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Home Alone: The Effects of Lone-Insider Boards on CEO Pay, Financial Misconduct, and Firm Performance

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Research summary: *Corporate scandals of the previous decade have heightened attention on board independence. Indeed, boards at many large firms are now so independent that the CEO is "home alone" as the lone inside member. We build upon "pro-insider" research within agency theory to explain how the growing trend toward lone-insider boards affects key outcomes and how external governance forces constrain their impact. We find evidence among S&P 1500 firms that having a lone-insider board is associated with (a) excess CEO pay and a larger CEO-top management team pay gap, (b) increased likelihood of financial misconduct, and (c) decreased firm performance, but that stock analysts and institutional investors reduce these negative effects. The findings raise important questions about the efficacy of leaving the CEO "home alone."*

Managerial summary: *Following concerns that insider-dominated boards failed to protect shareholders, there has been a push for greater board independence. This push has been so successful that the CEO is now the only insider on the boards of more than half of S&P 1500 firms. We examine whether lone-insider boards do in fact offer strong governance or whether they enable CEOs to benefit personally. We find that lone-insider boards pay CEOs excessively, pay CEOs a disproportionately large amount relative to other top managers, have more instances of financial misconduct, and have lower performance than boards with more than one insider. Thus, it appears that lone-insider boards do not function as intended and firms should reconsider whether the push towards lone-insider boards is actually in shareholders' best interests.*

Corporate governance practice continues to evolve. One evolution that has largely escaped scholarly attention is the increased use of lone-insider boards, which occur when the CEO is "home alone" as the only current employee on the board of directors. As evidenced by the 2002 Sarbanes-Oxley Act and subsequent NYSE/NASDAQ rule changes, publicly-traded firms face pressure to increase board independence. As a result, it is perhaps not surprising that a steadily rising number of firms have taken the ultimate step toward independence by adopting a lone-insider structure. Indeed, from a handful prior to 1990, lone-insider boards now account for more than half of S&P 1500 boards.

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As a growing trend, these boards appear worthy of investigation.

Agency theory has long advised that boards should be comprised of a majority of outside, independent directors – i.e., those neither employed by the firm nor from affiliated companies that depend on the firm (Bednar, 2012; Fama, 1980). The push for more independent directors is grounded in the belief that these directors' independence enhances objectivity and thus increases boards' overall monitoring capacity, which should improve firm performance by reducing CEOs' ability to take self-serving actions (e.g., Fama & Jensen, 1983; Finkelstein, Hambrick, & Cannella, 2009).

While the benefits of independent directors have been heralded by governance practitioners (e.g., Monks & Minow, 2011) and institutionalized in practice through legislative action and stock exchange rules that require a majority of independent directors (Dalton, Hitt, Certo, & Dalton, 2007), removing *all* non-CEO inside directors and leaving the CEO "home alone" is a practical extension of agency theory that goes well beyond the theory's recommendations. Removing non-CEO inside directors implicitly assumes that such directors bring little value. Not only is there a lack of empirical evidence to support such an assumption (Dalton et al., 2007), there is a small but long-established "pro-insider" stream of agency theory research that explains how a small minority of inside directors strengthens the monitoring capabilities of independent directors by providing (a) better access to critical information and (b) viable CEO succession options (e.g., Baysinger & Hoskisson, 1990; Ocasio, 1994; Shen & Cannella, 2002).

Given that lone-insider boards are a relatively new but increasingly prevalent governance structure, that this practice extends beyond the recommendations of established theory, and that their efficacy remains unknown, investigating the consequences of lone-insider boards is both timely and warranted. Indeed, if researchers fail to build theory to explain why lone-insider boards might be harmful and empirically demonstrate their consequences, practitioners might see little reason to stop and critically evaluate this increasingly institutionalized practice. We therefore draw on the pro-insider stream of agency research to describe what is lost when the CEO is left "home alone" on the board and we investigate three outcomes: (a) CEO pay (i.e., excess CEO pay and the CEO-TMT pay gap), (b) financial misconduct, and (c) firm performance.

Although boards are shareholders' primary line of defense (Dalton et al., 2007), governance forces external to the firm have also been shown to exert influence that shapes board members' and managers' actions (Aguilera, Desender, Bednar, & Lee, 2015). Thus, we also theorize that monitoring pressure from external governance forces, namely stock analysts and institutional investors, helps reduce lone-insider CEOs' ability to take self-serving actions at shareholders' expense. Results based on two-stage least squares regression on a panel of S&P 1500 firms supports our theorizing that critical sources of information and monitoring are lost on lone-insider boards, but that the associated harm can be reduced by external governance forces. Overall, our findings suggest that researchers and practitioners need to view increasingly institutionalized norms about board independence with caution.

Lone-Insider Boards: Changing Dynamics in the Boardroom

With the birth of modern stock exchanges in the late 18th century and the accompanying legalized sale of company stock, managers were no longer the primary owners sharing the same interests as their investors (Berle & Means, 1932). These agents might, in fact, divert resources toward personal consumption (e.g., greater compensation, private jets) or take actions to reduce personal employment risk at shareholders' expense (Fama & Jensen, 1983). As a check against such actions and to secure investments from geographically dispersed shareholders, boards of directors were created to constrain CEO self-interest and tasked with hiring, monitoring, and compensating professional agent-managers (Berle & Means, 1932; Dalton et al., 2007).

Boards, however, are far from perfect in their ability to effectively monitor management (Dalton et al., 2007). Boards are comprised of inside directors (i.e., employees), affiliated directors (such as key suppliers), and independent directors. All types of directors face challenges in monitoring CEOs — insiders because they are employees whose rewards depend on CEO support (Pitcher, Chreim, & Kisfalvi, 2000), affiliated directors because they might lose future business (Johnson, Daily, & Ellstrand, 1996), and independent directors because they feel obligated to the CEO for their board seat (Westphal & Stern, 2007). Many fear that these

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limitations have led to, for example, increased CEO compensation (e.g., Goergen & Renneboog, 2011), slow responses to declining performance (e.g., Shen & Cannella, 2002), poor succession planning (e.g., Davidson, Nemec, & Worrell, 2001), and unethical CEO behavior (e.g., Davidson, Jiraporn, Kim, & Nemec, 2004). While there is wide agreement that boards play an important role in safeguarding shareholder interests, it is not clear how boards should be structured to best perform this role.

The mainstream view among scholars, regulatory agencies, and governance advocates is that boards are more effective when comprised of a majority of independent outsiders (Dalton et al., 2007). Following Fama's (1980), suggestion that independent directors help prevent top managers from expropriating shareholder wealth, early studies promoted the addition of independent outsiders to insider-dominated boards (Boyd, 1994; Weisbach, 1988). The push for more independent directors was especially fruitful prior to the 1990s when it was common for a majority of board members to be affiliated with the firm, risking either their jobs (inside directors) or lucrative contracts (affiliated directors) if they disagreed with the CEO (Johnson et al., 1996; Pitcher et al., 2000). Independent directors are freer to question the CEO and, despite some felt obligation toward the CEO (Westphal & Stern, 2007; Westphal & Zajac, 1995), have incentive to be candid to maintain a reputation for independence and garner additional board invitations (Fama & Jensen, 1983; Yermack, 2004).

Although agency theory advances the notion that independent directors should hold a majority of board seats and there is substantial institutional pressure supporting independent director majorities (Dalton et al., 2007; Gillan & Starks, 2007), adopting a lone-insider board is not mandated by any legislation nor required by any major stock exchange. Indeed, there is no obvious justification for this extreme position. Yet lone-insider board adoption has increased rapidly. This trend is important because these boards represent a change in kind rather than degree. That is, moving to a lone-insider board is not the same as simply increasing independent directors' majority because it completely removes a historically represented group from the board – i.e., other insiders. Accordingly, the widespread adoption of lone-insider boards raises two important questions: (a) Why are firms adopting this structure, and (b) what are its consequences? Joseph, Ocasio, and McDonnell (2014) offer an answer to the first question, arguing that CEOs prefer lone-insider boards and leverage institutionalized norms about independence to lobby for their adoption. They find that powerful and persuasive CEOs (e.g., newly appointed or post-performance gains) are more likely to adopt a lone-insider structure.

The consequences of lone-insider boards, however, remain unclear. Two finance studies assume that lone-insider boards increase CEO power to justify its use as part of a composite measure of power (Hoechle, Schmid, Walter, & Yermack, 2012; Liu & Jiraporn, 2010). A third finance paper finds that lone-insider boards increase performance variability – theoretically because these boards lack inside voices that might moderate extreme decisions (Adams, Almeida, & Ferreira, 2005). These studies[1] imply that lone-insider boards might weaken governance, but their effect on more proximal outcomes and on firm performance remain unknown.

Theory on the Efficacy of Lone-Insider Boards

To develop a theoretical base for understanding the potential consequences of lone-insider boards, we draw on pro-insider agency theory research to explain how removing all non-CEO insiders eliminates two important benefits. The first benefit of non-CEO insiders, as described by pro-insider research, is that they reduce the information asymmetries that independent directors inherently confront given their lack of day-to-day interaction with the firm (Baysinger & Hoskisson, 1990). The CEO's job is complex and largely hidden from independent directors' view, which can help CEOs limit information sharing and reduce the board's monitoring intensity (Adams & Ferreira, 2007). Accordingly, independent board members "in and of themselves, often lack the type of information needed to be truly effective in controlling decisions" (Baysinger & Hoskisson, 1990, p. 77). Inside directors, in contrast, have superior knowledge that reduces information asymmetries because they are

[1] To justify their focus on the antecedents of lone-insider boards, Joseph et al. (2014) cite these finance studies as evidence of lone-insider boards' negative outcomes. As we have detailed here, however, the specific consequences of lone-insider boards remain unknown.

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engaged with day-to-day operations, understand the firm's broader context, and directly observe the CEO's decision-making and resource allocations (Raheja, 2005). While top management team (TMT) members who are not on the board may be invited to present during board meetings, they are unlikely to present information that challenges the CEO given that it is relatively easy for a CEO to fire a TMT member who does not sit on the board (Pitcher et al., 2000). Overall, "this limitation on information severely hinders the ability of even highly talented board members to contribute effectively to the monitoring and evaluation of the CEO and the company's strategy" (Jensen, 1993, p. 864).

The second benefit of having one or more non-CEO inside directors is that they provide independent directors with CEO succession options, which constrains CEO actions via the threat of contestation. Non-CEO inside board members have strong incentives to monitor the CEO and, where needed, take corrective action (Fama, 1980). TMT members monitor one another (including the CEO) because they are bound together in the managerial labor market wherein their reputations are jointly at risk and tied to the firm's performance (Semadeni, Cannella, Fraser, & Lee, 2008). For this reason, non-CEO inside directors are "perhaps the best ones to control the board of directors … they may be the most informed and responsive critics" (Fama, 1980, p. 293). When a CEO's actions harm firm performance, this renders her or him vulnerable to internal challengers and succession (Mobbs, 2013; Ocasio, 1994). Inside directors have direct access to independent board members, providing internal information and building social relationships that can be leveraged to contest the CEO's position (Combs, Ketchen, Perryman, & Donahue, 2007).

The threat of contestation helps independent directors in two ways. First, succession events can be very disruptive, especially if they force an external search, which is why shareholders discount the shares of firms without viable successors (W. N. Davidson et al., 2001). The availability of potential successors makes it easier to question the CEO's actions and risk confrontation that might lead to CEO departure (Shen & Cannella, 2002). Second, the fact that non-CEO directors are incentivized to monitor the CEO's actions and look for contestation opportunities puts pressure on CEOs to focus on increasing firm performance. The mere fact that someone knowledgeable is watching and available as heir apparent increases CEO sensitivity and awareness that self-serving actions are likely to be noticed and challenged. This furnishes a powerful incentive to stay focused on firm performance and to preempt challengers by keeping independent directors well informed (Rediker & Seth, 1995).

These benefits to independent directors – i.e., reduced information asymmetries and options for succession – are considerably, if not completely, lost on lone-insider boards, which suggests that CEOs at such firms are more capable of pursuing self-serving actions at shareholders' expense. To investigate our theorizing, we examine three outcome categories that prior literature views as tied to corporate governance: CEO pay, financial misconduct, and firm performance. We investigate two aspects of CEO pay: excess CEO pay, which is pay above what objective factors, such as firm size and performance, would predict (Combs & Skill, 2003; Fong, Misangyi, & Tosi, 2010; O'Reilly, Main, & Crystal, 1988), and CEO-TMT pay gap, which indicates that CEO pay is decoupled from other managers' contributions (Bebchuk, Cremers, & Peyer, 2006; Carpenter & Sanders, 2002). Strong boards should be able to prevent CEOs from garnering excessive pay or decoupling their compensation from that of the TMT (Bebchuk & Fried, 2003; Bebchuk et al., 2006; Core, Holthausen, & Larcker, 1999). We examine financial misconduct because the push for board independence largely followed high-profile cases of financial misconduct, such as those at Enron and WorldCom (Burks, 2010; Wintoki, 2007), and reduced monitoring efficacy increases the likelihood of financial misconduct (Klein, 2002). Finally, we examine firm performance. Ultimately, effective governance facilitates and strengthens financial performance (Core et al., 1999; Zahra & Pearce, 1989).

CEO Pay

If lone-insider CEOs are indeed at an informational advantage relative to the board, there are several reasons why they may be able to garner excess pay. First, boards typically use peer firms' executive pay as benchmarks to determine appropriate market rates (Bizjak, Lemmon, & Naveen, 2008), and CEOs with information and position advantages can favorably shape the selection of peer firms (Faulkender & Yang, 2010, 2013; Morgenson, 2006). Second, CEOs can present themselves as critical sources of expertise (Grabke-Rundell &

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Gomez-Mejia, 2002) or attribute unfavorable outcomes to external forces in order to justify large payouts (Laux, 2008). Without other insiders who might contest the CEO's claims (Baysinger & Hoskisson, 1990; Ocasio, 1994), lone-insider CEOs are in a better position to manipulate pay by claiming responsibility for exceptional performance and attributing poor performance to external causes (Staw, McKechnie, & Puffer, 1983; Westphal & Zajac, 1994). Thus, without other insiders on the board to contest CEO claims and provide independent directors with additional information, we expect that CEOs at lone-insider boards are more capable of acting in self-serving ways and thereby garnering pay in excess of what would be otherwise expected:

Hypothesis 1a: Lone-insider boards are positively related to excess CEO pay.

The CEO-TMT pay gap captures the distance or disparity between the pay levels of the CEO and the rest of the top management team (TMT). Pay gaps indicate weak internal monitoring by boards and reflect "the relative importance of the CEO" (Bebchuk, Cremers, & Peyer, 2011, p. 199). Investors observe and discount the value of firms with large CEO-TMT pay gaps (Bebchuk et al., 2006; Carpenter & Sanders, 2002), theoretically because pay gaps discourage cooperation among managers (Henderson & Fredrickson, 2001) and foster "sabotage" behaviors (Lazear, 1989, p. 562). Research generally shows that smaller pay gaps are associated with stronger individual and group performance, especially when tasks are complex and require coordination (Bloom, 1999; Shaw, Gupta, & Delery, 2002), such as among TMT members (Carpenter & Sanders, 2002; Siegel & Hambrick, 2005).

When TMT members serve on the board with the CEO, these inside directors should logically join the CEO in working to achieve equitable, if not greater, pay for all top managers. Thus, with multiple insiders on the board, compensation committees are likely to consider executive pay more holistically and distribute compensation relative to managers' individual contributions (Bebchuk et al., 2006). Removing non-CEO inside directors, however, elevates the importance of the CEO as a source of information, making it easier for compensation committees to set CEO pay without regard to other TMT members. On lone-insider boards, CEOs become the central figure providing information to the board and the compensation committee might logically come to view CEO pay as separate and distinct from other managers' pay.

Even when the compensation committee considers the joint contributions of the CEO and the TMT, without other managers present, the CEO might allow – or even encourage – board members to attribute the firm's successes to his/her own actions (Staw et al., 1983; Westphal, 1998), leading to the conclusion that s/he deserves a greater slice of the compensation pie. Supporting this notion, Henderson and Fredrickson (2001) found that the CEO-TMT pay gap increases as board members' access to inside information decreases. Thus, without non-CEO inside directors providing information to independent board members, the CEO's influence over pay likely expands relative to the TMT. Accordingly, we submit that without non-CEO insiders on the board, lone-insider CEOs can decouple their pay from that of other TMT members:

Hypothesis 1b: Lone-insider boards are positively related to CEO-TMT pay gap.

Financial Misconduct

A streak of corporate scandals in the late 1990s and early 2000s intensified regulatory pressures towards greater board independence. Financial misconduct at Enron, WorldCom, Tyco, and other firms cost shareholders and employees billions of dollars and led to the passage of the Sarbanes-Oxley Act (i.e., SOX). The SOX legislation was partially designed to address failures of board oversight by increasing board independence, and from it arose stock exchange requirements that boards must maintain a majority of independent directors. Given the increasing adoption of lone-insider boards among publicly-traded firms, it appears that practitioners have extrapolated agency logic to its extreme – i.e., if a majority of independent directors is expected to reduce corporate wrongdoing, having all independent directors (beyond the CEO) must reduce it even further.

Yet, pro-insider research points out that without the information and potential for contestation that insiders bring, CEOs have greater discretion to pursue self-interested, risky, and potentially even illegal actions (Baysinger & Hoskisson, 1990; Hoskisson & Turk, 1990; Ocasio, 1994). Prior research shows that if CEOs gain influence relative to the board, they are less sensitive to contestation

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risk when performance declines, and they are more likely to manipulate earnings or engage in "empire building" acquisitions (W. N. Davidson et al., 2001, 2004; Shen & Cannella, 2002; Wright, Kroll, & Elenkov, 2002). Ineffective board monitoring enables CEO misbehavior and increases the risk of corporate fraud (R. Davidson, Dey, & Smith, 2015; Irani & Oesch, 2013). If lone-insider boards confront greater information asymmetries and lack viable successors who might monitor and contest CEO actions as we theorize, it follows that lone-insider boards are, on average, less effective and thus more susceptible to the misbehavior and fraud that previous research associates with ineffective boards. We therefore submit that lone-insider boards are more likely to have financial misconduct:

Hypothesis 2: Lone-insider boards are positively related to financial misconduct.

Firm Performance

Finally, the ultimate role of the board is to provide governance that helps the firm maximize its performance. Boards do this by advising and approving major strategic decisions, monitoring the effectiveness of the CEO's implementation efforts, and offering their own human and social capital (Hillman & Dalziel, 2003; S. G. Johnson, Schnatterly, & Hill, 2012). Although evidence regarding the performance effects of board independence is weak at best (Dalton et al., 2007), board independence has been widely institutionalized and viewed by regulators and governance advocates as positive. One explanation for equivocal results in prior research is that studies combine various board types, collapsing the benefits and costs of each kind of director in ways that might mask and confound their independent effects. Specifically, research conducted using data prior to the 1990s might have too few observations with independent director majorities to show their benefits (e.g., Boyd, 1994; Pearce & Zahra, 1992), and more recent studies may average the positive effects of independent director majorities with the negative effects of lone-insider boards, yielding insignificant or small overall performance effects (Dalton, Daily, Ellstrand, & Johnson, 1998; Rhoades, Rechner, & Sundaramurthy, 2000).

Such an interpretation is consistent with our theorizing that the switch from two or more insiders to a lone-insider board fundamentally changes the nature of the CEO-board relationship. With less threat of contestation by knowledgeable insiders, independent directors would need to more fully understand and monitor how strategy is being implemented. However, without inside directors as key informants, even experienced independent directors face uncertainty in applying their expertise to current situations and might hesitate to challenge decisions they do not fully understand (Mitchell, 2005; Nicholson & Kiel, 2004; Westphal & Bednar, 2005). With limited information, independent directors will be less equipped to advise and oversee strategic decision-making and implementation, which potentially harms firm performance (Baysinger & Hoskisson, 1990). Accordingly, we suggest that lone-insider boards lose the benefits of inside directors and thereby suffer weaker performance:

Hypothesis 3: Lone-insider boards are negatively related to firm performance.

The Moderating Effects of External Governance Forces

Following pro-insider research describing the contributions of non-CEO insiders on boards, we theorized that lone-insider boards — which lack these advantages — are likely to suffer outcomes indicative of weak board monitoring. While boards are shareholders' first line of defense against self-serving CEO actions, we also recognize that boards are influenced by a complex configuration of governance-related pressures (Misangyi & Acharya, 2014; Rediker & Seth, 1995). In particular, there are a number of external governance forces, including legal and regulatory systems, powerful institutional investors, stock analysts, and the media, that can influence governance (Aguilera et al., 2015; Gentry & Shen, 2013; Walsh & Seward, 1990; Westphal & Graebner, 2010). We focus on stock analysts and institutional investors because these external governance forces have direct access to the firm and interact with the CEO and board (Byard, Li, & Weintrop, 2006; Cordeiro, Vehyath, & Romal, 2007; Gillan & Starks, 2007).

When the board of directors provides effective managerial incentives, knowledgably monitors (and advises) strategy implementation, and constrains CEO self-interest, individuals and groups outside the firm validate the board and management team's competence – e.g., stock analysts rate and recommend owning the stock and institutional investors

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passively maintain (or increase) their substantial equity stakes (Aspara, Pajunen, Tikkanen, & Tainio, 2014; Ryan & Schneider, 2002). However, when the board is not effectively guiding and incentivizing management, external governance forces may become more active and pressure the board to limit the CEO's self-serving actions (Aguilera et al., 2015). In Irani and Oesch's (2013) study of stock analysts, for example, the amount of analyst coverage had little effect on firms with strong boards, but firms with weak boards had better financial reporting quality as analyst coverage increased. Institutional investors similarly monitor the strategic actions and performance of their portfolio firms and will (a) directly lobby board members, (b) take actions such as initiating shareholder proposals, and/or (c) reduce holdings (Bharath, Jayaraman, & Nagar, 2013; David, Bloom, & Hillman, 2007; David, Hitt, & Gimeno, 2001; Parrino, Sias, & Starks, 2003). Because these external governance forces can affect stock prices (Gallagher, Gardner, & Swan, 2013; Parrino et al., 2003; Zhang & Gimeno, 2016), their information disclosures and concerns are taken seriously by the board and can thereby limit the extent to which CEOs are free to pursue self-serving agendas (Aguilera et al., 2015; Cyert, Kang, & Kumar, 2002; Irani & Oesch, 2013; Yu, 2008).

Stock Analysts

Stock analysts represent an influential force because they provide investors and the general public with important information that shapes their judgments (Wiersema & Zhang, 2011). CEOs are highly concerned with managing analyst impressions in order to protect their personal reputation (Bednar, Love, & Kraatz, 2015; Westphal & Graebner, 2010). Indeed, prior research suggests managers perceive that stock analysts are powerful external actors capable of influencing stock prices (Luo, Wang, Raithel, & Zheng, 2015; Yu, 2008). These analysts often have direct interaction with the CEO and ask detailed questions in quarterly earnings calls and press conferences. CEOs identify analysts as one of their most important stakeholders (ranking either directly above or below institutional investors), in part, because they are known to "blow the whistle" when necessary (Dyck, Morse, & Zingales, 2010; Graham, Harvey, & Rajgopal, 2005). While stock analyst coverage generally enhances a firm's visibility and thus public scrutiny (Brooks, Highhouse, Russell, & Mohr, 2003; Pollock, Rindova, & Maggitti, 2008), analysts' primary role is as "information intermediaries" who, through their detailed research and public disclosures, reduce investors' information asymmetries (Howe, Unlu, & Yan, 2009; Irani & Oesch, 2013).

Several studies find evidence that is consistent with stock analysts strengthening governance by providing information to shareholders, thereby increasing pressure on the board to monitor the CEO. In conveying information to the market, stock analysts "create an external layer of scrutiny for the financial reporting process. Their role as external monitors can be potentially significant in areas such as earnings management, when internal controls might not be effective" (Yu, 2008, p. 247). Research shows that analyst coverage helps constrain CEO pay levels (Chen, Harford, & Lin, 2015) and improve financial reporting quality in the presence of weak boards (Irani & Oesch, 2013). Insights from analysts are valued given their direct access to the board and CEO (Byard et al., 2006) and are consequential to a firm's ability to raise capital (Chang, Dasgupta, & Hilary, 2006; Derrien & Kecskes, 2013) as well as to market returns (Luo et al., 2015; Womack, 1996).

Overall, we theorize that lone-insider CEOs are able to take more self-serving actions, but that the visibility and scrutiny that accompanies greater analyst coverage should increase board awareness and thereby limit these CEOs' freedom to take such actions. Thus, while stock analysts do not replace or substitute for non-CEO insiders, they do provide critical information that should alert independent directors on lone-insider boards of the need to constrain their CEOs. Accordingly, we suggest that greater analyst coverage will reduce the negative effects of lone-insider boards:

Hypothesis 4a: The positive relationship between lone-insider boards and CEO pay is attenuated as analyst coverage increases. Specifically, the positive relationships for (i) excess CEO pay and (ii) CEO-TMT pay gap are reduced.

Hypothesis 4b: The positive relationship between lone-insider boards and financial misconduct is attenuated as analyst coverage increases.

Hypothesis 4c: The negative relationship between lone-insider boards and firm performance is attenuated as analyst coverage increases.

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Institutional Investors

Institutional investors are financial intermediaries who serve as external monitors (Aguilera et al., 2015; Cordeiro et al., 2007). Indeed, "while CEOs may be able to affect the enforcement of normative pressures from within the board, institutional investors are powerful monitors affecting norm enforcement from outside the board" (Sauerwald, Lin, & Peng, 2016, p. 504). Institutional ownership exerts pressure on the CEO through distinct mechanisms that can be used when independent directors fail to recognize or constrain self-serving CEO outcomes. Institutional investors can step in and voice criticism directly to the board or through activist actions that guide CEO outcomes into alignment with shareholders' interests (Appel, Gormley, & Keim, 2016; David, Kochhar, & Levitas, 1998; David et al., 2001).

Although institutional investors historically tended toward passive ownership, not meddling in day-to-day operations or management, they have increasingly engaged in activism to alert board members to monitoring failures and to CEO self-serving actions (David et al., 2001; Gillan & Starks, 2007). Indeed, like analysts who convey information and thereby increase board scrutiny of the CEO, institutional investors often engage with the firm to affect change when they feel such action is necessary (Ryan & Schneider, 2002). McCahery, Sautner, and Starks (2016), p. 2), for example, found in their survey of institutional investors that "63% of the respondents state that, in the past 5 years, they have engaged in direct discussions with management, and 45% have had private discussions with a company's board outside of management's presence." Underscoring their power, institutional investors have been linked to improved CEO pay-for-performance sensitivity (Brav, Jiang, Partnoy, & Thomas, 2008; Van Essen, Otten, & Carberry, 2015) and increased stock prices (Schnatterly, Shaw, & Jennings, 2008). Given their concentrated ownership positions and credible threat of exit or activism (McCahery et al., 2016; Ryan & Schneider, 2002), institutions command more direct access to the firm than dispersed owners (Gillan and Starks, 2000), enabling them to scrutinize the board's diligence in constraining CEO behavior (Appel et al., 2016; Ward, Brown, & Rodriguez, 2009).

If our theorizing is correct and weakened internal monitoring allows lone-insider CEOs to act in more self-serving ways, then we expect that greater external monitoring by institutional owners will exert pressure on the board to constrain lone-insider CEOs' self-serving outcomes and thereby reduce overcompensation and financial misconduct as well as increase performance:

Hypothesis 5a: The positive relationship between lone-insider boards and CEO pay is attenuated as institutional ownership increases. Specifically, the positive relationships for (i) excess CEO pay and (ii) CEO-TMT pay gap are reduced.

Hypothesis 5b: The positive relationship between lone-insider boards and financial misconduct is attenuated as institutional ownership increases.

Hypothesis 5c: The negative relationship between lone-insider boards and firm performance is attenuated as institutional ownership increases.

Methods

Considerable regulatory and institutional pressure for greater board independence has focused on large public firms. Given this focus, our sampling frame is the S&P 1500 over a 10-year window, post Sarbanes-Oxley, from 2003 to 2014. Independent and control variables were collected from 2003 to 2013 and dependent variables were collected from 2004 to 2014. We used lagged models to ensure that variation in the independent variable was adequately captured in the dependent variables. Data were compiled from seven sources: RiskMetrics for board information; Execucomp for executive data, COMPUSTAT and CRSP for financial data; AuditAnalytics for data on financial restatements; I/B/E/S for stock analyst coverage; and Thomson Reuters Institutional 13f Holdings database for institutional ownership. Firms with available data were included, resulting in a panel of approximately 1,638 firms and 11,351 firm-year observations. We tested for differences between all S&P 1500 firms and our final sample and found no significant difference with regard to assets, long-term debt, or net income.

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Variables

Our independent variable is whether the focal board of directors was a *lone-insider board*. To capture the most conservative specification, we coded firms as "1" if the CEO was the only inside or affiliated member on the board; other board structures were coded as "0." Across our final sample, boards were allowed to change structure as they adopted or abandoned lone-insider boards. We note the robustness of this measure to alternative specifications below where we discuss robustness tests.

Our dependent variables reflect predicted outcomes of lone-insider boards. We measured excess CEO pay following prior research on executive pay premiums and overcompensation (Combs & Skill, 2003; Fong et al., 2010). We calculated *excess pay* as the residuals from OLS regression where we regressed CEO total compensation on factors that prior research has shown to predict CEO pay. The regression included firm size (market capitalization), prior performance (ROA), CEO equity ownership (%), CEO age, CEO tenure and tenure-squared (prior research suggests this relationship may be curvilinear), firm stock returns (compounded monthly), and industry and year dummy variables. To ensure that our choice of independent variables was not driving the results, we tested multiple models (i.e., including controls for R&D intensity, capital intensity, debt, cash, and alternative measures of firm size) and found that the results were the same. Positive residuals reflect excess CEO pay and negative residuals reflect "under-payment" (Fong et al., 2010). To examine *CEO-TMT pay gap*, we used the natural log of the difference between CEO total pay and the average total pay of the TMT (i.e., the next four top management team members after the CEO; Henderson & Fredrickson, 2001).

We measured corporate *financial misconduct* using financial restatements. Following prior research, we created an indicator variable depicting instances of non-reliance restatements that were not due to clerical errors or minor accounting issues and are thus considered "material" (Gangloff, Connelly, & Shook, 2016). Our final outcome of interest was *firm performance,* which we measured using return on assets (ROA) and Tobin's q (e.g., Dezsö & Ross, 2012; Yermack, 1996). ROA was calculated as net income divided by total assets. Our measure for Tobin's q was calculated as total assets minus deferred taxes plus the market value of equity less book value of equity, all divided by total assets (Bertrand & Schoar, 2003; Dezsö & Ross, 2012).

To test for the moderating effects of stock analysts and institutional investors, we measured analyst coverage and institutional ownership, respectively. *Analyst coverage* was measured as the number of analysts who follow the firm in a given year (e.g., Luo et al., 2015). Following previous research (e.g., Hartzell & Starks, 2003) we measured *institutional ownership* as the percent of outstanding shares held by institutions.

We controlled for a variety of firm, board, and executive characteristics. All models controlled for firm and year effects as part of our analytical approach. *Firm size* was measured as the natural logarithm of sales; prior research has linked firm size to board decisions such as CEO pay (Tosi, Werner, Katz, & Gomez-Mejia, 2000). To control for previous performance, we included *ROA* and compounded daily stock market returns over the fiscal year (*stock returns*). To further capture financial position, we controlled for leverage using the *debt ratio,* measured as the sum of current liabilities and long-term debt divided by total assets, and short term liquidity using the *cash-holding ratio*, measured as short-term investments divided by total assets. Prior research suggests that certain strategies, such as R&D or capital intensity, and diversification, are related to firm performance (O'Reilly et al., 1988) and, because they increase the difficulty of the CEO's job, CEO compensation (Henderson & Fredrickson, 1996). Thus, we control for *R&D intensity* and *capital intensity* using the ratios of R&D expenditures and capital expenditures to sales, respectively, and for *diversification* using the entropy measure calculated as the sum of the share of sales in each segment weighted by the natural log of the inverse of sales (Hoskisson, Hitt, Johnson, & Moesel, 1993).

We also included control variables to rule out alternative sources of CEO influence, including *CEO tenure* (Hill & Phan, 1991; Westphal, 1998), *duality* (Combs et al., 2007), and *CEO equity ownership* (%) (Nyberg, Fulmer, Gerhart, & Carpenter, 2010). Further, because incentives influence firm performance and misconduct (O'Connor, Priem, Coombs, & Gilley, 2006; Sanders & Hambrick, 2007), we control for *CEO incentives,* measured as the natural log of the sum of all performance-contingent compensation paid to a CEO in a given year, including bonuses, restricted stock grants, long-term incentive plan payouts

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and stock options as valued by Execucomp's Black-Scholes formula (Wowak & Hambrick, 2010).

Finally, we control for factors that may influence directors' motivation or ability to monitor the CEO. Given that larger boards face more difficulty in coordination and monitoring (Yermack, 1996), we controlled for *board size* using the number of directors. Similarly, we control for the average number of *outside boards* among all directors. Directors serving on numerous boards may not be able to devote as much attention to the focal board (Fich & Shivdasani, 2006). We also control for *director ownership* using the percentage of outstanding shares held by directors; directors with higher levels of ownership may more closely monitor the CEO's actions (Bhagat & Bolton, 2013). Finally, we control for CEO succession events by coding succession events as 1 for a firm-year wherein a change in CEO occurred and 0 otherwise.

Analyses

Our sample is an unbalanced panel; accordingly, the data include annual observations that are not independent. To account for this and simultaneously address endogeneity concerns, we model excess pay, CEO-TMT pay gap, and firm performance using two-stage least squares (2SLS) with two-way fixed effects to control for firm and time. Using fixed effects for our continuous dependent variables is a powerful approach that captures outcomes due to within-firm changes. To model financial misconduct, which is a binary dependent variable, we use logistic regression with year dummies and robust standard errors clustered by firm[2] (Burns & Kedia, 2006). Given the low base rate occurrence of financial restatement (i.e., many firms never restate), fixed effects models drop a significant number of observations due to lack of variance in the dependent variable. Thus, in modeling the likelihood of financial misconduct, we control for firm effects by clustered standard errors (Long & Freese, 2014).

Endogeneity concerns can arise from multiple sources when the independent variable is correlated with the error term (Bascle, 2008). Of particular concern is endogeneity stemming from recursive relationships between governance and performance and omitted control variables (Wintoki, Linck, & Netter, 2012). Including instrumental variables in two-stage models helps isolate the variation in the independent variable that is not correlated with the error term (i.e., not endogenous), which creates more accurate estimations (Bascle, 2008). To find suitable instruments for 2SLS, we follow recent research in top finance journals that uses the industry average of the focal independent variable, excluding the focal firm, to instrument for the focal predictor (Liu, Miletkov, Wei, & Yang, 2015; Yang & Zhao, 2014). Industry averages correlate with the focal firm given that firms in the same industry often have similar businesses and investment opportunities, but an industry average that excludes the focal firm is not endogenous with focal firm outcomes. In addition to the industry-average of lone-insider board occurrence as the primary instrument, we use the sum of directors' ages and the sum of directors' tenure to include multiple instruments (Semadeni, Withers, & Certo, 2014), depending on the dependent variable of interest. The instruments are correlated with lone-insider boards but show a weak relationship with the dependent variables, and thus are unlikely to be correlated with the error term. To ensure the appropriateness of the instruments, we tested their relevance using the first stage F-test and their exogeneity using Hansen's J statistic and found support for our instrument selection. The instruments and instrument strength are reported in Table 2.

Results

Table 1 presents means, standard deviations, and bivariate correlations. Relationships among variables are consistent with prior research; for example, firm size is positively correlated with ROA and stock returns. We addressed multicollinearity concerns in multiple ways. First, we ran the models using OLS regression to check variance inflation factors (VIF) and Tolerances. Neither VIFs (all below 3) nor Tolerances (all above 0.35) showed multicollinearity (Chatterjee & Price, 1991). To further ensure that moderate correlations among predictors were not driving our results, we tested the models by removing each predictor with a potentially problematic relationship with another

[2] There is no exact logistic regression technique that matches 2SLS. Thus, as discussed in the robustness section, we confirm our logistic regression results using instrumental variable probit modeling.

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Table 1
Descriptive Statistics and Correlations[ab]

Variables		M	S. D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Excess pay	0.00	0.75														
2.	CEO-TMT pay gap	7.88	1.10	0.66													
3.	Financial misconduct	0.06	0.24	0.00	−0.03												
4.	ROA	0.04	0.10	−0.02	0.13	−0.03											
5.	Tobin's q	1.83	1.05	−0.10	0.07	−0.04	0.40										
6.	Lone-insider board	0.35	0.48	0.08	0.11	0.02	−0.01	0.00									
7.	Prior performance	0.05	0.09	−0.05	0.10	−0.05	0.48	0.36	0.00								
8.	Stock returns	0.17	0.45	0.04	0.10	0.01	0.18	0.18	0.00	0.14							
9.	Firm size[a]	7.64	1.51	0.07	0.61	−0.02	0.17	−0.02	0.04	0.14	0.04						
10.	Debt ratio	0.20	0.20	0.09	0.10	0.03	−0.21	−0.18	0.02	−0.19	−0.08	0.09					
11.	Cash-holding ratio	0.09	0.11	0.00	−0.07	0.00	−0.05	0.22	0.07	0.02	0.03	−0.24	−0.13				
12.	Diversification	0.25	0.40	0.05	0.18	−0.00	0.02	−0.09	0.05	0.00	0.02	0.26	0.09	−0.10			
13.	Institutional ownership	0.72	0.27	0.05	0.04	0.01	0.02	0.03	0.15	0.04	−0.02	−0.06	−0.02	0.06	−0.04		
14.	R&D intensity	0.04	0.19	0.00	−0.03	0.00	−0.18	0.11	0.03	−0.15	0.01	−0.16	−0.06	0.29	−0.05	0.03	
15.	Cap. intensity	0.06	0.15	0.01	0.03	0.01	−0.07	−0.07	0.03	−0.03	−0.05	−0.04	0.16	−0.08	0.00	0.03	0.03
16.	Analyst coverage	11.74	7.65	0.00	0.46	−0.03	0.11	0.15	0.01	0.11	−0.01	0.55	0.01	−0.03	−0.03	0.01	0.01
17.	CEO tenure	7.67	7.39	0.00	−0.11	0.01	0.00	0.03	−0.06	0.02	0.00	−0.12	−0.06	0.04	−0.05	−0.04	0.00
18.	Duality	0.63	0.48	0.07	0.13	−0.01	0.03	−0.02	0.06	0.01	0.00	0.17	0.05	−0.07	0.11	−0.01	−0.06
19.	CEO equity %	1.65	4.51	−0.01	−0.22	0.01	0.02	0.04	−0.11	0.03	0.00	−0.14	−0.08	0.06	−0.03	−0.15	−0.02
20.	CEO incentives[a]	7.78	1.42	0.37	0.71	−0.04	0.12	0.07	0.11	0.14	0.08	0.56	0.12	−0.05	0.15	0.06	−0.01
21.	Board size	9.37	2.42	0.03	0.30	−0.03	0.00	−0.16	−0.15	−0.01	−0.03	0.47	0.11	−0.23	0.15	−0.16	−0.09
22.	Outside boards	0.80	0.52	0.11	0.38	−0.02	0.04	0.03	0.18	0.03	0.00	0.45	0.13	0.00	0.18	0.07	0.03
23.	Dir. ownership %	0.01	0.09	0.01	−0.02	0.00	0.00	0.02	−0.01	−0.02	0.05	−0.03	0.02	0.01	0.01	−0.02	0.00
24.	Succession	0.10	0.30	−0.02	−0.02	0.03	−0.02	−0.01	−0.05	−0.05	−0.01	0.02	0.02	0.04	−0.01	−0.00	0.01

Variables		15	16	17	18	19	20	21	22	23
15.	Cap. intensity									
16.	Analyst coverage	0.12								
17.	CEO tenure	−0.01	−0.05							
18.	Duality	0.01	0.06	0.25						
19.	CEO equity %	−0.03	−0.13	0.46	0.14					
20.	CEO incentives[a]	0.05	0.45	−0.12	0.09	−0.25				
21.	Board size	−0.01	0.27	−0.14	0.08	−0.16	0.28			
22.	Outside boards	0.00	0.28	−0.20	0.11	−0.18	0.38	0.19		
23.	Dir. ownership %	−0.01	−0.02	0.00	−0.01	0.00	−0.02	−0.01	−0.01	
24.	Succession	−0.00	0.00	−0.31	−0.13	−0.09	0.00	0.03	0.03	0.00

[a] Logarithmic values.
[b] Values greater than 0.02 fall within the 95% confidence interval.

predictor (i.e., correlations above 0.4). Results were not affected.

Table 2 presents the results for the main effects of lone-insider boards on excess pay, CEO-TMT pay gap, financial misconduct, and performance (Hypotheses 1–3). Hypothesis 1a predicts that CEOs of firms with lone-insider boards garner excess pay. Results presented in Table 2 (Model 1) support Hypothesis 1a ($b = 0.82$, $p = .01$). Lone-insider CEOs received roughly 82% greater pay than their non-lone-insider peers. Practically speaking, given the mean value of total pay in our sample of $5.7 million, results suggest that lone-insider CEOs receive $4.7 million in excess pay. Hypothesis 1b expects that firms with lone-insider boards will have a larger CEO-TMT pay gap; results presented in Table 2, Model 2, support this assertion ($b = 1.68$, $p = .00$). Practically speaking, lone-insider boards in our sample had a pay gap $2.99 million greater than their non-lone-insider peers, given the mean pay gap of $4.4 million. In addition to our primary test of the CEO-TMT pay gap, we examined whether the increase in pay gap on lone-insider boards was due to reduced TMT pay or simply because these CEOs garnered more pay without increasing the

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Table 2
The Effect of Lone-Insider Boards on Firm Outcomes

Variables	Model 1 Excess pay[a,b,c]	Model 2 CEO-TMT pay gap[a,d,c]	Model 3 Financial misconduct[e,c]	Model 4 Performance (ROA)[a,b,c]	Model 5 Performance (Tobin's q)[a,b,c]
ROA	−0.05	0.13	−1.77	0.06	0.19
	(.66)	(.31)	(.00)	(.05)	(.18)
Stock returns	0.08	0.18	0.13	0.03	0.22
	(.00)	(.00)	(.17)	(.00)	(.00)
Firm size	−0.08	0.16	0.09	0.03	0.24
	(.23)	(.06)	(.08)	(.00)	(.00)
Debt ratio	−0.11	−0.25	0.51	−0.10	−0.35
	(.15)	(.03)	(.01)	(.00)	(.00)
Cash-holding ratio	−0.25	−0.17	0.46	−0.03	0.13
	(.13)	(.42)	(.23)	(.27)	(.44)
Diversification	0.02	0.05	−0.09	−0.02	−0.30
	(.72)	(.54)	(.48)	(.00)	(.00)
Institutional ownership	−0.13	−0.19	0.23	−0.00	0.01
	(.19)	(.16)	(.21)	(.86)	(.95)
R&D intensity	−0.06	−0.10	−0.07	−0.02	0.10
	(.16)	(.06)	(.56)	(.42)	(.45)
Capital intensity	0.09	0.30	0.36	0.01	0.05
	(.28)	(.02)	(.17)	(.37)	(.64)
Analyst coverage	−0.01	−0.00	−0.01	0.00	0.00
	(.06)	(.96)	(.11)	(.85)	(.26)
CEO tenure	−0.00	−0.00	0.01	0.00	0.01
	(.28)	(.67)	(.07)	(.97)	(.02)
Duality	−0.05	−0.06	−0.17	0.00	0.01
	(.05)	(.07)	(.10)	(.13)	(.61)
CEO equity %	0.01	−0.01	−0.01	−0.00	−0.00
	(.01)	(.04)	(.63)	(.66)	(.86)
CEO incentives			−0.12	0.00	0.04
			(.00)	(.00)	(.00)
Board size	0.05	0.11	−0.02	−0.01	−0.11
	(.04)	(.00)	(.47)	(.00)	(.00)
Outside boards	0.01	−0.05	−0.04	0.00	−0.07
	(.68)	(.34)	(.68)	(.81)	(.06)
Director ownership %	0.01	−0.04	−0.13	0.01	−0.07
	(.87)	(.62)	(.34)	(.34)	(.34)
Succession	0.03	0.05	0.34	−0.01	−0.08
	(.56)	(.40)	(.02)	(.18)	(.05)
Lone-insider board	0.82	1.68	0.24	−0.10	−1.28
	(.01)	(.00)	(.01)	(.00)	(.00)
N	8,852	9,515	10,474	11,351	11,351
First stage F-test	11.04	7.63		15.35	15.35
	(.00)	(.00)		(.00)	(.00)
Hansen J-statistic	1.67	1.53		1.50	1.77
	(.20)	(.22)		(.22)	(.18)

[a] Models estimated using 2SLS and include two-way fixed effects for firm and year with robust standard errors; Models lagged 1 year.
[b] Instruments include industry-averaged lone-insider board occurrence and the sum of director's ages.
[c] Exact p-values in parentheses below regression coefficients.
[d] Instruments include industry-averaged lone-insider board occurrence and the sum of directors' tenures.
[e] Model estimated using logistic regression with year and robust standard errors clustered by firm; Model lagged 1 year.

TMT's pay. We found no evidence of a relationship between lone-insider boards and TMT pay, suggesting that the gap is due to higher CEO pay. TMT pay is roughly equivalent at lone-insider and non-lone-insider firms.

Hypothesis 2 predicts that CEOs on lone-insider boards have a greater likelihood of financial misconduct. Results in Table 2 (Model 3) provide support for Hypothesis 2 ($b = 0.24$, $p = .01$). Reporting the odds ratio for practicality, firms

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with lone-insider boards are 1.27 times more likely than non-lone-insider firms to have financial misconduct.

Hypothesis 3 anticipates lower performance among firms with lone-insider boards. Findings presented in Table 2 (Models 4 and 5) support Hypothesis 3 (ROA: $b = -0.10$, $p = .00$; Tobin's q: $b = -1.28$, $p = .00$). In practical terms, ROA in this sample is roughly 10% lower for firms with lone-insider boards. When comparing firms with similar asset bases, firms with lone-insider boards have net incomes approximately $54 million less, on average, than non-lone-insider firms, given the mean net income of $544 million in our sample.

Table 3 presents results from testing the moderation hypotheses (Hypotheses 4 and 5), which predict that external governance forces influence the relationship between lone-insider boards and firm outcomes. We discuss the results of each interaction below as well as describe the significance of the conditional effects of lone-insider boards at different levels of the moderators (as described in greater detail in Dobbin & Dowd, 2000).

Hypothesis 4a part i predicts that analyst coverage weakens the positive effects of lone-insider boards on excess CEO pay. The coefficient for the interaction term in Table 3, Model 1, offers evidence that analyst coverage attenuates the amount of excess pay lone-insider CEOs receive ($b = -0.09$, $p = .05$). Next, we examine whether the conditional effect of lone-insider boards is different from zero depending on the amount of analyst coverage. The slope of the relationship between lone-insider boards and excess pay at the mean value of analyst coverage (approximately 12 analysts) is marginal ($b = 5.59$, $p = .08$). As visually depicted in Figure 1, the slope of the relationship when analyst coverage is low (i.e., the solid line in Figure 1, which depicts the relationship at one standard deviation below the mean or approximately four analysts) is marginal ($b = 6.21$, $p = .07$), and the slope of the relationship when analyst coverage is high (i.e., the dotted line in Figure 1, which depicts the relationship at one standard deviation above the mean) is also marginal ($b = 4.90$, $p = .08$). Overall, Hypothesis 4a part i received marginal support.

Hypothesis 4a part ii predicts that analyst coverage moderates the relationship between lone-insider boards and CEO-TMT pay gap. This hypothesis was not supported ($b = -0.10$, $p = .11$).

Hypothesis 4b predicts that analyst coverage shapes the relationship between lone-insider boards and financial misconduct. This hypothesis was also not supported ($b = -0.01$, $p = .42$).

Hypothesis 4c predicts that analyst coverage moderates the relationship between lone-insider boards and firm performance. As shown in Table 3, Models 4 and 5, the interaction between analyst coverage and lone-insider boards helps predict ROA ($b = 0.01$, $p = .05$) and Tobin's q ($b = 0.17$, $p = .02$). Next, we examine whether the conditional effect of lone-insider boards is different from zero depending on the amount of analyst coverage. The slopes of the relationships between lone-insider boards and both performance measures at the mean value of analyst coverage (approximately 12 analysts) are supportive (ROA: $b = -0.73$, $p = .06$; Tobin's q: $b = -8.85$, $p = .03$). With respect to Tobin's q and as visually depicted in Figure 2, the slope of the relationship when analyst coverage is low (i.e., the solid line in Figure 2, which depicts the relationship at one standard deviation below the mean or approximately four analysts) is meaningful ($b = -10.15$, $p = .03$), and the slope of the relationship when analyst coverage is high (i.e., the dotted line in Figure 2, which depicts the relationship at one standard deviation above the mean) is also meaningful ($b = -7.55$, $p = .04$). We found a similar pattern of conditional relationships (not shown visually) between ROA and lone-insider boards at low ($b = -0.81$, $p = .06$) and high ($b = -0.66$, $p = .05$) analyst coverage. Overall, findings are consistent with Hypothesis 4c and suggest analyst coverage constrains performance declines among lone-insider firms.

We expected institutional ownership to moderate the effects of lone-insider boards. Hypothesis 5a, part i, predicts that institutional ownership reduces the relationship between lone-insider boards and excess pay. As shown in Table 3, Model 1, results show a marginally supportive interaction term ($b = -6.52$, $p = .06$). Next, we examine whether the conditional effect of lone-insider boards is different from zero depending on the amount of institutional ownership. The slope of the relationship between lone-insider boards and excess pay at the mean value of institutional ownership (72%) is marginally supportive ($b = 1.96$, $p = .06$). As depicted in Figure 3, the slope of the relationship when institutional ownership is low (i.e., the solid line in Figure 1, which depicts the relationship at one standard deviation below the mean or 45%) is marginally supportive ($b = 3.72$, $p = .06$). The slope of the relationship when institutional ownership is one standard deviation above the mean, or 98%

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Table 3
Moderating Effects of External Governance Forces on Lone-Insider Boards and Firm Outcomes

Variables	Model 1 Excess pay [a,b,c]	Model 2 CEO-TMT pay gap [a,d,c]	Model 3 Financial misconduct [e,c]	Model 4 Performance (ROA) [a,b,c]	Model 5 Performance (Tobin's q) [a,b,c]
ROA	−0.14	−0.03	−1.78	0.06	0.14
	(.37)	(.87)	(.00)	(.07)	(.52)
Stock returns	0.11	0.20	0.13	0.02	0.19
	(.00)	(.00)	(.16)	(.00)	(.00)
Firm size	0.01	0.35	0.09	0.02	0.11
	(.91)	(.00)	(.08)	(.00)	(.14)
Debt ratio	0.02	−0.06	0.51	−0.11	−0.51
	(.89)	(.62)	(.01)	(.00)	(.00)
Cash-holding ratio	−0.42	−0.14	0.47	−0.00	0.43
	(.14)	(.67)	(.22)	(.90)	(.21)
Diversification	−0.15	−0.22	−0.09	−0.00	−0.06
	(.05)	(.02)	(.47)	(.82)	(.56)
Institutional ownership	2.19	2.29	0.36	−0.27	−3.39
	(.06)	(.10)	(.10)	(.04)	(.02)
R&D intensity	−0.02	−0.06	−0.07	−0.02	0.06
	(.80)	(.47)	(.57)	(.25)	(.76)
Capital intensity	0.22	0.56	0.36	−0.00	−0.13
	(.03)	(.00)	(.17)	(.96)	(.35)
Analyst coverage	0.02	0.03	−0.01	−0.00	−0.05
	(.19)	(.05)	(.30)	(.03)	(.01)
CEO tenure	0.00	0.00	0.02	−0.00	0.00
	(.78)	(.31)	(.07)	(.30)	(.77)
Duality	−0.06	−0.07	−0.17	0.01	0.04
	(.09)	(.04)	(.10)	(.09)	(.32)
CEO equity %	0.02	−0.01	−0.00	−0.00	−0.00
	(.01)	(.31)	(.71)	(.43)	(.51)
CEO incentives			−0.12	0.00	0.05
			(.00)	(.03)	(.06)
Board size	0.03	0.04	−0.02	−0.01	−0.10
	(.18)	(.12)	(.46)	(.04)	(.00)
Outside boards	0.06	0.03	−0.04	−0.00	−0.13
	(.13)	(.50)	(.71)	(.42)	(.01)
Director ownership %	0.01	−0.05	−0.13	0.00	−0.13
	(.85)	(.52)	(.33)	(.85)	(.18)
Succession	−0.04	−0.09	0.34	0.00	0.01
	(.30)	(.03)	(.02)	(.75)	(.77)
Lone-insider board	6.65	7.01	0.70	−0.85	−10.85
	(.06)	(.11)	(.04)	(.05)	(.02)
Lone-insider × analyst coverage[a]	−0.09	−0.10	−0.01	0.01	0.17
	(.05)	(.11)	(.42)	(.05)	(.02)
Lone-insider × institute ownership[a]	−6.52	−6.68	−0.44	0.81	10.31
	(.06)	(.12)	(.26)	(.05)	(.02)
N	8,852	9,515	10,480	11,351	11,351

[a] Instruments include industry-averaged lone-insider board occurrence and the sum of directors' tenures.
[b] Model estimated using logistic regression with year and robust standard errors clustered by firm; Model lagged 1 year.
[c] Exact p-values in parentheses below regression coefficients.
[d] Instruments include industry-averaged lone-insider board occurrence and the sum of director's ages.
[e] Models estimated using 2SLS and include two-way fixed effects for firm and year with robust standard errors; Models lagged 1 year.

(i.e., the dotted line in Figure 1), is less supportive (b = 0.26, p = .11) but becomes supportive at 97% institutional ownership (b = 0.33, p = .08). Thus, hypothesis 5a part i was marginally supported.

Hypothesis 5a, part ii, anticipates that institutional ownership reduces the positive relationship between lone-insider boards and CEO-TMT pay gap. No support was found (b = −6.68, p = .12).

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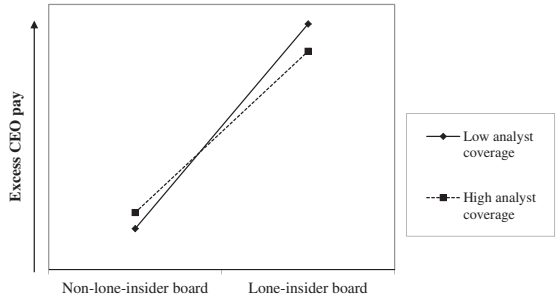

Figure 1. The influence of analyst coverage on the relationship between lone-insider boards and excess CEO pay (Hypothesis 4a).

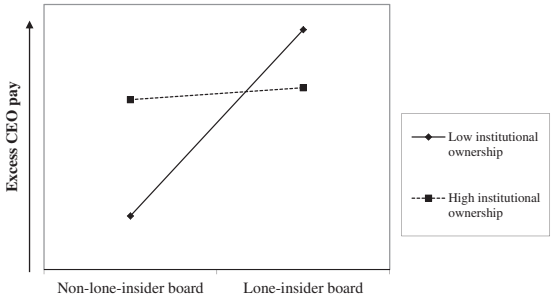

Figure 3. The influence of institutional ownership on the relationship between lone-insider boards and excess CEO pay (Hypothesis 5a).

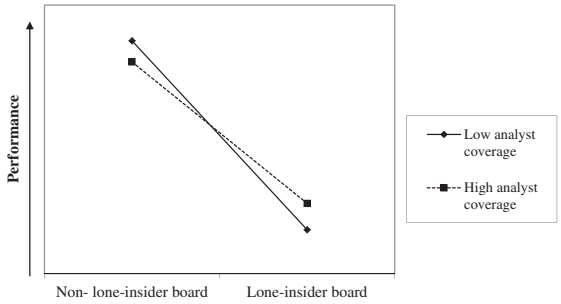

Figure 2. The influence of analyst coverage on the relationship between lone-insider boards and firm performance (Tobin's q) (Hypothesis 4c).

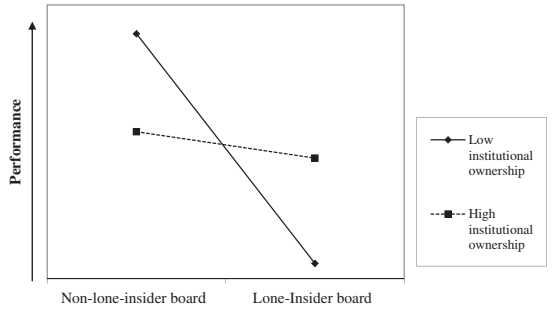

Figure 4. The influence of institutional ownership on the relationship between lone-insider boards and firm performance (Tobin's q) (Hypothesis 5c).

Hypothesis 5b predicts that institutional ownership reduces the positive relationship between lone-insider boards and financial misconduct. This hypothesis was not supported ($b = -0.44$, $p = .26$).

Hypothesis 5c expects that institutional ownership reduces the negative effect of lone-insider boards on financial performance. As shown in Table 3, Models 4 and 5, the interaction between institutional ownership and lone-insider boards helps predict ROA ($b = 0.81$, $p = .05$) and Tobin's q ($b = 10.31$, $p = .02$). Next, we examine whether the conditional effect of lone-insider boards is different from zero depending on the amount of institutional ownership. The slope of the relationship between lone-insider boards and both performance measures at the mean value of institutional ownership (72%) are supportive (ROA: $b = -0.27$, $p = .06$; Tobin's q: $b = -3.43$, $p = .02$). With respect to Tobin's q and as visually depicted in Figure 4, the slope of the relationship when institutional ownership is low (i.e., the solid line in Figure 4, which depicts the relationship at one standard deviation below the mean or 45%) is meaningful ($b = -6.21$, $p = .02$), and the slope of the relationship when institutional ownership is high (i.e., the dotted line in Figure 4, which depicts the relationship at one standard deviation above the mean or 98%) is also meaningful ($b = -0.75$, $p = .01$). We found a similar pattern of conditional relationships (not shown visually) between ROA and lone-insider boards at low ($b = -0.49$, $p = .06$) and high ($b = -0.06$, $p = .06$) institutional ownership. Overall, the findings support the relationship predicted in Hypothesis 5c and suggest that high levels of institutional ownership constrain performance declines among lone-insider firms.

To summarize, our results support pro-insider agency theory's claim that one or more inside directors beyond the CEO adds value. In their absence, CEOs receive excessive pay and enjoy larger CEO-TMT pay gaps, firms engage in more financial misconduct, and firm performance suffers. However, the negative effects of lone-insider boards on excess CEO pay and firm performance are reduced for firms with more stock analyst coverage and greater institutional ownership.

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Robustness Tests

To ensure the robustness of our results, we conducted multiple additional analyses. First, recognizing fixed effects models cannot include industry dummy variables (i.e., due to perfect collinearity), we tested the robustness of the main effects with respect to industry by using robust standard errors clustered by two-digit SIC industry. Results were nearly identical. For the binary outcome of financial misconduct, we confirmed the logistic regression results with an instrumental variable technique that estimates a bivariate Probit model with year dummy variables and robust standard errors clustered by firm. Again, results are robust.

Additional robustness tests dealt with specific threats to validity. First, given that our sample allows firms to move in and out of lone-insider status, we tested models that include only firms with at least three consecutive years of lone-insider board status. Second, to ensure that the excess pay model was not being driven by current pay, we tested models that included a control for incentive pay and separately for total compensation. Third, to examine whether performance effects are temporary or short-term, we tested models with 2-year lags. Fourth, to ensure that effects from affiliated directors (e.g., former employees, family members, or delegates of key stakeholders such as suppliers or unions) were not biasing the results, we recoded our independent variable with all affiliated directors coded as outsiders. Results were robust to all of these additional specifications.

We theorized that lone-insider boards are categorically different from other board types (i.e., adding an insider beyond the CEO is a change in kind rather than degree). Accordingly, we need to ensure our results are not simply due to a linear relationship wherein each new insider improves outcomes by similar amounts. Stated differently, the change from a lone-insider board to two insiders should be more meaningful than the addition of a third or fourth insider. We begin by observing that the practical range for inside directors is very narrow and that very little information is lost by dichotomizing boards beyond those with one insider (i.e., the CEO) as two or more. Only 8% have three inside directors (including the CEO), 2% have four, and less than 1% have five or more. Because the lone-insider indicator variable is embedded within such a narrow-range continuous measure, any linear effects in the full sample could be driven largely by the move from one insider to two insiders. Thus, we undertook several additional robustness tests to make sure that effects reflect a distinct board type that would not be better captured by a continuous measure.[3]

First, we examined curvilinear effects by including a quadratic measure of insiders. Supporting the categorical uniqueness of lone-insider boards, we did not find curvilinear effects. Second, we tested our models by replacing lone-insider with "dual-insider" boards (coded as 1 if the board has two insiders and 0 otherwise). While our hypothesis testing found that lone-insider boards are positively associated with excess CEO compensation and CEO-TMT pay gap, as shown in the Appendix, dual-insider boards do not provide their CEOs with excess compensation ($b = -0.83$, $p = .21$) and they are negatively associated with CEO-TMT pay gaps ($b = -2.08$, $p = .08$). While firms with lone-insider boards are more likely than other boards to have financial misconduct, the effect is reversed among firms with dual-insider boards, which are less likely to have instances of financial misconduct ($b = -0.30$, $p = .00$). In terms of performance, dual-insider boards do not appear to influence ROA ($b = -0.03$, $p = .66$) or Tobin's q ($b = -0.68$, $p = .21$).[4] These results, across all five outcomes, suggest that having at least one more insider beyond the CEO is beneficial to the firm.

Finally, we created a subsample of non-lone-insider firms and examined a continuous measure of board independence. The effects became insignificant for excess pay, CEO-TMT pay gap, and financial restatements, but not for the performance measures. However, Chow tests show that the effects of moving from one insider (i.e., the CEO) to two insiders are significantly larger than the linear effects of moving from two to three or more insiders ($F = 139.18$ and 185.26 for ROA and Tobin's q, respectively). Taken together, these results support our theorizing that having at least one non-CEO insider represents a change in kind rather than degree.

Next, we examined a model predicting CEO salary because it provides a direct measure of

[3] We thank an anonymous reviewer for bringing these concerns to our attention.

[4] In keeping with our reported two-stage model specification, we test these robustness models using the number of directors hired during the incumbent CEO's tenure, the sum of directors' tenure, and whether the board had a classified board structure as suitable and valid instruments.

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whether the CEO is able to garner greater amounts of fixed pay, in line with agency concerns (Sanders, 2001). Results mirrored other CEO compensation measures in that lone-insider CEOs had larger salaries. We then investigated whether the interaction terms remained consistent when entered into the models separately. In all cases, results were either identical or stronger. Finally, because we include a lagged dependent variable in the ROA model and lagged dependent variables can deflate standard errors, we confirmed the performance results using Arellano-Bond modeling (Wintoki et al., 2012). Overall, lone-insider boards appear to be an empirically unique phenomenon and our findings are fully robust across all of the aforementioned tests.

Discussion

Agency theory has long advocated building corporate boards with a majority of independent directors because independence enhances objectivity and thus increases boards' overall monitoring capability (Fama & Jensen, 1983; Johnson et al., 1996). Corporate governance practitioners agree and have worked hard to institutionalize independent-majority boards (Joseph et al., 2014; Monks & Minow, 2011). Not only are independent-majority boards enshrined in law, practitioners frequently go beyond agency theory's initial recommendations by removing *all* non-CEO inside directors. Indeed, lone-insider boards have themselves become an increasingly adopted institutionalized norm accounting for more than half of S&P 1500 boards.

Our central insight is that these boards are "too much of a good thing" (Pierce & Aguinis, 2013) because there are unintended negative consequences that come with leaving the CEO "home alone." Not only does this extreme form of board independence go beyond legal requirements and agency theory's recommendations, it implicitly assumes that non-CEO inside directors have little value. We draw on pro-insider agency theory to describe the value that non-CEO inside directors bring and theorize that this value is lost when they are removed. Specifically, non-CEO inside directors enhance independent directors' monitoring capabilities by providing (a) better access to critical information and (b) viable CEO succession options (e.g., Baysinger & Hoskisson, 1990; Ocasio, 1994; Shen & Cannella, 2002).

Findings support our theorizing that internal monitoring is weakened on lone-insider boards. Firms with such boards (a) overcompensate their CEOs and do so relative to other TMT members, (b) experience more financial misconduct, and (c) suffer reduced financial performance. Examples from within our dataset illuminate these effects. Chesapeake Energy Corporation is a petroleum and gas exploration and production firm that had a lone-insider board from 2007 to 2012. Chesapeake's CEO, Aubrey McClendon, was indicted by the U.S. Justice Department for rigging bidding processes for land leases between 2007 and 2012 (Harwell & Mufson, 2016), and McClendon nominated his friends as "independent" board members, making them the highest-paid directors in the petroleum industry (Olson, 2012). At $112 million, Chesapeake's lone-insider board made McClendon the highest paid CEO in the S&P 500. In another example, the CEO of KB Home, Bruce Karatz, resigned in 2006 after an internal accounting probe found that stock options were improperly backdated. KB Home adopted a lone-insider board structure in 2004 and subsequently received media attention from the *Wall Street Journal* because the CEO was among the highest paid executives in 2005 (Bandler & Forelle, 2006). That year, Karatz earned $156 million, mostly from stock options.

While our results strongly suggest hazards of adopting a lone-insider board, based on emerging research that describes interactions among internal and external governance forces (Aguilera et al., 2015), we theorized that external governance forces apply pressure that helps reduce the negative impact of lone-insider boards. In particular, we investigated whether having more analyst coverage and institutional ownership attenuates the negative effects of lone-insider boards by pressuring independent directors to remain alert to CEO self-serving outcomes. Supporting our theorizing, we found that greater analyst coverage and institutional ownership reduced excess CEO pay and the negative impact of lone-insider boards on firm performance. We did not, however, find evidence that stock analyst coverage and institutional investor ownership reduced the effects of lone-insider boards on CEO-TMT pay gap or financial restatements, which suggests at least two possibilities. Either pressure from external actors may not always be effective in encouraging the board to take action, or external actors may be selective in terms of where they exert pressure. Future research might, for example, explore

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whether external actors only exert pressure or effect change related to highly visible outcomes, such as CEO pay and firm performance. Future research might also examine whether other external actors, such as the media and external auditors, focus on different sets of governance outcomes.

Our theorizing and findings are valuable first because they draw attention to the costs of adopting this increasingly institutionalized norm. Creating a lone-insider board implicitly assumes either that non-CEO insiders bring no value or that their value is offset by having more independent directors. Consistent with pro-insider research showing the value of inside directors, our findings suggest that practitioners and researchers alike should critically examine the decision to remove these directors in the name of independence. Second, our theorizing and findings are valuable because they offer a possible explanation for why prior efforts to study board independence have been plagued by mixed or insignificant findings. While a majority of independence is beneficial, extreme independence is harmful. This may render measures of the proportion of independent directors meaningless because these effects cancel each other out. Third, our results add to mounting evidence that external governance forces are most important when internal governance is weak (e.g., Irani & Oesch, 2013) and, as we describe below, raise important new questions about whether these actors might also intervene when it is not necessary.

All research has limitations and ours is no exception. One is the U.S.-centric nature of our sample; this creates opportunities to test our theorizing in other countries. Our use of archival data is a second limitation in that it does not allow direct access to the decision-making processes that led to the observed relationships. Finer-grained knowledge might be gained through interviews or other primary data collected from interested parties, including executives, directors, analysts, and investors. Nevertheless, our results have important implications for future inquiry on lone-insider boards and, more broadly, corporate governance.

Implications for Future Research on Lone-Insider Boards

We focused on external governance forces – analysts and institutional investors – with direct access and ability to exert pressure on weak boards (Aguilera et al., 2015). However, there are also internal governance forces that might limit the damage caused by lone-insider boards. Classified boards, for example, are a structural board characteristic that can influence effectiveness by making it more difficult to replace the entire board, resulting in entrenched boards that are immune from the threat of takeover (Faleye, 2007). Consistent with our theorizing, *post hoc* tests show that when lone-insider boards have a (theoretically stronger) non-classified structure, excess CEO pay and the CEO-TMT pay gap are reduced and performance improves (no change in financial misstatements). We found the same pattern of results in *post hoc* tests using CEO equity – another internal governance force. Overall, there appear to be many internal and external governance forces that individually or in combination (Aguilera et al., 2015; Rediker & Seth, 1995) interact with lone-insider board structures to determine the effectiveness of firms' overall governance, suggesting that detailed investigations involving different governance configurations merit future research.

Another broad and potentially unforeseen consequence of lone-insider boards that warrants future research attention is their impact on CEO succession. It seems likely that lone-insider boards face ambiguity around succession planning (*cf.* Shen & Cannella, 2003). Inside directors are often groomed as CEO successors but, without other insiders on the board, independent directors might have insufficient regular interaction with potential internal successors. Lacking a clear successor or having less information about potential successors might increase independent board members' reliance on the current CEO. Thus, future research might benefit by investigating whether lone-insider boards are slower to terminate a CEO following performance declines and more likely to hire external successors.

A final broad future research question regarding lone-insider boards is whether they impact the board's function as a resource provider (Hillman & Dalziel, 2003). Whereas our results are in line with pro-insider logic that the board's monitoring ability suffers, the opposite might be true for resource provision. Lone-insider CEOs might use the independent board positions to reach into as many related industries and potentially beneficial sources of knowledge as possible. Thus, it might be a fruitful extension to understand the extent, if any, to which lone-insider boards impact the board's ability to provide critical resources to the firm.

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Implications for Future Research on Corporate Governance

Lone-insider boards are a relatively new governance structure. Accordingly, future research might benefit by investigating whether other emerging governance practices have similar consequences. For example, firms are increasingly pressured to adopt lead directors, giving researchers "a unique opportunity to examine whether firms are using it to signal independence without a significant structural change" (Krause, Semadeni, & Cannella, 2014, p. 279). It seems possible that CEOs might ingratiate themselves (Westphal, 1998) or take other actions that thwart the intended benefits from lead directors. Therefore, future research is necessary to understand whether our theorizing has implications for research on lead directors.

We grounded our moderation hypotheses in theory that portrays external governance forces as more influential when boards are weak (Gentry & Shen, 2013; Irani & Oesch, 2013; Ryan & Schneider, 2002). Accordingly, our theorizing describes how scrutiny from institutional investors and stock analysts pressure board monitoring, which constrains CEO self-serving actions. Graphically, this can be seen in Figures 1–4 by lower excess pay and higher firm performance when lone-insider boards have high analyst coverage or institutional ownership — i.e., the right side of the Figures. However, the left side of Figures 1–4 and significant coefficients for analyst coverage and institutional ownership in Table 3, which depict their impact on non-lone-insider boards, suggest that perhaps the scrutiny raised by these actors can influence firm outcomes even when they are not needed.

For boards that are strong because they have non-CEO insiders, analyst coverage and institutional ownership appear to make things worse — i.e., analyst coverage relates to larger CEO-TMT pay gap, institutional ownership relates to greater excess CEO pay, and they both relate to lower firm performance. To date, theory about how configurations of multiple governance forces interact suggests they reinforce one another — either as substitutes or complements (e.g., Misangyi & Acharya, 2014). The possibility that some governance forces might actually detract from others, especially the board, has yet to enter the debate. We developed our thinking *post hoc* based on preliminary evidence in a single context (i.e., lone-insider boards), but the potential for negative interactions among competing governance forces seems worthy of future inquiry.[5]

Conclusion

Agency theory does not advocate removing all non-CEO directors nor do stock exchange rules require it. Yet governance practitioners are increasingly institutionalizing the removal of all non-CEO directors, leaving the CEO as the lone remaining insider. This practice assumes that non-CEO insiders bring little value to boards and ignores pro-insider research suggesting that such directors help independent directors perform better – by providing important information and succession options. While we find evidence that the costs of lone-insider boards can be partially mitigated by stock analyst coverage and institutional investors, our results suggest that, on average, lone-insider boards go a step too far — they grant their CEOs excessive pay, relative to both peer firms and other TMT members, they permit more financial misconduct, and they underperform. Our hope is that the theoretical explanation that we developed and the evidence provided will open new avenues of inquiry for researchers and help governance practitioners pause to critically evaluate the costs of leaving the CEO "home alone."

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References

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, *18*, 1403–1432.

Adams, R. B., & Ferreira, D. (2007). A theory of friendly boards. *Journal of Finance*, *62*, 217–250.

[5] We thank an anonymous reviewer for directing our attention to the implications of our results for non-lone-insider boards.

Aguilera, R. V., Desender, K., Bednar, M. K., & Lee, J. H. (2015). Connecting the dots: Bringing external corporate governance into the corporate governance puzzle. *Academy of Management Annals*, *9*(1), 483–573.

Appel, I. R., Gormley, T. A., & Keim, D. B. (2016). Passive investors, not passive owners. *Journal of Financial Economics*, *121*, 111–141.

Aspara, J., Pajunen, K., Tikkanen, H., & Tainio, R. (2014). Explaining corporate short-termism: Self-reinforcing processes and biases among investors, the media and corporate managers. *Socio-Economic Review*, *12*(4), 667–693.

Bandler, J., & Forelle, C. (2006, November 13). KB Home CEO resigns over backdated options. *Wall Street Journal* [WWW document]. Retrieved from http://www.wsj.com/articles/SB116338002994221196.

Bascle, G. (2008). Controlling for endogeneity with instrumental variables in strategic management research. *Strategic Organization*, *6*, 285–327.

Baysinger, B., & Hoskisson, R. (1990). The composition of boards of directors and strategic control. *Academy of Management Review*, *15*, 72–87.

Bebchuk, L. A., Cremers, M., & Peyer, U. (2006). *Pay distribution in the top executive team* (Discussion paper no. 574). Harvard Law and Economics. Available at SSRN: https://ssrn.com/abstract=964303

Bebchuk, L. A., Cremers, M., & Peyer, U. (2011). The CEO pay slice. *Journal of Financial Economics*, *102*, 199–221.

Bebchuk, L. A., & Fried, J. M. (2003). Executive compensation as an agency problem. *Journal of Economic Perspectives*, *17*(3), 71–92.

Bednar, M. K. (2012). Watchdog or lapdog? A behavioral view of the media as a corporate governance mechanism. *Academy of Management Journal*, *55*, 131–150.

Bednar, M. K., Love, E. G., & Kraatz, M. (2015). Paying the price? The impact of controversial governance practices on managerial reputation. *Academy of Management Journal*, *58*, 1740–1760.

Berle, A. A., & Means, G. (1932). *The modern corporation and private property*. New York, NY: Macmillan.

Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *Quarterly Journal of Economics*, *118*, 1169–1208.

Bhagat, S., & Bolton, B. (2013). Director ownership, governance, and performance. *Journal of Financial and Quantitative Analysis*, *48*(1), 105–135.

Bharath, S. T., Jayaraman, S., & Nagar, V. (2013). Exit as governance: An empirical analysis. *The Journal of Finance*, *68*(6), 2515–2547.

Bizjak, J. M., Lemmon, M. L., & Naveen, L. (2008). Does the use of peer groups contribute to higher pay and less efficient compensation? *Journal of Financial Economics*, *90*, 152–168.

Bloom, M. (1999). The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal*, *42*, 25–40.

Boyd, B. K. (1994). Board control and CEO compensation. *Strategic Management Journal*, *15*, 335–344.

Brav, A., Jiang, W., Partnoy, F., & Thomas, R. (2008). Hedge fund activism, corporate governance, and firm performance. *The Journal of Finance*, *63*, 1729–1775.

Brooks, M. E., Highhouse, S., Russell, S. S., & Mohr, D. C. (2003). Familiarity, ambivalence, and firm reputation: Is corporate fame a double-edged sword? *Journal of Applied Psychology*, *88*, 904–914.

Burks, J. J. (2010). Disciplinary measures in response to restatements after Sarbanes-Oxley. *Journal of Accounting and Public Policy*, *29*(3), 195–225.

Burns, N., & Kedia, S. (2006). The impact of performance-based compensation on misreporting. *Journal of Financial Economics*, *79*(1), 35–67.

Byard, D., Li, Y., & Weintrop, J. (2006). Corporate governance and the quality of financial analysts' information. *Journal of Accounting and Public Policy*, *25*, 609–625.

Carpenter, M. A., & Sanders, W. M. (2002). Top management team compensation: The missing link between CEO pay and firm performance? *Strategic Management Journal*, *23*, 367–375.

Chang, X., Dasgupta, S., & Hilary, G. (2006). Analyst coverage and financing decisions. *The Journal of Finance*, *61*, 3009–3048.

Chatterjee, S., & Price, B. (1991). *Regression analysis by example* (2nd ed.). New York, NY: John Wiley and Sons.

Chen, T., Harford, J., & Lin, C. (2015). Do analysts matter for governance? Evidence from natural experiments. *Journal of Financial Economics*, *115*, 383–410.

Combs, J. G., Ketchen, D. J., Perryman, A. A., & Donahue, M. S. (2007). The moderating effect of CEO power on the board composition – firm performance relationship. *Journal of Management Studies*, *44*, 1299–1323.

Combs, J. G., & Skill, M. S. (2003). Managerialist and human capital explanation for key executive pay premiums: A contingency perspective. *Academy of Management Journal*, *46*, 63.

Cordeiro, J. J., Vehyath, R., & Romal, J. B. (2007). Moderators of the relationship between director stock-based compensation and firm performance. *Corporate Governance: An International Review*, *15*(6), 1384–1393.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, *51*, 371–407.

Cyert, R. M., Kang, S. H., & Kumar, P. (2002). Corporate governance, takeovers, and top management compensation: Theory and evidence. *Management Science*, *48*(4), 453–469.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, *19*, 269–290.

Dalton, D. R., Hitt, M. A., Certo, S. T., & Dalton, C. M. (2007). The fundamental agency problem and its mitigation. *Academy of Management Annals*, *1*, 1–64.

David, P., Bloom, M., & Hillman, A. J. (2007). Investor activism, managerial responsiveness, and corporate social performance. *Strategic Management Journal*, *28*, 91–100.

David, P., Hitt, M. A., & Gimeno, J. (2001). The influence of activism by institutional investors on R&D. *Academy of Management Journal*, *44*, 144–157.

David, P., Kochhar, R., & Levitas, E. (1998). The effect of institutional investors on the level and mix of CEO

compensation. *Academy of Management Journal*, *41*, 200–208.
Davidson, R., Dey, A., & Smith, A. (2015). Executives' 'off-the-job' behavior, corporate culture, and financial reporting risk. *Journal of Financial Economics*, *117*(1), 5–28.
Davidson, W. N., Jiraporn, P., Kim, Y. S., & Nemec, C. (2004). Earnings management following duality-creating successions: Ethnostatistics, impression management, and agency theory. *Academy of Management Journal*, *47*, 267–275.
Davidson, W. N., Nemec, C., & Worrell, D. L. (2001). Succession planning vs. agency theory: A test of Harris and Helfat's interpretation of plurality announcement market returns. *Strategic Management Journal*, *22*, 179–184.
Derrien, F., & Kecskes, A. (2013). The real effects of financial shocks: Evidence from exogenous changes in analyst coverage. *The Journal of Finance*, *68*, 1407–1440.
Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, *33*, 1072–1089.
Dobbin, F., & Dowd, T. J. (2000). The market that antitrust built: Public policy, private coercion, and railroad acquisitions, 1825 to 1922. *American Sociological Review*, *65*, 631–657.
Dyck, A., Morse, A., & Zingales, L. (2010). Who blows the whistle on corporate fraud? *The Journal of Finance*, *65*, 2213–2253.
Faleye, O. (2007). Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics*, *83*, 501–529.
Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, *88*, 288–307.
Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *Journal of Law and Economics*, *26*, 327–349.
Faulkender, M., & Yang, J. (2010). Inside the black box: The role and composition of compensation peer groups. *Journal of Financial Economics*, *96*, 257–270.
Faulkender, M., & Yang, J. (2013). Is disclosure an effective cleansing mechanism? The dynamics of compensation peer benchmarking. *Review of Financial Studies*, *26*, 806–839.
Fich, E. M., & Shivdasani, A. (2006). Are busy boards effective monitors? *Journal of Finance*, *61*, 689–724.
Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and research on executives, top management teams, and boards*. Oxford, England: Oxford University Press.
Fong, E. A., Misangyi, V. F., & Tosi, H. L. (2010). The effect of CEO pay deviations on CEO withdrawal, firm size, and firm profits. *Strategic Management Journal*, *31*(6), 629–651.
Gallagher, D., Gardner, P., & Swan, P. (2013). Governance through trading: Institutional swing trades and subsequent firm performance. *Journal of Financial and Quantitative Analysis*, *48*, 429–458.
Gangloff, K. A., Connelly, B. L., & Shook, C. L. (2016). Of scapegoats and signals: Investor reactions to CEO succession in the aftermath of wrongdoing. *Journal of Management*, *42*(6), 1614–1634.
Gentry, R. J., & Shen, W. (2013). The impacts of performance relative to analyst forecasts and analyst coverage on firm R&D intensity. *Strategic Management Journal*, *34*, 121–130.
Gillan, S. L., & Starks, L. T. (2000). Corporate governance proposals and shareholder activism: The role of institutional investors. *Journal of Financial Economics*, *57*(2), 275–305.
Gillan, S. L., & Starks, L. T. (2007). The evolution of shareholder activism in the United States. *Journal of Applied Corporate Finance*, *19*(1), 55–73.
Goergen, M., & Renneboog, L. (2011). Managerial compensation. *Journal of Corporate Finance*, *17*(4), 1068–1077.
Grabke-Rundell, A., & Gomez-Mejia, L. R. (2002). Power as a determinant of executive compensation. *Human Resource Management Review*, *12*(1), 3–23.
Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1), 3–73.
Hartzell, J. C., & Starks, L. T. (2003). Institutional investors and executive compensation. *The Journal of Finance*, *58*, 2351–2374.
Harwell, D., & Mufson, S. (2016, March 2). Former Chesapeake Energy CEO dies in crash a day after price-fixing indictment. *The Washington Post* [WWW document]. Retrieved from https://www.washingtonpost.com/business/economy/former-chesapeake-energy-ceo-dies-in-crash-a-day-after-price-fixing-indictment/2016/03/02/35f92d32-e0b3-11e5-846c-10191d1fc4ec_story.html.
Henderson, A. D., & Fredrickson, J. (1996). Information processing demands as a determinant of CEO compensation. *Academy of Management Journal*, *39*, 575–606.
Henderson, A. D., & Fredrickson, J. (2001). Top management team coordination needs and the CEO pay gap: A competitive test of economic and behavioral views. *Academy of Management Journal*, *44*, 96–117.
Hill, C., & Phan, P. (1991). CEO tenure as a determinant of CEO pay. *Academy of Management Journal*, *34*, 707–717.
Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, *28*, 383–396.
Hoechle, D., Schmid, M., Walter, I., & Yermack, D. (2012). How much of the diversification discount can be explained by poor corporate governance? *Journal of Financial Economics*, *103*, 41–60.
Hoskisson, R. E., Hitt, M., Johnson, R. A., & Moesel, D. D. (1993). Construct validity of an objective (entropy) categorical measure of diversification strategy. *Strategic Management Journal*, *14*, 215–235.
Hoskisson, R. E., & Turk, T. A. (1990). Corporate restructuring: Governance and control limits of the internal capital market. *Academy of Management Review*, *15*, 459–477.
Howe, J. S., Unlu, E., & Yan, X. (2009). The predictive content of aggregate analyst recommendations. *Journal of Accounting Research*, *47*, 799–821.

Irani, R. M., & Oesch, D. (2013). Monitoring and corporate disclosure: Evidence from a natural experiment. *Journal of Financial Economics*, *109*, 398–418.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, *48*, 831–880.

Johnson, J. L., Daily, C., & Ellstrand, A. (1996). Boards of directors: A review and research agenda. *Journal of Management*, *22*, 409–438.

Johnson, S. G., Schnatterly, K., & Hill, A. D. (2012). Board composition beyond independence: Social capital, human capital, and demographics. *Journal of Management*, *39*, 232–262.

Joseph, J., Ocasio, W., & McDonnell, M. H. (2014). The structural elaboration of board independence: Executive power, institutional logics, and the adoption of CEO-only board structures in U.S. corporate governance. *Academy of Management Journal*, *57*, 1834–1858.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*(3), 375–400.

Krause, R., Semadeni, M., & Cannella, A. A. (2014). CEO duality: A review and research agenda. *Journal of Management*, *40*, 256–286.

Laux, V. (2008). Board independence and CEO turnover. *Journal of Accounting Research*, *46*(1), 137–171.

Lazear, E. P. (1989). Pay equality and industrial politics. *Journal of Political Economy*, *97*, 561–580.

Liu, Y., & Jiraporn, P. (2010). The effect of CEO power on bond ratings and yields. *Journal of Empirical Finance*, *17*, 744–762.

Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of Corporate Finance*, *30*, 223–244.

Long, J. S., & Freese, J. (2014). *Regression models for categorical dependent variables using STATA*. College Station, TX: Stata Press.

Luo, X., Wang, H., Raithel, S., & Zheng, Q. (2015). Corporate social performance, analyst stock recommendations, and firm future returns. *Strategic Management Journal*, *36*(1), 123–136.

McCahery, J., Sautner, Z., & Starks, L. (2016). Behind the scenes: The corporate governance preferences of institutional investors. *The Journal of Finance*, *71*(6), 2905–2932.

Misangyi, V. F., & Acharya, A. G. (2014). Substitutes or complements? A configurational examination of corporate governance mechanisms. *Academy of Management Journal*, *57*(6), 1681–1705.

Mitchell, L. E. (2005). Structural holes, CEOs, and informational monopolies. *Brooklyn Law Review*, *70*(4), 1313–1368.

Mobbs, S. (2013). CEOs under fire: The effects of competition from inside directors on forced CEO turnover and CEO compensation. *Journal of Financial and Quantitative Analysis*, *48*, 669–698.

Monks, R. G., & Minow, N. (2011). *Corporate governance*5th ed., . John Wiley and Sons Ltd: Chichester, England.

Morgenson, G. (2006, November 26). Peer pressure: Inflating executive pay. *The New York Times*.

Nicholson, G. J., & Kiel, G. C. (2004). A framework for diagnosing board effectiveness. *Corporate Governance: An International Review*, *12*(4), 442–460.

Nyberg, A. J., Fulmer, I. S., Gerhart, B., & Carpenter, M. A. (2010). Agency theory revisited: CEO return and shareholder interest alignment. *Academy of Management Journal*, *53*, 1029–1049.

Ocasio, W. (1994). Political dynamics and the circulation of power: CEO succession in U.S. industrial corporations, 1960-1990. *Administrative Science Quarterly*, *39*, 285–312.

O'Connor, J. P., Priem, R. L., Coombs, J. E., & Gilley, K. M. (2006). Do CEO stock options prevent or promote fraudulent financial reporting? *Academy of Management Journal*, *49*, 483–500.

Olson, B. (2012, May 21). Chesapeake director's firm paid $343 million amid ties. *Bloomberg* [WWW document]. Retrieved from http://www.bloomberg.com/news/articles/2012-05-21/chesapeake-director-s-firm-paid-343-million-amid-ties.

O'Reilly, C. A., Main, B. G., & Crystal, G. S. (1988). CEO compensation as tournament and social comparison: A tale of two theories. *Administrative Science Quarterly*, *33*, 257–274.

Parrino, R., Sias, R. W., & Starks, L. T. (2003). Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics*, *68*, 3–46.

Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, *29*, 411–438.

Pierce, J. R., & Aguinis, H. (2013). The too-much-of-a-good-thing effect in management. *Journal of Management*, *39*(2), 313–338.

Pitcher, P., Chreim, S., & Kisfalvi, V. (2000). CEO succession research: Methodological bridges over troubled waters. *Strategic Management Journal*, *21*, 625–648.

Pollock, T. G., Rindova, V. P., & Maggitti, P. G. (2008). Market watch: Information and availability cascades among the media and investors in the US IPO market. *Academy of Management Journal*, *51*, 335–358.

Raheja, C. G. (2005). Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, *40*(2), 283–306.

Rediker, K. J., & Seth, A. (1995). Boards of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, *16*, 85–99.

Rhoades, D. L., Rechner, P. L., & Sundaramurthy, C. (2000). Board composition and financial performance: A meta-analysis of the influence of outside directors. *Journal of Managerial Issues*, *1*, 76–91.

Ryan, L. V., & Schneider, M. (2002). The antecedents of institutional investor activism. *Academy of Management Review*, *27*, 554–573.

Sanders, W. G. (2001). Behavioral responses of CEOs to stock ownership and stock option pay. *Academy of Management Journal*, *44*, 477–492.

Sanders, W. G., & Hambrick, D. C. (2007). Swinging for the fences: The effects of CEO stock options on company risk taking and performance. *Academy of Management Journal*, *50*, 1055–1078.

Sauerwald, S., Lin, Z., & Peng, M. W. (2016). Board social capital and excess CEO returns. *Strategic Management Journal*, *37*, 498–520.

Schnatterly, K., Shaw, K. W., & Jennings, W. W. (2008). Information advantages of large institutional owners. *Strategic Management Journal*, *29*, 219–227.

Semadeni, M., Cannella, A. A., Fraser, D. R., & Lee, D. S. (2008). Fight or flight: Managing stigma in executive careers. *Strategic Management Journal*, *29*, 557–567.

Semadeni, M., Withers, M. C., & Certo, S. T. (2014). The perils of endogeneity and instrumental variables in strategy research: Understanding through simulations. *Strategic Management Journal*, *35*, 1070–1079.

Shaw, J. D., Gupta, N., & Delery, J. E. (2002). Pay dispersion and workforce performance: Moderating effects of incentives and interdependence. *Strategic Management Journal*, *23*, 491–512.

Shen, W., & Cannella, A. A. (2002). Power dynamics within top management and their impact on CEO dismissal followed by inside succession. *Academy of Management Journal*, *45*, 1195–1206.

Shen, W., & Cannella, A. A. (2003). Will succession planning increase shareholder wealth? Evidence from investor reactions to relay CEO successions. *Strategic Management Journal*, *24*, 191–198.

Siegel, P. A., & Hambrick, D. C. (2005). Pay disparities within top management groups: Evidence of harmful effects on performance of high-technology firms. *Organization Science*, *16*, 259–274.

Staw, B. M., McKechnie, P. I., & Puffer, S. M. (1983). The justification of organizational performance. *Administrative Science Quarterly*, *28*, 582–600.

Tosi, H. L., Werner, S., Katz, J. P., & Gomez-Mejia, L. R. (2000). How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management*, *26*, 301–339.

Van Essen, M., Otten, J., & Carberry, E. J. (2015). Assessing managerial power theory: A meta-analytic approach to understanding the determinants of CEO compensation. *Journal of Management*, *41*, 164–202.

Walsh, J. P., & Seward, J. K. (1990). On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, *15*, 421–458.

Ward, A. J., Brown, J. A., & Rodriguez, D. (2009). Governance bundles, firm performance, and the substitutability and complementarity of governance mechanisms. *Corporate Governance: An International Review*, *17*, 646–660.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, *20*, 431–460.

Westphal, J. D. (1998). Board games: How CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly*, *43*, 511–537.

Westphal, J. D., & Bednar, M. K. (2005). Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. *Administrative Science Quarterly*, *50*, 262–298.

Westphal, J. D., & Graebner, M. E. (2010). A matter of appearances: How corporate leaders manage the impressions of financial analysts about the conduct of their boards. *Academy of Management Journal*, *53*, 15–44.

Westphal, J. D., & Stern, I. (2007). Flattery will get you everywhere (especially if you are a male Caucasian): How ingratiation, boardroom behavior, and demographic minority status affect additional board appointments at US companies. *Academy of Management Journal*, *50*, 267–288.

Westphal, J. D., & Zajac, E. J. (1994). Substance and symbolism in CEO's long-term incentive plans. *Administrative Science Quarterly*, *39*, 367–391.

Westphal, J. D., & Zajac, E. J. (1995). Who shall govern? CEO/board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, *40*, 60–83.

Wiersema, M. F., & Zhang, Y. (2011). CEO dismissal: The role of investment analysts. *Strategic Management Journal*, *32*(11), 1161–1182.

Wintoki, M. B. (2007). Corporate boards and regulation: The effect of the Sarbanes-Oxley Act and the exchange listing requirements on firm value. *Journal of Corporate Finance*, *13*(2), 229–250.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, *105*, 581–606.

Womack, K. L. (1996). Do brokerage analysts' recommendations have investment value? *The Journal of Finance*, *51*, 137–167.

Wowak, A. J., & Hambrick, D. C. (2010). A model of person-pay interaction: How executives vary in their responses to compensation arrangements. *Strategic Management Journal*, *31*, 803–821.

Wright, P., Kroll, M., & Elenkov, D. (2002). Acquisition returns, increase in firm size, and chief executive officer compensation: The moderating role of monitoring. *Academy of Management Journal*, *45*, 599–608.

Yang, T., & Zhao, S. (2014). CEO duality and firm performance: Evidence from an exogenous shock to the competitive environment. *Journal of Banking and Finance*, *49*, 534–552.

Yermack, D. (1996). Higher market evaluation of companies with a small board of directors. *Journal of Financial Economics*, *40*, 185–211.

Yermack, D. (2004). Remuneration, retention, and reputation incentives for outside directors. *Journal of Finance*, *59*, 2281–2308.

Yu, F. F. (2008). Analyst coverage and earnings management. *Journal of Financial Economics*, *88*(2), 245–271.

Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, *15*, 291–344.

Zhang, Y., & Gimeno, J. (2016). Earnings pressure and long-term corporate governance: Can long-term-oriented investors and managers reduce the quarterly earnings obsession? *Organization Science*, *27*, 354–372.

Appendix: The effect of dual-insider boards on firm outcomes.

Variables	Model 1 Excess pay[abc]	Model 2 CEO-TMT pay gap[abc]	Model 3 Financial misconduct[dc]	Model 4 Performance (ROA)[abc]	Model 5 Performance (Tobin's q)[abc]
ROA	−0.16	−0.15	−1.80	0.02	0.16
	(.21)	(.44)	(.00)	(.49)	(.20)
Stock returns	0.06	0.18	0.13	0.03	0.20
	(.00)	(.00)	(.17)	(.00)	(.00)
Firm size	0.04	0.44	0.09	0.01	0.12
	(.28)	(.00)	(.09)	(.08)	(.02)
Debt ratio	0.07	0.19	0.50	−0.10	−0.36
	(.55)	(.34)	(.01)	(.00)	(.00)
Cash-holding ratio	−0.06	0.12	0.49	−0.04	−0.22
	(.67)	(.57)	(.21)	(.12)	(.18)
Diversification	−0.02	−0.03	−0.08	−0.01	−0.08
	(.82)	(.76)	(.54)	(.24)	(.10)
Institutional ownership	−0.05	−0.14	0.27	−0.01	−0.08
	(.59)	(.40)	(.14)	(.14)	(.55)
R&D intensity	−0.05	−0.08	−0.07	−0.05	−0.03
	(.30)	(.47)	(.52)	(.07)	(.81)
Capital intensity	0.16	0.37	0.36	−0.01	−0.17
	(.05)	(.02)	(.17)	(.29)	(.03)
Analyst coverage	0.00	0.01	−0.01	−0.00	−0.00
	(.79)	(.03)	(.10)	(.15)	(.15)
CEO tenure	0.00	0.01	0.01	−0.00	0.00
	(.48)	(.12)	(.09)	(.79)	(.07)
Duality	−0.08	−0.18	−0.14	0.00	−0.04
	(.15)	(.05)	(.15)	(.92)	(.36)
CEO equity %	0.00	−0.02	−0.01	−0.00	−0.01
	(.59)	(.04)	(.47)	(.25)	(.20)
CEO incentives			−0.11	0.00	0.02
			(.00)	(.33)	(.08)
Board size	0.00	0.02	−0.03	−0.00	−0.01
	(.85)	(.38)	(.13)	(.53)	(.06)
Outside boards	0.11	0.14	−0.01	−0.00	−0.13
	(.04)	(.10)	(.96)	(.67)	(.00)
Director ownership %	0.01	−0.12	−0.15	0.01	−0.15
	(.94)	(.23)	(.29)	(.26)	(.39)
Succession	0.00	0.00	0.33	0.01	0.08
	(.98)	(.98)	(.02)	(.26)	(.06)
Dual-insider board	−0.83	−2.08	−0.30	−0.03	−0.68
	(.21)	(.08)	(.00)	(.66)	(.21)
N	7,667	8,177	10,474	9,970	9,970
First Stage F-test	2.16	1.96		2.11	2.11
	(.09)	(.12)		(.10)	(.10)
Hansen J-statistic	3.71	6.18		2.23	2.74
	(.16)	(.05)		(.33)	(.25)

[a] Models estimated using 2SLS and include two-way fixed effects for firm and year with robust standard errors; Models lagged 1 year.
[b] Instruments include the number of directors hired during the incumbent CEO's tenure, the sum of directors' tenure, and whether the board had a classified board structure.
[c] Exact p-values in parentheses below regression coefficients.
[d] Model estimated using logistic regression with year and robust standard errors clustered by firm; Model lagged 1 year.

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