Strategic Management Journal
Strat. Mgmt. J., **36**: 1877–1894 (2015)
Published online EarlyView 18 September 2014 in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/smj.2316
Received 12 February 2014; *Final revision received 3 June 2014*

THE ROLE OF CEO RELATIVE STANDING IN ACQUISITION BEHAVIOR AND CEO PAY

JEONGIL SEO,[1]* DANIEL L. GAMACHE,[2] CYNTHIA E. DEVERS,[3] and MASON A. CARPENTER[4]
[1] *Sogang Business School, Sogang University, Seoul, Korea*
[2] *Department of Management, Terry College of Business, University of Georgia, Athens, Georgia, U.S.A.*
[3] *Department of Management, Eli Broad College of Business, Michigan State University, East Lansing, Michigan, U.S.A.*
[4] *Wisconsin School of Business, University of Wisconsin-Madison, Madison, Wisconsin, U.S.A.*

In this study, we develop and test a theory of CEO relative pay standing. Specifically, we propose that CEOs with negative relative pay standing status (underpaid relative to comparison CEOs) will engage in acquisition activity, as a self-interested means of attempting to realign their pay with that of their peers. We further propose that, when CEOs with negative relative pay standing acquire, they will tend to finance those acquisitions more heavily with stock than cash, to mitigate the risk associated with those deals. Finally, we argue that acquisition activity will partially mediate the influence of CEO negative relative pay standing on subsequent CEO compensation increases; however, that pay growth will come primarily in the form of long-term incentive pay. Our results support our predictions.

INTRODUCTION

The idea that compensation is an important governance mechanism is a fundamental assumption of executive compensation theory and practice (Jensen and Meckling, 1976). Research examining this assumption has generated rich insight into how CEOs' own compensation influences both their perceptions and behavioral outcomes (Devers *et al.*, 2008; Finkelstein, Hambrick, and Cannella, 2009; Gomez-Mejia and Wiseman, 1997; Harris and Bromiley, 2007; Sanders, 2001; Sanders and Hambrick, 2007). Other related evidence, however, suggests that the results of CEOs' comparisons of their own pay to that of their peers (CEO relative pay standing) may exhibit even more salient influences on CEOs' perceptions and behavioral responses than does their own pay in isolation (e.g., Folger and Cropanzano, 1998; Goodman, 1974). More specifically, drawing on extensive evidence showing that employees tend to view pay as reflective of one's perceived worth (e.g., skills, knowledge, effort) to their firms (Wade, O'Reilly, and Pollock, 2006), scholars have argued that, when individuals believe they are underpaid relative to peers, feelings of inequity arise (Brown, Sturman, and Simmering, 2003; Greenberg, 1990; Pfeffer and Langton, 1993). Further, considerable evidence has shown that employees respond to relative underpayment with remedial actions designed to achieve perceived pay equity (Bloom, 1999; Bloom and Michel, 2002; Cosier and Dalton, 1983; Cowherd and Levine, 1992; Fredrickson, Davis-Blake, and Sanders, 2010; Janssen, 2001).

Keywords: executive compensation; corporate governance; relative standing; CEO underpayment; mergers and acquisitions
*Correspondence to: Jeongil Seo, Sogang Business School, Sogang University, 35 Baekbeom-ro, Mapo-gu, Seoul, 121-742, Korea. E-mail: jeongil@sogang.ac.kr

Some scholars have drawn on this research to examine the role of relative pay in the CEO setting. This work has provided some preliminary evidence that CEO relative pay standing, or the degree to which CEOs are underpaid or overpaid as compared to their peers, appears to have implications for firm size, CEO turnover (Fong, Misangyi, and Tosi, 2010), and compensation (Ezzamel and Watson, 1998).[1] However, the specific actions underpaid CEOs may take in response to underpayment and whether those actions result in subsequent pay increases remain unclear. Drawing on evidence that CEOs can receive significant personal benefits from acquiring other firms, we develop and test a more complete theoretical explanation of whether, when, and how CEO relative pay standing influences CEO acquisition behavior and subsequent pay.

Gaining a deeper understanding of the antecedents of acquisition activity is an important endeavor. Research has consistently demonstrated that acquisitions typically generate unstable and often negative firm returns (Datta, Iskandar-Datta, and Raman, 2001; King *et al.*, 2004; Schijven and Hitt, 2012). Nevertheless, evidence has shown that CEOs can derive significant personal benefits, such as increased discretion, visibility, prominence, power, and pay from acquiring other firms (Chen, Hambrick, and Pollock, 2008; Hambrick, Finkelstein, and Mooney, 2005; Henderson and Fredrickson, 1996). Recent research suggests that these factors are especially salient to underpaid CEOs, as they likely perceive they are undervalued and underappreciated, compared to peers leading similar firms with comparable characteristics and performance (Fong *et al.*, 2010; Wade *et al.*, 2006). Nevertheless, recent evidence suggests that CEOs who acquire primarily for self-interested reasons (e.g., increasing subsequent pay) simultaneously perceive increased downside risk related to those acquisitions, and thus engage in actions intended to minimize that risk (Devers *et al.*, 2013). Specifically, scholars suggest that, when acquirers are uncertain about the value creation potential of their acquisitions, they tend to finance deals with higher levels of stock, to help offset that risk (Schijven and Hitt, 2012).

Our study draws on this work to offer important theoretical and empirical contributions to the executive compensation, corporate governance, and merger and acquisition (M&A) literatures. First, we propose that negative relative pay standing will motivate CEOs to attempt to increase their subsequent pay by making acquisitions. Our results support this prediction by showing that CEO negative relative standing status positively influences acquisition behavior. Second, we propose and find support for the argument that underpaid CEOs who acquire will endeavor to mitigate the risk associated with those deals by financing those acquisitions with a greater percentage of stock (Haleblian *et al.*, 2009). Third, we argue that CEOs who make acquisitions under negative relative pay standing conditions will increase their pay (Ezzamel and Watson, 1998). We further argue that acquisition activity will exhibit a positive influence on subsequent CEO pay, beyond that of firm growth. In support, we find that acquisitions appear to offer acquiring CEOs greater opportunities to increase their compensation than simply increasing firm size. Our results further show that acquisition activity partially mediates the influence of CEO negative relative pay standing on subsequent compensation increases. Finally, in line with our argument that CEO underpayment elicits self-interested motives for acquiring, we further predict that the directors of firms led by CEOs who make acquisitions under negative relative pay standing conditions will be more likely to fund subsequent CEO pay increases with long-term pay than short-term pay, to more tightly align their CEOs' interests with those of shareholders. Our findings support this prediction by showing that, although underpaid CEOs who acquire tend to successfully increase their pay, those increases derive primarily from long-term, incentive-based compensation awards.

THEORY DEVELOPMENT

Scholars have long emphasized the symbolic nature of pay. In this regard, Barnard (1938: 145) argued that "the real value of differences of monetary reward lies in the recognition or distinction assumed to be conferred." Lawler (1966) agreed, suggesting that its reflection as symbolic reward may be the most salient motivational property of pay. More recently, a number of upper echelon scholars have built on this work to suggest that, because pay levels

[1] In this study, we use the terms CEO negative relative pay standing, CEO underpayment, and underpaid CEOs synonymously, to reflect the condition under which CEOs are paid less relative to their similar labor market peers.

DOI: 10.1002/smj

serve as important indicators of others' perceptions of CEO skill and expertise, CEOs regularly compare their pay with that of their labor market peers (Bebchuk and Fried, 2004; Finkelstein *et al.*, 2009). This research suggests that pay comparisons have substantial motivational effects for CEOs.

Although CEO labor markets are far from efficient in terms of supply and demand (Crystal, 1991; Khurana, 2002), these markets are often viewed as informationally efficient, particularly in terms of CEO compensation (Ezzamel and Watson, 1998; Fong *et al.*, 2010). For example, executive search firms collect and disseminate copious amounts of information regarding top executive pay (Finkelstein *et al.*, 2009; Khurana, 2002). Executive networks and interlocking directors responsible for selecting, evaluating, and compensating CEOs also facilitate compensation information transparency (Davis and Greve, 1997; Haunschild, 1993). In addition, other sources, such as compensation consultants, business media outlets, annual proxy statements and reports, etc., also contribute to the wide distribution of executive compensation figures. The extensive availability of executive pay information facilitates pay comparisons, and thus renders CEOs' relative pay standing highly visible to those and other CEOs, their firms' internal and external stakeholders, and the public (Finkelstein *et al.*, 2009). Given the salience of pay, it follows that CEOs "keep track of their relative standing" (Finkelstein *et al.*, 2009: 311).

CEO behavioral responses to negative relative pay standing

Scholars have long argued that the results of pay comparisons can motivate significant behavioral consequences (Adams, 1963; Ambrose and Kulik, 1999; Heneman and Judge, 2000). Indeed, individuals tend to view pay as reflective of one's ability, worth, and social status (Frank, 1985; Mitchell and Mickel, 1999). This relative view of compensation, often grounded in equity, justice, and social comparison theories (e.g., Adams, 1965; Festinger, 1954), has shown that individuals gauge the perceived fairness of their pay via peer pay comparisons and, further, that the results of these comparisons can significantly influence their perceptions and behaviors. This, and related work, has further shown that individuals who perceive they are underpaid relative to peers experience feelings of inequity (Greenberg, 1990; Pfeffer and Langton, 1993; Trevor and Wazeter, 2006). In turn, those underpaid individuals tend to engage in remedial actions aimed at restoring perceived pay fairness (Bloom, 1999; Bloom and Michel, 2002; Connelly *et al.*, Forthcoming; Cosier and Dalton, 1983; Cowherd and Levine, 1992; Fredrickson *et al.*, 2010; Grund and Westergaard-Nielsen, 2008; Janssen, 2001).

Building on this work, Fong and colleagues (2010) recently argued and found that CEO relative underpayment positively influenced subsequent firm growth. Although this finding provided initial insight into an important consequence of underpayment in the CEO context, the specific actions underpaid CEOs may take to grow their firms and whether such growth influences subsequent CEO pay remain unclear. We attempt to advance this line of research by proposing that CEOs will respond to relative underpayment by engaging in measures they feel hold the potential to raise their relative standing (increase their pay). Specifically, we argue that CEO negative relative pay standing will positively influence acquisition activity, as underpaid CEOs attempt to better align their pay with that of peers. We further predict that such acquisition activity will positively influence the subsequent pay of those underpaid CEOs, beyond what increases to firm size might produce.

Acquisition behavior

We develop our theory by drawing on evidence showing that CEOs can derive significant personal benefits from acquiring other firms (Haleblian *et al.*, 2009). Specifically, recent research demonstrates that the value of acquiring firm CEOs' compensation awards increases following acquisitions, often irrespective of subsequent acquisition performance (Bliss and Rosen, 2001; Grinstein and Hribar, 2004; Harford and Li, 2007). These pay increases are due, in part, to the conventional assumption that managing larger firms requires greater cognitive ability and executive skill than managing smaller firms (e.g., Henderson and Fredrickson, 1996; Smith and Watts, 1992). Therefore, higher pay is often assumed necessary to attract and/or retain CEOs who have the capabilities and skills to lead large firms (Fulmer, 2009; Haleblian *et al.*, 2009; Rosen, 1986). In a related vein, acquisitions typically heighten the complexity of acquiring firms, which, in turn, can enhance CEOs' discretion and bargaining power, potentially increasing their ability to negotiate more lucrative future

DOI: 10.1002/smj

compensation contracts (Carpenter and Seo, 2007; Hambrick *et al.*, 2005; Henderson and Fredrickson, 1996). In support, research has shown that acquiring another firm typically increases CEOs' pay much more quickly than does internal or organic growth (Bliss and Rosen, 2001; Harford and Li, 2007; Shelton, 1988). More recently, drawing on Bliss and Rosen's (2001: 110) argument that "even mergers which reduce shareholder value can be in a manager's private interest," Devers and colleagues (2013) suggested that personal interests, such as increasing compensation, discretion, and power, may actually provide the motivating forces behind many CEOs' acquisition decisions.

Given that pay tends to reflect individuals' competence and worth (Fulmer, 2009; Mitchell and Mickel, 1999; O'Reilly, Main, and Crystal, 1988; Tang, 1992; Wade *et al.*, 2006), it is no surprise that CEOs are sensitive to their relative pay standing (Finkelstein *et al.*, 2009). Thus, we expect underpaid CEOs are highly motivated to improve their relative pay standing status. Integrating these arguments with theory and evidence from the M&A literature discussed above leads us to propose that negative relative pay standing will motivate CEOs to engage in acquisition activity as a means of attempting to better align their pay with that of peers. Formally stated, we hypothesize:

Hypothesis 1: CEO negative relative pay standing is positively associated with acquisition activity.

Payment method

A large body of research has documented that most large acquisitions generate null or negative acquirer returns (Datta *et al.*, 2001; Haleblian *et al.*, 2009; Hitt *et al.*, 2001). Thus, although acquiring another firm may offer CEOs substantial personal benefits, scholars are generally skeptical about whether acquisitions enhance firm value (Haleblian *et al.*, 2009). Acquiring CEOs appear to share this concern. For example, Devers and colleagues' (2013) recent research shows that CEOs tend to exercise stock options and sell firm stock following their own acquisition announcements. These authors further argued that, although CEOs possibly believe that they will reap personal benefits from acquisitions, at the same time their unloading of firm equity following acquisition announcements suggests they attempt to minimize the personal downside potential related to their acquisitions.

We argued earlier that underpaid CEOs will pursue acquisitions to increase their pay as a self-interested means of better aligning it with that of their peers. Although all acquiring CEOs face downside acquisition-related potential, we propose such concerns can be exacerbated for underpaid CEOs. For example, scholars have firmly documented that CEOs can accrue sizable personal benefits from acquiring other firms (Haleblian *et al.*, 2009). However, when personal interests serve as a primary motivation for acquisitions, acquiring CEOs appear to question the ability of those acquisitions to produce long-term value (Devers *et al.*, 2013). Given our argument that CEOs with negative relative pay standing will seek to acquire to increase their own pay, we expect that underpaid acquiring CEOs may sense additional uncertainty about the success of potential acquisitions and, thus, although they still are intent on acquiring, they will focus on mitigating the downside potential of doing so.

The research above suggests that, although underpaid CEOs will perceive acquisitions as an instrument to increase their pay, they will simultaneously work to mitigate their personal downside exposure from those investments. Thus, we argue that underpaid CEOs' desire to reduce such downside potential will manifest in how they finance acquisitions. Specifically, acquirers generally finance acquisitions with cash, stock, or some combination (Haleblian *et al.*, 2009). Payment in stock, as opposed to cash, allows the acquiring firm and its investors to share some of the acquisition-related risk with the acquired firm and its owners (Hansen, 1987; Martin, 1996). As such, when acquiring CEOs are highly certain about an acquisition's ability to generate returns, they are likely to use cash to ensure they capture the full value of the gains associated with that acquisition (Carow, Heron, and Saxton, 2004). However, when acquirers question the value-enhancing potential of acquisitions, they tend to finance deals with higher levels of stock, to help offset risk (Schijven and Hitt, 2012). We argued earlier that, given their potentially self-interested motives for acquiring, underpaid CEOs may not be highly certain about the long-term value creation potential of their impending acquisitions. Therefore, we propose that underpaid CEOs who acquire will rely more on stock as an acquisition payment method. Thus, we hypothesize:

DOI: 10.1002/smj

Hypothesis 2: When acquisitions are made, CEO negative relative pay standing will positively influence the use of stock as a payment method.

Subsequent pay change

We develop our final arguments by integrating evidence from pay fairness research (e.g., equity, justice, and social comparison) with executive compensation, governance, and M&A scholarship to propose that acquisition activity partially mediates the effect of CEO negative relative pay standing on subsequent pay. Specifically, as discussed earlier, the assumption that overseeing larger, complex firms requires greater cognitive capabilities and skills than overseeing smaller, less complex firms is common (e.g., Haleblian *et al.*, 2009; Henderson and Fredrickson, 1996; Smith and Watts, 1992). Given acquisitions typically increase firm complexity and scope, acquiring CEOs' often accrue increased visibility, prominence, decision-making discretion, and bargaining power, which can potentially raise their ability to negotiate more lucrative future compensation contracts (Carpenter and Seo, 2007; Hambrick *et al.*, 2005; Henderson and Fredrickson, 1996).

CEO compensation contracts are structured through intense negotiations, involving CEOs, compensation committee members, and often consultants and investors (Miller, 1995). The intensity of such negotiations increases when the relative attractiveness of CEOs' pay is low (Gerhart and Rynes, 1991). We argued earlier that CEOs in negative relative pay standing will seek to acquire to increase their compensation. As a consequence, we expect underpaid acquiring CEOs to enthusiastically point to increases in firm complexity and scope to help justify arguments for higher pay (Henderson and Fredrickson, 1996). We expect this, together with the potential increased bargaining power received from acquiring, to positively impact underpaid CEOs ability to influence their subsequent pay (Bliss and Rosen, 2001; Chen *et al.*, 2008; Gomez-Mejia and Wiseman, 1997; Grinstein and Hribar, 2004; Hambrick *et al.*, 2005; Harford and Li, 2007; Henderson and Fredrickson, 1996; Pollock, Porac, and Wade, 2004). Further, although firm size has been shown to positively influence compensation (Tosi *et al.*, 2000), we propose that acquisitions may allow underpaid CEOs to increase their compensation beyond the potential effect of firm growth. Thus, we hypothesize:

Hypothesis 3: Acquisition activity (controlling for change in firm size) is (a) positively related to subsequent pay change, and (b) partially mediates the relationship between CEO negative relative pay standing and subsequent pay change.

Long-term and short-term pay

We posited above that underpaid CEOs will receive pay increases following acquisitions. We further develop our understanding of this relationship by examining how those pay increases are structured. Specifically, we argue that pay increases that follow underpaid CEOs' acquisition activity are more likely to take the form of incentive-based long-term pay than short-term cash-based pay.

As we argued, we expect underpaid CEOs to attempt to resolve their negative relative standing. Self-interest underlies our theorizing, in that we propose underpaid CEOs may view acquisitions as a means of increasing their own subsequent compensation, and acquire accordingly. Research has shown that CEOs have a great deal of freedom in undertaking actions such as acquisitions (Sanders and Hambrick, 2007). Nevertheless, directors are expected to ensure that their CEOs are engaging in behaviors designed to enhance firm value (Devers *et al.*, 2008). Thus, when underpaid CEOs make acquisitions, their acquiring firm directors may sense the possibility that self-interest has motivated those acquisition decisions and, in turn, perceive potential misalignment of CEOs' and shareholders' interests.

Given the difficulties and costliness of directly monitoring CEO behaviors, directors have sought new ways to align CEOs interests with those of shareholders. Considerable governance research has shown that directors' primary alternative alignment mechanism is long-term incentive pay (e.g., Finkelstein *et al.*, 2009; Jensen and Meckling, 1976; Sanders and Hambrick, 2007). This research suggests that, if acquiring firm directors suspect the possibility of self-interest regarding their underpaid CEOs' intentions for acquiring, they will seek to more tightly align CEO-shareholder interests by tying their CEOs' pay to performance, via long-term pay forms, during the subsequent compensation structuring period. Therefore, although we expect directors to award underpaid CEOs higher pay following their acquisitions, we propose this increase is more likely to take the form of long-term, than short-term pay. Thus, we hypothesize:

DOI: 10.1002/smj

Hypothesis 4: Underpaid CEOs' acquisition activity is more likely to lead to subsequent long-term pay increases than subsequent short-term pay increases.

METHODS

Sample

To test our hypotheses, we used longitudinal panel data with a sample that consisted of the firms covered in Standard & Poor (S&P)'s ExecuComp database for the years 1996–2008. We lagged all independent variables and all firm-level control variables one year. As such, we excluded firm-year observations if the previous year's CEO relative pay standing and firm-level control variables were unavailable. Our final sample included 7,670 firm-year observations from 1,468 distinct firms. We used the full sample for our tests of Hypotheses 1, 3a, 3b, and 4. For our tests of Hypothesis 2, we used a reduced sample consisting of only firm-year observations where at least one acquisition occurred. This reduced sample consisted of 3,448 observations when all acquisitions were considered and 2,370 observations when only large acquisitions were considered.

We drew all CEO compensation data from the ExecuComp service, which collects compensation data from firms' proxy statements. In addition, we gathered firm financial data from Compustat, industry data from the Compustat Segments database, and board structure data from the RiskMetrics database (formerly the Investor Responsibility Research Center). Finally, data on firm acquisition activities came from the SDC Mergers & Acquisitions Database.

Dependent variables

Acquisition activity

To test our hypotheses regarding the influence of CEO negative relative pay standing on CEO acquisition activity and the direct and mediation effects of acquisition activity on subsequent change in CEO pay, we measured *total acquisitions* as the number of acquisitions announced during a year and subsequently completed. Our use of the count measure of acquisition activities is consistent with previous studies and, therefore, facilitates a rigorous comparison between the current study's findings and those of previous studies (Haunschild, 1993; Haunschild and Beckman, 1998; Sanders, 2001). We also captured a separate measure of acquisition activity that included only *large acquisitions,* calculated as the number of acquisitions whose total deal size was greater than $1 million. We Winsorized the extreme 1 percent of the distribution of acquisition activity variables to reduce the effects of extreme observations. Results without Winsorizing were completely consistent with those reported.

Payment method

To test our hypothesis regarding the impact of CEO negative relative pay standing on *payment method*, following McNamara, Haleblian, and Dykes (2008), we drew the acquirer's "percentage of the stock used" variable from the SDC Mergers & Acquisitions Database. This value was averaged on an annual basis based on all acquisitions announced during the year and subsequently completed. When the SDC database did not report a percentage of stock used, we recorded this value as 0. Results were fully consistent when we coded those values as missing.

CEO subsequent pay change

Hypotheses 3a, 3b, and 4 proposed that acquisition activity would mediate the relationship between CEO negative relative pay standing and subsequent CEO pay increases. The dependent variable in Hypotheses 3a and 3b is *change in total compensation*. To capture change in total compensation, we used the total CEO compensation each firm publicly reported during each year of our sample. We simultaneously controlled for the previous year's total compensation (Graffin, Boivie, and Carpenter, 2013). This method allowed us to partial out the influence of previous year total compensation from current year total compensation (Cohen and Cohen, 1983; Dunlap, Dietz, and Cortina, 1997; Firebaugh and Gibbs, 1985), thus avoiding the problems that difference scores produce when used as a dependent variable (Edwards, 1994, 1995).

Our sample encompasses 1996–2008. Importantly, after 2005, (as a result of the revised 2004 Statement of Financial Accounting Standards No. 123 (FAS 123(R)), public firms changed the way they reported some compensation awards (Kuhnen and Niessen, 2012). Thus, the post-2005 CEO compensation reporting format differs from the format firms used during the years 1996–2005.

DOI: 10.1002/smj

As our theory suggests, CEOs compare their pay with that of peers. Although one could calculate CEO compensation in multiple ways, it is most reasonable to believe that CEOs make pay comparisons using widely publicized compensation figures, such as those reported in proxy statements and SEC filings, rather than individually tabulating their own pay and that of peers, using some other calculation method. The tediousness of individually tabulating CEO pay for oneself and peers notwithstanding, compensation figures reported in proxy statements and SEC filings are those the business media typically use when comparing CEO pay to that of peers, to lower-level employees, and to firm performance (Bebchuk and Fried, 2004; Connelly *et al.*, Forthcoming; O'Reilly *et al.*, 1988; Wade *et al.*, 2006). Thus, they are widely known and recognized. We wanted to ensure that the total compensation variable accurately reflected these publicly reported CEO compensation figures for the 1996–2005 and post-2005 periods. Therefore, we operationalized total compensation for years 1996–2005 as the total annual CEO compensation the firm publicly reported during that time frame: the sum of *salary, bonus, total value of restricted stock awards, Black-Scholes value of stock option awards, long-term incentive payouts,* and *other compensation* (compensation received by the CEO including perquisites and other personal benefits, termination or change-in-control payments, contributions to defined contribution plans, life insurance premiums, gross-ups, and other tax reimbursements, and discounted share purchases).

For years 2006–2008, we operationalized total compensation as the total annual CEO compensation the firm publicly reported in SEC filings: the sum of *salary, bonus, value of stock option awards* (as the firm reported on its income statement and the values the firm capitalized on its balance sheet for the fiscal year), *value of stock awards*, including restricted stock, restricted stock units, phantom stock, phantom stock units, common stock equivalents (as the firm reported on its income statement and the values the firm capitalized on its balance sheet for the fiscal year), *non-equity incentive plan compensation earned*, *change in pension value and non-qualified deferred compensation earnings*, and *other compensation* (compensation received by the CEO including perquisites and other personal benefits, termination or change-in-control payments, contributions to defined contribution plans, life insurance premiums, gross-ups, and other tax reimbursements, and discounted share purchases). To test Hypothesis 4, we then separated total compensation into *change in short-term compensation* and *change in long-term compensation*. Due to skewness, we used the natural logarithm of the compensation variables.

Independent variables

Following previous research, we operationalized CEO relative pay standing by taking the residuals from the regression of CEO total pay on important determinants of CEO total pay (Ambrose and Kulik, 1999; Cowherd and Levine, 1992; Fong *et al.*, 2010; Levine, 1993; Wade *et al.*, 2006; Wowak, Hambrick, and Henderson, 2011). First, we constructed the following equation that included firm size, performance, human capital, and CEO labor market membership as determinants of CEO compensation (O'Reilly *et al.*, 1988):

$$
\begin{aligned}
&ln\,(\text{Total compensation})_{it} = \beta_0 \\
&+ \beta_1 ln\,(\text{Firm sales})_{it} + \beta_2 ln\,(\text{Firm assets})_{it} \\
&+ \beta_3\,(ROA)_{it} + \beta_4\,(\text{Shareholder return})_{it} \\
&+ \beta_5\,(CEO\ \text{tenure})_{it} + \beta_6\,(CEO\ \text{tenure})^2_{it} \\
&+ \sum_{k=1}^{n} \alpha_k \text{Industry} + \sum_{k=1}^{n} \gamma_k S\&P\text{Index} \\
&+ \sum_{k=1}^{n} \delta_k \text{Year} + \nu_i + \epsilon_{it}
\end{aligned}
$$

We captured firm size through firm sales and firm assets. As is typical, firm sales and firm assets were highly skewed, and thus we used the natural logarithm of these variables in the equation. We used ROA and shareholder return to measure firm performance. Following O'Reilly *et al.* (1988), we used CEO tenure (number of years in the CEO role) as the proxy for CEO human capital. Because research has suggested that the value of CEO human capital decreases for long-tenured CEOs (Hambrick and Finkelstein, 1995), we added the square of CEO tenure to our model. We also included additional variables to account for the effects of CEO labor market membership because our theory posits that CEOs will compare their pay to that of their labor market peers. We controlled for each specific labor market by including dummy codes for industry groups, based on SIC two-digit

DOI: 10.1002/smj

codes. Further, recent evidence suggests that directors, executives, and external stakeholders appear to make comparisons within the different S&P indices (Cadman, Klasa, and Matsunaga, 2010). As such, we controlled for membership within different S&P size indices (spcode in ExecuComp): S&P large-cap, S&P mid-cap, and S&P small-cap.[2] We also included a control for *year* to capture any periodic systemic variation. Finally, because of the panel nature of our data, we utilized between-effects panel estimation (clustered on firms) for our analysis. We then used the between-effect residuals from this wage equation to calculate CEO overpayment and CEO underpayment (Fong *et al.*, 2010).

Positive residuals and negative residuals, respectively, represented positive and negative CEO relative pay standing among peer CEOs (in terms of relative overpayment and underpayment). We operationalized *CEO overpayment* by equating it to the residual value if positive and by setting it to 0, if not. We set the *CEO underpayment* variable at the residual value if negative and to 0, if not. To more clearly report the effect of CEO underpayment, we reversed the negative signs, such that increasing positive values reflected higher underpayment levels (Fong *et al.*, 2010). We then lagged the values for CEO overpayment and underpayment variables by one year.

Control variables

We included several variables in our analyses to control for the influence of factors that might otherwise explain our results. First, we controlled for prior firm performance using return on assets (*ROA*). We also controlled for *free cash flow* (Haunschild, 1993; McNamara *et al.*, 2008), and *diversification*, operationalized as the entropy measure (Hoskisson, Johnson, and Moesel, 1994; Palepu, 1985; Westphal and Fredrickson, 2001). To be consistent with prior research, we controlled for *firm size* by creating a composite factor using principal components analysis (PCA; Jackson, 1991) based on the natural logarithm of sales and the natural logarithm of number of employees (Fong *et al.*, 2010; Tosi *et al.*, 2004).

When examining whether the impact of acquisitions on subsequent pay change exceeded that of changes in firm size (for Hypotheses 3 and 4), we operationalized *change in firm size* as $(\text{firm size}_t - \text{firm size}_{t-1})/\text{firm size}_{t-1}$ (Fong, *et al.,* 2010). In addition, since firm-specific resources may impact acquisition decisions, we included firm *R&D expense* as a control variable. Because R&D expenditures are frequently not reported in the Compustat database, we followed prior research and assumed an R&D value of 0 if the data was missing (e.g., Henderson, Miller, and Hambrick, 2006; O'Brien, 2003). Not including R&D expenditures in our analyses provided results consistent with those reported.

Given the importance of CEO power in executive decision making, we controlled for *CEO power* by constructing a composite variable (using PCA) comprised of three different measures: CEO tenure relative to directors' average tenure, the proportion of directors appointed by the current CEO, and CEO duality; a dichotomous variable set to 1 if the CEO was board chair and 0 if not (Boeker, 1992; Main, O'Reilly, and Wade, 1995; Wade, O'Reilly, and Chandratat, 1990; Westphal and Zajac, 1994, 2001). To account for *CEO change*, we used a dichotomous variable set to 1 if there was a change in CEO for the firm in that year and 0 if no change occurred. We also controlled for *CEO pay structure* by using the ratio of long-term pay to total pay (Carpenter and Sanders, 2002). In addition, because researchers have found that board vigilance may associate with acquisition activity (Hoskisson and Turk, 1990) and executive compensation (Daily *et al.*, 1998), we controlled for *board independence,* using the proportion of unaffiliated outside directors.

To account for industry conditions, we included control variables that captured *industry dynamism* and *industry munificence*. Following prior research, we regressed industry sales on a year-count variable for the five-year period ending in the focal year. The standard error of the regression coefficient divided by mean industry sales is used as a measure for industry dynamism, while the regression coefficient divided by mean industry sales is used as a measure for industry munificence (Dess and Beard, 1984; McNamara *et al.*, 2008).

[2] Cadman and colleagues (2010) found significant within-indices similarities (S&P large-cap, S&P mid-cap, and S&P small-cap) and between-indices differences in CEOs' compensation levels and structures, as well as external factors such as number of analysts covering the firm, level of media coverage, and stock liquidity. This suggests these indices represent salient comparison groups (i.e., CEOs of S&P large-cap firms are likely to compare their compensation with that of other S&P large-cap CEOs, but may not engage in social comparison with CEOs from the other indices). In our analysis, firms included in the ExecuComp database but not currently in one of these indices are considered small-cap firms. Not including the S&P indices in our analyses provided results consistent with those reported.

DOI: 10.1002/smj

To control any unmeasured period-specific effects, we included dummy codes for each year. Finally, in models in which the dependent variable was either the number or the characteristics of acquisitions, we controlled for the *previous periods' number of acquisitions.*

Analysis

We used a random effects negative binomial regression model to test the CEO relative pay standing-acquisition activity hypothesis, because the dependent variable was a count variable. Negative binomial regression is appropriate for a count variable when the variable's variance exceeds its mean (i.e., overdispersion; Sanders, 2001). We also estimated the model using the random effects Poisson regression model and found no material differences in our results. For all other models, we use generalized estimating equations (GEE), which is appropriate for analyzing panel data where there are measures repeated over time (Henderson *et al.*, 2006; Liang and Zeger, 1986; Ndofor, Sirmon, and He, 2011; Quigley and Hambrick, 2012). This analytical technique is appropriate for our study, as we explored the impact of CEO underpayment relative to peer CEOs in their respective labor markets. We also tested our models using random effects regression, and all results were consistent with those reported here.

RESULTS

Table 1 presents means and standard deviations for each of the variables as well as their bivariate correlations. The results from the random effects negative binomial regression model used to examine whether underpaid CEOs were more likely to engage in acquisition activity are reported in Table 2. As earlier noted, we used both the number of total acquisitions and the number of large acquisitions to test our hypotheses.

Models 1 and 3 of Table 2 report the effects of our control variables on acquisition activity. As expected, the effects of several of the control variables were significant. With regard to our variables of interest, with Hypothesis 1, we predicted that CEO negative relative pay standing would positively influence acquisition activity. The coefficients for CEO underpayment in both Model 2 and Model 4 were positive and significant in predicting both the total number of acquisitions ($p < 0.01$) and number of large acquisitions ($p < 0.001$), demonstrating that CEO relative underpayment was positively associated with the total number of acquisitions and total number of large acquisitions, thus supporting Hypothesis 1.

The results for our tests of Hypothesis 2 are shown in Table 3. Given our predictions, these tests were restricted to situations in which acquisitions occurred. Hypothesis 2 predicted that CEO negative relative pay standing would positively influence the level of stock used to finance acquisitions. Models 1 and 3 report the results of control variables only, while Models 2 and 4 provide the tests of this hypothesis. As seen in Models 2 and 4, the coefficients for CEO underpayment were positive and significant ($p < 0.001$), when the dependent variable was the level of stock used for all acquisitions and large acquisitions. Thus, Hypothesis 2 was supported.

With Hypotheses 3a, 3b, and 4, we predicted that underpaid CEOs' acquisition activity would positively influence subsequent pay changes and, further, that acquisition activity partially mediates the relationship between CEO negative relative pay standing and subsequent pay increases. Table 4 presents three models for each dependent variable: total compensation change, short-term compensation change, and long-term compensation change. Models 1, 4, and 7 each show the main effect of CEO relative underpayment on compensation changes. In each case, CEO underpayment was a strong positive predictor of subsequent compensation changes ($p < 0.001$). Models 2, 5, and 8 added in the number of total acquisitions, while Models 3, 6, and 9 included the number of large acquisitions. Hypothesis 3a predicted that firm acquisition activity (beyond change in firm size) would positively influence subsequent total pay change. The coefficient for number of acquisitions in Model 2 and the coefficient for number of large acquisitions in Model 3 were both positive and significant ($p < 0.001$), supporting this hypothesis.

Hypothesis 3b predicted that acquisition activity would partially mediate the relationship between CEO negative relative pay standing and subsequent total pay change. The results from these models, combined with those from Table 2, allowed us to test for mediation using the product of coefficients approach (Alwin and Hauser, 1975; Sobel, 1982). Specifically, we computed the indirect effect as the product of the coefficients of those paths and tested for significance using Sobel's (1982) standard error

DOI: 10.1002/smj

Table 1. Descriptive statistics

Variables	Mean	*s.d.*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Total acquisitions	0.80	1.37																	
2. Stock payment	9.77	26.95	**0.12**																
3. CEO total pay	8.03	1.12	**0.22**	**0.10**															
4. CEO short-term pay	6.94	0.94	**0.14**	0.01	**0.60**														
5. CEO long-term pay	7.09	2.06	**0.16**	**0.07**	**0.86**	**0.35**													
6. Industry dynamism	0.02	0.02	**−0.03**	**0.04**	**−0.05**	**0.04**	**−0.07**												
7. Industry munificence	0.06	0.06	−0.01	**0.07**	**0.07**	**0.04**	**0.06**	**0.04**											
8. Diversification$_{t-1}$	0.51	0.50	**0.13**	**−0.08**	**0.14**	**0.17**	**0.09**	**0.03**	**−0.05**										
9. Board independence$_{t-1}$	0.67	0.17	0.02	**−0.06**	**0.16**	**0.08**	**0.21**	−0.01	−0.02	**0.13**									
10. CEO pay structure$_{t-1}$	0.53	0.28	**0.09**	**0.05**	**0.39**	**0.06**	**0.44**	**−0.08**	0.02	0.02	**0.18**								
11. CEO change	0.12	0.33	−0.02	0.00	−0.02	**−0.06**	0.01	0.00	0.00	0.01	−0.00	**−0.03**							
12. CEO power$_{t-1}$	0.00	1.42	0.00	**0.06**	0.02	**0.03**	**−0.03**	−0.01	0.02	**−0.03**	**−0.02**	**−0.06**	**0.07**						
13. Firm size$_{t-1}$	0.21	1.27	**0.23**	−0.03	**0.52**	**0.43**	**0.38**	**−0.06**	0.02	**0.29**	**0.10**	**0.19**	**0.03**	**−0.03**					
14. ROA$_{t-1}$	0.04	0.16	**0.08**	**−0.13**	**0.11**	**0.11**	**0.08**	**−0.04**	**0.07**	−0.01	0.01	−0.01	**−0.06**	0.01	**0.13**				
15. R&D expense$_{t-1}$	129.34	557.23	**0.24**	**0.07**	**0.24**	**0.10**	**0.17**	**−0.08**	−0.01	**0.13**	**0.08**	**0.13**	**0.03**	**−0.03**	**0.33**	**0.03**			
16. Free cash flow$_{t-1}$	0.02	6.07	0.01	−0.01	0.01	0.01	0.01	−0.01	0.01	−0.01	−0.01	0.01	0.00	−0.02	0.02	**0.05**	0.00		
17. CEO overpayment$_{t-1}$	0.24	0.41	**0.04**	**0.06**	**0.07**	−0.01	**0.03**	−0.02	**0.03**	**−0.06**	**−0.03**	**0.38**	**−0.01**	0.01	**0.03**	0.00	0.02	0.01	
18. CEO underpayment$_{t-1}$	0.24	0.42	0.01	**0.06**	**−0.05**	**−0.08**	**−0.06**	**0.03**	**−0.06**	−0.01	**−0.06**	**−0.36**	**0.07**	0.01	−0.01	**−0.07**	0.01	**−0.03**	**−0.34**

$N = 7{,}670$, except for variable 2 where $N = 3{,}448$.
$p < 0.05$ for correlations in bold; two-tailed test

Table 2. The effects of CEO underpayment on acquisition behavior

	All acquisitions		Large acquisitions	
	Model 1	Model 2	Model 3	Model 4
Intercept	0.4187**	0.3387*	0.7581**	0.6606*
	(0.1612)	(0.1646)	(0.2568)	(0.2610)
Prior acquisitions$_{t-1}$	0.1687***	0.1705***	0.2247***	0.2287***
	(0.0110)	(0.0111)	(0.0246)	(0.0247)
Industry dynamism	−1.0963	−1.0562	−2.0226	−1.9874
	(1.4041)	(1.4037)	(1.7378)	(1.7329)
Industry munificence	0.2948	0.2827	0.8140	0.7882
	(0.3561)	(0.3561)	(0.4602)	(0.4600)
Diversification$_{t-1}$	0.1167*	0.1179*	0.1419**	0.1459**
	(0.0466)	(0.0464)	(0.0546)	(0.0543)
Board independence$_{t-1}$	0.0128	−0.0011	−0.1022	−0.1025
	(0.1299)	(0.1298)	(0.1546)	(0.1544)
CEO pay structure$_{t-1}$	0.1629*	0.2446**	0.2681**	0.3367**
	(0.0704)	(0.0853)	(0.0873)	(0.1034)
CEO change	−0.0591	−0.0643	−0.0835	−0.0930
	(0.0503)	(0.0503)	(0.0651)	(0.0651)
CEO power$_{t-1}$	0.0084	0.0094	0.0043	0.0050
	(0.0142)	(0.0142)	(0.0171)	(0.0171)
Firm size$_{t-1}$	0.1236***	0.1197***	0.0721**	0.0683**
	(0.0228)	(0.0228)	(0.0250)	(0.0249)
ROA$_{t-1}$	1.7169***	1.7419***	1.4187***	1.4413***
	(0.2306)	(0.2308)	(0.2735)	(0.2731)
R&D expense$_{t-1}$	0.0001***	0.0001***	0.0002***	0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Free cash flow$_{t-1}$	0.0022	0.0023	0.0014	0.0017
	(0.0056)	(0.0055)	(0.0058)	(0.0058)
CEO overpayment$_{t-1}$		0.0220		0.0835
		(0.0461)		(0.0555)
CEO underpayment$_{t-1}$		0.1163**		0.1707***
		(0.0425)		(0.0511)
Wald chi-square	562.08***	572.17***	238.28***	252.73***

$N = 7{,}670$; year dummy variables included.
Standard errors are in parentheses. One-tailed tests for hypothesized effects, two-tailed tests otherwise.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

formula. This approach allowed us to quantify the effect by performing a significance test for mediation. This approach is common in management research and has been particularly emphasized as appropriate for research using large samples (Koopman, Howe, and Hollenbeck, Forthcoming; MacKinnon *et al.*, 2002; Stone and Sobel, 1990). As noted above, the main effect of CEO underpayment on total compensation was positive and significant ($p < 0.001$). Further, the product of the coefficient test was significant both when considering all acquisitions and only large acquisitions ($p < 0.05$). As such, Hypothesis 3b was also supported.

To test Hypothesis 4, we separated total compensation changes into short-term and long-term compensation changes. Hypothesis 4 predicted that acquisition activity would be more likely to lead to subsequent long-term pay increases than subsequent short-term pay increases. To test this hypothesis, we first examined the coefficient of number of acquisitions in predicting subsequent changes in short-term pay. Models 5 and 6 of Table 4 show that the effects of the total number of acquisitions and number of large acquisitions on short-term pay changes were not significant. On the other hand, as Models 8 and 9 of Table 4 show, the coefficient for acquisition behavior on subsequent changes in long-term pay was positive and significant, both for total acquisitions and large acquisitions ($p < 0.001$), thereby supporting Hypothesis 4.

In a supplemental analysis, we tested the partial mediation effect of acquisition activity on changes

DOI: 10.1002/smj

Table 3. The effects of CEO underpayment on acquisition payment method

	Stock payment			
	All acquisitions		Large acquisitions	
	Model 1	Model 2	Model 3	Model 4
Intercept	−4.2638	−6.4164*	−4.0434	−7.4945
	(3.1331)	(3.1956)	(4.2882)	(4.3867)
Prior acquisitions$_{t-1}$	0.9745***	0.9596***	1.9292**	1.9011**
	(0.2680)	(0.2674)	(0.6002)	(0.5985)
Industry dynamism	29.4138	33.2683	45.0022	48.5971
	(34.0972)	(33.9813)	(46.7685)	(46.5352)
Industry munificence	16.4783	15.8247	9.3036	8.2780
	(9.3371)	(9.3155)	(13.1929)	(13.1677)
Diversification$_{t-1}$	−2.8851**	−2.7487**	−4.8018***	−4.5422***
	(0.9010)	(0.8978)	(1.3780)	(1.3706)
Board independence$_{t-1}$	1.9336	1.8176	2.4470	2.2370
	(3.0203)	(3.0154)	(4.0683)	(4.0586)
CEO pay structure$_{t-1}$	7.1695***	8.6101***	10.2647***	13.1328***
	(1.7892)	(2.0781)	(2.4175)	(2.8443)
CEO change	−0.8052	−0.9948	−0.2534	−0.5957
	(1.3552)	(1.3542)	(1.9041)	(1.9024)
CEO power$_{t-1}$	0.7230*	0.7047*	1.0185*	1.0137*
	(0.3379)	(0.3367)	(0.4614)	(0.4591)
Firm size$_{t-1}$	−1.7756***	−1.8291***	−1.8541**	−1.9074**
	(0.4542)	(0.4522)	(0.6045)	(0.6005)
ROA$_{t-1}$	−27.4335***	−26.7425***	−32.5953***	−31.7597***
	(4.6733)	(4.6648)	(6.0087)	(5.9892)
R&D expense$_{t-1}$	0.0021**	0.0021**	0.0022*	0.0021*
	(0.0007)	(0.0007)	(0.0009)	(0.0009)
Free cash flow$_{t-1}$	−0.0791	−0.0631	0.4329	0.4595
	(0.6401)	(0.6392)	(0.8693)	(0.8673)
CEO overpayment$_{t-1}$		1.8739		1.8416
		(1.1950)		(1.5787)
CEO underpayment$_{t-1}$		3.9564***		5.3652***
		(1.0876)		(1.5020)
Wald chi-square	310.13***	326.70***	312.49***	328.95***

$N = 3{,}448$ for all acquisitions; $N = 2{,}370$ for large acquisitions; year dummy variables included.
Standard errors are in parentheses. One-tailed tests for hypothesized effects, two-tailed tests otherwise.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

in long-term compensation. The partial mediation was significant both for total acquisitions ($p < 0.05$) and large acquisitions ($p < 0.01$). Taken together, as predicted, while acquisition activity does mediate the association between CEO negative relative standing and pay increases, it does so primarily through changes in long-term compensation awards.

DISCUSSION

The purpose of our study was to develop a more complete theoretical understanding of the effects of relative pay standing on CEO behavior. We believe that our results make several contributions to the executive compensation, corporate governance, and M&A literatures. First, scholars have long sought to understand why CEOs acquire other firms when evidence has consistently shown that such investments typically fail to produce positive acquirer value (Haleblian *et al.*, 2009). Recent research, however, has begun to reveal that CEOs often accrue substantial personal benefits from acquiring other firms, often with little regard to acquisition performance (Bliss and Rosen, 2001; Grinstein and Hribar, 2004; Harford and Li, 2007). Such benefits are particularly important to underpaid CEOs who likely feel undervalued, relative to their peers (Fong *et al.*, 2010; Wade *et al.*, 2006). Drawing on this work, we

DOI: 10.1002/smj

Table 4. The effects of CEO underpayment on subsequent compensation

	Total compensation			Short-term compensation			Long-term compensation		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Intercept	3.0966***	3.1246***	3.0967***	1.6895***	1.6882***	1.6878***	2.9522***	2.9255***	2.9195***
	(0.0850)	(0.0851)	(0.0848)	(0.0647)	(0.0648)	(0.0648)	(0.1237)	(0.1231)	(0.1230)
Prior compensation	0.5370***	0.5311***	0.5356***	0.7071***	0.7075***	0.7076***	0.3774***	0.3740***	0.3770***
	(0.0093)	(0.0094)	(0.0094)	(0.0079)	(0.0079)	(0.0079)	(0.0103)	(0.0103)	(0.0103)
Industry dynamism	0.6223	0.6241	0.6553	0.7907	0.7903	0.7825	0.2961	0.3207	0.4038
	(0.6111)	(0.6106)	(0.6097)	(0.4718)	(0.4717)	(0.4718)	(1.2530)	(1.2480)	(1.2473)
Industry munificence	0.3709*	0.3808*	0.3628*	0.1936	0.1918	0.1953	0.7173*	0.7474*	0.6929
	(0.1732)	(0.1731)	(0.1730)	(0.1397)	(0.1397)	(0.1397)	(0.3578)	(0.3567)	(0.3568)
$\text{Diversification}_{t-1}$	0.1267***	0.1206***	0.1236***	0.0932***	0.0938***	0.0940***	0.1776***	0.1578***	0.1673***
	(0.0201)	(0.0201)	(0.0200)	(0.0143)	(0.0144)	(0.0143)	(0.0402)	(0.0401)	(0.0399)
$\text{Board independence}_{t-1}$	0.0539	0.0588	0.0573	−0.0936*	−0.0941*	−0.0947*	0.5755***	0.5888***	0.5855***
	(0.0595)	(0.0595)	(0.0593)	(0.0439)	(0.0439)	(0.0439)	(0.1210)	(0.1204)	(0.1202)
$\text{CEO pay structure}_{t-1}$	0.7455***	0.7442***	0.7440***	0.3755***	0.3764***	0.3774***	1.8437***	1.8412***	1.8448***
	(0.0417)	(0.0416)	(0.0416)	(0.0307)	(0.0308)	(0.0308)	(0.0877)	(0.0875)	(0.0875)
CEO change	−0.0649*	−0.0623*	−0.0629*	0.0513*	0.0511*	0.0509*	−0.1249*	−0.1169*	−0.1188*
	(0.0257)	(0.0256)	(0.0257)	(0.0221)	(0.0221)	(0.0221)	(0.0537)	(0.0537)	(0.0537)
CEO power_{t-1}	0.0054	0.0051	0.0053	0.0080	0.0080	0.0080	−0.0077	−0.0091	−0.0083
	(0.0066)	(0.0066)	(0.0066)	(0.0050)	(0.0050)	(0.0050)	(0.0134)	(0.0134)	(0.0133)
Change in firm size	−0.0005	−0.0005	−0.0005	−0.0004	−0.0004	−0.0004	−0.0006	−0.0006	−0.0005
	(0.0006)	(0.0006)	(0.0006)	(0.0005)	(0.0005)	(0.0005)	(0.0013)	(0.0013)	(0.0013)
ROA_{t-1}	0.3411***	0.3274***	0.3338***	0.1488**	0.1500**	0.1503***	0.7835***	0.7421***	0.7612***
	(0.0554)	(0.0554)	(0.0553)	(0.0456)	(0.0456)	(0.0456)	(0.1143)	(0.1142)	(0.1141)
$\text{R\&D expense}_{t-1}$	0.0001***	0.0001***	0.0001***	−0.0000	−0.0000	−0.0000	0.0002***	0.0002***	0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$\text{Free cash flow}_{t-1e}$	0.0010	0.0010	0.0010	0.0013	0.0013	0.0013	0.0006	0.0005	0.0006
	(0.0014)	(0.0014)	(0.0014)	(0.0012)	(0.0012)	(0.0012)	(0.0029)	(0.0029)	(0.0029)
$\text{CEO overpayment}_{t-1}$	−0.1413***	−0.1447***	−0.1439***	−0.1337***	−0.1334***	−0.1332***	−0.4169***	−0.4283***	−0.4266***
	(0.0248)	(0.0247)	(0.0248)	(0.0207)	(0.0207)	(0.0207)	(0.0518)	(0.0518)	(0.0518)
$\text{CEO underpayment}_{t-1}$	0.2824***	0.2790***	0.2799***	0.1558***	0.1564***	0.1570***	0.5666***	0.5570***	0.5593***
	(0.0243)	(0.0243)	(0.0243)	(0.0202)	(0.0203)	(0.0203)	(0.0507)	(0.0506)	(0.0506)
Number of acquisitions		0.0291***			−0.0023			0.0779***	
		(0.0068)			(0.0054)			(0.0140)	
Number of large acquisitions			0.0377***			−0.0079			0.1043***
			(0.0115)			(0.0094)			(0.0237)
Wald chi-square	6,042.13***	6,058.11***	6,129.69***	9,898.95***	9,900.97***	9,899.19***	3,952.35***	4,048.66***	4,066.84***

$N = 7{,}670$; year dummy variables included.
Standard errors are in parentheses. One-tailed tests for hypothesized direct and mediation effects, two-tailed tests otherwise.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

DOI: 10.1002/smj

proposed and demonstrated that negative relative pay standing status motivates CEOs to make acquisitions, presumably in order to better align their pay with that of peers.

Second, we argued that, when self-interested motives (e.g., increasing subsequent pay) underlie decisions to acquire, CEOs will tend to perceive downside risk related to those acquisitions, and thus attempt to manage that risk (Devers *et al.*, 2013). In line with this proposition, we argued that CEOs who acquire under negative relative pay standing conditions will respond to impending downside potential by financing their acquisitions more heavily with stock than cash, to transfer some of the risk associated with those deals from their firms to target firms (Hansen, 1987; Martin, 1996; Schijven and Hitt, 2012). Our findings are consistent with this prediction, thereby showing that the firm risk associated with acquisitions is not lost on underpaid CEOs. However, rather than refraining from acquisition behavior altogether, underpaid CEOs take measures to offset this risk. We believe this suggests that remedying negative relative pay standing may take precedence over serving shareholder interests. To this point, we encourage other research that examines how alternative corporate governance mechanisms and pay arrangements may affect underpaid CEOs' strategic investment behaviors.

Third, we find that underpaid CEOs who acquire appear to increase their pay. We also show that acquisition activity partially mediates the influence of CEO negative relative pay standing on subsequent compensation increases, even when controlling for changes in firm size. Scholars have shown that firm size is a chief driver of CEO compensation (Tosi *et al.*, 2000). Indeed, an assumption exists that acquiring CEOs may acquire simply to increase firm size (Haleblian *et al.*, 2009). However, our results demonstrate that acquisitions appear to offer additional pecuniary benefits above those provided by firm size enhancements. Although data and space limitation restricted our ability to expressly examine the specific factors that provide this CEO compensation premium, we speculate that the increased discretion, visibility, prominence, and bargaining power that accompany acquisitions are likely strong predictors. We encourage future work that continues to uncover the multilayered drivers of CEO pay.

Fourth, although our findings demonstrate that underpaid acquiring CEOs do increase their subsequent pay, those increases are funded predominantly by long-term, incentive-based compensation awards. Scholars have long argued that directors rely on long-term incentive grants to better align CEOs' interests with those of shareholders (cf. Jensen and Meckling, 1976). Our finding suggests that, although directors of firms led by underpaid CEOs might originally approve acquisitions, they may eventually sense the possibility that their CEOs may have acquired for self-interested reasons and, thus, seek to remedy such potential interest misalignment by more strongly linking their CEOs' pay to firm outcomes in the subsequent compensation structuring period. Nevertheless, it may also be that directors fail to exercise adequate vigilance or, worse, also act self-interested with regard to ratifying acquisitions. For example, while association with larger, more prominent firms is beneficial for CEOs, directors also profit from such ties (Chen *et al.*, 2008; Finkelstein *et al.*, 2009; Pollock *et al.*, 2004). In this way, directors, too, can receive substantial benefits from acquisition-related growth. This suggests that directors, whether they are self-interested or just simply not vigilant, may eventually rely on long-term incentive pay awards as a substitute for the adequate vetting of acquisition prospects. Although examining this question is beyond the reach of this work, we suggest delving deeper into the decision-making processes that drive directors' acquisition-related responses will further advance our understanding of M&A and governance practices.

Further, Fong and colleagues (2010) found that CEO underpayment was positively associated with subsequent CEO departure. In a supplemental analysis, we similarly found that CEO underpayment exhibited a strong positive influence on subsequent CEO change. Combining Fong and colleagues' (2010) findings with our results showing that CEO underpayment is positively associated with acquisition behavior after controlling for CEO turnover suggests some important avenues for future research. Specifically, scholars have found that individuals frame situations as gains and losses around reference points, both in general (e.g., Kahneman and Tversky, 1979), and with regard to their compensation (Devers *et al.,* 2008; Larraza-Kintana, Gomez-Mejia, and Wiseman, 2011; Larraza-Kintana *et al.*, 2007; Wiseman and Gomez-Mejia, 1998). Scholars have also held that managers tend to perceive two such reference points as salient: a success reference point and a survival reference point (e.g., Lopes, 1987;

DOI: 10.1002/smj

March and Shapira, 1987, 1992; Shapira, 1995). Nevertheless, managers are believed to focus on one reference point at any given time (March and Shapira, 1987, 1992).

We argued earlier that underpaid CEOs will engage in self-interested actions in response to negative relative pay standing. Thus, it may be that, when some CEOs are underpaid, they remain focused on "success" and continue to acquire because they view acquisitions as potential pay and power equalizers. However, given CEO negative relative standing can reflect low director and shareholder backing (David, Kochhar, and Levitas, 1998), other underpaid CEOs may sense employment risk and, thus, turn their attention toward "survival" (Lopes, 1987; Shapira, 1995). We suggest that such a survival mindset may motivate underpaid CEOs to seek out new positions, or retire, to avoid the threats to their reputations and financial, human, and social capital the stigma of termination may present (Fong *et al.*, 2010; Semadeni *et al.*, 2008; Simon and Houghton, 2003). It may also be that those underpaid CEOs are involuntarily terminated. Although examining these new research avenues is beyond the scope of this work, we believe scholars could further advance our findings by drawing on recent theorizing by Wowak and Hambrick (2010) to explore how CEOs' individual characteristics (e.g., narcissism, regulatory focus, etc.) influence the degree to which CEOs focus on success or survival.

Another fertile opportunity for future research involves exploring additional ways that CEOs may compare themselves to others. Although this, too, is beyond the range of our study, we believe that CEOs likely compare themselves to peers on other dimensions (e.g., media coverage, reputation, winning certification contests, board appointments, number and status of speaking engagements, etc.). Further research that considers these factors should continue to advance our knowledge regarding the influence of social comparison in the CEO context.

A final interesting avenue for future research might be to examine how positive relative pay standing (overpaid relative to peers) influences CEO perceptions and behaviors. Although our results suggest that CEO overpayment does not influence acquisition activity, they do show negative relationships between CEO overpayment and subsequent total, short-term, and long-term pay changes. While interesting, we suggest more fine-grained research is required to develop a more complete understanding of the influence of CEO overpayment on CEO actions and subsequent pay.

In conclusion, we believe that the results of our study underscore the importance of relative pay standing for executive compensation, corporate governance, and M&A theories and practices. We hope our theory and findings provide additional motivation to scholars seeking to advance our understanding of how CEO pay comparisons influence CEOs', directors, and other stakeholders' perceptions and responses.

ACKNOWLEDGEMENTS

We thank co-editor Will Mitchell and two anonymous reviewers for their valuable insights in the review process. We also thank Bert Cannella, Barry Gerhart, Chip Hunter, Gerry McNamara, and James Wade for their helpful comments on earlier drafts of this paper. This research was supported by the Sogang University Research Grant of 2011.

REFERENCES

Adams JS. 1963. Towards an understanding of inequity. *Journal of Abnormal and Social Psychology* **67**(5): 422–436.

Adams JS. 1965. Inequity in social exchange. In *Advances in Experimental Social Psychology*, Berkowitz L (ed). Academic Press: New York; 267–299.

Alwin DF, Hauser RM. 1975. The decomposition of effects in path analysis. *American Sociological Review* **40**(1): 37–47.

Ambrose ML, Kulik CT. 1999. Old friends, new faces: motivation research in the 1990s. *Journal of Management* **25**(3): 231–292.

Barnard C. 1938. *The Functions of the Executive*. Harvard University Press: Cambridge, MA.

Bebchuk LA, Fried JM. 2004. *Pay without Performance*. Harvard University Press: Cambridge, MA.

Bliss RT, Rosen RJ. 2001. CEO compensation and bank mergers. *Journal of Financial Economics* **61**(1): 107–138.

Bloom M. 1999. The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal* **42**(1): 25–40.

Bloom M, Michel JG. 2002. The relationships among organizational context, pay dispersion, and managerial turnover. *Academy of Management Journal* **45**(1): 33–42.

Boeker W. 1992. Power and managerial dismissal: scapegoating at the top. *Administrative Science Quarterly* **37**(3): 400–421.

Brown MP, Sturman MC, Simmering MJ. 2003. Compensation policy and organizational performance: the efficiency, operational, and financial implications of pay

levels and pay structure. *Academy of Management Journal* **46**(6): 752–762.
Cadman B, Klasa S, Matsunaga S. 2010. Determinants of CEO pay: a comparison of execucomp and non-execucomp firms. *Accounting Review* **85**(5): 1511–1543.
Carow K, Heron R, Saxton T. 2004. Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. *Strategic Management Journal* **25**(6): 563–585.
Carpenter MA, Sanders WG. 2002. Top management team compensation: the missing link between CEO pay and firm performance? *Strategic Management Journal* **23**(4): 367–375.
Carpenter MA, Seo J. 2007. Strategic refocusing as a pathway to controlling CEO pay. In *Current Topics in Management*, Rahim MA (ed). Transaction Publishers: New Brunswick, NJ; 129–152.
Chen GL, Hambrick DC, Pollock TG. 2008. Puttin' on the ritz: pre-IPO enlistment of prestigious affiliates as deadline-induced remediation. *Academy of Management Journal* **51**(5): 954–975.
Cohen J, Cohen P. 1983. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Erlbaum: Hillsdale, NJ.
Connelly BL, Haynes KT, Tihanyi L, Gamache DL, Devers CE. Forthcoming. Minding the gap: antecedents and consequences of top management-to-worker pay dispersion. *Journal of Management*. DOI: 10.1177/0149206313503015.
Cosier RA, Dalton DR. 1983. Equity theory and time: a reformulation. *Academy of Management Review* **8**(2): 311–319.
Cowherd DM, Levine DI. 1992. Product quality and pay equity between lower-level employees and top management: an investigation of distributive justice theory. *Administrative Science Quarterly* **37**(2): 302–320.
Crystal GS. 1991. *In Search of Excess: The Overcompensation of American Executives*. Norton: New York.
Daily CM, Johnson JL, Ellstrand AE, Dalton DR. 1998. Compensation committee composition as a determinant of CEO compensation. *Academy of Management Journal* **41**(2): 209–220.
Datta S, Iskandar-Datta M, Raman K. 2001. Executive compensation and corporate acquisition decisions. *Journal of Finance* **56**(6): 2299–2336.
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**(2): 200–208.
Davis GF, Greve HR. 1997. Corporate elite networks and governance changes in the 1980s. *American Journal of Sociology* **103**(1): 1–37.
Dess GG, Beard DW. 1984. Dimensions of organizational task environments. *Administrative Science Quarterly* **29**(1): 52–73.
Devers CE, McNamara G, Haleblian J, Yoder ME. 2013. Do they walk the talk? Gauging acquiring CEO and director confidence in the value creation potential of announced acquisitions. *Academy of Management Journal* **56**(6): 1679–1702.
Devers CE, McNamara G, Wiseman RM, Arrfelt M. 2008. Moving closer to the action: examining compensation design effects on firm risk. *Organization Science* **19**(4): 548–566.
Dunlap WP, Dietz J, Cortina JM. 1997. The spurious correlation of ratios that have common variables: a Monte Carlo examination of Pearson's formula. *Journal of General Psychology* **124**(2): 182–193.
Edwards JR. 1994. Regression analysis as an alternative to difference scores. *Journal of Management* **20**(3): 683–689.
Edwards JR. 1995. Alternatives to difference scores as dependent variables in the study of congruence in organizational research. *Organizational Behavior and Human Decision Processes* **64**(3): 307–324.
Ezzamel M, Watson R. 1998. Market comparison earnings and the bidding-up of executive cash compensation: evidence from the United Kingdom. *Academy of Management Journal* **41**(2): 221–231.
Festinger L. 1954. A theory of social comparison processes. *Human Relations* **7**(2): 117–140.
Finkelstein S, Hambrick DC, Cannella AA. 2009. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford University Press: New York.
Firebaugh G, Gibbs JP. 1985. User's guide to ratio variables. *American Sociological Review* **50**(5): 713–722.
Folger RG, Cropanzano R. 1998. *Organizational Justice and Human Resource Management*. Sage: Thousand Oaks, CA.
Fong EA, Misangyi VF, Tosi HL. 2010. The effect of CEO pay deviations on CEO withdrawal, firm size, and firm profits. *Strategic Management Journal* **31**(6): 629–651.
Frank RH. 1985. *Choosing the Right Pond: Human Behavior and the Quest for Status*. Oxford University Press: New York.
Fredrickson JW, Davis-Blake A, Sanders WG. 2010. Sharing the wealth: social comparisons and pay dispersion in the CEO's top team. *Strategic Management Journal* **31**(10): 1031–1053.
Fulmer IS. 2009. The elephant in the room: labor market influences on CEO compensation. *Personnel Psychology* **62**(4): 659–695.
Gerhart B, Rynes S. 1991. Determinants and consequences of salary negotiations by male and female MBA graduates. *Journal of Applied Psychology* **76**(2): 256–262.
Gomez-Mejia LR, Wiseman RM. 1997. Reframing executive compensations: an assessment and outlook. *Journal of Management* **23**(3): 291–374.
Goodman PS. 1974. An examination of referents used in the evaluation of pay. *Organizational Behavior and Human Performance* **12**(2): 170–195.
Graffin SD, Boivie S, Carpenter MA. 2013. Examining CEO succession and the role of heuristics in early-stage CEO evaluation. *Strategic Management Journal* **34**(4): 383–403.
Greenberg J. 1990. Organizational justice: yesterday, today, and tomorrow. *Journal of Management* **16**(2): 399–432.

Grinstein Y, Hribar P. 2004. CEO compensation and incentives: evidence from M&A bonuses. *Journal of Financial Economics* **73**(1): 119–143.

Grund C, Westergaard-Nielsen N. 2008. The dispersion of employees' wage increases and firm performance. *Industrial and Labor Relations Review* **61**(4): 485–501.

Haleblian J, Devers CE, McNamara G, Carpenter MA, Davison RB. 2009. Taking stock of what we know about mergers and acquisitions: a review and research agenda. *Journal of Management* **35**(3): 469–502.

Hambrick DC, Finkelstein S. 1995. The effects of ownership structure on conditions at the top: the case of CEO pay raises. *Strategic Management Journal* **16**(3): 175–193.

Hambrick DC, Finkelstein S, Mooney AC. 2005. Executive job demands: new insights for explaining strategic decisions and leader behaviors. *Academy of Management Review* **30**(3): 472–491.

Hansen RG. 1987. A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business* **60**(1): 75–95.

Harford J, Li K. 2007. Decoupling CEO wealth and firm performance: the case of acquiring CEOs. *Journal of Finance* **62**(2): 917–949.

Harris J, Bromiley P. 2007. Incentives to cheat: the influence of executive compensation and firm performance on financial misrepresentation. *Organization Science* **18**(3): 350–367.

Haunschild PR. 1993. Interorganizational imitation: the impact of interlocks on corporate acquisition activity. *Administrative Science Quarterly* **38**(4): 564–592.

Haunschild PR, Beckman CM. 1998. When do interlocks matter?: Alternate sources of information and interlock influence. *Administrative Science Quarterly* **43**(4): 815–844.

Henderson AD, Fredrickson JW. 1996. Information-processing demands as a determinant of CEO compensation. *Academy of Management Journal* **39**(3): 575–606.

Henderson AD, Miller D, Hambrick DC. 2006. How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal* **27**(5): 447–460.

Heneman HG, Judge TA. 2000. Compensation attitudes. In *Compensation in Organizations: Current Research and Practice*, Gerhart B, Rynes S (eds). Jossey-Bass: San Francisco, CA; 61–103.

Hitt MA, Bierman L, Shimizu K, Kochhar R. 2001. Direct and moderating effects of human capital on strategy and performance in professional service firms: a resource-based perspective. *Academy of Management Journal* **44**(1): 13–28.

Hoskisson RE, Johnson RA, Moesel DD. 1994. Corporate divestiture intensity in restructuring firms: effects of governance, strategy, and performance. *Academy of Management Journal* **37**(5): 1207–1251.

Hoskisson RE, Turk TA. 1990. Corporate restructuring: governance and control limits of the internal capital market. *Academy of Management Review* **15**(3): 459–477.

Jackson JE. 1991. *A User's Guide to Principal Components*. John Wiley & Sons: New York.

Janssen O. 2001. Fairness perceptions as a moderator in the curvilinear relationships between job demands, and job performance and job satisfaction. *Academy of Management Journal* **44**(5): 1039–1050.

Jensen MC, Meckling WH. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* **3**(4): 305–360.

Kahneman D, Tversky A. 1979. Prospect theory: an analysis of decision under risk. *Econometrica* **47**(2): 263–292.

Khurana R. 2002. *Searching for a Corporate Savior: The Irrational Quest for Charismatic CEOs*. Princeton University Press: Princeton, NJ.

King DR, Dalton DR, Daily CM, Covin JG. 2004. Meta-analyses of post-acquisition performance: indications of unidentified moderators. *Strategic Management Journal* **25**(2): 187–200.

Koopman J, Howe M, Hollenbeck JR. Forthcoming. Pulling the sobel test up by its bootstraps. In *More Statistical and Methodological Myths and Urban Legends*, Lance CE, Vandenberg RJ (eds). Routledge: New York.

Kuhnen CM, Niessen A. 2012. Public opinion and executive compensation. *Management Science* **58**(7): 1249–1272.

Larraza-Kintana M, Gomez-Mejia LR, Wiseman RM. 2011. Compensation framing and the risk-taking behavior of the CEO: testing the influence of alternative reference points. *Management Research* **9**(1): 32–55.

Larraza-Kintana M, Wiseman RM, Gomez-Mejia LR, Welbourne TM. 2007. Disentangling compensation and employment risks using the behavioral agency model. *Strategic Management Journal* **28**(10): 1001–1019.

Lawler EE. 1966. The mythology of management compensation. *California Management Review* **9**(1): 11–22.

Levine DI. 1993. What do wages buy? *Administrative Science Quarterly* **38**(3): 462–483.

Liang K-Y, Zeger SL. 1986. Longitudinal data analysis using generalized linear models. *Biometrika* **73**(1): 13–22.

Lopes LL. 1987. Between hope and fear: the psychology of risk. *Advances in Experimental Social Psychology* **20**(3): 255–295.

Mackinnon DP, Lockwood CM, Hoffman JM, West SG, Sheets V. 2002. A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods* **7**(1): 83–104.

Main BG, O'Reilly CA III, Wade JB. 1995. The CEO, the board of directors and executive compensation: economic and psychological perspectives. *Industrial and Corporate Change* **4**(2): 293–332.

March JG, Shapira Z. 1987. Managerial perspectives on risk and risk taking. *Management Science* **33**(11): 1404–1418.

March JG, Shapira Z. 1992. Variable risk preferences and the focus of attention. *Psychological Review* **99**(1): 172–183.

Martin KJ. 1996. The method of payment in corporate acquisitions, investment opportunities, and management ownership. *Journal of Finance* **51**(4): 1227–1246.

McNamara GM, Haleblian J, Dykes BJ. 2008. The performance implications of participating in an acquisition

wave: early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. *Academy of Management Journal* **51**(1): 113–130.

Miller DJ. 1995. CEO salary increases may be rational after all: referents and contracts in CEO pay. *Academy of Management Journal* **38**(5): 1361–1385.

Mitchell TR, Mickel AE. 1999. The meaning of money: an individual-difference perspective. *Academy of Management Review* **24**(3): 568–578.

Ndofor HA, Sirmon DG, He XM. 2011. Firm resources, competitive actions and performance: investigating a mediated model with evidence from the in-vitro diagnostics industry. *Strategic Management Journal* **32**(6): 640–657.

O'Brien JP. 2003. The capital structure implications of pursuing a strategy of innovation. *Strategic Management Journal* **24**(5): 415–431.

O'Reilly CA III, Main BG, Crystal GS. 1988. CEO compensation as tournament and social comparison: a tale of two theories. *Administrative Science Quarterly* **33**(2): 257–274.

Palepu K. 1985. Diversification strategy, profit performance and the entropy measure. *Strategic Management Journal* **6**(3): 239–255.

Pfeffer J, Langton N. 1993. The effect of wage dispersion on satisfaction, productivity, and working collaboratively: evidence from college and university faculty. *Administrative Science Quarterly* **38**(3): 382–407.

Pollock TG, Porac JF, Wade JB. 2004. Constructing deal networks: brokers as network "architects" in the U.S. IPO market and other examples. *Academy of Management Review* **29**(1): 50–72.

Quigley TJ, Hambrick DC. 2012. When the former CEO stays on as board chair: effects on successor discretion, strategic change, and performance. *Strategic Management Journal* **33**(7): 834–859.

Rosen S. 1986. Prizes and incentives in elimination tournaments. *American Economic Review* **76**(4): 701–715.

Sanders WG. 2001. Behavioral responses of CEOs to stock ownership and stock option pay. *Academy of Management Journal* **44**(3): 477–492.

Sanders WG, Hambrick DC. 2007. Swinging for the fences: the effects of CEO stock options on company risk taking and performance. *Academy of Management Journal* **50**(5): 1055–1078.

Schijven M, Hitt MA. 2012. The vicarious wisdom of crowds: toward a behavioral perspective on investor reactions to acquisition announcements. *Strategic Management Journal* **33**(11): 1247–1268.

Semadeni M, Cannella AA, Fraser DR, Lee DS. 2008. Fight or flight: managing stigma in executive careers. *Strategic Management Journal* **29**(5): 557–567.

Shapira Z. 1995. *Risk Taking*. Russell Sage Foundation: New York.

Shelton LM. 1988. Strategic business fits and corporate acquisition: empirical evidence. *Strategic Management Journal* **9**(3): 279–287.

Simon M, Houghton SM. 2003. The relationship between overconfidence and the introduction of risky products: evidence from a field study. *Academy of Management Journal* **46**(2): 139–149.

Smith CW, Watts RL. 1992. The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics* **32**(3): 263–292.

Sobel ME. 1982. Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology* **13**: 290–312.

Stone CA, Sobel ME. 1990. The robustness of estimates of total indirect effects in covariance structure models estimated by maximum likelihood. *Psychometrika* **55**(2): 337–352.

Tang TLP. 1992. The meaning of money revisited. *Journal of Organizational Behavior* **13**(2): 197–202.

Tosi HL, Misangyi VF, Fanelli A, Waldman DA, Yammarino FJ. 2004. CEO charisma, compensation, and firm performance. *Leadership Quarterly* **15**(3): 405–420.

Tosi HL, Werner S, Katz JP, Gomez-Mejia LR. 2000. How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management* **26**(2): 301–339.

Trevor CO, Wazeter DL. 2006. A contingent view of reactions to objective pay conditions: interdependence among pay structure characteristics and pay relative to internal and external referents. *Journal of Applied Psychology* **91**(6): 1260–1275.

Wade JB, O'Reilly CA III, Chandratat I. 1990. Golden parachutes: CEOs and the exercise of social influence. *Administrative Science Quarterly* **35**(4): 587–603.

Wade JB, O'Reilly CA III, Pollock TG. 2006. Overpaid CEOs and underpaid managers: fairness and executive compensation. *Organization Science* **17**(5): 527–544.

Westphal JD, Fredrickson JW. 2001. Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic Management Journal* **22**(12): 1113–1137.

Westphal JD, Zajac EJ. 1994. Substance and symbolism in CEOs' long-term incentive plans. *Administrative Science Quarterly* **39**(3): 367–390.

Westphal JD, Zajac EJ. 2001. Decoupling policy from practice: the case of stock repurchase programs. *Administrative Science Quarterly* **46**(2): 202–228.

Wiseman RM, Gomez-Mejia LR. 1998. A behavioral agency model of managerial risk taking. *Academy of Management Review* **23**(1): 133–153.

Wowak AJ, Hambrick DC. 2010. A model of person-pay interaction: how executives vary in their responses to compensation arrangements. *Strategic Management Journal* **31**(8): 803–821.

Wowak AJ, Hambrick DC, Henderson AD. 2011. Do CEOs encounter within-tenure settling up? A multiperiod perspective on executive pay and dismissal. *Academy of Management Journal* **54**(4): 719–739.