, we limit the analysis to financial firms only, re-estimating the baseline model to assess robustness across the industry types. Our results remain consistently robust throughout these variations.

Panel B of Table 4 introduces additional factors to address possible confounding effects from other characteristics of independent directors. In column 1, we add *Board Busyness*, indicating boards where more than half of the independent members hold three or more directorships, as a control. The positive and significant coefficient for *Board Busyness* supports its relevance, while *%High Ranked* remains positive and significant, ruling out concerns that the director network alone drives corporate governance effects. Column 2 limits the sample to firms with independent directors serving on at least one additional board, and, despite the smaller sample, *%High Ranked* remains positively significant.

To account for potential limitations in board independence due to CEOs appointing independent directors with social ties, we include *Co-opted Directors* in column 3, representing the proportion of independent directors appointed after the CEO assumed office (Afzali et al. 2025; Coles et al. 2014). In this specification, *%High Ranked* remains positive and statis-

tically significant. Columns 4 and 5 control for independent directors' tenure and qualifications, while columns 6 and 7 examine diversity factors by including *Female Directors* and *Foreign Directors*. Finally, in column 8, we control for *Board Age*. Across all models, the relationship between reputation incentives and the *Pay Gap* remains positive and statistically significant, underscoring the robustness of our findings.

4.4 Controls for endogeneity

4.4.1 PSM

To address potential selection bias in our data, we employ PSM, a non-parametric technique that creates comparable treatment and control groups by accounting for non-random assignment. This approach reduces estimation bias by matching firms with similar key characteristics, allowing us to more accurately assess the relationship between director reputation incentives and the CEO pay gap. We define our treatment group as firms in the top quintile of *%High Ranked*, indicating high reputation incentives for independent directors, while firms in the remaining four quintiles form the control group.

To ensure comparability, we match treatment and control firms on all control variables, including board, firm, and CEO characteristics, using a caliper of 0.01 with no replacement. This caliper restricts matches to firms with minimal differences in propensity scores, while no replacement prevents any control firm from being reused, thus ensuring unique treatment-control pairs. Additionally, we match firms within the same two-digit SIC industry classification to control for industry-specific effects on pay structures and director reputation incentives.

After matching, we examine whether the pay gap differs between the treatment and control groups, which are closely matched in characteristics and operate in the same industry. Panel A of Table 5 presents descriptive statistics for both groups before and after PSM, where the insignificant differences in mean values confirm the success of the matching process. Panel B of Table 5 shows the PSM results, indicating that firms with higher director reputation incentives exhibit a larger pay gap. These firms rely heavily on both short- and long-term pay gaps within their tournament structures, highlighting the impact of director reputation incentives on executive compensation strategies.

4.4.2 Exogenous shocks to directorship rankings

Establishing a causal link between the reputation incentives of independent directors and the magnitude of the CEO pay gap is challenging due to endogeneity concerns. One source of endogeneity is reverse causality: CEOs may influence board composition by strategically appointing directors who are more likely to endorse favorable pay structures, thereby widening the pay gap. For instance, Coles et al. (2014) show that as the proportion of co-opted independent directors increases, executive pay rises without corresponding improvements in pay-performance sensitivity, consistent with CEO influence over compensation policies. Another concern is self-selection: firms that are already more profitable or growth-oriented may naturally attract high-reputation directors, who join such boards to protect or enhance their reputation. In these cases, the observed association between director reputation and pay tournaments could be driven by underlying firm characteristics rather than a causal effect of reputation incentives themselves.

Table 5 The relationship between director reputation incentives and the CEO pay gap in a matched sample

Panel A: Statistics of treatment and control groups before and after the PSM method

	Before PSM			After PSM		
	Treatment	Control	Mean Difference	Treatment	Control	Mean Difference
Sole Directorship	0.418	0.729	-0.311***	0.676	0.671	0.005
ln(Board Size)	2.331	2.218	0.113***	2.234	2.219	0.015
Board Independence	0.777	0.707	0.069***	0.727	0.737	-0.010
Number of VPs	5.436	5.421	0.015	5.408	5.445	-0.036
Firm Size	9.312	7.870	1.442***	8.217	8.211	0.006
Inst. Ownership	0.759	0.764	-0.005	0.777	0.769	0.007
STD Return	0.265	0.321	-0.056***	0.314	0.314	-0.000
Leverage	0.264	0.247	0.018***	0.244	0.254	-0.011
Ind. Concentration	0.062	0.065	-0.003***	0.039	0.041	-0.002
ln(CEO Tenure)	1.686	1.794	-0.108***	1.826	1.821	0.005
Inside CEO	0.680	0.630	0.050***	0.631	0.651	-0.020
ln(CEO Ownership)	5.692	5.516	0.176***	5.572	5.470	0.102
ln(CEO Age)	4.032	4.023	0.009***	4.028	4.022	0.006
CEO Duality	0.650	0.546	0.103***	0.540	0.557	-0.018
Observations	5,169	22,275	27,444	3,971	3,971	7,942

Panel B: Regression results of the pay gap on reputation measures using a matched sample

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*Pay Gap*	*Pay Gap*	*Pay Gap*	*Pay Gap*	*ST Gap*	*LT Gap*
%High Ranked	0.444***	0.432***	0.343***	0.330***	0.169**	0.426***
	(5.15)	(4.97)	(3.97)	(3.87)	(2.14)	(3.54)
%Low Ranked	-0.481***	-0.500***	-0.379***	-0.348***	-0.069	-0.439***
	(-5.08)	(-5.24)	(-4.09)	(-3.86)	(-0.75)	(-3.27)
Board Controls	No	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	No	Yes	Yes	Yes	Yes
CEO Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.637	0.637	0.647	0.656	0.598	0.605
Observations	7,942	7,942	7,942	7,942	7,942	7,942

Panel A reports the means and mean differences between treatment and control groups before and after applying the Propensity Score Matching method. Panel B presents regression results on a matched sample of firms to assess the relationship between director reputation incentives and executive pay tournaments, represented by the CEO pay gap. Appendix A defines all variables. The t-statistics based on robust standard errors clustered at the firm level are in parentheses. *, **, *** denote significance at the 10%, 5%, and 1% levels (two-tailed), respectively

Following prior research (Masulis and Mobbs 2014; Sila et al. 2017), we address these potential biases by exploiting a plausibly exogenous shock to director reputation incentives. Specifically, we identify firms where at least one independent director experiences an increase in their directorship ranking relative to other directorships, driven by a decline in the market capitalization of other firms in the director's portfolio. This market-driven increase in ranking provides a plausibly exogenous change in director reputation incentives.

To examine the effect of this shock on the CEO pay gap, we first apply PSM, matching firms based on board, firm, CEO, and industry characteristics (two-digit SIC code). We use a caliper of 0.01 with no replacement to ensure precise, unique matches between treatment and control firms.

Panel A of Table 6 presents descriptive statistics for firms whose directors experience the exogenous shock (treatment) and those that do not (control) over a six-year event window, both before and after PSM. We remove firms that experience such shocks more than once during the sample period to avoid overlapping treatment effects and ensure clean identification. The absence of significant mean differences post-matching indicates that the samples are well balanced.

Following the matching, we conduct a parallel trends test to examine the validity of the DiD design, with the indicator variable *Post* set to one for the three years after the ranking change and zero for the three years before. Figure 1 provides evidence consistent with the parallel

Table 6 An exogenous increase in directorship ranking and the CEO pay gap

Panel A: Statistics for treatment and control groups around the event window, before and after PSM

	Before PSM			After PSM		
	Treatment	Control	Mean Difference	Treatment	Control	Mean Difference
Sole Directorship	0.691	0.561	0.130***	0.599	0.591	0.008
ln(Board Size)	2.228	2.278	-0.050***	2.263	2.265	-0.002
Board Independence	0.714	0.748	-0.034***	0.742	0.746	-0.004
Number of VPs	5.422	5.465	-0.043**	5.470	5.454	0.015
Firm Size	8.102	8.228	-0.126**	8.200	8.244	-0.044
Inst. Ownership	0.762	0.773	-0.011	0.764	0.771	-0.008
STD Return	0.312	0.310	0.003	0.318	0.310	0.008
Leverage	0.242	0.279	-0.036***	0.259	0.271	-0.012
Ind. Concentration	0.064	0.063	0.002	0.055	0.055	0.000
ln(CEO Tenure)	1.804	1.717	0.087***	1.702	1.736	-0.034
Inside CEO	0.637	0.669	-0.033**	0.654	0.648	0.006
ln(CEO Ownership)	5.585	5.458	0.127**	5.430	5.453	-0.023
ln(CEO Age)	4.026	4.015	0.011***	4.016	4.017	-0.001
CEO Duality	0.563	0.605	-0.042***	0.589	0.594	-0.005
Observations	1,261	20,870	22,131	941	941	1,882

Panel B: Regression results of the pay gap on reputation measures using a matched sample

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*Pay Gap*	*Pay Gap*	*Pay Gap*	*Pay Gap*	*ST Gap*	*LT Gap*
Post	-0.057	-0.060	-0.057	-0.064	-0.088	-0.129
	(-0.74)	(-0.78)	(-0.76)	(-0.86)	(-1.56)	(-1.09)
Ranking Increase × Post	0.081*	0.086**	0.093**	0.093**	0.093	0.180**
	(1.93)	(1.99)	(2.08)	(2.10)	(1.40)	(2.41)
Board Controls	No	Yes	Yes	Yes	Yes	Yes
Firm Controls	No	No	Yes	Yes	Yes	Yes
CEO Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.750	0.749	0.753	0.759	0.677	0.694
Observations	1,882	1,882	1,882	1,882	1,882	1,882

This table presents the DiD regression results, identifying treatment firms as those with at least one treatment director, an independent director with multiple directorships who gains ranking in the firm due to a decrease in another firm's size. Control firms, by contrast, lack any treatment directors. We use PSM with all control variables and two-digit SIC codes to match treatment and control firms. The dummy variable *Post* equals zero three years before the directorship ranking change and one three years after. Appendix A defines all variables. The t-statistics based on robust standard errors clustered at the firm level are in parentheses. *, **, *** denote significance at the 10%, 5%, and 1% levels (two-tailed), respectively

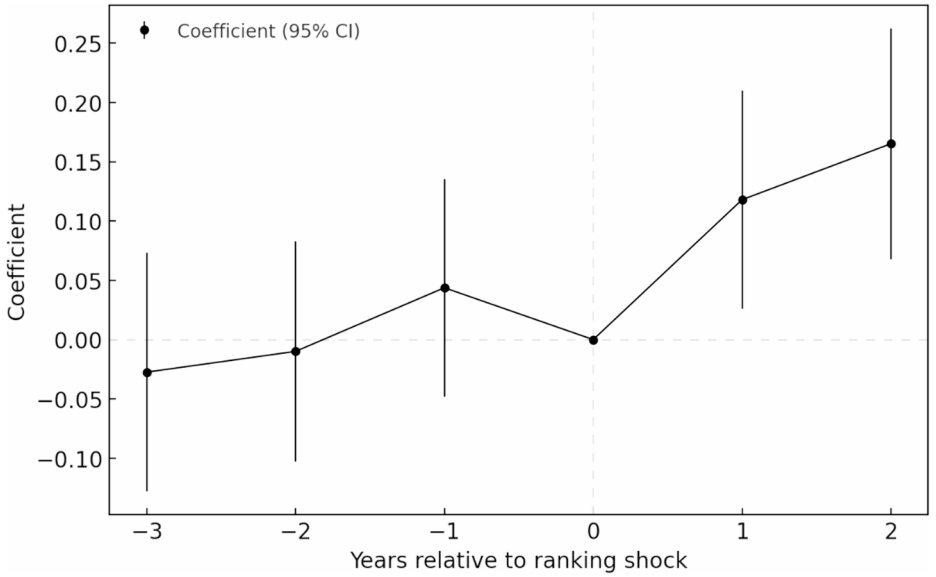

Fig. 1 Parallel trends in the CEO pay gap around directorship ranking shocks. This figure presents the parallel trends analysis from our DiD regression, examining the CEO pay gap before and after exogenous increases in director reputation incentives. The graph plots coefficient estimates for treatment (firms experiencing a director ranking shock) relative to control firms, with 95% confidence intervals shown by error bars. Pre-treatment estimates are close to zero with overlapping confidence intervals, supporting the parallel trends assumption

trends assumption. Before the exogenous increase in directorship rankings, the CEO pay gap evolves similarly for treatment and control firms, with pre-treatment coefficients close to zero and statistically insignificant. Following the ranking increase, however, the pay gap in treatment firms diverges upward relative to control firms. This pattern supports a causal interpretation of our DiD estimates, indicating that the observed divergence is attributable to changes in directors' reputation incentives rather than to pre-existing differences.

The DiD results in Panel B of Table 6 show that the coefficient estimates for *Ranking Increase* × *Post* are positive and significant across most columns. Specifically, following a positive shock to directorship rankings, the average pay gap of treatment firms increases by approximately 9.3% relative to control firms over a three-year period, as demonstrated in column 4, which includes all control variables. The final two columns of Table 6 reveal that the increase in this pay gap primarily stems from a rise in CEO long-term compensation. These findings suggest that an exogenous increase in director reputation incentives leads to a corresponding increase in the pay gap. With staggered treatment timing, the coefficient for post period is not absorbed by year fixed effects.

4.5 Tournament incentives and risk-taking

In the previous section, we reported a positive relationship between directors' reputation incentives and the pay gap. In this section, we test our second hypothesis (H2), which posits that a wider CEO pay gap increases executive risk-taking, particularly when independent directors have strong reputation incentives.

In column 1 of Table 7, we examine the relationship between *High Pay Gap* and *Vega*. *High Pay Gap* is an indicator variable set to one if the firm's pay gap exceeds the industry median for that year, using the two-digit SIC code and excluding the firm itself. *Vega*, calculated following Core and Guay (2002), measures CEO risk-taking incentives, representing the anticipated change in CEO wealth for a 0.01 increase in stock return volatility. The coefficient for *High Pay Gap* is positive and significant at the 1% level, indicating that firms with a high pay gap show greater CEO risk-taking incentives, as reflected in a higher *Vega*. This finding aligns with prior research, suggesting that a large pay gap is positively associated with the CEO's sensitivity to firm risk.

In column 2, we run the regression of *Vega* on reputation variables. The coefficient for *%High Ranked* is positive but not statistically significant, indicating that a larger proportion of independent directors with higher reputation incentives does not independently drive *Vega*. However, the coefficient for *%Low Ranked* is negative and significant at the 5% level,

Table 7 Reputation-conscious directors, tournament incentives, and CEO risk-taking

Dependent variable:	(1)	(2)	(3)
	Vega	Vega	Vega
High Pay Gap	0.024***		0.017***
	(6.83)		(3.06)
%High Ranked		0.030	-0.047**
		(1.21)	(-2.18)
%Low Ranked		-0.053**	-0.005
		(-2.35)	(-0.29)
%High Ranked × High Pay Gap			0.121***
			(4.06)
%Low Ranked × High Pay Gap			-0.090***
			(-2.99)
Sole Directorship	0.002	0.001	0.002
	(0.67)	(0.44)	(0.61)
ln(Board Size)	0.053**	0.053**	0.054**
	(2.43)	(2.40)	(2.46)
Board Independence	-0.056**	-0.050*	-0.054**
	(-2.09)	(-1.86)	(-2.01)
Number of VPs	-0.006***	-0.006***	-0.006***
	(-2.71)	(-2.63)	(-2.61)
Firm Size	0.056***	0.057***	0.054***
	(5.61)	(5.88)	(5.56)
Inst. Ownership	0.000	0.000	0.000
	(0.29)	(1.14)	(1.42)
STD Return	-0.058***	-0.056***	-0.056***
	(-4.56)	(-4.49)	(-4.52)
Leverage	-0.039	-0.039	-0.036
	(-1.51)	(-1.52)	(-1.43)
Ind. Concentration	0.233*	0.239*	0.242*
	(1.73)	(1.77)	(1.80)
ln(CEO Tenure)	0.041***	0.041***	0.040***
	(9.41)	(9.46)	(9.37)

Table 7 (continued)

Dependent variable:	(1)	(2)	(3)
	Vega	Vega	Vega
Inside CEO	0.006	0.005	0.006
	(0.93)	(0.82)	(0.88)
ln(CEO Ownership)	0.006**	0.006**	0.006**
	(2.22)	(2.31)	(2.18)
ln(CEO Age)	-0.021	-0.020	-0.018
	(-0.68)	(-0.66)	(-0.58)
CEO Duality	0.003	0.004	0.002
	(0.35)	(0.47)	(0.30)
Intercept	-0.510***	-0.515***	-0.497***
	(-2.80)	(-2.86)	(-2.77)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R^2	0.576	0.575	0.577
Observations	25,230	25,230	25,230

This table presents regression results for the firm-level risk-taking measure on the interaction between director reputation incentives and the *High Pay Gap*, which is an indicator variable equal to one if the firm's CEO pay gap is greater than the annual two-digit SIC industry median, and zero otherwise. All variables are defined in Appendix A. The t-statistics, based on robust standard errors clustered at the firm level, are shown in parentheses. Significance levels are denoted as *, **, and *** for the 10%, 5%, and 1% levels (two-tailed), respectively

suggesting that a higher proportion of low-ranked directors corresponds to a decrease in *Vega*, likely reducing risk-taking incentives.

In column 3, we introduce interaction terms between *High Pay Gap* and the measures of reputation to explore their combined impact. The interaction term *%High Ranked* × *High Pay Gap* is positive and significant at the 1% level, suggesting that firms with both a high pay gap and a larger proportion of directors with higher reputation incentives experience an increase in *Vega*, reflecting stronger CEO risk-taking incentives. Conversely, the interaction term *%Low Ranked* × *High Pay Gap* is negative and significant, indicating that a high pay gap combined with a higher proportion of directors with lower reputation incentives reduces *Vega* and thus lowers risk sensitivity.

Overall, these results support the hypothesis that a high CEO pay gap intensifies executive risk-taking, especially when the firm's independent directors have strong reputation incentives. Conversely, a higher proportion of directors with lower reputation incentives mitigates this effect, underscoring the crucial role board composition plays in shaping CEO risk sensitivity within the context of pay gaps.

4.6 Cross-sectional tests

We extend our analysis with cross-sectional tests to examine how the association between directors' reputation incentives and the CEO pay gap varies with firms' information environments and monitoring quality. Columns 1–4 of Table 8 report the results. Across all specifications, the interaction term *%High Ranked* × *CS variable* is positive and statistically significant, indicating that the increase in the pay gap associated with

Table 8 Cross-sectional tests of director reputation incentives and the CEO pay gap

Cross-sectional (CS) variable:	Higher Information Asymmetry	Lower Inst. Ownership	Lower Competition	Small Firms
	(1)	(2)	(3)	(4)
Dependent variable:	*Pay Gap*	*Pay Gap*	*Pay Gap*	*Pay Gap*
%High Ranked	0.229***	0.253***	0.290***	0.288***
	(3.53)	(4.33)	(4.77)	(5.05)
%Low Ranked	-0.303***	-0.257***	-0.246***	-0.288***
	(-4.84)	(-4.47)	(-4.10)	(-4.85)
%High Ranked × CS variable	0.275*	0.342***	0.198*	0.313**
	(1.81)	(3.65)	(1.74)	(2.31)
%Low Ranked × CS variable	0.354	-0.063	-0.111	0.069
	(1.54)	(-0.58)	(-0.90)	(0.60)
CS variable	-0.246***	-0.091***	-0.000	-0.094***
	(-9.02)	(-3.52)	(-0.00)	(-3.31)
Board Controls	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
CEO Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.712	0.694	0.693	0.694
Observations	22,039	27,444	27,444	27,444

This table reports regressions of the CEO pay gap on director reputation incentives interacted with a set of cross-sectional variables, each in separate specifications. The four cross-sectional variables proxy for the firm's information/monitoring environment and are defined as follows: (i) *Higher Information Asymmetry* equals 1 when the firm's Amihud illiquidity (constructed from daily returns) falls in the fifth (top) quintile within its SIC 2-digit industry-year, and 0 otherwise; (ii) *Lower Inst. Ownership* equals 1 for observations in the first (bottom) quintile of the percentage of institutional ownership within SIC 2-digit industry-year; (iii) *Lower Competition* equals 1 for industries in the fifth (top) quintile of the HHI in a given year (higher HHI implies weaker competition); and (iv) *Small Firms* equals 1 for firms in the first (bottom) quintile of total assets within SIC 2-digit industry-year. All variables are defined in Appendix A. The t-statistics, based on robust standard errors clustered at the firm level, are shown in parentheses. Significance levels are denoted as *, **, and *** for the 10%, 5%, and 1% levels (two-tailed), respectively

stronger reputation incentives is larger when information is more opaque, external monitoring is weaker, product-market competition is lower, or firms are smaller in size.

Specifically, we find that the effect of reputation incentives on pay gap is more pronounced in firms in the top quintile of Amihud illiquidity (constructed using daily return, following Amihud (2002), a widely used measure of information asymmetry. This evidence supports the view that when performance is more difficult to observe, boards rely more heavily on contractual incentives to elicit managerial effort and mitigate agency problems (Holmström 1979; Lazear and Rosen 1981). Similarly, the association between reputation incentives and the pay gap is stronger when institutional ownership is lower. This finding is consistent with the notion that sophisticated owners provide external discipline that constrains board-driven incentives (Shleifer and Vishny 1986). In their absence, reputation-motivated directors compensate by implementing larger internal tournaments.

The effect is also higher in less competitive industries. This result aligns with evidence that product-market competition disciplines managers (Giroud and Mueller 2010). When market forces are weaker, internal governance plays a larger role, and directors' reputational concerns more strongly translate into wider CEO pay gaps. Finally, the effect is stronger in smaller firms. Such firms typically face greater opacity, thinner liquidity, and less analyst coverage (Bhushan 1989), conditions under which internal incentive instruments are especially valuable for eliciting managerial effort.

Taken together, the cross-sectional evidence supports a governance-substitution perspective (Agrawal and Knoeber 1996): directors' reputation incentives are linked to larger pay gaps in settings where alternative disciplining mechanisms, such as information environments, institutional ownership, and market competition, are less effective.

5 Conclusion

This study examines the relationship between the reputation incentives of independent directors and the use of executive pay tournaments within firms. We argue that independent directors, acting in their own reputational interest, strategically employ tournament incentives to stimulate executive risk-taking and thereby enhance firm performance. Our empirical analysis supports this claim, showing a positive relationship between directors' reputation incentives and the CEO pay gap. We also find that a wider pay gap increases CEOs' sensitivity to firm risk when independent directors have stronger reputation incentives. These results remain robust across a range of supplementary tests, including PSM and DiD. Consistent with governance substitution, the cross-sectional tests reveal that the link between directors' reputation incentives and the CEO pay gap is stronger when external monitoring is limited and information is opaque, particularly in firms characterized by higher information asymmetry, lower institutional ownership, smaller size, and less competitive industries.

This study contributes to the literature on reputation management among corporate directors by demonstrating how directors can enhance their reputational capital through the strategic use of tournament incentives. The implications extend to both firms and investors. For firms, carefully calibrated tournament incentives can help align VPs' behavior with long-term corporate objectives, fostering an environment that encourages strategic risk-taking and sustainable growth. For investors, understanding how directors' reputational concerns influence executive compensation offers a valuable perspective for evaluating the alignment between managerial incentives and shareholder value creation. Such insight can support more informed investment decisions and identify firms with stronger governance and balanced approaches to risk-taking.

Nonetheless, the study has limitations. As our sample is drawn from S&P 1500 firms, the findings may not be generalized beyond the Anglo-American corporate governance framework. Future research should extend this analysis to different institutional settings, where variations in ownership structures and governance norms may shape how directors' reputation incentives influence executive pay design.

Appendix A

Table 9 Variable definitions

Variable	Definition	Source
Pay Gap	The difference between the CEO's total compensation and the firm's median-paid VP's total compensation	Execucomp
CEO Pay	The CEO's total compensation, TDC1 in Excucomp	Execucomp
Median VP Pay	The total compensation of the median-paid VP, TDC1 in Excucomp	Execucomp
ST Gap	The difference in short-term compensation (salary + bonus + other annual payments) between the CEO and the median-paid VP	Execucomp
LT Gap	The difference in long-term compensation (stock awards + option awards + long-term incentive payouts) between the CEO and the median-paid VP	Execucomp
%High Ranked	The proportion of independent directors on a firm's board whose directorship in that firm is at least 10% larger than their smallest directorship across all firms, measured by the market capitalization	Boardex and Compustat
%Low Ranked	The proportion of independent directors on a firm's board whose directorship in that firm is at least 10% smaller than their largest directorship across all firms, measured by the market capitalization	Boardex and Compustat
Sole Directorship	An indicator variable that equals one when the majority of independent directors hold no other directorship besides the one in question, zero otherwise	Boardex
Board Size	Number of directors sitting on the firm's board	Boardex
Board Independence	Number of independent directors divided by the total number of corporate directors	Boardex
Board Busyness	Indicator variable taking on a value of one when more than half of the board has three or more other directorships	Boardex
Co-opted Directors	Proportion of independent directors appointed after the CEO's appointment	Boardex
Board Tenure	Average number of years the independent directors held the firm's directorship	Boardex
Board Qualifications	Average number of degrees that independent directors have	Boardex
Female Directors	Ratio of female independent directors on the firm's corporate board	Boardex
Foreign Directors	Ratio of independent directors who hold nationality other than the US	Boardex
Board Age	Average age of independent directors sitting on the corporate board	Boardex
Number of VPs	Number of non-CEO executives	Execucomp
STD Return	Standard deviation of stock returns over fiscal years t-4 to t, requiring a minimum of five years of data to estimate	CRSP
Firm Size	Natural logarithm of total assets	Compustat
Inst. Ownership	Proportion of outstanding shares held by institutional investors	Thomson-Reuters Institutional Holdings (13 F)
Leverage	Long-term debt plus short-term debt divided by total assets	Compustat
Ind. Concentration	Herfindahl index based on sales, calculated across all Compustat firms operating in the same industry (two-digit SIC)	Compustat

Table 9 (continued)

Variable	Definition	Source
CEO Tenure	Number of years that the CEO has assumed office	Execucomp
Inside CEO	Indicator variable taking the value of one if the CEO was at the firm more than two years before becoming a CEO, zero otherwise	Execucomp
CEO Ownership	Market value of the firm's stocks owned by the CEO	Execucomp
CEO Age	The CEO's age	Execucomp
CEO Duality	Indicator variable equals one if the CEO is also chair of the board, zero otherwise	Execucomp
Vega	Anticipated change in CEO wealth for a 0.01 shift in stock return volatility (based on the total portfolio of options) is calculated following the method outlined by Core and Guay (2002)	CSRP & Execucomp

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