Acquisitions and CEO Compensation Changes[1*]

Leonce Bargeron[α]

David Denis[γ]

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Abstract

Increases in CEO compensation following acquisitions are unique to stock-financed deals. These compensation increases are driven by increases in equity-based compensation, and are concentrated in riskier acquirers, riskier deals, and in acquirers whose CEOs have low exposure to the stock price. These findings support the *Dual Adverse Selection Hypothesis*, which posits that acquirers use stock to overcome adverse selection in the target firm, while increasing the equity-based compensation of the acquirer CEO to mitigate adverse selection concerns on the part of target shareholders. We find little support for the hypothesis that acquisition-related increases in CEO compensation are due to entrenched, empire building CEOs.

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[α] Gatton College of Business, University of Kentucky, Lexington, KY 40506. leonce.bargeron@uky.edu

[γ] Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, PA 15260. djdenis@katz.pitt.edu

1. Introduction

A number of prior studies analyze the evolution of CEO compensation around acquisitions and generally report that (i) CEOs benefit from acquisitions, on average, and (ii) these benefits are uncorrelated with measures of the quality of the acquisitions. For example, Grinstein and Hribar (2004) examine the period from 1993 to 1999 and find that CEOs are rewarded with higher bonuses for completed acquisitions. These bonuses are positively associated with measures of CEO power and are unrelated to deal performance. Similarly, examining acquisitions over the period from 1993 to 2000, Harford and Li (2007) find that the value of the acquiring firm CEO's portfolio is positively related to long term stock returns when those returns are positive, but unrelated to stock returns when those returns are negative. They conclude that compensation changes following acquisitions insulate CEOs from downside risk. Most recently, Yim (2013) finds that acquisitions completed between 1993 and 2007 are associated with large, permanent increases in CEO compensation. Because such compensation increases are more valuable for CEOs with long career horizons, Yim argues that this creates strong financial incentives for CEOs to pursue acquisitions early in their career. Consistent with this conjecture, Yim (2013) reports that acquisition propensities decline with CEO age.

We re-examine the link between CEO compensation and acquisitions over an extended and more recent sample period (1993-2018) and find that the positive association between acquisitions and CEO compensation has disappeared in recent years. Consistent with Yim (2013), we find a positive association between changes in CEO compensation and acquisitions in the first half of our sample (1993-2005). However, during the second half of our sample (2006-2018), we find no significant association between acquisitions and changes in CEO compensation.

We further find that the disappearance of any association between acquisitions and changes in CEO compensation in the latter part of our sample period is strongly linked with the sharp decline in the propensity of all-stock deals since 2001. In the first half of our sample, acquisitions for which the method of payment is common stock comprise 23% of all acquisitions. While all-stock deals are positively

associated with changes in CEO compensation, there is no evidence of such an association for either all-cash deals or deals in which the method of payment is a mixture of cash and stock. We find similar patterns in the second half of our sample, although the positive association between all-stock deals and changes in CEO pay is not significant. Importantly, however, the frequency of all-stock deals declines from 23% in the first half of our sample to only 6% of acquisitions in the second half of the sample. As a result, the unconditional association between acquisitions and changes in CEO compensation disappears in the second half of the sample.

To provide further evidence on the positive association between changes in CEO compensation and all-stock deals we utilize a shock to all-stock deals induced by the abolishment of the pooling method of accounting in 2001. Debodt, Cousin and Roll (2018) find that following this accounting rule change, the percentage of all-stock deals drops from approximately 50% prior to 2001 to 10% after 2010. To explore the impact of this shock, we estimate the probability of all-stock deals using pre-2001 data, then analyze CEO compensation changes following acquisitions in the 2002-2018 period. We find compensation changes are largest in the sub-sample of acquisitions that are all-stock, regardless of whether they were predicted to be all-stock based on observable characteristics. By contrast, for the subset of acquisitions that are predicted to be all-stock, but are not, compensation changes are no different from those that are correctly predicted to be either all-cash or a combination of cash and stock. Although the limited number of actual all-stock deals limits the statistical significance of differences between sub-samples, the compensation differences are economically large and, thus, provide suggestive evidence that it is the choice of all-stock as the method of payment that drives positive changes in CEO compensation following acquisitions.

Our descriptive evidence implies that in order to understand the factors driving changes in CEO compensation following acquisitions, we need to understand why such changes are specific to all-stock deals. Moreover, as we later show, increases in compensation following all-stock deals are driven primarily by changes in equity-based compensation. Although there is some evidence of changes in salary and bonus, these changes are economically much smaller and often statistically insignificant. Thus, any explanation

for CEO compensation increases following all-stock acquisitions should also explain why these compensation changes are primarily due to increases in equity-based compensation.

One possibility is that both the acquisitions themselves and the subsequent compensation changes are a manifestation of agency problems in the acquiring firm. Under this view, entrenched managers pursue acquisitions to expand their empire and use the acquisition and their influence over the board to increase their compensation. This might be particularly effective in stock deals because such deals avoid the scrutiny of the capital market that is associated with raising cash through external financings. Contrary to this hypothesis, however, we find no evidence that changes in compensation following all-stock deals are associated with measures of poor corporate governance. In fact, using one measure of corporate governance, board capture, we find the evidence goes in the opposite direction. Moreover, it is unclear why entrenched managers would choose to increase their compensation via risky, equity-based pay rather than salary or bonus. Finally, insofar as entrenched CEOs capture higher compensation, our additional finding that greater CEO compensation in all-stock deals is concentrated in CEOs with low levels of compensation prior to the deal announcement is also inconsistent with this hypothesis.

An alternative is that the compensation dynamics that we observe surrounding all-stock acquisitions represent endogenous contracting solutions to frictions associated with adverse selection in the acquisition market. Prior studies dating back to Hansen (1987) predict that acquirers offer stock as a means of payment when target value is uncertain and when the target has superior information about its value. The use of stock serves as a contingent payment mechanism whereby target shareholders receive smaller payments if the value of the target (and, therefore, the combined post-acquisition company) subsequently declines. At the same time, however, the value of the stock offered in the acquisition is also uncertain, leading target shareholders to be concerned about adverse selection in the method of payment chosen by the acquirer. A shift in compensation towards greater equity-based pay for the acquiring firm CEO is one way for the acquirer to credibly signal that the acquirer's stock is not overvalued. However, because greater equity-based pay increases the risk of the CEO's overall compensation package, the CEO's total

compensation correspondingly increases to satisfy the CEO's participation constraint (e.g. Hölmstrom, 1979).

We report a series of results consistent with this two-sided adverse selection argument. First, we find that changes in CEO compensation for all-stock deals are greater for riskier acquirers (as measured by the absence of a debt rating) than for less risky acquirers. This association with acquirer risk is not present in either mixed payment acquisitions or all-cash acquisitions. Second, when the CEO's exposure to the stock price is low prior to the acquisition we find that post-acquisition increases in pay are larger in all-stock acquisition years than in non-deal years, all-cash acquisition years or mixed acquisition years. These two findings are consistent with acquirers in all-stock deals using equity-based pay to bond the CEO to the post-acquisition stock price and mitigate target firm concerns about overvalued equity when (i) there is more uncertainty about the acquirer's value, and (ii) when the acquiring firm CEO is less bonded to the acquirer's stock price prior to the acquisition. Moreover, consistent with the increase in equity-based compensation serving as a credible signal of acquirer value, we find that the acquirer's abnormal stock returns from one month prior through twelve months following the acquisition announcement are positively associated with increases in the CEO's equity-based compensation.

With respect to the acquirer's concern about the value of the acquisition, we find that increases in CEO compensation following all-stock deals are significantly greater in acquisitions with above-median risk. Moreover, this increase is paid predominately in equity-based compensation. For acquisitions with below-median risk, there is no evidence of increases in either fixed or equity-based compensation.

Our study contributes to the literatures that study the compensation incentives of acquisitions and the optimal design of executive pay. While previous studies document significant increases in CEO pay following acquisitions and the extent to which these changes in pay are correlated with the wealth created in the acquisitions, we report new and important stylized facts about the time-series of compensation changes around acquisitions, which acquisitions in the cross-section exhibit compensation changes, and the form of compensation that is changed. Specifically, we find that compensation changes are limited to acquisitions for which the medium of exchange is acquirer stock. In these deals, compensation is increased

primarily through equity-based pay. By contrast, when the medium of exchange is either all cash or a mix of cash and acquirer shares, there is no evidence of any post-acquisition changes in CEO compensation. Moreover, because all-stock acquisitions declined substantially in the latter half of the sample period, there is little evidence that CEO compensation increases, on average, following successful acquisitions in recent years.

Together, these findings cast doubt on the view that compensation changes provide perverse incentives for CEOs to pursue acquisitions even if they are value-reducing. It is unclear why such perverse incentives would be present only in stock acquisitions. Moreover, we find little evidence that agency problems drive compensation changes in the acquiring firms. Rather, our evidence supports a more benign, contracting motive for the observed compensation changes whereby such changes solve a two-sided adverse selection problem in acquisitions for which the medium of exchange is acquirer stock.

2. Literature review

Previous studies of the evolution of CEO compensation around acquisitions find that CEOs benefit from acquisitions. Grinstein and Hribar (2004), examining the period 1993 to 1999, find that CEO bonus compensation for completed deals is positively related to CEO power and these increases are not related to deal performance. They conclude, "Managerial power is the primary driver of M&A bonuses." Examining the period 1993 to 2000, Harford and Li (2007) find acquisitions insulate the CEOs from downside risk. The value of the CEO's portfolio after an acquisition is positively related to long-term stock returns for positive returns, but unrelated to stock returns for negative returns.[2] Similarly, Fu, Lin, and Officer (2013) suggest CEOs in firms with overvalued stock pursue stock financed acquisitions in order to receive large equity grants. In the study most closely related to our study, Yim (2013) investigates the period 1993 to 2007. She finds CEO compensation increases are greater in years in which firms announce an acquisition.

[2] In the Harford and Li (2007) sample of acquisitions with a relative size of at least 10%, 73% of the acquisitions are stock deals.

We confirm this result in the first half of our sample period, but find the result does not hold in the second half of the sample. Yim further finds the positive relation between acquisitions and CEO compensation increases is driven by young CEOs.

A vast literature investigates acquiring firm returns and operating performance across different periods around and after acquisition announcements. Although neoclassical theory suggests that mergers should increase the value of both the target and acquiring firm, studies find that average returns for acquirers around the announcement of an acquisition are indistinguishable from zero, on average, and negative in the case of acquisitions financed by stock (e.g. Travlos, 1987; Loughran and Vijh, 1997).

Several hypotheses explain why firms might pursue acquisitions associated with decreases in the market value of the firm's equity. Jensen (1986), Jensen and Murphy (1990), and Stulz (1990) highlight managers' agency based motivations to increase the size of the firm, such as increased managerial power and compensation. Roll (1986) posits that hubristic CEOs overbid for target firms because they overestimate the value of the target firm under their control. Shleifer and Vishny (2003) model an inefficient market and show that rational mangers can take advantage of market inefficiencies by using overvalued stock as a cheap currency to buy other firms. The market interprets the choice to pay with stock as a potential signal of overvaluation of the acquirer and decreases the acquirer stock price accordingly. In this paper, we develop a hypothesis that integrates the acquirer's motive to share the risk of overvaluing the deal with the target firm and the target shareholders' motive to avoid accepting overvalued equity.

Given the potential of financing an acquisition with overvalued equity, recent research questions whether stock financed acquisitions actually destroy shareholder value. Savor and Lu (2009) find that acquirers use overvalued equity in stock financed acquisitions to increase shareholder value. Golubov, Petmezas, and Travlos (2016) suggest the negative announcement returns for stock financed acquisitions comes entirely from the negative signal associated with issuing stock. In contrast, Fu, Lin, and Officer (2013) conclude poor governance and CEO self-interest are the primary reasons overvalued firms acquire. In related research, Eckbo, Makaew, and Thorburn (2018) report that acquirers use more stock when the

target knows more about the bidder and is therefore less susceptible to accepting overvalued equity as payment.

Another branch of the literature examines how executive compensation and its components relates to the probability and characteristics of a subsequent acquisition. Datta, Iskandar-Datta and Raman (2001) find acquirers with high equity-based compensation pay lower acquisition premiums and have higher acquirer announcement returns. Cai and Vijh (2007) investigate the effects of CEO stock and option holdings on acquisitions. They find more valuable CEO stock and option holdings are associated with a higher probability of being an acquirer and higher acquisition premiums. These studies focus on executive compensation and equity-based holdings before an acquisition. In contrast, our study examines changes in CEO compensation around acquisition announcements.

Two recent papers explore the sharp drop in the proportion of acquirers paying exclusively with stock. Boone, Lie, and Liu (2014) document the decreased frequency of stock financed acquisitions since the early to mid-2000s in their sample of acquisitions with public acquirers and public targets and find that only a portion of the time series variation in methods of payment is due to variation in their measures of adverse selection, taxation, and contracting costs. De Bodt, Cousin, and Roll (2018) note that the percentage of stock financed deals drops from around 50% before 2001 to around 10% after 2010 and that the beginning of the decline in 2001 coincides with the abolishment of the pooling method of accounting.

We extend the above literature by re-examining CEO compensation changes over a longer and more recent time period and across different methods of payment. We then develop and test two primary hypotheses for the cross-sectional variation in compensation changes following acquisitions; the Agency Hypothesis and the Dual Adverse Selection Hypothesis.

3. Sample selection and data description

We begin with the Compustat universe of firms between 1993 and 2018 and merge this dataset with data from a variety of different data sources. The acquisition data comes from Thomson Reuters SDC

Platinum database (SDC). We include acquisitions by U.S. public acquirers and require the deal to be a merger, acquisition, acquisition of majority interest, or acquisition of assets. Similar to Yim (2013), we further require the deal value to be at least 5% of the market value of equity of the acquiring firm as of the previous fiscal year end. The CEO compensation data comes from the Execucomp database. Return data is from the Center for Research in Security Prices (CRSP) and implied volatility data is from the Optionmetrics database. We also use governance data from the Institutional Shareholder Services' Governance database.

To investigate the persistence of the positive relation between takeovers and increases in CEO compensation, we partition the sample into two sub-periods: 1993 to 2005 and 2006 to 2018. Table 1 reports the summary statistics for each period. Panel A details the characteristics of the 5% or greater relative size acquisitions (5% acquisition) within each period. The frequency of 5% acquisitions decreases from 12.1% of firm-years in the early period to 10.8% in the late period. Consistent with prior literature (e.g. Boone, Lie, and Liu, 2014; de Bodt, Cousin, and Roll 2016), the method of payment for the acquisitions changes sharply across the periods. The frequency of deals in which the consideration is composed of at least 95% stock (*All stock*) drops from 22.5% in the early period to 6.1% in the late period. Making up for most of the drop in all stock deals, the frequency of deals in which the consideration is composed of at least 95% cash (A*ll cash*) jumps from 27.4% to 39.0%. The frequency of all other deals, designated *Mixed* deals, increases slightly from 50.1% to 54.9%.

For each of the two sub-periods respectively, Panel B and Panel C of Table 1 detail the firm characteristics for the non-acquiring firm-years and the subset of firm-years with an acquisition announcement. *Chg CEO Comp* is the change in total CEO compensation from the prior year divided by the prior year compensation and is winsorized at the 1st and 99th percentile. *Assets* is the prior year assets for the firm (denoted in $millions). *Firm age* is the number of years since the firm was listed on CRSP. *Mkt to Book* is the prior fiscal year end ratio of the market value of assets divided to the book value of assets and is winsorized at the 1st and 99th percentile. *Prior year return* is the buy and hold return for the stock over the prior fiscal year. *ROA* is the return on assets at the end of the prior fiscal year and is winsorized at

the 1st and 99th percentile. *Change in CEO* is an indicator variable equal to one if there was a change in CEO. *CEO age* is the age of the CEO. *CEO tenure* is the number of years the CEO has served as CEO at the firm. *CEO compensation* is the total compensation for the CEO of the firm in the prior year. We use these variables throughout the paper. We will discuss the variables that are specific to the second part of the analysis later in the paper when we examine cross-sectional variation in the relation between increases in CEO compensation and method of payment in an acquisition.

In the early period, the increase in total CEO compensation is higher in acquisition firm-years than in non-acquisition firm-years by 8.4% (*p-value* = 0.011). In the late period, however, the increases in compensation for the two samples are almost identical. With the exception of *Mkt to Book*, the difference in means tests between the acquisition and non-acquisition samples yield similar results in the two periods. Acquiring firms have fewer assets, are younger, have higher prior year returns, have higher ROA, are less likely to replace the CEO, and have younger CEOs. We find no significant differences in CEO tenure or prior year CEO total compensation between the acquisition and non-acquisition sample. Somewhat surprisingly, the lagged market to book ratio is higher for acquiring firms in the early period, but lower for acquiring firms in the late period.

4. Changes in CEO Compensation Following Acquisitions

In this section, we present our primary descriptive findings on changes in CEO compensation following the sample acquisitions and the link between such compensation changes and the method of payment.

4.1. Changes in total compensation

Table 2 reports coefficient estimates and *t*-statistics from regressions that test for differences in the change in CEO compensation for firm-years in which a 5% acquisition is announced during the year and non-acquiring firm-years. We present results for the full sample period as well as for the two sub periods

in our sample. The model is based on those estimated in Yim (2013). The variable of interest (*Announced 5% deal - completed*) indicates the firm announced a 5% acquisition during the year that was subsequently completed. We also include the variable (*Announced 5% deal - withdrawn*) indicating the firm announced a 5% acquisition during the year that was subsequently withdrawn. In Models (2), (4) and (6), we add variables indicating the firm announced a 5% acquisition in the prior year, separated based on whether the deal was completed. Additional variables in each model control for log of assets, firm age, market to book, prior year return, ROA, and an indicator for a change in the CEO. Industry-year fixed effects are included in each model and standard errors are clustered by firm.

Consistent with Yim (2013), we find that changes in CEO compensation are significantly greater in firms-years in which a firm announces a 5% acquisition that is subsequently completed than in firm-years for which there is no 5% acquisition announcement. However, our results also suggest the greater increases in CEO compensation associated with acquisitions are specific to the early sample period. The coefficient drops from between 7.9% to 8.0% in the early period to 2.5% to 2.7% in the later period and is no longer statistically significant. We further find that 5% acquisitions that are subsequently withdrawn are not associated with significantly greater increases in CEO compensation and that 5% acquisitions announced in the prior year are not associated with significantly greater increases in CEO compensation whether they are subsequently completed or not.[3]

4.2. Changes in individual components of compensation

Table 3 breaks down the changes in compensation into its component parts: salary, bonus, equity (stock plus options), stock, option, and other. For each component of compensation, the dependent variable is defined as the change in the component (value in the current year minus the value in the prior year) divided by the prior year total compensation. We again analyze the full sample as well as the early period

[3] One concern is that because there are few withdrawn acquisitions, our use of industry-year fixed effects might lead our findings to be driven by outliers. To address this concern, we estimate the Table 2 regressions without fixed effects and find nearly identical results. Completed acquisitions are associated with significant increases in CEO compensation, while withdrawn acquisitions are not.

(1993 – 2005) and late period (2006 – 2018) separately. As in the previous table, the control variables and industry-year fixed effects are included in each model and standard errors are clustered by firm.

The results suggest that the increase in compensation associated with acquisitions is predominately coming from equity-based compensation. For the full sample, acquisitions are associated with an additional 4.8% increase in CEO compensation through equity grants (restricted stock and options). This increase in equity-based compensation is larger in the first subperiod (6.6%) than in the late subperiod (3.4%). Salary increases are also larger for acquirers in both periods, but the economic magnitude is only 0.3% - 0.% of prior compensation. Acquisitions are associated with larger bonuses in the early period, equal to 1.1% of prior compensation, but not in the later period. In summary, the bump in CEO compensation related to 5% acquisitions is composed primarily of equity grants, but these additional grants drop sharply in the later period. Further, acquisition related bonuses disappear in the second half of the sample.[4]

4.3. Changes in compensation by method of payment

To further understand the disappearance of acquisition related CEO compensation increases, we separate deals based on the method of payment in the acquisition, specifically all-stock, all-cash or mixed deals. Table 4 presents these results. Models (1) and (4) examine all years, models (2) and (5) examine the early period, and models (3) and (6) examine the late period. In models (1) - (3) we include indicator variables for all-stock deals, all-cash deals, and mixed deals. Models (4) - (6) further divide each type of consideration into completed and withdrawn deals. As in the previous regressions, the control variables and industry-year fixed effects are included in each model and standard errors are clustered by firm.

The data indicate that all-stock deals overwhelmingly drive the acquisition related increase in CEO compensation, specifically all-stock deals that are subsequently completed. All-stock deals are associated with a 17% extra increase in CEO compensation in the full sample, a 19% additional increase in the early

[4] Our findings in Tables 2 and 3 indicate that CEO compensation increases sharply around CEO transitions. Therefore, we control for this directly in all of our models. In unreported results, we find that our results are similar if we limit the sample to acquisitions in which there is no CEO change.

period, and a 10% extra increase (though not significant) in the late period.[5] These estimates increase to 19%, 22% and 11%, respectively, for completed all-stock deals. Neither all-cash deals nor mixed deals are associated with statistically significant CEO compensation increases in either period. These findings suggest that the disappearance of acquisition related CEO compensation increases in the late period of the sample is the result of the decrease in the frequency of all-stock deals noted in Table 1.

To investigate which components of CEO compensation increase around acquisitions for each method of payment, Table 5 breaks down the changes in compensation into its component parts for each type of deal consideration. For the full sample, the results indicate that changes in CEO compensation are driven by changes in equity-based pay for all-stock completed deals. There is little evidence of changes in pay otherwise, except for some evidence of increases in equity-based pay with mixed methods of payment.

We find similar evidence of increase in equity-based pay in all-stock deals in the two subperiods. In the early period, the increase in acquisition related CEO compensation for all-stock deals is paid primarily with option grants. In the late period, the increase in compensation shifts to restricted stock. These results coincide with the general shift away from option-based pay around the implementation of mandatory option expensing imposed by FASB 123 in the latter part of 2005. However, in the regression for change in equity in the late period (Model (14)), the estimated coefficient on (All-stock * Completed) of 6.0% does not attain statistical significance even though it is larger than the significant early period coefficient of 4.4%. The sharp drop in the frequency of all-stock deals could be contributing to this lack of statistical significance. There is also some evidence that restricted stock compensation increases for mixed deals in the later period.

In summary, the increase in CEO compensation associated with all-stock deals is paid in the form of equity-based compensation throughout the sample period, primarily options in the early period with a shift to restricted stock in the late period.

[5] Note that there are far fewer all-stock deals in later subperiod (152) than in the first subperiod (438).

4.4. Further evidence from a shock to the use of stock as a method of payment

Our evidence indicates that abnormal increases in CEO compensation following acquisitions are limited to all-stock deals. To provide further evidence on whether it is the choice of all-stock as the method of payment, per se, that drives this association, we make use of a shock to the use of all-stock as the method of payment induced by an accounting change in 2001 that prohibited companies from using the 'pooling of interests' method of accounting for all-stock deals. As shown in De Bodt, Cousin, and Roll (2018), this accounting change was followed by a sharp reduction in all-stock deals from around 50% prior to 2001 to around 10% by 2010.

Using data from the pre-2001 period, we first estimate a model based on De Bodt et al. (2018) of the likelihood of all-stock as the method of payment in our sample acquisitions. Specifically, the model includes as independent variables the log of market value of equity, the relative size of the target, leverage, market to book, tangibility, a dividend dummy, R&D, cash, the 10-year US treasury rate on the day before the deal announcement and dummy variables denoting domestic acquisitions, horizontal acquisitions, and public targets. The model also includes dummies for the acquirer 2-digit SIC code. We then use the model to predict the likelihood of all-stock as the method of payment for the 2002-2018 acquisitions and partition the acquisitions into four mutually exclusive groups: (i) all-stock deals that were predicted to be all-stock (n=136); (ii) all-stock deals that were not predicted to be all-stock (n=96); (iii) cash or mixed deals that were predicted to be all-stock (n=489); and (iv) cash or mixed deals that were not predicted to be all-stock (n=2,643). We impose an ad hoc cutoff probability of 40% based on using the predicted probabilities to generate the actual proportion of all-stock deals in the pre-2001 period.

Figure 1 depicts the change in compensation in each of the four sub-groups. Compensation changes are largest in the sub-groups for which the method of payment is all-stock regardless of whether they are predicted to be or not. Specifically, all stock deals that are predicted (not predicted) to be all-stock have compensation changes that average 42% (40%), as compared with compensation changes that average 25% (33%) in the sub-groups that are not all-stock. However, while these differences are economically large, they are not quite statistically significant at conventional levels (p-value for the difference between 42%

and 25% = 0.156), most likely because of the small sample of all-stock deals in the post-2001 period. Interestingly, the sub-group that is predicted to be all-stock using pre-2001 data, but is actually cash or mixed, exhibits compensation changes that are, if anything, lower than the cash or mixed deals that were predicted to be cash/mixed.

While these findings are only suggestive, they provide further support for the view that it is the choice of all-stock as the method of payment that drives positive changes in CEO compensation following acquisitions.

5. Why are Changes in Compensation Unique to Stock Deals?

Our results to this point suggest that significant changes in CEO compensation following acquisitions are limited to deals in which common stock is used as the primary method of payment. Moreover, the changes in compensation are driven primarily by changes in equity-based compensation such as stock options and restricted stock. In this section, we introduce two broad hypotheses that can explain these patterns and derive additional testable implications of each hypothesis that we later analyze empirically.

The *Agency Hypothesis* posits that an entrenched CEO pursues an acquisition to increase the size of her empire. The empire building CEO avoids using debt to bypass market scrutiny of the deal, evade additional monitoring, and preserve flexibility in the allocation of future cash flows (e.g. Jensen, 1986). In addition, the entrenched CEO takes advantage of the transition event by leveraging her influence over the board of directors to increase her own compensation (Grinstein and Hribar, 2004).[6] Under this hypothesis, therefore, we expect greater CEO compensation increases in all stock deals with entrenched CEOs and weak board oversight. Moreover, insofar as the empire building CEO knows the acquisition is value

[6] Grinstein and Hribar (2004) state, "If the shareholders perceive the arrangement as a blunt expropriation, they are likely to act against it. This argument implies that CEOs that want to maximize rent extraction might try to find justifiable reasons for their compensation. A merger or acquisition could provide such a justification — a manager who acquires another company spends extra time and effort in constructing the deal, and thus the manager can use this task as a justification for additional compensation."

destroying, we expect the compensation increase to come in the form of non-equity compensation. Finally, we expect these entrenched CEOs to have used their power to capture abnormally high compensation prior to a deal (Bebchuk and Fried, 2003).

The *Dual Adverse Selection Hypothesis* posits that observed changes in compensation represent an optimal contracting solution to frictions from potential adverse selection concerns in the target and acquiring firms. The acquirer can mitigate the adverse selection concern of overpaying for the target firm by using stock as the method of payment (Hansen, 1987). However, stock payment creates an adverse selection concern for target shareholders of accepting overvalued equity from the acquirer (Shleifer and Vishny, 2003). To reduce the target firm's overvaluation concerns, the CEO of the acquirer can bond herself to the accuracy of the acquirer stock price by increasing her stock-based compensation. That is, the privately informed CEO credibly signals the acquirer is not overvalued by increasing her exposure to the firm's stock price. The resulting increase in the acquiring CEO's exposure to firm risk increases her participation constraint, requiring an increase in overall CEO compensation (Hölmstrom, 1979).

The Dual Adverse Selection hypothesis thus predicts that in stock financed deals, greater increases in CEO compensation are related to greater concerns about target firm adverse selection and acquirer firm overvaluation. It also predicts greater increases in equity-based CEO compensation in acquisitions using stock as the form of payment. The required increase in equity compensation is greater when the CEO's exposure to the stock price before the acquisition is low.[7]

5. Tests of the Agency and Dual Adverse Selection Hypotheses

In this section, we attempt to uncover the motives for the observed CEO compensation increases around acquisitions by conducting more direct tests of our hypotheses. To do so, we first create a set of

[7] Note that the Dual Adverse Selection hypothesis does not predict that higher risk deals are necessarily more likely to be all-stock. It predicts increases in acquirer CEO compensation, specifically equity compensation, in high risk all-stock deals with low prior CEO exposure to the stock price. The form of payment is an equilibrium outcome of the tradeoff between costs and benefits to the target and acquirer. The form of payment will be all-stock in those high risk deals in which the benefits of sharing the risk with the target outweigh the costs of bonding the CEO to the stock price through greater equity compensation.

indicator variables based on firm and deal categories that relate to the predictions of the hypotheses. We then test for cross-sectional differences in CEO compensation changes between acquisitions with different firm and deal characteristics. Because we find the acquisition related increases in CEO compensation are specific to all-stock deals, we focus our analysis of the different firm and deal categories on firm-years with all-stock acquisition announcements versus firm-years without acquisition announcements or versus firm-years with acquisition announcements using other methods of payment. However, for completeness we also conduct tests using all-cash deal firm-years or mixed deal firm-years versus non-acquisition firm-years.

More specifically, after presenting summary statistics for the variables of interest, we conduct two types of multivariate tests. First, we test whether within each firm and deal category, changes in CEO compensation within firm-years with acquisition announcements using a specific type of consideration differ from non-acquisition firm-years, and whether this difference is sensitive to the firm or deal characteristic. For example, we test if the larger change in CEO compensation for firms announcing all-stock acquisitions is greater for firms with captured boards than for firms with less captured boards.

Second, we examine the subsample of firm-years with 5% acquisition announcements and investigate if, for a particular acquirer or deal characteristic, the change in CEO compensation when the consideration is all-stock differs from when the consideration is all-cash or mixed. For example, for firms with captured boards, is the change in CEO compensation greater when an all-stock deal is announced than when an all-cash deal is announced. We also test if, within all-stock firm-years, the change in CEO compensation for below median values of the firm or deal characteristic of interest differs from the change in CEO compensation for above median values of the firm or deal characteristic of interest. For example, for all-stock acquisition announcement years, is the change in CEO compensation greater for firms with captured boards than for firms without captured boards. We repeat this analysis for the other two classifications of method of payment, all-cash and mixed.

5.1 Variables of Interest and Predictions

To test the predictions of our hypotheses, we create a set of variables related to these predictions and group the variables into four categories: (i) CEO compensation variables; (ii) Acquirer board variables; (iii) Acquirer risk variables; and (iv) Deal risk variables. Three variables quantify past CEO compensation and the associated incentives: *Excess CEO compensation* is an indicator variable equal to one if the CEO's excess compensation in the prior year was above the median across all firms in the year.[8] *CEO delta* and *CEO vega* are estimates of the CEO's exposure to changes in the firm's stock price and volatility. They are calculated based on the methodology in Core and Guay (2002).[9] Under the *Agency Hypothesis*, we expect compensation changes following acquisitions to be greater in firms with high excess compensation and low sensitivity of compensation to performance. We also expect greater changes in CEO compensation following all-stock deals when the sensitivity of the CEO's prior compensation to stock price is low under the *Dual Adverse Selection Hypothesis*. The difference, however, is that under the *Agency Hypothesis*, we expect *CEO delta* to remain low following the acquisition, whereas the *Dual Adverse Selection Hypothesis* predicts an increase in *CEO delta*.

Two variables are commonly used measures of board monitoring and CEO entrenchment: *Fraction of directors after CEO* is the fraction of directors that were appointed to the board during the CEO's tenure (co-opted directors). The data, from Coles, Daniel, and Naveen (2014), span 1996 to 2014. *Classified board* is an indicator variable equal to one if elections to board seats are staggered across years. The variable is downloaded from the Institutional Shareholder Services governance database. Under the *Agency Hypothesis*, we expect greater increases in CEO compensation following all-stock acquisitions when the fraction of co-opted directors is high and if the acquirer has a classified board.

Two variables relate to acquirer risk and potential misvaluation. *Stdev mkt-adj return* is the standard deviation of the difference between the daily firm return and the market return calculated over the one year

[8] Excess compensation is the residual from a regression of CEO compensation on log of firm sales, firm market to book, the prior year return on the firm's stock, firm ROA, CEO tenure, and an indicator variable equal to one if the CEO is at least 60 years old. The regression includes industry-year fixed effects.

[9] We use Kai Chen's adaptation of Lalitha Naveen's program to calculate delta and vega in Coles, Daniel, and Naveen (2006).

period prior to the deal announcement. The variable serves as a proxy for the uncertainty in firm value. *Investment grade* is an indicator variable equal to one if the firm has an investment grade rating and zero if it is unrated or has a non-investment grade rating.[10] We assume that non-investment grade and unrated firms are riskier than investment grade firms and have greater asymmetric information. The variable is downloaded from the Institutional Shareholder Services governance database. Under the *Dual Adverse Selection Hypothesis*, we expect greater increases in CEO compensation following all-stock acquisitions when acquirer risk is high.

Finally, three variables relate to the risk of the deal. *Abs(DGTW abret)*, an ex-post measure of the realized uncertainty in the deal, is the absolute value of the DGTW adjusted buy and hold return for the acquirer in the twelve month period after the deal announcement using the technique of Daniel, Grinblatt, Titman, and Wermers (1997). *Abs(DGTW abret)* is a proxy for the magnitude of the change in the market's perception of the deal's value during the one-year period after the initial announcement of the deal. *Excess change implied volatility* measures the market's perception of the change in the expected risk of the firm over the fiscal year. It is calculated as the market adjusted change in the implied volatility of the one-year at-the-money option (the average of the call and put option) from the end of the prior fiscal year just prior to the acquisition to the end of the current fiscal year following the acquisition.[11] The implied volatility data is from Optionmetrics volatility surface database. *Change stdev* is the difference in the daily standard deviation of returns of the acquirer from the one year period prior to the announcement to the one year period after the deal announcement. Under the *Dual Adverse Selection Hypothesis*, we expect greater increases in CEO compensation following stock acquisitions when the riskiness of the deal is high.

Panel A of Table 6 tabulates the number of observations, the mean value, and the median value of each of the variables of interest within each of the four firm-year types: all-stock deals, no deal, all-cash deals, and mixed deals. Panel B presents difference-in-means tests between all stock deals and the each of

[10] For the observations with *Investment grade* equal to zero, 75% are unrated firms and 25% are rated below investment grade.

[11] To adjust for the change in market volatility we subtract the change in the implied volatility of the S&P 500 at-the-money options over the same time period.

the other firm-year types. For the variables that are specific to years with acquisition announcements, statistics for no deal firm-years and the respective tests are excluded.

Consistent with our earlier results, the change in CEO compensation is significantly higher in all-stock deal years than in the other firm-years. All-stock deals are also associated with higher board capture greater variation in returns in the year after the acquisition announcement, and greater uncertainty in acquirer value.

5.2 Cross-sectional Variation in Changes in CEO compensation

Having found that all-stock deals are associated with large increases in CEO compensation, we now analyze which categories of all-stock acquirers drive this relation. The results of this analysis are presented in Tables 7 and 8. Table 7 compares the change in CEO compensation in all-stock deal years to non-deal years, while Table 8 limits the analysis to acquisition years only and compares the change in CEO compensation in all-stock deal years to all-cash and mixed deal years.

Our analysis in Table 7 addresses two primary questions: 1) Within firm-years with a *low* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in non-deal firm-years? 2) Within firm-years with a *high* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in non-deal firm-years? These two questions allow us to hone in on the types of all-stock deals driving the large increases in CEO compensation and directly test the *Agency* and *Dual Adverse Selection* hypotheses. The analysis in Table 7 covers all firm-years and incorporates only the variables of interest that are available for non-deal firm-years. It presents one regression model for each variable of interest in which the dependent variable is *Change in CEO compensation*. The regressions include an indicator variable for a high value of the variable of interest, indicator variables for all-stock deals, all-cash deals, and mixed deals, and interactions of each of the three deal types and the indicator variable for a high value of the variable of interest. [12] Each model also includes

[12] For the continuous variables of interest, we separate into above and below median categories: CEO delta, CEO vega, Fraction of directors after CEO, Acquirer CAR, DGTW abret, Change stdev, Change implied volatility, and

an indicator for withdrawn deals, the control variables used in Table 2, and industry-year fixed effects. The standard errors are clustered at the firm level.

The coefficient on *All-stock deal* addresses the first question: Within firm-years with a *low* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in non-deal firm-years? The coefficients on *All-cash deal* and *Mixed deal* address the related questions for cash and mixed deals, respectively. The coefficient in F-test (1) sums the coefficients on the method of payment indicator and the respective interaction term to address the second question: Within firm-years with a *high* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in non-deal firm-years? The coefficients on F-test (2) and F-test (3) address the related questions for cash and mixed deals.

The analysis in Table 8 restricts the sample to firm-years with 5% acquisition announcements and investigates two primary questions: (1) Within firm-years with a *low* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in all-cash and mixed deal years? (2) Within firm-years with a *high* value for the variable of interest, is the change in CEO compensation in all-stock deal years greater than in all-cash and mixed deal years?[13]

The variables of interest for which the change in CEO compensation is higher for stock deals than other types of deals in the low variable of interest group but not the high group, or vice versa, are of particular interest. This pattern suggests that CEOs in firms of that type, but not the opposing type, receive a greater increase in compensation, on average, when all stock is chosen as the method of payment. As with Table 7, these results allow us to identify the types of all-stock deals driving the large increases in CEO compensation and test the hypotheses.

Abs(DGTW abret). We use the indicator form of these variables in the regression analysis to mitigate potential issues arising from assuming linearity.

[13] The models in Table 8 do not include an indicator for withdrawn deals. The coefficient on the variable of interest can therefore be interpreted as the difference in the change in CEO compensation between high and low type categories of the variable of interest for withdrawn deals.

We proceed with a joint discussion of Table 7 and Table 8 organized by variable of interest. For CEOs with *low* levels of *Excess CEO compensation* we find that the increase in CEO compensation is greater in all-stock deal years than in non-deal years, all-cash deal years, and mixed deal years; however, this does not hold for CEOs with *high* levels of *Excess CEO compensation*. These results are inconsistent with entrenched CEOs and weak boards using stock deals to increase CEO compensation because we expect high, not low, levels of excess CEO compensation before the deal for entrenched CEOs and weak boards.

For CEOs with *low* levels of *CEO delta* (*CEO vega*) we find that the increase in CEO compensation is greater in all-stock deal years than in non-deal years, all-cash deal years, and mixed deal years; however, this does not hold for CEOs with *high* levels of *CEO delta* (*CEO vega*). These results suggest CEOs with low exposure to firm stock price and volatility receive greater increases in compensation for all-stock deals. Combining these results with the earlier finding that the increase in CEO compensation related to all-stock deals comes primarily through equity-based compensation, this is consistent with acquiring firms bonding the CEO to the deal when CEOs with low exposure to firm risk pursue all-stock deals. These findings support the *Dual Adverse Selection* hypothesis.

Regarding board monitoring and CEO entrenchment, for *low* levels of *Fraction of directors after CEO* we find that the increase in CEO compensation is greater in all-stock deal years than in non-deal years, all-cash deal years, and mixed deal years; however, this does not hold for CEOs with *high* levels of *Fraction of directors after CEO*. The finding that the increases in CEO compensation for all-stock deals is focused in firms with low board capture is not consistent with the Agency hypothesis, which predicts captured boards are more likely to acquiesce to CEO demands for higher compensation. The only difference we observe between deal types with respect to *Classified boards* is a marginally significant difference between all-stock deal years and non-deal years when boards are classified.

With respect to potential misvaluation, the results for *Stdev mkt-adj return* are weak and inconclusive. For *non-investment grade* firms, however, we find that the increase in CEO compensation is greater in all-stock deal years than in non-deal years, all-cash deal years, and mixed deal years, whereas this does not hold for *investment grade* firms. This suggests that greater risk in the value of the acquiring

firm is related to greater increases in CEO compensation for all-stock deals, which is consistent with the acquirer bonding its CEO to the stock price in response to target firm fear of the acquirer using overvalued stock as consideration, as in the *Dual Adverse Selection* hypothesis.

We next consider the variables relating to the risk of the deal. For *high* levels of *Excess change in implied volatility* Table 7 suggests the increase in CEO compensation is greater in all-stock deal years than in non-deal years, but this does not hold for *low* levels of *Excess change in implied volatility*. In Table 8 we see CEO compensation increases more for all-stock deal years than all-cash or mixed deal years for *high* levels of *Abs(DGTW abret)* or for high levels of *Excess change in implied volatility;* however, this does not hold for CEOs with *low* levels of *Abs(DGTW abret)* or low levels of *Excess change in implied volatility*. The results for *Change stdev* are inconclusive. We find CEO compensation changes tend to be high for all-stock deals regardless of the level of *Change stdev*. In sum, we find evidence of greater increases in CEO compensation for all-stock deals when the risk of the deal is greater.

5.3. Cross-sectional Variation in Changes in the Components of CEO Compensation

In Table 9, we extend the analysis from Table 8 to the different components of CEO compensation to further investigate the relation between deal risk and the riskiness of the increases in compensation associated with all-stock deals versus all-cash and mixed deals. Specifically, we replace the dependent variable, change in total CEO compensation, with the components of CEO compensation: salary, bonus, and equity. We then examine each of our measures of CEO compensation (Panel A), Board structure (Panel B), Acquirer risk (Panel C), and Deal risk (Panel D) separately.

For the most part, we find that changes in salary and bonus are no different in years with all-stock deals than in years with all-cash deals, regardless of differences in compensation, board structure, acquirer risk, or deal risk. By contrast, changes in equity-based compensation are often significantly different for all-stock deals than for cash and mixed deals. Moreover, the magnitude of this difference is associated with differences in compensation, acquirer risk, and deal risk.

Specifically, we find that, in all-stock deals, changes in equity-based compensation are greater for firms with low levels of compensation, low CEO delta, and low CEO vega (F-tests 1, 2, 3, and 4). The same is not true for all-cash or mixed deals. Similarly, in all-stock deals, we find that changes in equity-based compensation in all-stock deals are greater for firms in which the fraction of 'co-opted' directors is low. However, this is not the case for all-cash and mixed deals. For *Investment grade*, changes in equity-based compensation are greater in all-stock deals than in all-cash or mixed deals when acquirer risk is *high* (i.e. non-investment grade firms), but this does not hold for changes in salary of bonuses. For *Stdev mkt-adj return*, we find marginal significance for the change in equity-based compensation and not salary or bonuses, but only for the *low* acquirer risk group.

Finally, for all three measures of deal risk, we find the changes in *salary* and *bonus* are no different in years with all-stock deals than in years with all-cash or mixed deals for both high and low risk deals. This is not the case for *equity* compensation. For all three measures of deal risk, we find increases in CEO equity compensation are greater in all-stock deals. Moreover, the results indicate the increase in equity compensation is exclusive to deals with above median risk. Combining these results with our earlier results suggests all-stock deals are associated with greater compensation, particularly in high risk deals, and the greater compensation in high risk deals comes in the form equity compensation.

5.5. Is the Certification of Acquirer Stock Value Credible?

The *Dual Adverse Selection Hypothesis* predicts that acquiring companies boost the equity-based component of CEO pay in order to credibly certify that the acquirer's stock price is not overvalued. An alternative view, however, is that acquirers use all-stock as the method of payment when they perceive their equity to be overvalued. The board then awards the acquiring firm CEO more equity-based compensation because their current holdings are likely to decline in value. Although this single-sided adverse selection argument cannot explain our cross-sectional findings, it potentially can explain the observed increase in equity-based pay for CEOs following acquisitions.

To provide evidence on these alternative views, we calculate abnormal returns over two event windows: (i) the three days centered on the announcement of the acquisition; and (ii) the interval extending from one-month prior to the acquisition announcement through twelve months following the acquisition. We compute standard abnormal returns over the short event window and DGTW abnormal returns over the long event window. We then estimate regressions of these abnormal returns on *Increase in CEO equity compensation dummy*, an indicator variable equal to one if CEO equity-based compensation increased and zero otherwise, along with the interaction of this variable and indicators for All-stock deals and Mixed deals, respectively. We also add controls for the log of total assets, firm age, the market-to-book ratio, the prior year's stock return, the acquirer's return on assets, an indicator variable denoting a change in CEO and the relative size of the acquisition.

Under the *Dual Adverse Selection Hypothesis*, we expect increased equity-based compensation to mitigate the negative stock price reaction typically associated with all-stock acquisitions. However, because it is unclear when the market learns of the changes in compensation, we are agnostic as to whether this information will be incorporated into prices at the time of the acquisition announcement or sometime subsequent to the announcement. By contrast, the alternative hypothesis predicts that greater increases in equity-based pay will be associated with lower returns because they signal greater overvaluation.

The results, presented in Table 10, indicate that announcement-period CARs are unrelated to changes in CEO compensation. However, we find that DGTW returns over months -1 to +12 are positively associated with an increase in equity-based pay for all-stock deals (F-test 1), but not for all-cash deals (coefficient on Increase in CEO equity compensation dummy). DGTW returns are also positively associated with an increase in equity-based pay for mixed deals (F-test 2), but the coefficient is only around half the size of the coefficient for all-stock deals. These findings support the *Dual Adverse Selection Hypothesis* but are counter to the hypothesis that firms boost the pay of CEOs to compensate them for expected declines in the value of their equity holdings.

5.5 Discussion

Our results indicate that the greater increase in CEO compensation for stock deals is concentrated in deals with low excess CEO compensation, low CEO exposure to the stock price and volatility, low board capture, high levels of acquirer risk, and high levels of deal risk. Further, we observe that the increase in CEO compensation in higher risk all-stock deals is primarily in the form equity-based compensation. Finally, when equity-based compensation is increased, the market reacts more favorably to all-stock acquisitions. Taken together, these results are consistent with the predictions of the *Dual Adverse Selection Hypothesis* but contradict the predictions of the *Agency Hypothesis*.

Three sets of results are not consistent with the *Agency Hypothesis*. First, CEOs of low board capture firms, but not high board capture firms, receive greater increase in CEO compensation for all-stock deals. Second, we expect entrenched CEOs to have high excess compensation before the acquisition, but we find low excess compensation CEOs drive the greater increases in compensation in all-stock deals. Third, we expect entrenched CEOs to avoid equity-based compensation when they pursue a value destroying all-stock acquisition, but we find the increase in compensation in all-stock deals is primarily equity-based.

The results are consistent with the *Dual Adverse Selection Hypothesis*. The hypothesis predicts an acquirer pursuing a riskier deal prefers to share the risk with target firm shareholders by using stock as consideration. To ease target shareholders concerns about accepting potentially overvalued acquirer stock as consideration, especially when the potential for misvaluation is high, greater equity compensation credibly bonds the acquirer CEO to the stock price, particularly when the CEO's exposure to the stock price is low before the deal. Consistent with these predictions, we find that for riskier acquirers and for riskier deals, all-stock deals are associated with larger increases in CEO compensation than all-cash or mixed deals. We also find greater increases in CEO compensation for all-stock deals when the acquiring firm CEO less bonded to the stock price before the deal.

In further support of the *Dual Adverse Selection Hypothesis*, the increases in CEO compensation in the all-stock deals are composed of equity-based compensation. Consistent with the imposition of greater risk on the CEO requiring a higher level of expected compensation to satisfy the CEO's participation

constraint, we observe significant increases in CEO pay only when the riskiness of the pay is increased. Finally, within all-stock deals, an increase in equity-based compensation is also associated with higher acquirer abnormal returns, suggesting the market responds positively to the signal of CEO bonding.

While alternative explanations can fit some elements of the data, we are unaware of any alternatives, other than *the Dual Adverse Selection Hypothesis*, that offer a unified explanation for all of our findings. For example, under the single-sided adverse selection story discussed earlier, acquirers might use stock as the method of payment when they perceive their equity to be overvalued. This might trigger the board to increase incentive compensation to compensate acquiring firm managers for the expected reduction in the value of their equity-based pay. However, this alternative fails to explain why such changes in pay are significantly larger when current equity incentives are low, and why the stock price reaction to the acquisition is positively related to the increase in equity-based compensation.

Similarly, one might argue that the use of stock as the method of payment will mechanically reduce the percentage ownership of acquiring firm management. Therefore, the board might increase equity-based pay to restore managerial incentives. Again, however, this alternative fails to explain why such changes in pay are significantly larger when current equity incentives are already low.

Finally, it is possible that acquisitions are driven by managerial hubris and that such managers prefer to receive compensation in the form of equity because they perceive such equity to be undervalued. However, this explanation is inconsistent with increases in stock-based acquisitions being limited to all-stock deals. If managers perceive their equity to be undervalued, they would prefer not to use stock as the method of payment.

6. Conclusion

We report novel evidence about CEO compensation changes around acquisitions and use the related cross-sectional variation to explore the motives for these compensation changes. We find that the previously documented increase in CEO compensation following acquisitions is driven by stock financed acquisitions.

Further, these increases in compensation related to stock financed acquisition are similar in the early and late sample period. However, because of the sharp drop in the frequency of stock financed acquisitions in the latter part of our sample period, the unconditional relation between CEO compensation increase and acquisitions disappears.

We then use the variation in CEO compensation changes across methods of payment in acquisitions to distinguish between two hypotheses motivating the CEO compensation increases. The *Agency Hypothesis* posits that entrenched CEOs pursue stock financed acquisitions to bypass market scrutiny while building their empire. They also take advantage of the opportunity presented by the transition event to increase their compensation. Alternatively, the *Dual Adverse Selection Hypothesis* posits that the combination of financing the acquisition with stock and bonding the CEO to the acquirer stock price with equity compensation mitigates the two sided adverse selection problem in takeovers.

The results do not support the *Agency Hypothesis*. We find no evidence that changes in compensation following all-stock deals are associated with measures of poor corporate governance. We find that the compensation increases are composed primarily of equity-based pay that would be particularly unattractive to CEOs pursuing an agency motivated, value destroying acquisition. Further, although we expect entrenched CEOs to garner high levels of compensation, we find that greater CEO compensation in all-stock deals is concentrated in CEOs with low levels of compensation prior to the deal announcement.

The results offer strong support for the *Dual Adverse Selection Hypothesis*. Consistent with acquirers in all-stock deals using equity-based compensation to bond the CEO to the post-acquisition stock price and mitigate target firm concerns about overvalued equity, we find that CEO equity compensation increases around all-stock acquisitions when (i) there is more uncertainty about the acquirer's value, and (ii) when the acquiring firm CEO is less bonded to the acquirer's stock price prior to the acquisition. In addition, with regard to the acquirer's concern about the value of the acquisition, we find that the increase in CEO compensation following all-stock deals is significantly greater in acquisitions with above-median risk, and that this increase in compensation is paid predominately in equity-based compensation. In short, equity-based CEO compensation is increased when acquirer shareholders have reason to be concerned

about the value of the acquisition at the same time target shareholders have reason to be concerned about the value of the stock consideration being paid.

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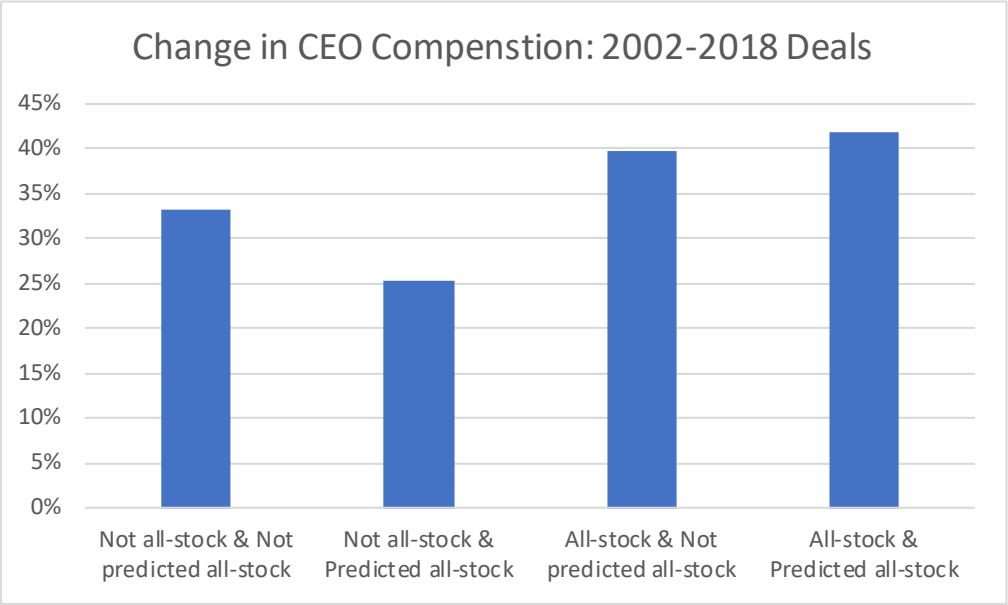
Figure 1: Change in CEO compensation



This figure plots the average change in CEO compensation for four subsets of M&A deal years during the 2002 to 2018 period: deals that were not predicted to be all-stock deals and were not all-stock deals, deals that were predicted to be all-stock deals but were not all-stock deals, deals that were not predicted to be all-stock deals but were all-stock deals, and deals that were predicted to be all-stock deals and were all-stock deals. The predictions are estimated using the 1993 to 2001 sample period.

Table 1: Summary statistics by period

Panel A: Acquisition variables

	All years	1993-2005	2006-2018	Diff. Mean	*p-value*
Obs (require CEO compensation)	47,041	21,215	25,826		
5% Acquisition	5,345	2,564	2,781		
Proportion of all obs	*0.114*	*0.121*	*0.108*	*-0.013*	*0.000****
5% All equity	746	577	169		
Proportion of 5% Acq.	*0.140*	*0.225*	*0.061*	*-0.164*	*0.000****
5% All cash	1,786	702	1,084		
Proportion of 5% Acq.	*0.334*	*0.274*	*0.390*	*0.116*	*0.000****
5% Mixed	2,813	1,285	1,528		
Proportion of 5% Acq.	*0.526*	*0.501*	*0.549*	*0.048*	*0.000****

Panel B: CEO and firm characteristics in the 1993 – 2005 period

	1993 - 2005 Non-acquiring firms				1993 - 2005 Acquiring firms				Diff Means Acq - Non-acq	
	N	Mean	Median	Std dev.	N	Mean	Median	Std dev.	Diff. Mean	*p-value*
Chg CEO Comp	16,296	0.463	0.086	1.453	2,211	0.547	0.141	1.560	0.084	*.011***
Assets	18,632	10,960	1,405	49,093	2,564	9,094	1,224	44,646	-1,865	*.068**
Firm age	18,651	22.82	19.00	16.02	2,564	20.29	15.50	15.24	-2.534	*0.000****
Mkt to Book	18,419	2.09	1.48	2.28	2,564	2.20	1.52	3.51	0.115	*0.027***
Prior year return	15,688	0.226	0.120	0.729	2,448	0.282	0.181	0.772	0.057	*0.000****
ROA	18,622	0.024	0.041	0.226	2,564	0.039	0.045	0.113	0.015	*.001****
Change in CEO	18,651	0.109	0.000	0.312	2,564	0.082	0.000	0.274	-0.028	*0.000****
CEO age	17,758	55.55	56.00	7.67	2,487	55.09	55.00	7.34	-0.459	*0.005****
CEO tenure	17,028	7.18	5.00	7.65	2,322	7.39	5.00	7.28	0.208	*0.216*
CEO compensation	16,328	4,280	1,961	11,368	2,214	4,301	2,035	8,047	21	*0.934*

Table 1: continued

Panel C: CEO and firm characteristics in the 2006 – 2018 period

	2006 - 2018 Non-acquiring firms				2006 - 2018 Acquiring firms				Diff Means Acq - Non-acq	
	N	Mean	Median	Std dev.	N	Mean	Median	Std dev.	Diff. Mean	*p-value*
Chg CEO Comp	21,964	0.313	0.053	1.176	2,668	0.309	0.084	1.071	-0.004	*0.858*
Assets	22,865	16,557	1,901	104,929	2,781	9,683	1,714	53,348	-6,874	*0.001***
Firm age	23,044	25.39	21.00	18.12	2,781	23.91	19.00	17.16	-1.478	*0.000****
Mkt to Book	21,965	1.915	1.469	1.622	2,781	1.747	1.486	0.918	-0.169	*0.000****
Prior year return	19,234	0.145	0.097	0.539	2,675	0.190	0.134	0.552	0.045	*0.000****
ROA	22,842	0.026	0.039	0.224	2,779	0.041	0.044	0.093	0.016	*0.000****
Change in CEO	23,045	0.106	0.000	0.308	2,781	0.077	0.000	0.266	-0.029	*0.000****
CEO age	22,934	55.96	56.00	7.33	2,771	55.44	55.00	7.25	-0.521	*0.000****
CEO tenure	22,318	7.23	5.00	7.37	2,716	7.43	6.00	6.84	0.204	*0.171*
CEO compensation	22,018	5,578	3,645	7,228	2,671	5,404	3,739	5,928	-174	*0.232*

This table presents the summary statistics within each of the two sample periods, 1993 to 2005 and 2006 to 2018. Panel A presents the acquisition variables. The first column reports all years in the sample and the second and third columns report the two sub-periods. The last two columns report the difference in means between the early and late period for each of the variables and the *p-value* resulting from difference in means tests. *5% Acquisition* is an indicator variable equal to one if the firm announced an acquisition in which the deal value was at least 5% of the market value of equity of the acquirer. *5% All equity* is an indicator variable equal to one if the form of payment for the announced deal was at least 95% equity and zero for all other 5% deal years. *5% All cash* is an indicator variable equal to one if the form of payment for the announced deal was at least 95% cash and zero for all other 5% deal years. *5% Mixed* is an indicator variable equal to one if the form of payment for the announced deal was neither a 95% equity deal nor a 95% cash deal. Panel B and Panel C present statistics for the CEO and firm characteristics in the early and late period, respectively. Each panel reports the number of observations, the mean, the median and the standard deviation for each variable within each period. The last two columns report the difference in means between the early and late period for each of the variables and the *p-value* resulting from difference in means tests. *Chg CEO Comp* is the change in total CEO compensation from the prior year divided by the prior year compensation and is winsorized at the 1st and 99th percentile. *Assets* is the prior year assets for the firm (denoted in $millions). *Firm age* is the number of years since the firm was listed on CRSP. *Mkt to Book* is the prior fiscal year end ratio of the market value of assets divided to the book value of assets and is winsorized at the 1st and 99th percentile. *Prior year return* is the buy and hold return for the stock over the prior fiscal year. *ROA* is the return on assets at the end of the prior fiscal year and is winsorized at the 1st and 99th percentile. *Change in CEO* is an indicator variable equal to one in years there was a change in CEO. *CEO age* is the age of the CEO. *CEO tenure* is the number of years the CEO has served as CEO at the firm. *CEO compensation* is the total compensation for the CEO of the firm in the prior year. In all panels *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 2: Multivariate analysis of CEO compensation by period

	All years		1993 - 2005		2006 - 2018	
	(1)	(2)	(3)	(4)	(5)	(6)
	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp
Announced 5% deal - completed	0.051**	0.049**	0.080**	0.079**	0.027	0.025
	(2.465)	(2.301)	(2.178)	(2.085)	(1.181)	(1.064)
Announced 5% deal - withdrawn	-0.006	-0.007	-0.021	-0.022	0.016	0.017
	(-0.078)	(-0.098)	(-0.176)	(-0.182)	(0.176)	(0.184)
Prior year announced 5% deal - completed		0.018		0.007		0.024
		(0.882)		(0.185)		(1.016)
Prior year announced 5% deal - withdrawn		0.076		0.002		0.159
		(0.874)		(0.019)		(1.154)
Log assets 2004	0.011**	0.011**	0.036***	0.036***	-0.005	-0.005
	(2.451)	(2.411)	(4.569)	(4.538)	(-0.934)	(-0.994)
Firm age	-0.004***	-0.003***	-0.005***	-0.005***	-0.003***	-0.003***
	(-8.874)	(-8.813)	(-6.055)	(-6.003)	(-6.987)	(-6.949)
Mkt to Book	0.028***	0.028***	0.029**	0.029**	0.025***	0.025***
	(2.839)	(2.853)	(2.062)	(2.064)	(2.783)	(2.839)
Prior year return	0.053***	0.053***	0.066**	0.065**	0.040**	0.039**
	(2.803)	(2.784)	(2.141)	(2.130)	(2.008)	(1.994)
ROA	-0.216***	-0.215***	-0.214**	-0.214**	-0.212*	-0.211*
	(-2.879)	(-2.873)	(-2.443)	(-2.441)	(-1.776)	(-1.769)
Change in CEO	0.376***	0.377***	0.536***	0.536***	0.240***	0.241***
	(12.183)	(12.199)	(10.566)	(10.576)	(6.331)	(6.345)
Observations	36,839	36,839	15,751	15,751	21,088	21,088
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0337	0.0337	0.0394	0.0393	0.0175	0.0176

This table presents regressions of the change in CEO compensation. The dependent variable in each model, *Chg CEO comp*, is the change in CEO compensation as a proportion of the prior year CEO compensation, winsorized at the 1st and 99th percentile. *Announced 5% deal – completed* is an indicator variable equal to one if a 5% acquisition was announced by the firm during the year and subsequently completed. *Announced 5% deal – withdrawn* is an indicator variable equal to one if a 5% acquisition was announced by the firm during the year and subsequently withdrawn. *Prior year announced 5% deal – completed* is an indicator variable equal to one if a 5% acquisition was announced by the firm during the prior year and subsequently completed. *Prior year announced 5% deal – withdrawn* is an indicator variable equal to one if a 5% acquisition was announced by the firm during the prior year and subsequently withdrawn. *Log assets* is the logged value of the prior year assets for the firm. The remaining variables are defined in Table 1. In each model, industry*year fixed effects are included and standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 3: Change in the components of CEO compensation by period

Panel A: All years

	All years					
	(1)	(2)	(3)	(4)	(5)	(6)
	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options	Chg other
Announced 5% deal - completed	0.003***	0.006**	0.048***	0.022***	0.022*	-0.003
	(3.421)	(2.365)	(2.791)	(3.134)	(1.675)	(-0.695)
Announced 5% deal - withdrawn	-0.002	0.005	0.041	0.035	0.002	-0.008
	(-0.698)	(0.437)	(0.651)	(1.276)	(0.038)	(-0.528)
Log assets 2004	-0.003***	-0.001***	0.011***	0.004***	0.006**	-0.001
	(-13.145)	(-2.814)	(3.343)	(3.191)	(2.297)	(-1.089)
Firm age	-0.000***	-0.000	-0.003***	-0.001***	-0.002***	-0.000
	(-3.435)	(-0.125)	(-8.960)	(-5.085)	(-7.864)	(-0.746)
Mkt to Book	-0.000	-0.001*	0.027***	-0.002**	0.024***	-0.003***
	(-0.430)	(-1.924)	(3.312)	(-2.535)	(3.643)	(-4.724)
Prior year return	0.002***	-0.008***	0.074***	0.020***	0.052***	-0.005**
	(3.544)	(-3.293)	(4.276)	(3.958)	(3.653)	(-2.225)
ROA	-0.003	-0.048***	-0.087	0.002	-0.066	-0.040***
	(-0.533)	(-3.935)	(-1.543)	(0.226)	(-1.451)	(-3.039)
Change in CEO	-0.053***	0.025***	0.431***	0.107***	0.299***	-0.063***
	(-26.508)	(6.835)	(17.671)	(11.143)	(16.472)	(-11.701)
Observations	36,930	36,930	36,857	36,930	36,857	36,918
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0775	0.0744	0.0453	0.0190	0.0658	0.0452

Panel B: 1993 – 2005 period

	1993-2005					
	(1)	(2)	(3)	(4)	(5)	(6)
	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options	Chg other
Announced 5% deal - completed	0.004**	0.011**	0.066**	0.024***	0.034	-0.002
	(2.529)	(2.171)	(2.092)	(2.740)	(1.318)	(-0.446)
Announced 5% deal - withdrawn	-0.002	0.013	-0.005	0.043	-0.047	0.004
	(-0.334)	(0.687)	(-0.054)	(1.376)	(-0.529)	(0.170)
Log assets 2004	-0.003***	-0.001	0.027***	0.009***	0.017***	0.006***
	(-7.858)	(-0.614)	(4.310)	(5.216)	(3.314)	(4.996)
Firm age	-0.000	0.000*	-0.004***	-0.000	-0.004***	0.000
	(-1.382)	(1.785)	(-6.764)	(-0.607)	(-7.126)	(0.645)
Mkt to Book	0.000	-0.002*	0.027**	-0.001**	0.023**	-0.002***
	(0.602)	(-1.722)	(2.360)	(-2.038)	(2.439)	(-4.186)
Prior year return	0.002*	-0.010***	0.074***	-0.000	0.075***	0.002
	(1.768)	(-2.702)	(2.700)	(-0.026)	(3.007)	(1.169)
ROA	-0.005	-0.063***	-0.087	-0.000	-0.063	-0.016**
	(-0.628)	(-3.039)	(-1.022)	(-0.017)	(-0.829)	(-2.354)
Change in CEO	-0.055***	0.015**	0.585***	0.098***	0.465***	-0.049***
	(-16.892)	(2.252)	(14.298)	(8.509)	(13.685)	(-7.277)
Observations	15,825	15,825	15,764	15,825	15,764	15,825
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0764	0.0470	0.0563	0.0137	0.0626	0.0117

Table 3: continued

Panel C: 2006 – 2018 period

	2006-2018					
	(1)	(2)	(3)	(4)	(5)	(6)
	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options	Chg other
Announced 5% deal - completed	0.003**	0.003	0.034*	0.021**	0.011	-0.004
	(2.099)	(1.187)	(1.891)	(2.020)	(1.121)	(-0.703)
Announced 5% deal - withdrawn	-0.003	-0.002	0.088	0.025	0.052	-0.016
	(-0.902)	(-0.199)	(1.101)	(0.591)	(0.924)	(-0.717)
Log assets 2004	-0.003***	-0.002***	0.002	0.001	-0.000	-0.005***
	(-10.455)	(-3.417)	(0.555)	(0.487)	(-0.204)	(-4.960)
Firm age	-0.000***	-0.000**	-0.002***	-0.001***	-0.001***	-0.000*
	(-3.460)	(-2.567)	(-6.414)	(-5.523)	(-4.158)	(-1.662)
Mkt to Book	-0.001***	-0.000	0.026***	-0.002	0.023***	-0.006***
	(-3.250)	(-0.310)	(4.081)	(-0.710)	(5.193)	(-3.731)
Prior year return	0.003***	-0.006*	0.075***	0.048***	0.024**	-0.014***
	(3.109)	(-1.673)	(4.126)	(4.827)	(2.433)	(-3.060)
ROA	0.002	-0.032**	-0.084	0.000	-0.062	-0.064*
	(0.402)	(-2.457)	(-1.304)	(0.000)	(-1.471)	(-1.958)
Change in CEO	-0.051***	0.035***	0.298***	0.114***	0.158***	-0.075***
	(-20.676)	(8.632)	(10.363)	(7.664)	(9.178)	(-9.192)
Observations	21,105	21,105	21,093	21,105	21,093	21,093
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0734	0.0640	0.0195	0.0161	0.0148	0.0620

This table presents regressions of the change in the different components of CEO compensation. We analyze change in salary in Model (1), change in bonus in Model (2), change in equity (combining stock and options) in Model (3), change in stock in Model (4), change in options in Model (5), and change in other compensation in Model (6). The dependent variable is the change in the respective component of compensation from the prior year divided by the total CEO compensation from the prior year. Each dependent variable is winsorized at the 1st and 99th percentile. The independent variables are defined in Table 1 and Table 2. In each model, industry*year fixed effects are included and standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 4: Change in CEO compensation by method of payment

	(1)	(2)	(3)	(4)	(5)	(6)
	All years	1993-2005	2006-2018	All years	1993-2005	2006-2018
	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp	Chg CEO comp
All-stock	0.169**	0.194**	0.103			
	(2.402)	(2.150)	(1.161)			
All-cash	0.040	0.074	0.024			
	(1.206)	(1.194)	(0.613)			
Mixed	0.024	0.024	0.020			
	(0.974)	(0.559)	(0.728)			
All-stock * Completed				0.194**	0.223**	0.113
				(2.558)	(2.322)	(1.143)
All-stock * Withdrawn				-0.077	-0.127	0.023
				(-0.551)	(-0.642)	(0.154)
All-cash * Completed				0.034	0.056	0.024
				(1.013)	(0.914)	(0.597)
All-cash * Withdrawn				0.153	0.515	0.025
				(0.868)	(1.147)	(0.143)
Mixed * Completed				0.029	0.035	0.021
				(1.136)	(0.767)	(0.730)
Mixed * Withdrawn				-0.085	-0.146	0.002
				(-1.053)	(-1.110)	(0.026)
Log assets 2004	0.011**	0.036***	-0.005	0.011**	0.036***	-0.005
	(2.404)	(4.549)	(-0.940)	(2.424)	(4.553)	(-0.931)
Firm age	-0.004***	-0.005***	-0.003***	-0.004***	-0.005***	-0.003***
	(-8.868)	(-6.064)	(-6.979)	(-8.876)	(-6.067)	(-6.979)
Mkt to Book	0.027***	0.028**	0.025***	0.027***	0.028**	0.025***
	(2.766)	(1.995)	(2.778)	(2.756)	(1.988)	(2.776)
Prior year return	0.053***	0.065**	0.040**	0.053***	0.065**	0.040**
	(2.783)	(2.127)	(2.006)	(2.781)	(2.115)	(2.007)
ROA	-0.215***	-0.213**	-0.212*	-0.215***	-0.213**	-0.212*
	(-2.871)	(-2.444)	(-1.773)	(-2.874)	(-2.440)	(-1.774)
Change in CEO	0.376***	0.535***	0.240***	0.376***	0.536***	0.240***
	(12.175)	(10.558)	(6.328)	(12.172)	(10.568)	(6.327)
Observations	36,839	15,751	21,088	36,839	15,751	21,088
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0338	0.0396	0.0175	0.0338	0.0397	0.0174

This table presents regressions of the change in CEO compensation across different methods of payment. *All-stock* (*All-cash*) indicates the consideration offered in the deal was at least 95% stock (cash). *Mixed* indicates the consideration offered in the deal was neither 95% stock deal nor 95% cash. Model (1) and Model (4) analyze all years. Model (2) and Model (5) analyze the 1993 through 2005 period. Model (3) and Model (6) analyze the 2006 through 2018 period. Models (4) through (6) analyze completed and withdrawn deals separately by including interactions terms between completed and each method of payment and interaction terms between withdrawn and each method of payment. The independent variables are defined in Table 1 and Table 2. In each model, industry*year fixed effects are included and standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 5: Change in the components of CEO compensation by method of payment

	All years					1993-2005					2006-2018				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options	Chg salary	Chg bonus	Chg equity	Chg stock	Chg options
All-stock * Completed	0.004	0.011	0.158**	0.045**	0.120**	0.006*	0.013	0.207**	0.044**	0.161**	-0.002	0.010	0.024	0.060	-0.004
	(1.403)	(1.450)	(2.453)	(2.312)	(2.253)	(1.745)	(1.330)	(2.495)	(2.194)	(2.315)	(-0.344)	(0.937)	(0.325)	(1.229)	(-0.083)
All-stock * Withdrawn	-0.009	0.016	-0.067	0.022	-0.059	-0.016	0.020	-0.134	-0.011	-0.092	0.006	0.011	0.063	0.091	0.000
	(-1.039)	(0.554)	(-0.549)	(0.409)	(-0.559)	(-1.350)	(0.569)	(-0.779)	(-0.264)	(-0.575)	(0.795)	(0.217)	(0.451)	(0.672)	(0.008)
All-cash * Completed	0.004**	0.006	0.027	0.015	0.004	0.006**	0.018**	0.024	0.020	-0.009	0.003	-0.001	0.030	0.011	0.014
	(2.481)	(1.422)	(0.964)	(1.136)	(0.200)	(1.990)	(1.965)	(0.459)	(1.253)	(-0.213)	(1.403)	(-0.250)	(0.962)	(0.618)	(0.831)
All-cash * Withdrawn	0.003	0.018	0.197	-0.012	0.158	0.014	0.088	0.466	0.028	0.363	-0.002	-0.008	0.103	-0.025	0.086
	(0.385)	(0.860)	(1.279)	(-0.251)	(1.274)	(0.763)	(1.479)	(1.170)	(0.762)	(1.050)	(-0.371)	(-0.465)	(0.678)	(-0.394)	(0.766)
Mixed * Completed	0.003**	0.006	0.036*	0.022**	0.011	0.002	0.006	0.032	0.018	0.008	0.003*	0.006	0.037*	0.025*	0.011
	(2.252)	(1.545)	(1.732)	(2.398)	(0.681)	(1.053)	(0.834)	(0.832)	(1.620)	(0.242)	(1.959)	(1.520)	(1.668)	(1.827)	(0.840)
Mixed * Withdrawn	-0.003	-0.011	-0.017	0.077*	-0.081	0.001	-0.018	-0.094	0.082	-0.163*	-0.008	-0.000	0.079	0.062	0.030
	(-0.633)	(-0.772)	(-0.243)	(1.778)	(-1.574)	(0.076)	(-0.814)	(-0.878)	(1.516)	(-1.934)	(-1.538)	(-0.017)	(0.988)	(0.989)	(0.632)
Log assets 2004	-0.003***	-0.001***	0.011***	0.004***	0.006**	-0.003***	-0.001	0.027***	0.009***	0.017***	-0.003***	-0.002***	0.002	0.001	-0.000
	(-13.165)	(-2.801)	(3.325)	(3.166)	(2.287)	(-7.857)	(-0.578)	(4.280)	(5.192)	(3.284)	(-10.419)	(-3.357)	(0.564)	(0.505)	(-0.200)
Firm age	-0.000***	-0.000	-0.003***	-0.001***	-0.002***	-0.000	0.000*	-0.004***	-0.000	-0.004***	-0.000***	-0.000**	-0.002***	-0.001***	-0.001***
	(-3.443)	(-0.123)	(-8.965)	(-5.072)	(-7.873)	(-1.417)	(1.729)	(-6.754)	(-0.592)	(-7.111)	(-3.448)	(-2.573)	(-6.416)	(-5.521)	(-4.159)
Mkt to Book	-0.000	-0.001*	0.026***	-0.003***	0.023***	0.000	-0.002*	0.026**	-0.002**	0.022**	-0.001***	-0.000	0.026***	-0.002	0.023***
	(-0.439)	(-1.951)	(3.232)	(-2.630)	(3.555)	(0.591)	(-1.725)	(2.272)	(-2.156)	(2.343)	(-3.239)	(-0.311)	(4.081)	(-0.716)	(5.193)
Prior year return	0.002***	-0.008***	0.073***	0.020***	0.052***	0.002*	-0.010***	0.073***	-0.000	0.074***	0.003***	-0.006*	0.075***	0.048***	0.024**
	(3.540)	(-3.284)	(4.254)	(3.959)	(3.637)	(1.767)	(-2.694)	(2.667)	(-0.054)	(2.972)	(3.136)	(-1.679)	(4.129)	(4.856)	(2.438)
ROA	-0.003	-0.048***	-0.086	0.003	-0.065	-0.005	-0.063***	-0.086	-0.000	-0.062	0.001	-0.032**	-0.085	0.001	-0.062
	(-0.536)	(-3.934)	(-1.533)	(0.259)	(-1.440)	(-0.634)	(-3.039)	(-1.011)	(-0.005)	(-0.815)	(0.396)	(-2.454)	(-1.305)	(0.028)	(-1.475)
Change in CEO	-0.053***	0.025***	0.430***	0.107***	0.299***	-0.055***	0.015**	0.585***	0.098***	0.465***	-0.051***	0.035***	0.298***	0.114***	0.158***
	(-26.516)	(6.825)	(17.663)	(11.152)	(16.458)	(-16.897)	(2.253)	(14.305)	(8.521)	(13.688)	(-20.674)	(8.634)	(10.367)	(7.668)	(9.189)
Observations	36,930	36,930	36,857	36,930	36,857	15,825	15,825	15,764	15,825	15,764	21,105	21,105	21,093	21,105	21,093
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0774	0.0743	0.0455	0.0190	0.0661	0.0764	0.0471	0.0568	0.0137	0.0631	0.0733	0.0639	0.0193	0.0160	0.0146

This table presents regressions of the change in the different components of CEO compensation across different methods of payment. We analyze change in salary in Models (1), (6), and (11), change in bonus in Models (2), (7), and (12), change in equity (combining stock and options) in Models (3), (8), and (13), change in stock in Models (4), (9), and (14), and change in options in Models (5), (10), and (15). The dependent variable is the change in the respective component of compensation from the prior year divided by the total CEO compensation from the prior year. Each dependent variable is winsorized at the 1st and 99th percentile. The independent variables are defined in previous tables. In each model, industry*year fixed effects are included and standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 6: Summary Statistics for classification variables

Panel A: Statistics by deal type

	All-stock deal			No deal			All-cash deal			Mixed deal		
	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median
Chg CEO compensation	639	0.647	0.155	38,484	0.376	0.064	1,670	0.384	0.092	2,582	0.381	0.098
Excess CEO compensation	507	0.568	1	29,362	0.497	0	1,459	0.528	1	2,221	0.522	1
CEO delta	717	676	173	38,274	578	148	1,696	505	172	2,672	438	145
CEO vega	698	80.5	26.8	37,048	94.7	26.8	1,672	103.1	41.1	2,639	83.9	27.3
Fraction of directors after CEO	415	0.550	0.556	23,373	0.463	0.429	1,152	0.485	0.444	1,604	0.494	0.455
Classified board	469	0.539	1	25,450	0.502	1	1,362	0.511	1	1,963	0.516	1
Stdev mkt-adj return	723	0.027	0.022				1,730	0.020	0.018	2,714	0.022	0.019
Investment grade	748	0.290	0	42,030	0.313	0	1,787	0.289	0	2,825	0.275	0
Abs(DGTW abret)	707	0.309	0.221				1,653	0.250	0.189	2,462	0.281	0.205
Excess chg imp vol	409	-0.007	-0.004	23,008	-0.002	-0.003	1,212	0.000	-0.002	1,782	-0.003	-0.003
Change stdev	713	0.002	0.001				1,694	0.002	0.001	2,641	0.001	0.000

Panel B: Difference in means

	All-stock - No deal		All-stock - All-cash		All-stock - Mixed	
	Diff mean	*p-value*	Diff mean	*p-value*	Diff mean	*p-value*
Chg CEO compensation	0.271	*0.000****	0.263	*0.000****	0.266	*0.000****
Excess CEO compensation	0.071	*0.001****	0.040	*0.123*	0.046	*0.060**
CEO delta	98	*0.069**	171	*0.005****	237	*0.000****
CEO vega	-14.2	*0.038***	-22.6	*0.003****	-3.5	*0.616*
Fraction of directors after CEO	0.087	*0.000****	0.065	*0.000****	0.056	*0.001****
Classified board	0.037	*0.110*	0.028	*0.288*	0.023	*0.362*
Stdev mkt-adj return			0.006	*0.000****	0.005	*0.000****
Investment grade	-0.023	*0.184*	0.001	*0.968*	0.015	*0.425*
Abs(DGTW abret 1-year)			0.059	*0.000****	0.029	*0.018***
Excess Chg ImpVol next year	-0.005	*0.648*	-0.007	*0.191*	-0.004	*0.397*
Change stdev			0.001	*0.208*	0.001	*0.025***

Table 6: continued

This table presents the summary statistics for the variables we use to classify acquisitions. Panel A lists the summary statistics (number of observations, mean, and median) for each deal type: All-stock, No deal, All-cash, and Mixed. For the variables that are specific to years with an acquisition announcement, the No deal statistics are blank. Panel B tabulates the difference in means between the All-stock deal years and each of the other deal types. The panel also tabulates *p-values* from difference-in-means tests. *Excess CEO compensation* is an indicator variable equal to one if the CEO's excess compensation in the prior year was above the median across all firms in the year. Excess compensation is the residual from a regression of CEO compensation on log of firm sales, firm market to book, prior year return on the firm's stock, firm ROA, CEO tenure, and an indicator variable equal to one if the CEO is at least 60 years old. The regression includes industry-year fixed effects. *CEO delta* and *CEO vega* are estimates of the CEO's exposure to changes in the firm's stock price and volatility. They are calculated based on the methodology in Core and Guay (2002) and winsorized at the 1st and 99th percentile. *Fraction of directors after CEO* is the fraction of directors that were appointed to the board during the CEO's tenure. The data, from Coles, Daniel, and Naveen (2014), span 1996 to 2014. *Classified board* is an indicator variable equal to one if elections to board seats are staggered across years. *Stdev mkt-adj return* is the standard deviation of the difference between the daily firm return and the market return calculated over the one year period prior to the deal announcement. *Investment grade* is an indicator variable equal to one if the firm has an investment grade rating and zero if it is unrated or has a non-investment grade rating. *Excess change implied volatility* is the market adjusted change in the implied volatility of the one year at-the-money option (the average of the call and put option) from the end of the prior fiscal year to the end of the current fiscal year. *Change stdev* is the difference in the daily standard deviation of returns of the acquirer from the one year period prior to the deal announcement to the one year period after the deal announcement. *Abs(DGTW abret)* is the absolute value of the DGTW adjusted buy and hold return for the acquirer in the twelve month period after the deal announcement using the technique of Daniel, Grinblatt, Titman, and Wermers (1997) and is winsorized at the 1st and 99th percentile.

Table 7: Change in CEO compensation within deal categories by method of payment

	(1) Excess CEO compensation (median)	(2) CEO delta (median)	(3) CEO vega (median)	(4) Fraction of directors after CEO (median)	(5) Classified board	(6) Investment grade	(7) Excess chg imp vol (median)
All-stock deal	0.312**	0.228**	0.265**	0.320*	0.149	0.226**	0.214
	(2.375)	(1.971)	(2.369)	(1.808)	(1.231)	(2.362)	(1.457)
All-cash deal	0.081	0.015	0.068	0.009	-0.009	0.008	0.044
	(1.349)	(0.314)	(1.223)	(0.172)	(-0.187)	(0.190)	(0.726)
Mixed deal	0.025	0.040	0.117***	-0.010	0.031	0.032	0.032
	(0.600)	(1.247)	(3.046)	(-0.205)	(0.817)	(1.007)	(0.664)
Variable of interest indicator	-0.591***	-0.016	-0.067***	0.057***	-0.007	-0.095***	-0.029
	(-34.427)	(-1.020)	(-4.520)	(3.665)	(-0.475)	(-5.631)	(-1.614)
Variable of interest indicator * All-stock deal	-0.236	-0.106	-0.182	-0.271	0.074	-0.109	0.061
	(-1.483)	(-0.694)	(-1.242)	(-1.309)	(0.446)	(-0.812)	(0.296)
Variable of interest indicator * All-cash deal	-0.045	0.033	-0.049	-0.014	0.034	0.090	-0.097
	(-0.654)	(0.506)	(-0.715)	(-0.172)	(0.487)	(1.300)	(-1.349)
Variable of interest indicator * Mixed deal	0.026	-0.021	-0.166***	0.040	-0.017	0.000	-0.005
	(0.520)	(-0.414)	(-3.337)	(0.611)	(-0.310)	(0.002)	(-0.077)
Observations	33,266	35,021	34,945	22,491	26,104	36,759	25,399
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0942	0.0272	0.0287	0.0390	0.0303	0.0347	0.0363
F-tests with *p-values*							
1. All-stock deal + (VOI indicator * All-stock deal)	0.076	0.122	0.083	0.049	0.223	0.117	0.275
p-value	*0.385*	*0.215*	*0.384*	*0.630*	*0.060**	*0.246*	*0.059**
2. All-cash deal + (VOI indicator * All-cash deal)	0.036	0.048	0.019	-0.005	0.025	0.098	-0.053
p-value	*0.290*	*0.285*	*0.623*	*0.937*	*0.623*	*0.083**	*0.208*
3. Mixed deal + (VOI indicator * Mixed deal)	0.051	0.019	-0.049	0.030	0.014	0.032	0.027
p-value	*0.046***	*0.607*	*0.116*	*0.496*	*0.734*	*0.426*	*0.483*

This table presents regressions of the change in CEO compensation within various deal categories for different methods of payment. The analysis includes all firm-years, regardless of whether an acquisition was announced. The dependent variable in each model is *Chg CEO comp*. We include indicator variables for each deal type, All-stock, All-cash, and Mixed, and a term interacting each deal type with the variable of interest in the model. The variable of interest in each model is as follows: Model (1) uses an indicator variable equal to one if *Excess CEO compensation* is above the sample median. Model (2) uses an indicator variable equal to one if *CEO Delta* is above the median for the year. Model (3) uses an indicator variable equal to one if *CEO Vega* is above the median for the year. Model (4) uses an indicator variable equal to one if *Fraction of directors after CEO* is above the median for the year. Model (5) uses *Classified board*. Model (6) uses *Investment grade*. Model (7) uses an indicator variable equal to one if *Excess chg imp vol* is above the median for the year. For each method of payment, F-tests (1), (2), and (3) test the hypothesis that when the variable of interest equals one *Chg CEO comp* in deal years with the given method of payment is no different than *Chg CEO comp* in years with no deal announcement. *P-values* for the F-tests are listed in italics. Each model also includes an indicator for withdrawn deals, the control variables used in Table 2, and industry-year fixed effects, but, for ease of presentation, these are untabulated. Standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 8: Change in CEO compensation within deal categories by method of payment – acquisition years only

Panel A – CEO compensation variables and board compensation variables

	(1)	(2)	(3)	(4)	(5)
	CEO Compensation Variables			Acquirer Board Variables	
	Excess CEO compensation (median)	CEO delta (median)	CEO vega (median)	Fraction of directors after CEO (median)	Classified board
All-stock deal	0.425**	0.225	0.172	0.392	0.208
	(2.077)	(1.384)	(0.937)	(1.563)	(1.075)
All-cash deal	0.110	-0.037	-0.119	-0.029	-0.019
`	(0.668)	(-0.302)	(-0.796)	(-0.163)	(-0.119)
Mixed deal	0.097	-0.008	-0.024	-0.061	0.011
	(0.627)	(-0.067)	(-0.166)	(-0.348)	(0.073)
Variable of interest indicator	-0.470**	-0.084	-0.370**	-0.137	-0.127
	(-2.573)	(-0.525)	(-2.029)	(-0.660)	(-0.624)
Variable of interest indicator * All-stock deal	-0.377	0.059	0.145	-0.100	0.128
	(-1.541)	(0.258)	(0.610)	(-0.324)	(0.476)
Variable of interest indicator * All-cash deal	-0.151	0.176	0.305	0.239	0.149
	(-0.753)	(1.022)	(1.607)	(1.058)	(0.687)
Variable of interest indicator * Mixed deal	-0.152	0.123	0.120	0.255	0.094
	(-0.799)	(0.723)	(0.626)	(1.152)	(0.446)
Observations	3,934	4,246	4,229	2,619	3,188
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0692	0.0117	0.0179	0.0229	0.0342
F-tests with *p-values*					
Is stock different than cash (mixed) for VOI = 0 firms?					
1. All-stock deal - All-cash deal	0.315	0.262	0.291	0.421	0.227
p-value	*0.049***	*0.058**	*0.039***	*0.034***	*0.126*
2. All-stock deal - Mixed deal	0.328	0.233	0.196	0.453	0.197
p-value	*0.029***	*0.079**	*0.137*	*0.024***	*0.178*
Is stock different than cash (mixed) for VOI = 1 firms?					
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	0.089	0.145	0.131	0.082	0.206
p-value	*0.385*	*0.237*	*0.270*	*0.605*	*0.167*
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	0.103	0.169	0.221	0.098	0.231
p-value	*0.315*	*0.155*	*0.053**	*0.496*	*0.117*

Panel B – Acquirer risk variables and deal risk variables

	(6)	(7)	(8)	(9)	(10)
	Acquirer Risk Variables		Deal Risk Variables		
	Stdev mkt-adj return (median)	Investment grade	Abs(DGTW abret)	Excess chg imp vol (median)	Change stdev (median)
All-stock deal	0.158	0.264*	0.180	0.182	0.232
	(1.047)	(1.726)	(1.214)	(0.736)	(1.368)
All-cash deal	0.017	-0.003	0.090	-0.080	-0.034
	(0.137)	(-0.028)	(0.836)	(-0.398)	(-0.282)
Mixed deal	-0.010	0.030	0.055	-0.107	-0.005
	(-0.083)	(0.247)	(0.514)	(-0.539)	(-0.038)
Variable of interest indicator	-0.110	-0.088	-0.003	-0.343	-0.164
	(-0.628)	(-0.473)	(-0.019)	(-1.555)	(-0.905)
Variable of interest indicator * All-stock deal	0.330	0.037	0.168	0.404	0.116
	(1.273)	(0.158)	(0.667)	(1.283)	(0.468)
Variable of interest indicator * All-cash deal	0.174	0.233	-0.019	0.245	0.193
	(0.896)	(1.206)	(-0.096)	(1.040)	(0.980)
Variable of interest indicator * Mixed deal	0.213	0.099	0.007	0.332	0.126
	(1.177)	(0.518)	(0.034)	(1.431)	(0.659)
Observations	4,398	4,389	4,082	3,028	4,282
Fixed Effects	Industry*Year	Industry*Year	Industry*Year	Industry*Year	Industry*Year
Clustering	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0276	0.0275	0.0197	0.0294	0.0291
F-tests with *p-values*					
Is stock different than cash (mixed) for VOI = 0 firms?					
1. All-stock deal - All-cash deal	0.141	0.267	0.090	0.262	0.266
p-value	*0.165*	*0.022***	*0.478*	*0.137*	*0.057**
2. All-stock deal - Mixed deal	0.168	0.234	0.125	0.289	0.237
p-value	*0.075**	*0.042***	*0.282*	*0.111*	*0.084**
Is stock different than cash (mixed) for VOI = 1 firms?					
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	0.324	0.071	0.277	0.421	0.189
p-value	*0.122*	*0.600*	*0.068**	*0.012***	*0.143*
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	0.285	0.172	0.286	0.361	0.227
p-value	*0.143*	*0.167*	*0.056**	*0.023***	*0.064**

Table 8: continued

This table presents regressions of the change in CEO compensation within various deal categories for different methods of payment. The sample includes only firm-years with a 5% acquisition announcement. The dependent variable in each model is *Chg CEO comp*. We include indicator variables for each deal type, All-stock, All-cash, and Mixed, and a term interacting each deal type with the variable of interest in the model. Panel A presents the CEO compensation variables and the acquirer board of director variables as the variables of interest: Model (1) uses an indicator variable equal to one if *Excess CEO compensation* is above the sample median. Model (2) uses an indicator variable equal to one if *CEO Delta* is above the median for the year. Model (3) uses an indicator variable equal to one if *CEO Vega* is above the median for the year. Model (4) uses an indicator variable equal to one if *Fraction of directors after CEO* is above the median for the year. Model (5) uses *Classified board*. Panel B presents the acquirer risk variables and the deal risk variables as the variables of interest: Model (6) uses an indicator variable equal to one if *Stdev mkt-adj return* is above the median for the year. Model (7) uses *Investment grade*. Model (8) uses an indicator variable equal to one if *Abs(DGTW abret)* is above the median for the year. Model (9) uses an indicator variable equal to one if *Excess chg imp vol* is above the median for the year. Model (10) uses an indicator variable equal to one if *Change stdev* is above the median for the year. For each method of payment, F-tests (1) and (2) test the hypothesis that when the variable of interest equals zero *Chg CEO comp* in All-stock deal years is no different than *Chg CEO comp* in All-cash deal years and Mixed deal years, respectively. F-tests (3) and (4) repeats these tests for deals in which the variable of interest equals one. *P-values* for the F-tests are listed in italics. Each model also includes the control variables used in Table 2 and industry-year fixed effects, but, for ease of presentation, these are untabulated. Standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 9: Change in the components of CEO compensation within deal categories by method of payment

Panel A: CEO compensation variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Excess CEO compensation			CEO delta			CEO vega		
	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity
All-stock deal	0.007	0.042	0.271	0.017*	0.026	0.169	0.024**	-0.002	0.030
	(0.687)	(1.585)	(1.565)	(1.760)	(1.315)	(1.315)	(2.222)	(-0.083)	(0.184)
All-cash deal	-0.000	0.027	-0.020	0.013	0.038**	-0.092	0.016	0.009	-0.265*
	(-0.035)	(1.239)	(-0.142)	(1.581)	(2.227)	(-1.004)	(1.640)	(0.354)	(-1.934)
Mixed deal	-0.001	0.031	0.015	0.010	0.037**	-0.027	0.015	0.011	-0.159
	(-0.070)	(1.427)	(0.110)	(1.269)	(2.171)	(-0.296)	(1.556)	(0.455)	(-1.166)
Variable of interest indicator	-0.021**	0.009	-0.362**	0.007	0.058**	-0.057	0.008	0.000	-0.455***
	(-2.568)	(0.368)	(-2.308)	(0.805)	(2.481)	(-0.418)	(0.869)	(0.003)	(-2.699)
Variable of interest indicator * All-stock deal	-0.009	-0.049	-0.267	-0.019*	-0.046*	0.035	-0.030**	0.005	0.251
	(-0.861)	(-1.622)	(-1.274)	(-1.773)	(-1.714)	(0.179)	(-2.551)	(0.154)	(1.187)
Variable of interest indicator * All-cash deal	0.005	-0.040	-0.050	-0.012	-0.065***	0.160	-0.015	-0.013	0.426**
	(0.603)	(-1.560)	(-0.294)	(-1.308)	(-2.684)	(1.119)	(-1.478)	(-0.454)	(2.475)
Variable of interest indicator * Mixed deal	0.005	-0.046*	-0.083	-0.013	-0.068***	0.104	-0.019*	-0.021	0.293*
	(0.548)	(-1.786)	(-0.512)	(-1.399)	(-2.826)	(0.721)	(-1.872)	(-0.785)	(1.656)
Observations	3,940	3,940	3,935	4,254	4,254	4,248	4,237	4,237	4,231
Fixed Effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0890	0.0995	0.0763	0.0526	0.0966	0.0268	0.0567	0.0969	0.0319
F-tests with *p-values*									
Is stock different than cash (mixed) for VOI = 0 firms?									
1. All-stock deal - All-cash deal	0.007	0.015	0.291	0.004	-0.012	0.261	0.008	-0.011	0.295
p-value	*0.300*	*0.434*	*0.027***	*0.511*	*0.433*	*0.017***	*0.202*	*0.510*	*0.008****
2. All-stock deal - Mixed deal	0.008	0.011	0.256	0.007	-0.011	0.196	0.009	-0.013	0.189
p-value	*0.249*	*0.545*	*0.040***	*0.237*	*0.451*	*0.066**	*0.093**	*0.394*	*0.078**
Is stock different than cash (mixed) for VOI = 1 firms?									
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	-0.007	0.006	0.074	-0.003	0.007	0.136	-0.007	0.007	0.120
p-value	*0.029***	*0.566*	*0.410*	*0.492*	*0.573*	*0.198*	*0.125*	*0.570*	*0.253*
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	-0.006	0.008	0.072	0.001	0.011	0.127	-0.002	0.013	0.147
p-value	*0.039***	*0.435*	*0.414*	*0.858*	*0.340*	*0.222*	*0.705*	*0.259*	*0.146*

Panel B: Acquirer board of director variables

	(1)	(2)	(3)	(4)	(5)	(6)
	Fraction directors after CEO			Classified board		
	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity
All-stock deal	0.010	0.060**	0.303	-0.007	0.030	0.078
	(1.112)	(1.973)	(1.515)	(-0.919)	(1.190)	(0.467)
All-cash deal	0.005	0.041*	-0.042	-0.005	0.003	-0.103
	(0.845)	(1.951)	(-0.308)	(-0.858)	(0.162)	(-0.744)
Mixed deal	-0.001	0.023	-0.046	-0.010	-0.003	-0.041
	(-0.184)	(1.135)	(-0.337)	(-1.638)	(-0.145)	(-0.289)
Variable of interest indicator	-0.001	0.024	-0.115	-0.010	-0.058**	-0.180
	(-0.173)	(0.818)	(-0.686)	(-1.170)	(-2.245)	(-1.022)
Variable of interest indicator * All-stock deal	-0.008	-0.058	-0.039	0.011	0.025	0.157
	(-0.730)	(-1.508)	(-0.151)	(0.994)	(0.754)	(0.698)
Variable of interest indicator * All-cash deal	-0.001	-0.022	0.183	0.009	0.061**	0.158
	(-0.182)	(-0.712)	(1.030)	(1.024)	(2.231)	(0.854)
Variable of interest indicator * Mixed deal	0.001	-0.002	0.228	0.011	0.063**	0.115
	(0.118)	(-0.064)	(1.264)	(1.257)	(2.300)	(0.635)
Observations	2,623	2,623	2,620	3,193	3,193	3,189
Fixed Effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0597	0.118	0.0523	0.0641	0.101	0.0560
F-tests with *p-values*						
Is stock different than cash (mixed) for VOI = 0 firms?						
1. All-stock deal - All-cash deal	0.005	0.019	0.345	-0.002	0.027	0.181
p-value	*0.532*	*0.451*	*0.032***	*0.754*	*0.164*	*0.132*
2. All-stock deal - Mixed deal	0.011	0.037	0.349	0.003	0.033	0.119
p-value	*0.184*	*0.128*	*0.033***	*0.683*	*0.082**	*0.328*
Is stock different than cash (mixed) for VOI = 1 firms?						
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	-0.002	-0.017	0.123	0.000	-0.009	0.180
p-value	*0.792*	*0.297*	*0.356*	*0.896*	*0.616*	*0.328*
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	0.002	-0.019	0.082	0.003	-0.005	0.161
p-value	*0.666*	*0.224*	*0.504*	*0.654*	*0.772*	*0.138*

Panel C: Acquirer risk variables

	(1)	(2)	(3)	(4)	(5)	(6)
	Investment grade			Stdev mkt-adj return		
	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity
All-stock deal	0.012*	0.000	0.222*	-0.001	0.015	0.117
	(1.698)	(0.015)	(1.747)	(-0.182)	(0.765)	(0.913)
All-cash deal	0.010*	-0.006	-0.013	0.000	0.015	-0.041
	(1.649)	(-0.327)	(-0.125)	(0.020)	(0.930)	(-0.408)
Mixed deal	0.008	-0.006	0.051	-0.005	0.009	-0.030
	(1.308)	(-0.336)	(0.505)	(-1.067)	(0.553)	(-0.306)
Variable of interest indicator	0.014	-0.016	0.083	-0.014	0.028	-0.088
	(1.599)	(-0.632)	(0.493)	(-1.520)	(1.043)	(-0.545)
Variable of interest indicator * All-stock deal	-0.022**	0.022	-0.106	0.017	-0.021	0.197
	(-2.227)	(0.762)	(-0.517)	(1.501)	(-0.659)	(0.867)
Variable of interest indicator * All-cash deal	-0.013	0.030	0.044	0.018*	-0.033	0.138
	(-1.380)	(1.138)	(0.256)	(1.818)	(-1.140)	(0.784)
Variable of interest indicator * Mixed deal	-0.015	0.017	-0.076	0.024**	-0.028	0.177
	(-1.645)	(0.652)	(-0.438)	(2.453)	(-0.992)	(1.064)
Observations	4,397	4,397	4,391	4,406	4,406	4,400
Fixed Effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0505	0.0844	0.0460	0.0537	0.0842	0.0460
F-tests with *p-values*						
Is stock different than cash (mixed) for VOI = 0 firms?						
1. All-stock deal - All-cash deal	0.002	0.006	0.235	-0.001	0.000	0.158
p-value	*0.637*	*0.650*	*0.014***	*0.771*	*0.997*	*0.079**
2. All-stock deal - Mixed deal	0.004	0.006	0.171	0.004	0.006	0.147
p-value	*0.317*	*0.619*	*0.076**	*0.252*	*0.630*	*0.081**
Is stock different than cash (mixed) for VOI = 1 firms?						
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	-0.007	-0.002	0.085	-0.002	0.012	0.217
p-value	*0.132*	*0.921*	*0.478*	*0.776*	*0.537*	*0.157*
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	-0.003	0.011	0.141	-0.003	0.013	0.167
p-value	*0.444*	*0.519*	*0.196*	*0.702*	*0.473*	*0.285*

Panel D: Deal risk variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Abs(DGTW abret)			Excess chg imp vol			Change stdev		
	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity	Chg salary	Chg bonus	Chg equity
All-stock deal	0.002	0.001	0.170	-0.003	0.013	0.125	-0.003	0.001	0.089
	(0.352)	(0.072)	(1.383)	(-0.384)	(0.498)	(0.586)	(-0.390)	(0.058)	(0.607)
All-cash deal	0.001	0.008	0.109	-0.002	0.008	-0.073	-0.001	-0.014	-0.084
	(0.194)	(0.549)	(1.263)	(-0.380)	(0.392)	(-0.419)	(-0.125)	(-0.750)	(-0.772)
Mixed deal	-0.002	-0.000	0.097	-0.001	0.005	-0.078	-0.002	-0.015	-0.042
	(-0.394)	(-0.030)	(1.084)	(-0.243)	(0.246)	(-0.450)	(-0.411)	(-0.810)	(-0.371)
Variable of interest indicator	-0.009	-0.001	0.091	-0.008	-0.006	-0.240	-0.012	-0.045*	-0.158
	(-1.164)	(-0.053)	(0.603)	(-0.939)	(-0.254)	(-1.247)	(-1.459)	(-1.879)	(-0.982)
Variable of interest indicator * All-stock deal	0.001	0.014	0.072	0.009	0.006	0.321	0.016	0.021	0.218
	(0.087)	(0.479)	(0.337)	(0.767)	(0.174)	(1.182)	(1.620)	(0.718)	(1.014)
Variable of interest indicator * All-cash deal	0.006	-0.001	-0.139	0.006	-0.000	0.176	0.012	0.037	0.167
	(0.754)	(-0.046)	(-0.862)	(0.668)	(-0.010)	(0.860)	(1.302)	(1.433)	(0.975)
Variable of interest indicator * Mixed deal	0.006	0.005	-0.086	0.004	-0.008	0.276	0.012	0.030	0.134
	(0.694)	(0.200)	(-0.529)	(0.440)	(-0.319)	(1.350)	(1.301)	(1.186)	(0.787)
Observations	4,089	4,089	4,084	3,033	3,033	3,029	4,290	4,290	4,284
Fixed Effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Clustering	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.0526	0.0868	0.0404	0.0191	0.0736	0.0510	0.0525	0.0839	0.0488
F-tests with *p-values*									
Is stock different than cash (mixed) for VOI = 0 firms?									
1. All-stock deal - All-cash deal	0.001	-0.007	0.061	-0.001	0.005	0.198	-0.002	0.015	0.173
p-value	*0.813*	*0.651*	*0.565*	*0.894*	*0.804*	*0.172*	*0.706*	*0.342*	*0.131*
2. All-stock deal - Mixed deal	0.004	0.001	0.073	-0.002	0.008	0.203	-0.001	0.016	0.131
p-value	*0.411*	*0.894*	*0.448*	*0.793*	*0.677*	*0.172*	*0.972*	*0.290*	*0.245*
Is stock different than cash (mixed) for VOI = 1 firms?									
3. (All-stock + VOI * All-stock) - (All-cash + VOI * All-cash)	-0.004	0.008	0.272	0.002	0.011	0.343	0.002	-0.001	0.224
p-value	*0.445*	*0.552*	*0.037***	*0.747*	*0.549*	*0.017***	*0.588*	*0.955*	*0.038***
4. (All-stock + VOI * All-stock) - (Mixed + VOI * Mixed)	-0.001	0.010	0.231	0.003	0.022	0.248	0.003	0.007	0.215
p-value	*0.840*	*0.468*	*0.074**	*0.550*	*0.198*	*0.068**	*0.334*	*0.590*	*0.042***

Table 9: continued

This table presents analysis of the components of the change in CEO compensation within various deal categories for different methods of payment. The sample includes only firm-years with a 5% acquisition announcement. For each variable of interest, the dependent variable in the first column is the change in CEO salary divided by the total CEO compensation in the prior year; the dependent variable in the second column is the change in the CEO bonus divided by the total CEO compensation in the prior year; the dependent variable in the third column is the change in equity compensation divided by the total CEO compensation in the prior year. Each dependent variable is winsorized at the 1st and 99th percentile. We include indicator variables for each deal type: All-stock, All-cash, and Mixed. We also include a term interacting each deal type with the high risk indicator variable of interest for the model. In Panel A, the high risk indicator variable is *Excess CEO Compensation* in the first three models, *CEO delta* in the next three models, and *CEO vega* in the last three models. In Panel B, the high risk indicator variable is *Fraction directors after CEO* in the first three models and *Classified Board* in the last three models. In Panel C, the high risk indicator variable is *Investment Grade* in the first three models and *Stdev mkt-adj return* in the last three models. In Panel D, the high risk indicator variable is *Abs(DGTW abret)* in the first three models, *Excess chg imp vol* in the next three models, and *Change stdev* in the last three models. These indicator variables are defined in the previous tables. For each method of payment, F-tests (1) and (2) test the hypothesis that when the variable of interest equals zero *Chg CEO comp* in All-stock deal years is no different than *Chg CEO comp* in All-cash deal years and Mixed deal years, respectively. F-tests (3) and (4) repeat these tests for deals in which the variable of interest equals one. *P-values* for the F-tests are listed in italics. Each model also includes the control variables used in Table 2 and industry-year fixed effects. For ease of presentation, these are untabulated. Standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 10: Increases in CEO equity-based compensation and stock returns

	(1) Car (-1 to +1)	(2) DGTW abret (-1 to +12)
Increase in CEO equity compensation dummy	0.006	0.029
	(1.342)	(1.262)
All-stock dummy	-0.036***	-0.054
	(-4.091)	(-1.418)
All-stock * Increase in equity compenstion	-0.005	0.100*
	(-0.539)	(1.739)
Mixed dummy	-0.005	-0.024
	(-1.052)	(-1.010)
Mixed * Increase in equity compenstion	-0.003	0.030
	(-0.521)	(0.991)
Log assets 2004	-0.006***	-0.011*
	(-5.558)	(-1.760)
Firm age	0.000	-0.001
	(0.664)	(-1.383)
Mkt to Book	-0.003	-0.006*
	(-1.520)	(-1.801)
Prior year return	0.000	0.003
	(0.078)	(0.190)
ROA	-0.011	0.156
	(-0.489)	(1.206)
Change in CEO	0.000	0.035
	(0.008)	(1.281)
Relative size of target firm	0.047	-0.055**
	(1.158)	(-2.542)
Observations	4,377	4,084
Fixed Effects	Industry*Year	Industry*Year
Clustering	Firm	Firm
Adjusted R^2	0.135	0.0825
F-tests:		
Increase in CEO equity comp + All-stock*Increase CEO equity	0.001	0.129
p-value	*0.866*	*0.014***
Increase in CEO equity comp + Mixed*Increase CEO equity	0.003	0.059
p-value	*0.376*	*0.004****

This table examines short run and long-run returns for deals with increases versus decreases in CEO equity-based compensation. The dependent variable in model (1) is *CAR (-1,+1)*, the acquiring firms cumulative abnormal return in the 3-day announcement period window (day -1 to +1). In model (2), the dependent variable is the DGTW abnormal return over the period one month before the deal announcement to twelve months after the deal announcement. The variables of interest include: *Increase in CEO equity compensation dummy*, which indicates the equity component of the CEO's compensation increased in the year of the announcement, and the two interactions of this variable with the dummy variables indicating all-stock deals and mixed deals, respectively. The regressions also include the control variables used in Table 2 and *Relative size*, the deal value divided by the MVE of the acquiring firm. Industry and year fixed effects are included, and standard errors are clustered at the firm level. *t-statistics* are presented in parentheses, and *, **, and *** denote significance at the 10%, 5% and 1% levels, respectively.