Using transactions generally overlooked in the compensation literature—joint ventures, strategic alliances, seasoned equity offerings (SEOs), and spin-offs—we find that, beyond compensation for increases in firm size or complexity, chief executive officers (CEOs) are rewarded for their deal-making activities. Boards pay CEOs for the core motivation of the deal, as well as for deal volume. We find that compensating for volume instead of core value creation occurs under weak board monitoring and that in deal-making firms, neither CEO turnover nor pay-for-performance responds to underperformance. We introduce an input monitoring explanation for these results: boards compensate for deal volume because of their inability to perfectly monitor outputs.

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1. Introduction

Absent moral hazard problems of the types described by Hölmstrom (1979) and others, chief executive officers (CEOs) should only implement deals that enhance their firms’ values, which implies that deals are a logical assessment tool for boards’ compensation decisions. However, in the presence of moral hazard, boards need to consider whether this assessment tool reflects suitable incentives for CEOs to choose activities that increase shareholder wealth.

Important evidenceexists on this issue as previous research (e.g., Harford and Li, 2007; Grinstein and Hribar, 2004; Bliss and Rosen, 2001) shows that acquiring CEOs are rewarded for mergers, even if the transactions are not successful. Yet, it is unclear whether acquiring CEOs are being paid for the deal itself or for possible by-products of the acquisition such as increases in firm size or complexity. We address this question by examining other types of deal-making activity [e.g., joint ventures, strategic alliances, seasoned equity offerings (SEOs), and spin-off deals] that are not generally subject to changing size and complexity. In particular, we study the specific motivations for executing those deals and their relation to market expectations and CEO compensation.

We first evaluate whether boards of directors appear to consider deal activity when structuring their CEOs’ pay. Using compensation committee reports from 400 randomly selected deal-making firms and 400 randomly selected non-deal-making firms, we tally reasons the committees give for their decisions. Consistent with previous research (Bizjak, Lemmon, and Naveen, 2008; Bizjak, Lemmon, and Nguyen, 2011; Faulkender and Yang, 2010), we find that across all firms in the random samples the two most common types of explanations involve firm performance and benchmarking the CEO’s compensation to peer firms’ compensation. However, by separating the explanations between deal-making and non-deal-making firms, we find striking differences. For example, performance-based justifications are mentioned significantly less often in the reports of deal-making firms. Instead, the boards of these companies cite their CEOs’ deal-making activities or leadership skills to explain their compensation decisions, implying that CEOs are rewarded, at least in part, on the basis of entering deals. These results suggest that deal making itself is an important component of the board’s compensation decision.

Using different multivariate specifications in a large sample of 11,815 firm-year observations, we find that changes in CEO compensation are significantly related to the CEOs’ deal-making activities. In fact, a CEO who initiates a joint venture, strategic alliance, SEO, or spin-off receives an additional $400,000 in total compensation, on average. One possible explanation for these results is that deal-making CEOs are systematically different from CEOs not undertaking such activities. To consider this alternative explanation for our results, we conduct a matched-firm difference-in-differences (diff-in-diff) analysis that accounts for systematic variations between deal-making and non-deal-making firms and is robust to controls for merger activity and other determinants of CEO compensation (such as changes in firm size and complexity). Consistent with our initial findings, this analysis indicates that greater CEO pay changes are associated with specific deals, thus supporting the hypothesis that boards consider CEO deal-making in their compensation decisions.

We next consider whether the pay raises to deal-making CEOs are linked to firm performance. Pay-for-performance sensitivity (PPS) analyses show that compensation for deal-making CEOs is markedly sensitive to good performance but apparently insensitive to bad performance. This analysis suggests that deal-making activities insulate CEOs from poor performance and that CEO wealth can increase even under apparent poor deal decisions.

These results are puzzling in that CEOs appear to be rewarded for deals regardless of performance. One potential explanation for these findings derives from economic theory that proposes an alternative method to provide incentives to agents such as firm managers—monitoring their observable inputs. Specifically, Khalil and Lawarrée (1995) and Raith (2008) theorize that principals (such as boards of directors) can base the compensation of agents (such as CEOs) on input or output monitoring. Their theories posit that, while monitoring observable outputs (such as firm performance) is the dominant strategy to incentivize agents, it could be optimal in some situations to consider observable inputs to the agents’ tasks (e.g., Lazear and Rosen, 1981; Lazear, 2000; Raith, 2008; Zhao, 2008). For example, Raith (2008) argues that a combination of input and output monitoring can result in optimal incentives, particularly in cases in which the output measure is not perfectly observable, is noisy, or is confounded by other events. However, Lazear and Rosen note that basing compensation on inputs with less than perfect monitoring could invite moral hazard. Similarly, Zhao’s model implies that when the principal must rely on inputs as a proxy for an agent’s efforts, moral hazard could arise if the agent directs attention toward the satisfaction of the input measure instead of toward the task’s success. Basing empirical tests on this premise, we examine whether CEO incentives to enter into deals could develop because the deal-making activity itself changes their risk of termination. We find this to be the case in that deal making appears to curtail the inverse firm performance-CEO turnover relationship shown in earlier studies (e.g., Weisbach, 1988; Parrino, 1997a). Thus, deal making can insulate CEOs from the risk of being fired for poor performance.

We next examine each of our specific deal types following the academic literature for the type of deal (i.e., joint ventures, strategic alliances, SEOs, and spin-offs). We test whether specific deal features are more likely to elicit a pay increase. That is, we consider the motivation for the deal. Because our tests indicate that deal making can insulate CEO pay from poor performance as well as insulate some poorly performing CEOs from losing their jobs, we evaluate whether the motivation for each deal type is more consistent with this insulating motivation, which would be empire building, or whether the motivation for the deal
appears to be more consistent with a core (organic) growth motivation. The results of these tests show that CEOs receive pay increases for deals that are expected to create value (as proxied by the market reaction to their announcements). However, we also find that some CEOs receive significant pay raises for deals that are not met with positive market reactions, on average. Further, these deals are often related to insulating or empire building motives and a lack of organic growth (such as a diversifying joint venture or an SEO that raises cash for a future acquisition or capital expenditure). The end result is that some CEOs receive pay raises for doing deals (deal volume) irrespective of whether the transactions are expected to improve firm value. In sum, our evidence on CEO pay raises for deals associated with empire building or a lack of organic firm growth, together with our pay-for-performance sensitivity and turnover results, suggests that using deal making as a contractible measure to set executive pay has the potential to trigger agency problems.

To uncover the mechanism that would allow a CEO to persist in empire-building deals that are detrimental to shareholders, we consider the quality of the board’s monitoring of the CEO. Theoretical work by Hermalin and Weisbach (1998) and Harris and Raviv (2008) argues that, in some cases, a firm’s board of directors could be too weak to effectively monitor the CEO.5 In line with this argument, we find that firms exhibiting potentially weaker board monitoring are more likely to execute non-value-increasing or insulating deals and more likely to issue higher pay raises and give more perks to their deal-making CEOs. Overall, our results support the deal-making hypothesis: For some firms, compensation for deals is simply pay for activity. Further, we find that this agency problem manifests in firms with weak board oversight.

Our work contributes to the literature regarding the alignment of managerial incentives with those of shareholders. We help complete this literature by examining how the dynamic setting of a given deal affects the compensation of the CEO under weak board monitoring.6 Moreover, by showing deal-making CEOs’ asymmetric exposure to performance, our paper complements the Garvey and Milbourn (2006) general finding of asymmetric benchmarking in CEO compensation.

Our work also contributes to the literature that examines the link between increasing CEO pay and acquisitions (e.g., Harford and Li, 2007; Grinstein and Hribar, 2004; and Bliss and Rosen, 2001). Our paper differs from this literature in several important dimensions. First, we focus on the broader questions of whether deal making in general affects CEO compensation, as our deal types diverge from mergers in terms of both motivation and payoffs. Given the results in the merger literature, it is not ex-ante obvious that other corporate deals have a material effect on CEO compensation or that CEO pay will rise or fall with the success or failure of these activities. Second, because CEO pay is increasing in firm size (e.g., Murphy, 1999) and in firm complexity (e.g., Duru and Reeb, 2002), the possibility exists that increases in pay upon acquisitions are more closely related to increases in firm size or complexity than to deal activity per se. In contrast, we study how CEO pay is affected by deals that do not change the size of the firm (e.g., strategic alliances) or deals that often reduce both the size of the firm and its complexity (e.g., spin-offs). We find that, even in these types of deals, CEO pay is increasing in the activity. In this vein, our study also contributes to the policy debate on the effectiveness of CEO compensation as outlined by Faulkender, Kadyrzhanov, Prabhala, and Senbet (2010).7

The paper proceeds as follows. In Section 2 we discuss the transactions used to study deal-making. We describe our data in Section 3 and present the empirical analyses in Sections 4–7. In Section 8 we provide our conclusions.

2. Deal-making activities

We address our research questions by examining four types of deal-making activities: joint ventures, strategic alliances, SEOs, and spin-offs. A joint venture is an entity formed between two or more parties to undertake economic activity together. The parties agree to create the new entity by contributing equity and then sharing in the revenues, expenses, and control of the enterprise. The entity can be established as a partnership, a corporation, or any other form of business organization the participating firms choose. The venture can be for one specific project or a continuing business relation. Our second type of deal is a strategic alliance, which is a relation between two or more parties to pursue collaboration to achieve a synergy in which the benefits are greater than those from individual efforts. In contrast with many joint ventures, strategic alliances do not form an independent entity (although in some alliances one partner takes an equity stake in the other).

The third type of deal we study is a seasoned equity offering, that is, the issuance of new shares by a firm that is already publicly traded. Although some could maintain that these issues are a financing decision, not an investment decision, we argue that the rationales behind these decisions are more consistent with deal-making activities.

Finally, we examine spin-offs. A spin-off occurs when a corporation divests a division or subsidiary by issuing shares in a new firm to the parent corporation’s shareholders. At the time of the spin-off transaction, the shareholders of both the parent firm and the new spin-off firm

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5 Relatedly and in terms of economic theories on input monitoring, Prendergast (2002) theorizes that a principal unable to select the appropriate activities during uncertain economic conditions often delegates such responsibility to the agent. Goodhue and Simon (2004) predict that delegating the choice of the input to the agents, however, can lead to adverse selection.

6 That is, the empirical design of the previous research does not require a specific firm action in order to study the relation between CEO compensation and corporate governance. However, most papers in this area control for contemporaneous or lagged performance, or both. An incomplete list of work in this literature is Core, Holthausen, and Larcker (1999), Adams, Almeida, and Ferreira (2005), and Morse, Nanda, and Seru (2011).

7 This debate is extensive and includes a number of studies on both sides (see, for example, Murphy, 1999; Bebchuk and Fried, 2004; Bettis, Bizjak, and Lemmon, 2005; Kato, Lemmon, Luo, and Schallheim, 2005; Denis, Hanouna, and Sarin, 2006; and Bebchuk, Cremers, and Peyer, 2011).
are identical, but after the spin-off transaction the ownership can diverge. Typically, the parent firm transfers ownership in the new firm to its shareholders in the form of a pro-rata distribution, and the new firm continues the operations of the division or subsidiary under different senior management. In a pure and complete spin-off, the parent firm’s management gives up all control over the spun-off unit.

3. Data and sample characteristics

Our sample consists of firms executing one or more of the deal activities described in Section 2, between January 1, 1996 and December 31, 2006, and for which we are able to retrieve data on the deals from different parts of the Thomson Financial database.8 We identify US joint ventures and strategic alliances from the Securities Data Company (SDC) Platinum Joint Ventures/Alliances file,9 all US common stock secondary issuances from the SDC Platinum Global New Issues file, and spin-off transactions from the Mergers and Acquisitions file.

Each observation must have data on CEO total compensation (in the ExecuComp database) for the year preceding the year of, and the year after each deal type is undertaken.10 We also require that each firm has governance data in the RiskMetrics database and accounting and stock market data in the Compustat database and the Center for Research in Security Prices (CRSP) daily stock file, respectively. After excluding observations for which data are not available in these sources, our final deal-making sample consists of 4,990 observations: 510 joint ventures, 3,775 strategic alliances, 548 SEOs, and 157 spin-offs.

3.1. Temporal distribution of deals

Panel A of Table 1 shows that the temporal distribution of our sample varies by the type of deal. For example, the peak year for joint ventures is 1997, which contains the largest number of deals at 113 (22% of the total joint ventures), and the peak years for strategic alliances, SEOs, and spin-offs occur in 1999, 2002, and 2000, respectively. The smallest number of joint ventures, strategic alliances, and spin-offs takes place in the same year, 2004.

3.2. Full sample characteristics

We analyze our deal-making firms along with other companies that have complete compensation, governance, stock market, and accounting data from the sources described above. The full sample consists of 11,815 firm-year observations from 1996 to 2006. For these observations, we report sample statistics for key variables in Panel B of Table 1. The average firm in our sample has approximately $13.8 billion in assets. The average board consists of ten directors, 66% of whom are independent. These board statistics are comparable to those presented by Yermack (1996) and Coles, Daniel, and Naveen (2014).11 Classifying the outside directors into two different categories based on previous research, we find that 10% of the outside directors are busy directors, holding three or more outside directorships (as in Fich and Shivdasani, 2006) and 51%, on average, are hand-picked directors, those who are appointed while the current CEO is in office (as in Shivdasani and Yermack, 1999). In addition, Table 1 shows that over 68% of CEOs in our sample also chair their boards. CEOs in our sample receive an average total annual compensation of more than $2.8 million.

3.3. Market reactions to deal announcements

We estimate market reactions to the different types of deal announcements using a standard event-study methodology (Dodd and Warner, 1983) to compute market-adjusted abnormal returns (ARs) on the deal announcement date and the two days preceding and following the event.12 The results, reported in Panel C of Table 1, indicate that most events in general elicit little market reaction. We find that the overwhelming majority of market reactions to joint venture announcements (about 87%) are not significantly different from zero at conventional levels.13 These results suggest that either joint ventures are not expected to significantly affect shareholder wealth, on average, or that their effects are too small to capture with our methodology.

Market reactions to announcements of strategic alliances and SEOs are statistically significant, but economically small, on average, with reactions being positive for strategic alliances and negative for SEOs. In contrast, spin-offs are

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8 This sample period has the advantage of avoiding the financial crisis period.

9 We restrict our analyses to ventures and alliances with only two participants per deal, in which each party is a publicly traded US company. This restriction does not eliminate a large number of deals as 95% of all domestic joint ventures involve two participants.

10 To calculate total compensation, we use, among other things, the value of the options when granted instead of the option value realizations. The value of the options when granted measures what the board intends to pay its CEO and not what the executive gets from these awards. This distinction is important because executives often sacrifice a large portion of the Black-Scholes option value by exercising grants before maturity (see, for example, Huddart and Lang, 1996).

11 Classifying the outside directors into two different categories based on previous research, we find that 10% of the outside directors are busy directors, holding three or more outside directorships (as in Fich and Shivdasani, 2006) and 51%, on average, are hand-picked directors, those who are appointed while the current CEO is in office (as in Shivdasani and Yermack, 1999). In addition, Table 1 shows that over 68% of CEOs in our sample also chair their boards. CEOs in our sample receive an average total annual compensation of more than $2.8 million.

12 We examine each announcement to ensure that it is not contaminated by other major events, such as dividend or earnings announcements, executive resignations, patent approvals, or lawsuits, by searching the Lexis Nexis data retrieval system for contemporary news that could affect our sample firms and flag those with confounding events. Very few announcements of deal-making activities are confounded by other events. Further, our results are not sensitive to the inclusion or exclusion of the confounding announcement observations. The announcement returns are estimated over the (−2, +2) window immediately surrounding the announcement date. We compute continuously compounded daily abnormal returns (AR) and cumulative abnormal returns (CAR) as

\[
AR_t = \ln(1 + RET_t) - \ln(1 + VWRETD_t)
\]

\[
CAR = \sum_{t=-2, +2} AR_t
\]

where \(RET\) and \(VWRETD\) are the daily stock and CRSP value-weighted index holding period returns, respectively.

13 We determine the significance of each observation’s CAR by computing the Patell (1976) test statistic.
Our sample consists of firms executing one or more joint venture, strategic alliance, seasoned equity offering, or spin-off deals. Data on these deals are collected from the Thomson Financial database, from January 1, 1996 to December 31, 2006. We require that each observation has complete governance, compensation, stock market, and accounting data from RiskMetrics (Investor Responsibility Research Center), ExecuComp, Center for Research in Security Prices, and Compustat, respectively. Panel A provides the sample's temporal distribution and the relative incidence of each deal type by year. Panel B presents sample statistics for key variables using our sample of Execucomp firms consisting of 11,815 firm-year observations with complete governance, stock market, and accounting data. Firm size is total assets in billions of dollars (Compustat item AT). Profit margin and return on assets are operating income before depreciation (Compustat item OIBDP) scaled by net sales (Compustat item SALE) and the book value of total assets (Compustat item AT), respectively. Stock return is the continuously compounded raw stock return for the 250 trading days ending at the fiscal year-end. CEO-Chairman indicates whether the chief executive officer (CEO) is also chairman of the board. Board size is the number of directors on the company's board of directors. Percent independent directors is the percentage of the board that is composed of directors who are not relatives of corporate officers, do not have a business relationship with the firm, and are those whose board seat is their only link with the firm. Percent hand-picked directors follows Shivdasani and Yermack (1999) and Coles, Daniel, and Naveen (2014) and represents the percentage of the board's outside directors appointed while the current CEO is in office. Percent busy directors follows Fich and Shivdasani (2006) and represents the percentage of the board's outside directors who hold three or more outside directorships. Total Pay is the sum of salary, bonus, stock option, restricted stock, and perquisite compensation in thousands of dollars. Age, ownership, and tenure are the age, common stock ownership, and tenure of the CEO, respectively. Panel C reports investor reactions arising from announcements of deals for our sample firms. We search the Lexis Nexis data retrieval system for contemporary news that could affect our sample firms and eliminate observations that could be contaminated by other major events such as dividend or earning announcements, executive resignations, patent approvals, or lawsuit filings. We use the standard event-study methodology (Dodd and Warner, 1983) to compute abnormal returns (ARs) for the announcement date of the deal and for the two days preceding and following the event. We also report two-stage cumulative abnormal returns (CARs) following Shivdasani and Yermack (1999). We report a two-tailed student's $t$-statistic (Wilcoxon signed rank Z-statistic) as a parametric (nonparametric) way to assess the statistical significance of the mean (median) CARs.

Panel A: Temporal distribution by deal type

<table>
<thead>
<tr>
<th>Year</th>
<th>Joint ventures Count</th>
<th>Joint ventures Percent of Sample</th>
<th>Strategic alliances Count</th>
<th>Strategic alliances Percent of Sample</th>
<th>Seasoned equity offerings Count</th>
<th>Seasoned equity offerings Percent of Sample</th>
<th>Spin-offs Count</th>
<th>Spin-offs Percent of Sample</th>
<th>All deals Count</th>
<th>All deals Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>67</td>
<td>19.65</td>
<td>243</td>
<td>71.26</td>
<td>23</td>
<td>6.74</td>
<td>8</td>
<td>2.35</td>
<td>341</td>
<td>100.00</td>
</tr>
<tr>
<td>1997</td>
<td>113</td>
<td>17.33</td>
<td>490</td>
<td>75.15</td>
<td>33</td>
<td>5.06</td>
<td>16</td>
<td>2.45</td>
<td>652</td>
<td>100.00</td>
</tr>
<tr>
<td>1998</td>
<td>65</td>
<td>10.06</td>
<td>521</td>
<td>80.65</td>
<td>42</td>
<td>6.50</td>
<td>18</td>
<td>2.79</td>
<td>646</td>
<td>100.00</td>
</tr>
<tr>
<td>1999</td>
<td>42</td>
<td>5.91</td>
<td>593</td>
<td>83.40</td>
<td>51</td>
<td>7.17</td>
<td>25</td>
<td>3.52</td>
<td>711</td>
<td>100.00</td>
</tr>
<tr>
<td>2000</td>
<td>82</td>
<td>15.56</td>
<td>352</td>
<td>66.79</td>
<td>53</td>
<td>10.06</td>
<td>40</td>
<td>7.59</td>
<td>527</td>
<td>100.00</td>
</tr>
<tr>
<td>2001</td>
<td>33</td>
<td>5.65</td>
<td>249</td>
<td>72.81</td>
<td>51</td>
<td>14.91</td>
<td>9</td>
<td>2.83</td>
<td>342</td>
<td>100.00</td>
</tr>
<tr>
<td>2002</td>
<td>23</td>
<td>4.08</td>
<td>222</td>
<td>66.87</td>
<td>75</td>
<td>22.59</td>
<td>12</td>
<td>3.61</td>
<td>332</td>
<td>100.00</td>
</tr>
<tr>
<td>2003</td>
<td>15</td>
<td>3.47</td>
<td>202</td>
<td>70.14</td>
<td>73</td>
<td>25.35</td>
<td>3</td>
<td>1.04</td>
<td>288</td>
<td>100.00</td>
</tr>
<tr>
<td>2004</td>
<td>10</td>
<td>7.04</td>
<td>334</td>
<td>81.07</td>
<td>38</td>
<td>9.22</td>
<td>11</td>
<td>2.67</td>
<td>412</td>
<td>100.00</td>
</tr>
<tr>
<td>2005</td>
<td>29</td>
<td>10.22</td>
<td>3,775</td>
<td>75.65</td>
<td>548</td>
<td>10.98</td>
<td>157</td>
<td>3.15</td>
<td>4,990</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Panel B: Sample statistics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Median</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Characteristics ($t−1$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Size (billions of dollars)</td>
<td>13.76</td>
<td>62.00</td>
<td>0.02</td>
<td>1.94</td>
<td>1,494.04</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>15.98%</td>
<td>161.84%</td>
<td>-13,498.74%</td>
<td>16.08%</td>
<td>97.84%</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>13.98%</td>
<td>9.29%</td>
<td>-131.92%</td>
<td>13.33%</td>
<td>96.51%</td>
</tr>
<tr>
<td>Stock Return</td>
<td>8.01%</td>
<td>51.35%</td>
<td>-96.83%</td>
<td>10.94%</td>
<td>1,397.81%</td>
</tr>
<tr>
<td>Governance Characteristics ($t−1$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board Size</td>
<td>9.86</td>
<td>2.90</td>
<td>3.00</td>
<td>9.00</td>
<td>39.00</td>
</tr>
<tr>
<td>Percent Independent Directors</td>
<td>66.17%</td>
<td>17.10%</td>
<td>7.69%</td>
<td>66.67%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Percent Busy Independent Directors</td>
<td>10.37%</td>
<td>15.60%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Percent Hand-Picked Independent Directors</td>
<td>51.03%</td>
<td>35.77%</td>
<td>0.00%</td>
<td>50.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Dual Role of Chairman and CEO</td>
<td>67.70%</td>
<td>46.76%</td>
<td>0.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>CEO characteristics ($t$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Compensation</td>
<td>5,443.66</td>
<td>10,824.45</td>
<td>0.00</td>
<td>2,842.97</td>
<td>600,347.35</td>
</tr>
<tr>
<td>Age</td>
<td>56.27</td>
<td>7.27</td>
<td>32.00</td>
<td>56.00</td>
<td>91.00</td>
</tr>
<tr>
<td>Ownership (percent of common)</td>
<td>2.09%</td>
<td>5.75%</td>
<td>0.00%</td>
<td>0.07%</td>
<td>58.29%</td>
</tr>
<tr>
<td>Tenure (years)</td>
<td>7.71</td>
<td>7.28</td>
<td>0.00</td>
<td>5.50</td>
<td>55.75</td>
</tr>
</tbody>
</table>

Panel C: Cumulative abnormal returns at deal announcement

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean CARs</th>
<th>Median CARs</th>
<th>Market-adjusted CARs</th>
<th>Mean CARs</th>
<th>Median CARs</th>
<th>Two-stage CARs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint ventures</td>
<td>0.27% (0.23)</td>
<td>0.25% (0.36)</td>
<td>0.01% (0.08)</td>
<td>0.34% (0.41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic alliances</td>
<td>0.19% (0.04)</td>
<td>0.12% (0.02)</td>
<td>1.05% (0.21)</td>
<td>0.24% (0.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seasoned equity offerings</td>
<td>−0.50% (0.09)</td>
<td>−0.95% (0.00)</td>
<td>−0.61% (0.06)</td>
<td>−1.00% (0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spin-offs</td>
<td>1.79% (0.01)</td>
<td>1.80% (0.00)</td>
<td>1.85% (0.01)</td>
<td>1.91% (0.00)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
met with positive market reactions that are both economically and statistically significant.

These generally small market reactions could be due to deal anticipation by market participants.\footnote{There could be alternative explanations for the muted reactions we estimate. For example, the market reactions we estimate could fail to capture the long-term performance associated with the deals we study. That is, the deals could be value-increasing, on average, but the market could under react to their announcements. Under these circumstances, one would expect the long-run performance of deal-making firms to improve. To consider this possibility, we employ the methodology used in Baker and Savasoglu (2002) and construct equal- and value-weighted portfolios of all deal-making companies and of all other Execucomp firms tracking their monthly performance. We benchmark these portfolios by the Fama and French (1992) and Carhart (1997) four-factors. Overall, we find that the monthly alphas associated with the portfolios of deal-making companies yield statistically insignificant coefficients. The monthly alphas related to the portfolios of non-deal-making firms are also insignificant. These findings are in line with those in the event study analyses reported in Panel C of Table 1.} To incorporate the probability of a potential deal on firm value, we perform a two-stage cumulative abnormal return (CAR) analysis similar to that in Shivdasani and Yermack (1999).\footnote{In the first stage, we estimate the probability that a specific deal occurs. We use our entire sample of 11,815 firm-year observations in these tests. We use these probabilities to adjust the CARs we test the following hypotheses in which the justification would include a deal-making activity.}

We report the two-stage CARs estimation in the last two columns of Panel C in Table 1. The results suggest that the average CARs are not biased by anticipation. Consequently, in the analyses that follow we use the standard CARs.

4. CEO compensation and deal-making activities

We examine whether boards appear to consider a CEO’s deal-making activities (i.e., joint ventures, strategic alliances, SEOs, and spin-offs) in their CEO pay decisions. To do so, we begin by studying the compensation committee disclosures reported by deal-making and non-deal-making firms in their proxy statement filings with the Securities and Exchange Commission (SEC). Next, we test whether pay increases are related to the CEOs’ deal-making activities in general and whether deal-making firms are systematically different from non-deal-making firms. We then evaluate the sensitivity of pay-for-performance for deal-making and non-deal-making CEOs.

4.1. Analysis of compensation committee reports

We examine the justifications reported by the board compensation committees to determine the proportion, $p$, which includes references to deal-making activity. That is, we test the following hypotheses in which the justification would include a deal-making activity.

\[
\begin{align*}
H_0: \text{Justification for pay raise is not cited by the compensation committee; } p &= 0. \\
H_A: \text{Justification for pay raise is cited by the compensation committee; } p \neq 0.
\end{align*}
\]

In general, the results in Panel C of Table 1 suggest that the average announcements for the CEO deal-making activities of joint ventures and SEOs do not indicate that the prospects for these deals are expected by the market to be significantly value-increasing. The average effects for strategic alliances appear to be slightly value-increasing, and the average announcements for spin-offs appear to be value-increasing from the market’s perspective.

Because of the very large size of our data set (11,815 firm-year observations), we use sampling theory to devise a sample of firms in which to examine the individual board committee justifications in the SEC filings. According to sampling theory, using 384 random observations should yield reliable estimates. Therefore, we collect data from 400 randomly selected compensation reports for our deal-making firms and similar data from 400 randomly selected reports for non-deal-making companies.\footnote{According to Cochran (1963, p. 75), sampling theory shows that if the proportion, $p$, is known for a population, then the sample size required to achieve an estimate of the mean value in the sample with a confidence level, $\alpha$, and a desired level of precision, $e$, would be given by

\[
n = \left( \frac{2z_{\alpha/2}}{e} \right)^2 p(1-p).
\]

However, if the proportion, $p$, is not known, Cochran (1963) notes that letting $p=0.50$ yields the most conservative sample size estimate. Setting $p=0.50$, $\alpha=0.05$, and the margin of error (precision) to $\pm 5\%$ produces the following estimate of the required sample size:

\[
n = \left( \frac{2 \times 1.96}{0.10} \right)^2 0.50(1-0.50) = 384.
\]}

To classify the factors boards consider in making their pay decisions, for each of the 800 observations, we read the section titled “Chief Executive Officer Compensation” in the corporate proxy statement filed by each firm with the SEC. This procedure is similar to that in Perry and Zenner (2001) and Bizjak, Lemmon, and Naveen (2008).

Table 2 reports the reasons cited by the compensation committees to explain CEO pay increases. In our sample of 400 compensation committee reports for deal-making firms, we find 104 cases (26\%) in which boards explicitly cite the joint venture, strategic alliance, SEO, or spin-off executed under the CEO’s direction. This incidence is comparable to the Perry and Zenner (2001) finding that 31\% of compensation committees cite “individual business
In this table we analyze the justifications given by the compensation committees that authorize CEO pay raises for 400 deal-making and 400 non-deal-making firms from the sample of 11,815 firm-year observations described in the legend accompanying Table 1. For each observation, we review the section titled "Chief Executive Officer Compensation" contained in the compensation discussion and analysis section of corporate proxy statements filed by each company with the Securities and Exchange Commission (SEC). We tabulate the reasons cited for pay increases for the chief executive officer. Deal-Making indicates that the compensation committee has explicitly cited a joint venture, strategic alliance, seasoned equity offering, or a spin-off as reason for the pay raise. Integration of Prior Merger indicates compensation for integrating/completing an acquisition that occurs in a prior fiscal year. Current Operating Performance and Prior Operating Performance indicate the committee has cited financial measures such as net income, earnings per share (EPS), return on assets (ROA), return on equity (ROE), economic value added (EVA), cash flow, etc., in either the current or prior fiscal year, respectively, as a reason. Shareholder Returns refers to raw stock returns, relative stock return performance, or an increase in the market capitalization of the firm. Growth indicates references to organic growth, revenue growth, growth initiatives, etc. Benchmarks to Peer Group indicates that the firm states that it sets CEO compensation, at least in part, relative to a peer group of firms. Leadership indicates references to the CEO’s leadership, vision, or management. Personal Goals indicates references to individual performance, personal goals, or personal contributions, and a Level of Responsibility reference states that the pay raise is commensurate with the duties or responsibilities of the CEO. Compensation Contract Renegotiation references newly amended compensation contracts, special bonus or grants of stock and options for retention purposes, adjustments for pay cycles, etc. Newly Hired CEO indicates the initiation of a compensation contract for a newly hired outside CEO or the promotion of a junior officer to that position. Differences in proportions are presented with p-values indicated by a chi-square test.

<table>
<thead>
<tr>
<th>Justification for pay</th>
<th>All observations</th>
<th>Deal firms</th>
<th>Non-deal firms</th>
<th>Difference in proportion</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
</tr>
<tr>
<td>Activity measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deal-Making</td>
<td>104</td>
<td>13.00</td>
<td>104</td>
<td>26.00</td>
<td>0</td>
</tr>
<tr>
<td>Integration of Prior Merger</td>
<td>25</td>
<td>3.13</td>
<td>14</td>
<td>3.50</td>
<td>11</td>
</tr>
<tr>
<td>Benchmarks to Peer Group</td>
<td>703</td>
<td>87.88</td>
<td>355</td>
<td>88.75</td>
<td>348</td>
</tr>
<tr>
<td>Financial performance measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Operating Performance</td>
<td>587</td>
<td>73.38</td>
<td>239</td>
<td>59.75</td>
<td>348</td>
</tr>
<tr>
<td>Prior Operating Performance</td>
<td>45</td>
<td>5.63</td>
<td>9</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td>Shareholder Returns</td>
<td>164</td>
<td>20.50</td>
<td>58</td>
<td>14.50</td>
<td>106</td>
</tr>
<tr>
<td>Growth</td>
<td>145</td>
<td>18.13</td>
<td>40</td>
<td>10.00</td>
<td>105</td>
</tr>
<tr>
<td>Non-financial performance measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>176</td>
<td>22.00</td>
<td>128</td>
<td>32.00</td>
<td>48</td>
</tr>
<tr>
<td>Personal Goals</td>
<td>88</td>
<td>11.00</td>
<td>43</td>
<td>10.75</td>
<td>45</td>
</tr>
<tr>
<td>Level of Responsibility</td>
<td>46</td>
<td>5.75</td>
<td>29</td>
<td>7.25</td>
<td>17</td>
</tr>
<tr>
<td>Compensation Contract Renegotiation</td>
<td>98</td>
<td>12.25</td>
<td>42</td>
<td>10.50</td>
<td>56</td>
</tr>
<tr>
<td>Newly Hired CEO</td>
<td>125</td>
<td>15.63</td>
<td>57</td>
<td>14.25</td>
<td>68</td>
</tr>
<tr>
<td>Number of committee reports</td>
<td></td>
<td></td>
<td>800</td>
<td></td>
<td>400</td>
</tr>
</tbody>
</table>

For the entire sample of 800 reports, 703 (or almost 88%) of the board compensation committees benchmark their CEO’s compensation to CEO pay at peer firms. This incidence is similar to those reported in Bizjak, Lemmon, and Naveen (2008) and Faulkender and Yang (2010).17 In a sample of 100 randomly selected reports from the 1997 proxy season, Bizjak, Lemmon, and Naveen (2008) find that 96 firms benchmark their CEO’s pay to peer companies. In a larger sample of reports from Standard & Poor’s (S&P) 500 and S&P Midcap 400 firms (for the fiscal year ending between December 2006 and November 2007), Faulkender and Yang (2010) find that 657 (73%) disclose an explicit list of peer firms that the filing companies use to benchmark their CEO’s pay.
non-deal-making firms should be interpreted with caution. The proportion of deal-makers in the general population of firms most likely differs from our 50–50 matching sample.)

In sum, the analysis of compensation committee reports indicates that in setting CEO compensation, boards of deal-making firms (in comparison with boards of non-deal-making firms) appear to consider the deal-making activity of their CEOs and are less likely to cite reliance on performance-based measures. The Appendix presents selected passages from compensation committee reports, which further illustrate how corporate boards use deal making to explain pay increases for their CEOs.

4.2. Compensation regressions

In this subsection we test whether CEOs experience significant changes in their total pay as a result of their deal making. In Models 1 and 2 of Table 3, we estimate regressions in which the dependent variable is the change in total CEO compensation. The key independent variable, which we define as the deal-making indicator, aggregates across the deal types and is, therefore, set to “one” if the firm executes a joint venture, strategic alliance, SEO, or spin-off. The indicator is set to zero otherwise. We run the regressions over our complete sample of 11,815 firm-year observations. Model 2 of Table 3 includes controls for stock price performance, operating performance, CEO characteristics (age, ownership, and tenure), contemporaneous mergers and acquisitions (M&A) activity, changes in firm size, and changes in firm complexity. In each model, we cluster the standard errors at the firm level to account for potential serial correlation in the residuals, which could bias the test statistics (Petersen, 2009). The results of the first two regressions in Table 3 show that engaging in a deal is associated with higher CEO pay, which suggests that boards of directors consider deal-making activities in their compensation decisions, consistent with our results from the compensation committee reports. The coefficient for the deal-making indicator in Model 2 of the table implies that a CEO who initiates a deal gets an additional $400,000 in total pay during the year of the deal, which is statistically significant beyond the 1% level. Further, the merger indicator shows that deal making in terms of joint ventures, strategic alliances, seasoned equity offerings, and spin-offs is associated with rewards to CEOs separate from those received from engaging in mergers and acquisitions. The positive and significant coefficient on the merger indicator is consistent with the results of Grinstein and Hribar (2004) and Harford and Li (2007). We also find that firms that increase in size over the year have higher increases in compensation, but that the coefficient on the deal-making activity indicator is still positive and significant. Firm size is important in that, according to the estimates, a 1 standard deviation change in firm size increases total compensation by about $282,000 dollars.

4.2.1. Potential alternative explanations: increasing firm size or complexity drives the results

The results in the first two regressions of Table 3 suggest that board compensation committees use deal making in determining CEO pay raises. This evidence is consistent with the hypothesis that CEOs who engage in deals (i.e., joint ventures, strategic alliances, SEOs, and spin-offs) receive pay raises related to their undertaking of these activities. Similarly, Grinstein and Hribar (2004), Harford and Li (2007), and Bliss and Rosen (2001) find that CEOs of acquiring firms experience increases in compensation during the year of a merger.

The compensation increases shown in Table 3 (and those shown in the M&A literature cited above) could occur because the deals increase firm size, which, in turn, enables CEOs to command higher levels of compensation. Although joint ventures and strategic alliances do not increase firm size, as do SEOs or mergers, they do provide the CEO with some control over a larger set of assets. This could be viewed as effectively increasing firm size, resulting in a rationale in and of itself for greater pay. However, our fourth type of deal, a spin-off, does not suffer from this alternative hypothesis as firms that undergo a spin-off typically experience a reduction in size after spinning off one or more of its divisions. Nevertheless, in all subsequent multivariate tests we control for the change in the firms’ assets, which is a commonly used proxy for firm size. Moreover, in unreported tests, we replace assets with the firms’ total capital or the firms’ net sales to assess the robustness of our findings.

A further issue of potential concern is that deals such as joint ventures or strategic alliances could provide additional effective diversification for the firm or alter the organizational complexity of the company. Hence, the pay raise shown for deal-making CEOs could be due to the diversifying or complexity changing effect deals have on the firm. Indeed, previous research finds that managerial pay or incentive-based compensation is increasing in these firm attributes (Rose and Shepard, 1997; Duru and Reeb, 2002) and pay-for-performance sensitivity decreasing (Anderson, Bates, Bizjak, and Lemmon, 2000). However, SEOs and spin-offs are unlikely to either diversify the firm or make the organization more complex. Nonetheless, to address this issue our multivariate analyses control for the change in the firm’s entropy using the measure proposed

---

18 All tests control for industry [48 industries by Fama and French (1997)] and calendar year fixed effects. The year effects are potentially important in our analyses because they enable us to control for (and identify) the influence of events and structural shocks (such as the passing of the Sarbanes-Oxley Act in 2002) that likely affected both firm performance and managerial compensation in public companies.

19 Petersen (2009) notes that clustered standard errors are unbiased as they account for the residual dependence created by the firm effect. He argues that because the clustered standard error places no restriction on the correlation structure of the residuals within a cluster, its consistency depends on having a sufficient number of clusters.

20 Academic studies provide explanations for why shareholders might pay CEOs according to the size of the firm [see, for example, Murphy and Zábojník (2004) and Gabai and Landier (2008)].

21 Total capital adds the market value of the firm’s equity, book value, long-term debt, and an estimated market value of preferred stock. We calculate the market value of preferred stock by dividing preferred dividends over the prevailing yield on Moody’s index of high-grade industrial preferred stock.
Table 3
Deal-making activity and chief executive officer (CEO) compensation.

In this table we analyze all of the firms in the ExecuComp database consisting of 11,815 firm-year observations with complete governance, stock-market, and accounting data from 1996 to 2006. In Models 1 and 2 we estimate CEO-compensation regressions using the change in total pay as the dependent variable. The key independent variable in each of these regressions is a Deal-Making Activity indicator that is “one” if the firm is involved in a joint venture, strategic alliance, seasoned equity offering, or Spin-off during the year and is “zero” otherwise. In Models 3 and 4, we conduct a matched-firm difference-in-differences (diff-in-diff) analysis. To be included in this analysis, each firm must not have completed a deal in the prior year. The dependent variable in these models is the matched-firm excess total pay, where excess total pay is defined as CEO compensation net of the benchmark level of compensation defined by a size, industry, and pre-event total pay matched control firm. The \( \Delta \text{Time} (t, 1) \) indicator denotes the deal-making year. In the regressions, the estimate for the deal-making indicator should be interpreted as the amount that deal-making CEOs are paid relative to non-deal-making CEOs, absent doing a deal. The estimate for the \( \Delta \text{Time} (t, 1) \) indicator reflects the annual compensation increases expected for all CEOs. The interaction of these two is the amount of excess pay attributable to doing a deal. In Models 5 and 6, we conduct pay-for-performance sensitivity (PPS) regressions with the natural logarithm (log) of Total Pay as the dependent variable and the interaction of Stock Returns and Deal-Making Firm (0, 1) as the key independent variable. Model 5 is run on only those observations in which Stock Return is greater than zero and Model 6 is run on only those observations in which it is less than or equal to zero. M&A Activity denotes whether the firm acquired another during the fiscal year. ΔComplexity is the change in the entropy measure of the firm’s business segments from the prior fiscal year to the current fiscal year and is computed as in Bushman, Indjejikian, and Smith (1995). ΔFirm Size is the dollar (in billions) change in firm size from the prior fiscal year to the current fiscal year. In addition, Models 2 and 4–6 control for CEO Age, CEO Ownership, CEO Tenure, Firm Size, Return on Assets (ROA), ROA Growth, Profit Margin, Margin Growth, and Stock Return, all of which are defined in Table 1. For each model, we report \( p \)-values using robust firm-clustered standard errors. Further, \( p \)-values in Models 3 and 4 are computed using bootstrapped standard errors to correct for overlapping observation windows. All models include industry and calendar year fixed effects.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \text{Total Pay} )</td>
<td>Estimate</td>
<td>( p )-Value</td>
<td>Estimate</td>
<td>( p )-Value</td>
<td>Estimate</td>
<td>( p )-Value</td>
</tr>
<tr>
<td>Intercept</td>
<td>625.36</td>
<td>0.23</td>
<td>305.96</td>
<td>0.60</td>
<td>29.55</td>
<td>0.66</td>
</tr>
<tr>
<td>Deal-Making Activity (0, 1)</td>
<td>463.35</td>
<td>0.00</td>
<td>398.86</td>
<td>0.00</td>
<td>21.25</td>
<td>0.46</td>
</tr>
<tr>
<td>Deal-Making × ( \Delta \text{Time} (t, 1) )</td>
<td>1,240.33</td>
<td>0.00</td>
<td>1,277.60</td>
<td>0.00</td>
<td>(-13.50)</td>
<td>0.90</td>
</tr>
<tr>
<td>( \Delta \text{Firm Size} (t) )</td>
<td>21.42</td>
<td>0.02</td>
<td>21.42</td>
<td>0.02</td>
<td>(-1.01)</td>
<td>0.93</td>
</tr>
<tr>
<td>M&amp;A Activity (0, 1)</td>
<td>414.25</td>
<td>0.07</td>
<td>299.79</td>
<td>0.08</td>
<td>20.85</td>
<td>0.02</td>
</tr>
<tr>
<td>ΔComplexity (t)–(t–1)</td>
<td>(-250.16)</td>
<td>0.18</td>
<td>(-196.57)</td>
<td>0.42</td>
<td>(-0.002)</td>
<td>0.96</td>
</tr>
<tr>
<td>ΔFirm Size (t)–(t–1)</td>
<td>21.42</td>
<td>0.02</td>
<td>(-1.01)</td>
<td>0.93</td>
<td>(-0.000)</td>
<td>0.96</td>
</tr>
<tr>
<td>Firm Size (t–1)</td>
<td>4.92</td>
<td>0.70</td>
<td>4.92</td>
<td>0.70</td>
<td>(-0.038)</td>
<td>0.00</td>
</tr>
<tr>
<td>Return on Assets (t–1)</td>
<td>(-232.44)</td>
<td>0.63</td>
<td>(-232.86)</td>
<td>0.05</td>
<td>(-232.86)</td>
<td>0.05</td>
</tr>
<tr>
<td>ROA Growth (t–1)</td>
<td>115.81</td>
<td>0.72</td>
<td>(-311.31)</td>
<td>0.35</td>
<td>(-0.113)</td>
<td>0.05</td>
</tr>
<tr>
<td>Profit Margin (t–1)</td>
<td>7.04</td>
<td>0.37</td>
<td>(-15.01)</td>
<td>0.67</td>
<td>(-0.084)</td>
<td>0.01</td>
</tr>
<tr>
<td>Margin Growth (t–1)</td>
<td>23.29</td>
<td>0.95</td>
<td>23.29</td>
<td>0.95</td>
<td>23.29</td>
<td>0.95</td>
</tr>
<tr>
<td>Stock Return</td>
<td>1,688.44</td>
<td>0.00</td>
<td>1,688.44</td>
<td>0.00</td>
<td>1,688.44</td>
<td>0.00</td>
</tr>
<tr>
<td>Industry effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>F-Statistic p-value</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

by Bushman, Indjejikian, and Smith (1995). Those authors argue that their entropy measure is a suitable proxy for organizational complexity. Moreover, in untabulated tests, we control for changes in geographic and product line diversification around the activity given that Bushman, Chen, Engel, and Smith (2004) argue that these measures of diversification also proxy for the firm’s complexity. None of these variables changes our qualitative results or conclusions.

4.3. Difference-in-differences analysis

The possibility exists that our results arise because deal-making firms are somehow systematically different from within the same two-digit SIC codes are defined as related, whereas products from different two-digit SIC codes are treated as unrelated.
their non-deal-making counterparts. This, in turn, could imply that the compensation increases we estimate are due to an unobservable factor causing CEO pay to increase regardless of deal occurrence. In that case, finding a significant compensation increase around a deal event could lead us to incorrectly attribute the associated higher pay to the activity. To address this potential source of endogeneity, we use a matched-firm difference-in-differences approach, in which we contrast CEOs’ excess pay, if any, during a deal-making year with their excess pay, if any, obtained in every other year in the sample. We also then compare our sample firms with similarly situated companies matched on the basis of industry as well as pre-event firm size and total CEO compensation. To construct the matching sample, we follow a methodology similar to that in Barber and Lyon (1996). Accordingly, each sample firm is matched to a control group consisting of firms in the same two-digit industry with total pay that lies between 90% and 110% of the sample firm’s CEO pay in the prior year. From that group, the control firm that is closest in size to the sample firm is used as the benchmark. To eliminate follow-on effects from serial deal-makers, any firm that executes a deal in the prior year is excluded from the diff-in-diff analysis and the benchmark.

In Models 3 and 4 of Table 3 we estimate two excess compensation difference-in-differences regressions. We construct a (0,1) variable that is set to “one” if the firm engages in a deal type we study during the sample period. This deal-making (0,1) variable is set to “zero” otherwise. We also create another dummy variable, Time t, that indicates the deal-making year. In the regressions, the estimate for the deal-making indicator should be interpreted as the amount that deal-making CEOs are paid relative to non-deal-making CEOs, absent doing a deal. The estimate for the Time t indicator reflects the annual compensation increases expected for all CEOs during year t.

The results from the difference-in-differences regression tests in Models 3 and 4 show that the individual coefficients for the two indicator variables, deal-making firm and deal-making year, are not statistically significant. These results indicate that, on average, we do not uncover any pre- or post-event differences in excess CEO pay between deal-making and non-deal-making firms.

To assess whether deal-making CEOs experience higher pay raises around the activity, we also include an interaction term of deal-making activity and Time t as an independent variable. Because the deal-making and Time t indicators control for the cross-sectional differences between deal-making and non-deal-making firms as well as for the intertemporal differences in CEO pay, the coefficient on the interaction term can be interpreted as the effect that the deal-making itself has on total pay (i.e., the change in pay for the CEOs of deal-making firms). In both regressions, whether we include CEO characteristics or not, the coefficients for the interaction term are positive and statistically significant. According to the estimates, after controlling for any systematic differences between deal- and non-deal-making firms and any temporal effects, the pay increase associated with the activity is almost $1.3 million, on average. The results of this analysis support the argument that compensation increases are higher for deal-making CEOs, but only when they do a deal.

4.4. Pay-for-performance sensitivity

To study further the association between CEO compensation and deal making, we examine the pay-for-performance sensitivity of deal making using a variant of the specification in Harford and Li (2007). In Models 5 and 6 of Table 3, we estimate two different PPS regressions. The left-hand-side variable in both regressions is the logarithm of CEO total pay in year t. To capture possible differential sensitivity of pay-for-performance for deal-making firms, on the right-hand side we interact the stock return variable with a deal-making indicator for whether the CEO executes any of the four deals we study and based on whether the firm’s performance in the previous year was positive or negative. By separating the relation between CEO pay and stock returns for deal-making CEOs, these tests allow for different pay sensitivities when stock returns are positive (Model 5) and when they are not (Model 6).

The results from these tests show that, in general, total compensation is sensitive to stock returns. According to the coefficient estimates in Model 5, if stock returns rise by 100%, CEO pay in general increases by 11.85%. The regressions also show that compensation is sensitive to deal making. The estimates in Model 5 indicate that the PPS of deal-making CEOs is stronger when stock returns are positive. More important, in Model (6) the coefficient on the return interaction variable is negative and statistically significant at the 6% level. This result indicates that, for deal-making CEOs, compensation is less sensitive to poor performance. In fact, comparing the magnitudes of the coefficients on stock return with that on the indicator variable suggests that a CEO’s deal making cuts the linkage between poor performance and CEO pay. Under this scenario, CEOs would then be less concerned about executing dubious deals as such deals would be likely to increase their total compensation. In addition, according to the estimates in Model 6, CEOs get a 5.11% pay raise when their poorly performing firms experience a size increase (such as from a deal) of 1 standard deviation.

Our PPS results are largely consistent with the theory of asymmetric benchmarking in Garvey and Milbourn (2006) in which CEOs are recompensed when their companies perform well, but not punished when performance is poor. Therefore, the results of our PPS tests provide evidence illustrating the agency problems that can arise when deal-making activities are used to reward the CEO.

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23 The dimension of bias in Barber and Lyon (1996) is operating performance because, often, the matching sample method is used to evaluate whether performance changes due to a given event. In our case, however, the dimension of bias is compensation because we want to assess whether CEO pay significantly changes due to deal-making.

24 We estimate this effect using the standard transformation of $(e^{0.112}) - 1$. 

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5. Deal making and CEO turnover

Although the level of executive compensation should be an increasing function of firm performance (Murphy, 1985), the evidence of our PPS tests suggests that CEOs have the ability to insulate their compensation from poor performance through their deal making. One explanation for our results derives from economic theories of input monitoring arguing that relying on such monitoring can result in agency problems (e.g., Lazear and Rosen, 1981; Zhao, 2008). That is, deal making could be viewed as a form of input considered by the firm’s board of directors. Then based on the theories of input monitoring applied to our setting, boards would oversee CEOs’ deal-making activities and reward these executives accordingly. The evidence from our analyses of the compensation committee reports as well as from our compensation regressions appears consistent with these theories: Boards consider deal-making (inputs) to set managerial compensation.

However, using inputs as the contractible measure to set compensation could be detrimental to the firm in two particular environments: if the asymmetry of information between the board and the CEO leads to adverse selection or if the board’s inability to assess the performance of the activity leads to moral hazard (Goodhue and Simon, 2004; Zhao, 2008). Therefore, adverse selection or moral hazard could manifest under input monitoring if CEOs direct their attention toward fulfilling the input measures (through deal-making) instead of toward ensuring that deals benefit their shareholders.

To evaluate whether deal making is linked to agency problems we examine whether it affects the likelihood of CEO dismissal due to poor performance. Jensen and Ruback (1983) maintain that one of the most egregious manifestations of agency problems in a public firm could be underperforming top managers who resist being replaced. Shleifer and Vishny (1989) argue that such managers are more likely to expropriate shareholders. In the context of our investigation, some CEOs could employ deal-making activity for entrenchment purposes, that is, to lessen the probability of termination due to poor performance. We test this hypothesis by examining whether the relation between CEO turnover and firm performance differs across deal-making and non-deal-making firms.

Our logit regressions of CEO turnover (reported in Table 4) include an indicator for CEO deal-making activity while controlling for the standard determinants of previous tests in the literature (e.g., Weisbach, 1988; Parrino, 1997a). Specifically, the dependent variable is set to “one” if the CEO leaves office during the year and “zero” otherwise. We employ two proxies for the CEO deal-making activities. In Panel A we use the deal-making dummy variable defined earlier. In Panel B we use a different proxy for deal making to take into account that CEOs could engage in more than one activity in a given year. We define a (0,4) count variable to capture the four different types of deals the CEO could engage in during a given year. All tests include industry and year fixed effects.

Model 1 of Panels A and B in Table 4 show the results from logit regressions of CEO turnover in which the only independent variable is firm performance as measured by the return on assets (ROA) for the previous year. Consistent with previous evidence as in Weisbach (1988) and Parrino (1997a), we find that CEO turnover is significantly negatively related to the firm’s performance. That is, poorly performing CEOs are more likely to leave their jobs. In Model 2 of Panels A and B, we add control variables (Firm Size, ΔFirm Size, ΔComplexity, Independent Board, Board Size, CEO Age, and CEO Ownership) as well as the respective proxies for CEO deal making activities in the current year. The estimates from these regressions suggest that CEO deal making itself has no direct effect on CEO turnover probabilities.

In Model 3 of Panels A and B we include interaction terms between the firm’s ROA and the proxies for CEO deal-making activities. We draw the following inferences based on the joint significance of the interaction term and the stand-alone coefficient for ROA in these tests. Engaging in deal-making significantly lowers the probability of being fired because of poor performance. In fact, deal-making activities appear to make CEO turnover insensitive to firm performance. In terms of the marginal effects implied by our coefficient estimates in Model 3 of Panel A, for all firms, a 1 standard deviation decrease in ROA increases the probability of CEO turnover by 0.65 percentage points. In contrast, for deal-making firms, a similar decline in performance results in an insignificant drop in the turnover probability of 0.12 percentage points.

Notably, the tests also show that a positive change in firm size of 1 standard deviation reduces CEO turnover by 6.86 percentage points and a similar change in firm complexity reduces it by 4 basis points.

It is possible that deal-making CEOs of underperforming firms leave their jobs but that such events occur over a longer period of time. To evaluate this possibility, in Model 4 of Panels A and B, we repeat the estimation of Model 3 while allowing for a two-year turnover window. The results

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25 In unreported tests, we replace ROA with net-of-market stock returns. In this specification, the marginal effects imply that a 1 standard deviation decrease in stock returns increases the probability of CEO turnover by 1.56 percentage points. However, a similar decrease in stock returns at deal-making firms cuts the turnover probability by 0.68 percentage points. Therefore, inferences from the turnover tests using stock returns as the firm performance metric are similar to those using ROA.

26 We acknowledge that in nonlinear models (such as the logistic regressions we report in Table 4) the marginal effects depend not only on the estimated coefficients, but also on the value of the vector $X\beta$ and on the form of the likelihood function (Greene (2003, p. 568)). To assess the robustness of the CEO-turnover marginal effects, we utilize the method proposed by Ai and Norton (2003), which estimates the magnitude of the interaction effect for each observation in the distribution of the sample data. Using the mean interaction effect, the marginal effects implied by their methodology indicate that, for deal-making firms, a 1 standard deviation decline in ROA results in an insignificant change in the probability of turnover. Alternatively, Powers (2005) advocates estimating the marginal effects for each condition (in our case deal-making and non-deal-making firms) separately and comparing whether the estimates are significantly different from one another. Following his approach, we find that for non-deal-making firms, a 1 standard deviation decrease in ROA results in a 1.29 percentage point increase in the probability of turnover. In contrast, for deal-making firms, a 1 standard deviation decrease in ROA results in a 0.15 percentage point decrease in the probability of turnover. The difference is statistically significant at better than the 1% level. Overall, the marginal effects arising from the Ai and Norton (2003) and Powers (2005) methodologies are in line with those we describe in the text.
of our two-year turnover tests also indicate that deal making severs the link between firm performance and CEO turnover. The implication of our results is that some CEOs could be motivated to engage in deal making to lower their termination risk. Such activities appear to be particularly important for CEOs of poorly performing companies. In terms of the agency problems related to deal making, our evidence showing that deal making significantly lowers the pay-for-performance sensitivity of CEO compensation when performance is poor.

6. Empirical evidence on deal making and the expected value of the deals

One potential explanation for the result that boards consider deal-making activity when increasing CEO compensation is that the rationales for these deals is to increase shareholder wealth. If this occurs, the deals could reasonably justify the pay increases to these CEOs. However, some CEOs could engage in non-value increasing deals due to the incentives provided by rewards to deal making itself. Because of the differences in motivations and outcomes across deal types, we study each type of transaction separately and consider attributes that previous research has found to be important in explaining value effects of the transaction. We examine theories and empirical evidence about when each deal type is more likely to be associated with a core or organic growth motivation. We also define certain deal types as empire building or insulating. This definition is motivated by our earlier findings showing that deal making insulates some underperforming CEOs from losing their jobs and also insulates their pay from poor performance.

Our empirical strategy in this section consists of two steps aimed at assessing the source of executive compensation for deals. For each deal type, we first examine the

### Table 4

Deal making and chief executive officer (CEO) turnover.

In this table we estimate logistic regressions of CEO turnover on Deal Making. The dependent variable in Models 1–3 (in both panels) takes the value of “one” if the CEO leaves office during the year and the value of “zero” otherwise. The dependent variable in Model 4 (in both panels) takes the value of “one” if the CEO leaves office over the next two fiscal years following the deal and “zero” otherwise. A board is classified to be independent if 50% or more of its directors are independent. Thus, we construct an indicator that is “one” in these cases and is “zero” otherwise. Firm size is the natural log of total sales (Compustat item SALE). ΔFirm size is the dollar change in firm size from the prior fiscal year to the current fiscal year. Board size is the natural log of board size. CEO ownership is measured as a percentage of common. All other variables are defined in Table 1. The sample consists of 11,815 CEO-year observations drawn from the ExecuComp database from 1996 to 2006. In Panel A the key independent variable is a deal-making (0,1) indicator that is set to “one” if the firm completes a joint venture, strategic alliance, SEO, or spin-off during the year. For the key independent variable in Panel B, we define a (0,4) count variable to capture the four different types of deals the CEO could implement during a given year. All regressions include industry and calendar year fixed effects. For each test, we report p-values using robust firm-clustered standard errors.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1) Estimate</th>
<th>p-Value</th>
<th>(2) Estimate</th>
<th>p-Value</th>
<th>(3) Estimate</th>
<th>p-Value</th>
<th>(4) Estimate</th>
<th>p-Value</th>
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<td>Intercept</td>
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<td>0.00</td>
<td>–7.421</td>
<td>0.00</td>
<td>–7.401</td>
<td>0.00</td>
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<tr>
<td>ROA (t–1)</td>
<td>–0.594</td>
<td>0.08</td>
<td>–0.622</td>
<td>0.22</td>
<td>–1.463</td>
<td>0.00</td>
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<tr>
<td>∆Complexity (t–)(t–1)</td>
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<td>0.86</td>
<td>–0.018</td>
<td>0.86</td>
<td>0.059</td>
<td>0.39</td>
<td>0.059</td>
<td>0.39</td>
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<td>∆Firm Size (t–)(t–1)</td>
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<td>–0.881</td>
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<td>–0.678</td>
<td>0.00</td>
<td>0.020</td>
<td>0.42</td>
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<td>Firm Size (t–1)</td>
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<td>0.004</td>
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<td>Independent Board (t–1)</td>
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<td>0.01</td>
<td>0.228</td>
<td>0.02</td>
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<tr>
<td>CEO Age (t–1)</td>
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<tr>
<td>CEO Ownership (t–1)</td>
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<td>0.38</td>
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<td>–0.060</td>
<td>0.33</td>
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<td>ROA (t–1) × Deal-Making firm (0,1)</td>
<td>1.682</td>
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<td>1.408</td>
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<td>0.00</td>
<td>0.00</td>
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</table>

Panel A: Using deal-making (0,1) indicator

Panel B: Using deal count (0,4)
relation between the deal’s announcement returns and the deal’s apparent motivation (core or insulating). Specifically, we regress the announcement cumulative abnormal returns on indicator variables, while controlling for firm size, stock return, and operating performance.28 We also include industry and year fixed effects as well as the inverse Mill’s ratio (Heckman, 1979) to control for self-selection based on the probability of executing a particular deal type.29 Furthermore, for each deal type we control for specific characteristics as suggested by the literature. These regressions are reported for each deal type individually in Panel A of Table 5. In the second step, we run a separate change in compensation regression for each deal activity to assess the role of the core and insulating motivations on pay. These regressions are reported in Panel B of Table 5 and include controls for changes in firm size, changes in firm complexity, contemporaneous M&A activity, and (un-tabulated) control variables, which are similar to those used in Table 3 (labeled “additional controls”). The reported p-values in Panel B of Table 5 are based on robust firm-clustered standard errors to address the possible dependence in the residuals.

6.1. Joint ventures

Academic research on the rationales for firms to engage in joint ventures finds that these deals are often initiated to cement supply agreements or serve as buyout options. Studies in this area analyze the impact of ventures on firm value and find that differences tend to depend on several deal characteristics. For instance, cross-industry joint ventures and those with majority control are met with lower deal characteristics. For instance, cross-industry joint ventures and those with majority control are met with lower deal announcement returns, while supply arrangement ventures are often greeted with positive investor reactions.29

Model 1 of Panel A in Table 5 reports the estimates of an ordinary least squares (OLS) regression in which the dependent variable is the ($-2, +2$) CAR accruing to firms that execute a joint venture. The key independent variables in this regression measure whether the venture has a core or organic growth motivation (such as a supply agreement) or an insulating or empire-building goal (such as diversification). The regression controls for certain deal-specific characteristics (i.e., a dummy variable to indicate whether the firm has majority control and another dummy to indicate if there is a buyout provision). The results show that joint venture deals with insulating motives are associated with significantly lower announcement returns.

Model 1 of Panel B in Table 5 reports a regression of the change in CEO compensation on joint venture activity. The results show, consistent with Grinstein and Hribar (2004) and Harford and Li (2007), that acquiring CEOs receive pay increases during the year of an acquisition. Likewise, changing firm size by 1 standard deviation raises the CEO’s total compensation by approximately $384,000.

The estimates also indicate that CEOs executing an insulating joint venture are rewarded with a total pay increase of about $1.5 million. In contrast, CEOs in core ventures do not get a statistically significant raise. We run an additional change in compensation regression for CEOs executing joint ventures in which we replace the core and insulating motivation dummies with indicators for value-increasing and non-value-increasing ventures, respectively. These new indicators are based on the CARs meeting of joint ventures. Although this alternate regression is estimated separately (using all control variables), to conserve space, only the results for these indicator variables are shaded and reported in Column 1 of Panel B in Table 5. The shaded estimates show that CEOs receive a higher pay raise only for value-increasing venture deals.

6.2. Strategic alliances

Lerner and Rajan (2006) argue that corporate alliances have become more important over the last two decades and that they are likely the dominant source of external funding for research and development by young firms in many industries. Several academic studies examine the financial causes and consequences of this activity, concluding that there are at least two important characteristics: (1) whether the deal is designed to finance future growth and (2) whether the alliance is diversifying.20 We define the first of these characteristics as a core motivation and the second as an insulating motivation.

In Model 2 of Panel A in Table 5, we examine whether the announcement CARs are related to these motivations for strategic alliances. In this regression, deal-specific controls include, for example, an indicator for whether the deal is initiated by a partner with prior alliance experience in the last two years. The results show that core alliance deals elicit significantly positive market reactions. In contrast,

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27 One caveat to these tests is that the deals might not be large enough relative to the company for our methodology to pick up the increased shareholder value from the deal. In addition, according to the literature, the types of deals we study have mixed results, on average, regarding their effects on firm value as measured by market reactions to their announcements. For example, Burch and Nanda (2003) show that spin-offs reduce diversification losses, and Ahn and Denis (2004) argue that spin-offs that break up conglomerates create value by improving investment efficiency. In contrast, Desai and Jain (1999) find that only those spin-offs that increase the firm’s focus enhance firm performance. Moreover, Parrino (1997b), who studies the 1993 Marriott spin-off, shows a decline in the total value of the firm following the deal announcement, arguing that much of the decline for this firm is due to transaction costs and inefficiencies resulting from the spinoff. Given this literature, it is not clear ex-ante whether all spin-offs increase shareholder wealth. The same question exists for the other deals we study.

28 The Heckman (1979) correction we employ consists of a two-stage estimation. The first-stage model estimates the propensity to undertake the deal type under study using the entire sample of 11,815 firm-year observations. The control variables in this first-stage model are firm size, market-to-book, cash-to-assets, leverage, ROA, number of same type of deals in the prior two years, CEO age, industry-adjusted compensation, tenure, ownership, and industry and year fixed effects. This specification augments that in Grinstein and Hribar (2004). The results of the first-stage estimation are used to construct an inverse Mill’s ratio, which controls for self-selection in all models of Panel A in Table 5.

insulating alliances are associated with announcement returns that are significantly lower by about 0.5%.

The second column of Panel B in Table 5 shows the estimates of a change in CEO compensation based on strategic alliance deal making. The results show that CEOs who have initiated core deals do not get a statistically significant pay raise, but those who have initiated insulating alliances get a raise close to $275,000, which represents an increase of about 9.5% in terms of total pay for the median CEO covered by ExecuComp during our sample period. In addition, a single standard deviation change in firm size is associated with a pay raise of about $178,000. The shaded coefficients in the second column of Panel B in Table 5 come from a separately estimated regression of the change in CEO pay associated with alliance activity. According to the shaded estimates, CEOs get a pay increase of (just over $200,000) for deals not expected to increase firm value. However CEOs in value increasing alliances do not receive a pay raise. In general, the evidence from our strategic alliance compensation tests suggests that rewards for deal making could lead CEOs to execute deals that enhance their own wealth but not necessarily the wealth of their shareholders.

6.3. Seasoned equity offerings

The third type of activity we consider is an SEO. A potential issue with our treatment of an SEO as a deal, similar to that of a joint venture or a strategic alliance, is whether fundamentally it is a financing decision that involves market-timing or life-cycle considerations instead of an investment decision. Consistent with our treatment of an SEO as a deal-making activity, Walker and Yost (2008) assert that capital expenditures, investments in fixed assets, and research and
development are often the primary motives for issuing equity in an SEO. Further, DeAngelo, DeAngelo, and Stulz (2010) conclude that the foundational reason for most firms conducting SEOS is to meet a near-term cash need and that life-cycle or market-timing considerations are marginally important.

In Panel A of Table 5 (Model 3) we report the estimates from a regression of the announcement returns in SEOs. The control variables in this test are motivated by the SEO literature which shows that the common intended uses of SEO proceeds are to refinance debt and to fund future acquisitions or capital expenditures (Masulis and Korwar, 1986; Walker and Yost, 2008). Therefore, in Model 3 the core motivation indicator is set to one for deals in which the proceeds’ intended use is refinancing and the insulating indicator captures SEOS in which the proceeds are targeted for financing new deals. Deal-specific control variables include the market-to-book ratio to proxy for highly priced stock as well as the existing level of leverage to account for the fact that SEOs affect the firm’s capital structure.

The estimates of our SEO CAR regression in Panel A of Table 5 indicate lower investor reactions (of about –2.5%) in transactions labeled as insulating deals. In contrast, the parameter estimate for the core deal variable is not significantly different from zero.

In Column 3 of Panel B we report the results of an OLS regression of the change in CEO compensation on SEO deal making. The estimates suggest that entering into a core-motivated SEO does not result in a pay raise for the CEO. Conversely, entering into an insulating SEO deal is associated with an increase in CEO pay of close to $2 million. The shaded coefficients in the same column are estimates from a separate change in CEO pay test using the SEO announcement CARs to distinguish deals expected to create value from those that do not. The results related to this separate test show that CEOs executing any kind of SEO, even those not expected to increase firm value, get a nontrivial pay raise, but they get a higher pay raise for deals that are value-increasing. The evidence on SEOS, therefore, provides support for the hypothesis that CEOs can get deal-related pay raises regardless of the deal’s performance, suggesting that some CEOs are able to enter into deals to obtain raises. We also note that the Model 3 estimates in Panel B of Table 5 indicate that a 1 standard deviation change in firm size is related to a raise of almost $422,000.

6.4. Spin-offs

Many academic studies examine the rationales for spin-offs and their effect on the value of the firm that divests a division through this kind of deal. The primary rationales that have been identified include bringing more focus to the firm (Berger and Ofek, 1996), providing better incentives for managers (Aron, 1991), and reducing information asymmetry between managers and investors (Krishnaswami and Subramaniam, 1999). Among other possible rationales that have been suggested are a goal of transferring wealth from bondholders to stockholders (Galai and Masulis, 1976; Maxwell and Rao, 2003) and managers’ desire to churn assets by first engaging in a merger and then divesting those assets (Lee, Shakespeare, and Walsh, 2012).

In our OLS regressions of whether (and how) the market reacts to spin-off announcements according to the deal’s apparent motivation, we set the core motivation indicator to “one” whenever the parent company is in the highest quartile of information asymmetry (in terms of the variance of the parent firm’s daily stock returns for the prior year). We define insulating spin-offs (and set an insulating indicator to “one”) whenever the spin-off does not bring more focus to the parent firm’s principal operations. Deal-specific control variables in the regression include a (0,1) indicator to control for recent merger activity [to account for the churning effect described in Lee, Shakespeare, and Walsh (2012)] and the leverage of the combined firm prior to the divestiture to control for wealth transfers from bondholders.

The results of our spin-off CAR regression (reported in Panel A of Table 5) indicate that insulating deals are received with investor reactions that are about 3% lower, whereas core-motivated spin-offs are greeted with higher and significant reactions.

In Column 4 of Panel B, we report the results of the tests conducted to assess whether (and how) these market reactions are related to changes in CEO pay around the transactions. The results from the regression of the change in CEO compensation on the explanatory variables show that CEOs in insulating spin-offs receive a compensation increase of more than $2.2 million. Chief executives of firms in which the spin-off is core-motivated do not receive an increase in pay. In Column 4, the shaded estimates (from a separate regression) indicate that even spin-off deals that are not expected to significantly increase firm value are related to meaningful pay raises. Specifically, non-value-increasing spin-offs are associated with a CEO pay raise of more than $3 million. Therefore, together with the findings of our other deal-making activities, our spin-off tests indicate that some CEOs could receive pay raises even for executing non-value-increasing or insulating deals.

6.5. Deal making in aggregate

Because CEOs can enter into multiple deals in a given year, in Model 5 in Panel A of Table 5 we report a multivariate analysis of the CARs accruing to the announcement of any of the four deal-making activities we study. Because the preceding tests suggest that CEOs enter many of these deals for insulating purposes [i.e., to diversify the firm’s businesses, which, according to Morck, Shleifer, and Vishny (1990), signals empire building], we use a control variable to capture this. Likewise, we define a core (0,1) dummy to indicate whether the deal purpose is more likely to be associated with organic growth. Empire-building deals are met with lower announcement returns. The coefficient estimate for the insulating indicator is negative and statistically significant. In contrast, core deals are met with 1.43% higher CARs.

We run a change in pay regression (Model 5 in Panel B of Table 5) to examine the effects of deal making on CEO compensation. CEOs receive a pay increase of almost $280,000 when their firms experience a positive change.
in size of approximately 1 standard deviation. The results also show that core-related deals are not associated with a change in CEO compensation. However, insulating deals are related to a pay increase of $413,000. This raise represents an increase of over 14% in terms of total pay for the median CEO in our sample. As with our deal-specific compensation tests, we report (shaded) coefficients from a separately estimated change in compensation regression in which two key explanatory variables indicate whether (or not) the deal is expected to be value-increasing. The results from this alternative test show that CEOs executing transactions expected to increase firm value are rewarded with a pay raise of $1.12 million, on average. To the extent that the announcement of the deal conveys its likely success, this result supports the view that some CEOs are compensated based on expected performance. However, the same test also indicates that CEOs in deals not expected to enhance firm value receive raises in excess of $360,000. As with our earlier findings, these results conform to the asymmetric benchmarking in pay theory in Garvey and Milbourn (2006) in which CEOs are rewarded for good performance but seldom are penalized for poor performance. Moreover, our findings indicate that CEOs receive pay raises for doing deals (deal volume) even if these activities are not expected to improve firm value.

7. Deal making and corporate governance

The preceding tests show that while investors appear to dislike deals associated with empire building and a lack of organic firm growth (motivated by insulation), CEOs executing these activities get significant raises. These results suggest that agency problems could be underlying board compensation decisions. A question that follows from this evidence relates to the mechanisms that could enable these situations to exist.

A potential answer to this question derives from the arguments by Fama (1980) and Jensen and Meckling (1976), among others, that a firm’s governance could be too weak for efficient monitoring of the CEO. Similarly, theoretical work by Hermelin and Weisbach (1998) and Harris and Raviv (2008) maintains that CEOs who control the board of directors have undue power over corporate decisions and that agency problems are likely to arise in these situations. In our setting, these theories predict that weaker monitoring by the board should be related to deal-making that does not improve firm value and to larger pay raises for CEOs executing such deals.

7.1. Board monitoring and deal quality

We first investigate whether potentially weaker monitoring by the board of directors leads to more deal making by management and whether both the investor reaction to the deal announcements and the motivations of the deals are related to the quality of board monitoring. For this purpose, we estimate the determinants of deal-making activities in the entire sample of 11,815 firm-year observations. Model 1 of Panel A in Table 6 estimates a logit regression in which the independent variable is “one” if the firm makes any type of deal during the year (joint venture, strategic alliance, SEO, or spin-off) and “zero” otherwise. In this test, we consider three different variables as proxies for effective corporate governance in board monitoring. Our first proxy measures whether the board appears to be attentive based on Fich and Shivdasani (2006). They show that firms with busy boards, defined as those in which 50% or more of the independent directors hold three or more outside directorships, exhibit poor performance. Accordingly, we control for the percentage of busy directors in our tests. Our second proxy is the percentage of the board’s outside directors appointed while the current CEO is in office. We refer to this variable, which is partially based on the findings of Shivdasani and Yermack (1999) and Coles, Daniel, and Naveen (2014), as a measure of how much of the board is hand-picked by the CEO. If hand-picked boards are loyal to their appointing CEOs, they are more likely to go along with the CEO’s decisions and less likely to be strict monitors. Our third proxy is a dummy variable that is set to “one” if the CEO serves as chairman of the board. This variable is motivated by the results in Masulis, Wang, and Xie (2007) that boards are more likely to approve bad acquisition deals when the acquiring CEO is the chairman of the board. Those authors argue that it is more likely that CEOs have greater power over the approval of deals when they run the board of directors.

The results (in Model 1 of Panel A in Table 6) show that deal making increases with the percentage of busy directors, the percentage of hand-picked directors, and when the CEO also chairs the board. The marginal effects implied by our estimates indicate that a 1 standard deviation increase in the busy board variable increases the probability of deal making by 2.3 percentage points. A similar increase in the hand-picked board variable raises it by about 1 percentage point. Likewise, the probability of executing a deal increases by 3.2 percentage points when the CEO is also the board’s chairman. Other results show that CEOs of older, larger firms with higher market-to-book ratios and more cash-to-assets are more likely to be dealmakers.

The second and third models in Panel A of Table 6, respectively, split our deal making by those expected to increase firm value and those that are not. We base these classifications on the market reaction to each deal reported in Table 1. The goal of this analysis is to study whether the strength of monitoring, vis-à-vis busy boards, hand-picked boards, or boards chaired by the CEO, is related to deal quality. These tests yield interesting results. While the coefficients for the board monitoring variables are not statistically significant for the value-increasing deals in Model 2, they are significantly positive for the non-value-increasing deals in Model 3, thus suggesting that non-value increasing deals are more likely to occur under the watch of potentially weak boards.31

The estimates in Model 3 of Panel A also imply that a 1 standard deviation increase in CEO ownership decreases the probability of entering into a non-value increasing deal

31 Aside from the inattentive interpretation of the busy board variable in Fich and Shivdasani (2006), busy boards could indicate board reputation (Fama, 1980) or connected boards. Larcker, So, and Wang (2013) find that firms with connected boards are associated with superior risk-adjusted stock returns.
Table 6

The effect of board monitoring on deal making and chief executive officer (CEO) compensation.

In Panel A, we estimate the determinants of deal making for a sample of 11,815 firm-year observations from the ExecuComp database from 1996 to 2006. To be included in the sample observations must have complete governance, stock-market, and accounting data from RiskMetrics (Investor Responsibility Research Center), Center for Research in Security Prices (CRSP), and Compustat, respectively. Model 1 estimates a logistic regression in which the dependent variable is “one” if the firm makes any deal during the year and is “zero” otherwise. The deals considered are joint ventures, strategic alliances, seasoned equity offerings, and spin-offs. Model 2 estimates a logistic regression where the dependent variable is “one” if the firm makes a value-increasing (significantly positive cumulative abnormal return (CAR)) deal during the year and is “zero” otherwise. Model 3 estimates a logistic regression in which the dependent variable is “one” if the firm makes a non-value-increasing (significantly negative or insignificant CAR) deal during the year and is “zero” otherwise. Model 4 estimates a logistic regression in which the dependent variable is “one” if the firm initiates a core motivation deal (as defined in Table 5) and is “zero” otherwise. Model 5 estimates a logistic regression in which the dependent variable is “one” if the firm initiates an insulating or non-core motivation deal and is “zero” otherwise. Busy Board represents the percentage of the board’s outside directors who hold three or more outside directorships. Hand-Picked Board represents the percentage of the board’s outside directors appointed while the current CEO is in office. CEO Chairman indicates whether the CEO is also chairman of the board. Board Size is the natural log of the number of directors on the company’s board. CEO Ownership is the common stock ownership of the CEO. Cash to Assets is cash and marketable securities normalized by total assets. Market-to-Book is the market value of common equity to its book value. Firm Age is the number of years the firm is listed on CRSP or Compustat. Firm Size is total assets (in billions of dollars). ΔFirm Size is the dollar (in billions of dollars) change in firm size from the prior fiscal year to the current fiscal year. We also include the additional controls outlined in Table 3 but omit their estimations to conserve space. For each model, we report p-values using robust firm-clustered standard errors. In Panel B, we estimate the effect of board monitoring, as proxied by Busy Board or Hand-Picked Board (those with ≥ 50% busy or hand-picked outsiders, respectively) and where the CEO is also the chairman of the board, upon the change in CEO compensation. We define perk compensation as the sum of ExecuComp items listed under ALLOTHTOT (e.g., life insurance premiums, payments for unused vacations, etc.), OTHANN (e.g., personal benefits, tax reimbursements, etc.), and LTIP (e.g., company’s long-term incentive plan).

### Panel A: Determinants of deal making

<table>
<thead>
<tr>
<th>(1) All deals</th>
<th>(2) Value-increasing deals</th>
<th>(3) Non-value-increasing deals</th>
<th>(4) Core motivation deals</th>
<th>(5) Insulating or non-core motivation deals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>p-Value</td>
<td>Estimate</td>
<td>p-Value</td>
<td>Estimate</td>
</tr>
<tr>
<td>Intercept</td>
<td>−4.888</td>
<td>0.00</td>
<td>−9.082</td>
<td>0.82</td>
</tr>
<tr>
<td>Busy Board</td>
<td>0.010</td>
<td>0.00</td>
<td>0.004</td>
<td>0.43</td>
</tr>
<tr>
<td>Hand-Picked Board</td>
<td>0.001</td>
<td>0.08</td>
<td>0.001</td>
<td>0.63</td>
</tr>
<tr>
<td>CEO Chairman</td>
<td>0.221</td>
<td>0.00</td>
<td>0.298</td>
<td>0.11</td>
</tr>
<tr>
<td>Board Size</td>
<td>1.230</td>
<td>0.00</td>
<td>0.794</td>
<td>0.02</td>
</tr>
<tr>
<td>CEO ownership (percent of common)</td>
<td>−0.016</td>
<td>0.01</td>
<td>0.001</td>
<td>0.96</td>
</tr>
<tr>
<td>Cash to Assets</td>
<td>0.540</td>
<td>0.00</td>
<td>−0.080</td>
<td>0.90</td>
</tr>
<tr>
<td>Market to Book</td>
<td>0.005</td>
<td>0.01</td>
<td>0.002</td>
<td>0.72</td>
</tr>
<tr>
<td>Firm Age</td>
<td>0.009</td>
<td>0.00</td>
<td>0.002</td>
<td>0.75</td>
</tr>
<tr>
<td>ΔFirm Size</td>
<td>−0.005</td>
<td>0.03</td>
<td>0.006</td>
<td>0.14</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.004</td>
<td>0.00</td>
<td>−0.001</td>
<td>0.70</td>
</tr>
<tr>
<td>Additional controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>p-value</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Panel B: Change in CEO compensation and board monitoring

<table>
<thead>
<tr>
<th>(1) Non-deal-making firms</th>
<th>(2) Deal-making firms with busy boards</th>
<th>(3) Deal-making firms with hand-picked boards</th>
<th>(4) Deal-making firms with CEO-chair duality</th>
<th>(5) p-Value for difference (1)–(2)</th>
<th>p-Value for difference (1)–(3)</th>
<th>p-Value for difference (1)–(4)</th>
<th>p-Value for difference (1)–(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>187.33</td>
<td>709.21</td>
<td>1,080.31</td>
<td>1,103.88</td>
<td>784.03</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Median</td>
<td>123.08</td>
<td>317.25</td>
<td>440.07</td>
<td>278.63</td>
<td>357.12</td>
<td>0.00</td>
<td>0.06</td>
</tr>
</tbody>
</table>
by 1.34 percentage points. This result, which suggests that
with ownership-aligned incentives CEOs are less likely to
destroy value, is consistent with previous arguments and
empirical evidence in the literature showing that CEO
ownership helps mitigate agency problems (e.g., Jensen

The fourth and fifth regressions reported in Panel A of
Table 6 decompose deal making by core-motivated and
insulating-motivated transactions, respectively. In Model 4,
the board monitoring variables are not significantly asso-
ciated to the execution of core-motivated deals. However,
the busy boards and the CEO-chairman variables exhibit
significantly positive coefficients for the insulating deals
regression reported in Model 5. The economic effects
associated with these variables are important. For example,
insulating deals are almost 3 percentage points more likely
to be approved when the CEO also chairs the board. These
findings also suggest that potentially weak boards are more
likely to consent to insulating or empire-building deals that
do not create value for shareholders.

7.2. Board monitoring and CEO compensation

The tests in Panel A of Table 6 indicate that deals not
expected to increase firm value and those characterized as
insulating are more likely to occur under the watch of
potentially weak boards. Core, Holthausen, and Larcker
(1999) conclude that busy boards, hand-picked boards,
and boards in which the CEO also serves as chairman are
more likely to overpay their CEOs. Therefore, we examine
the joint impact of weak boards and deal-making activity
on CEO pay.

In Panel B of Table 6, we report the mean and median
change in total CEO pay. We provide these statistics for two
types of cuts in the sample: (1) whether deal making occurs
and (2) whether deal making occurs under a weak board.
The results in Panel B of Table 6 show that the mean
(median) change in total CEO pay is significantly higher for
deal-making CEOs when compared with non-deal-making
CEOs. However, when the board monitoring is expected to
be weak, the change in compensation associated with a
deal is even more pronounced.

Fama (1980) argues that perquisites could arise in
optimal employment contracts that motivate executives to
work hard to create economic surplus. However, perks
could also exemplify agency problems if a firm’s govern-
ance is too weak to limit the use of company resources by
managers (Jensen and Meckling, 1976). Under their view,
perks are a way for managers to misappropriate some of
the surplus the firm generates. In Panel C of Table 6, we
track the mean and median change in the value of perks by
non-deal-making and deal-making CEOs. For the latter
category, we also estimate the change in perks by our
proxies of board efficiency. The results indicate that deal-
making CEOs receive significantly more perks than non-
deal-making CEOs, and this particularly occurs when the
board is classified as weak. These results provide additional
evidence related to the agency problems that arise in some
deal-making companies when board monitoring is weak.

In sum, the findings in Table 6 indicate that CEOs of
firms with potentially weaker, less attentive boards are
more likely to engage in deal-making activities that do not increase firm value. Moreover, these potentially weak boards give their deal-making CEOs a pay raise even when the deals are not expected to enhance shareholder wealth. However, when their own wealth is at stake due to larger shareholdings, CEOs are less likely to enter into bad deals. These results, together with our other findings, conform to the prediction in the theory (e.g., Hermalin and Weisbach, 1998; Harris and Raviv, 2008) that agency problems can manifest when board monitoring is ineffective.

8. Conclusions

We empirically study board compensation decisions for CEOs that execute four types of corporate actions that indicate CEO deal-making activity: joint ventures, strategic alliances, SEOs, and spin-offs. Examining the reasons given by compensation committees to justify CEO pay increases reveals that performance-based justifications are mentioned significantly less often by boards of deal-making companies. Instead, the boards of these firms cite their CEOs’ deal-making activities or leadership skills to explain their compensation decisions. In addition, multivariate analyses related to the annual change in total CEO compensation show that deal making is associated with pay raises. To evaluate the robustness of our findings, we conduct matched-firm difference-in-differences analyses that account for any systematic variations between deal-making and non-deal-making firms. The results of these tests also show that larger changes in CEO compensation are associated with deal-making. These findings are robust to controls for changes in firm size, changes in firm complexity, contemporaneous merger activity, and other determinants of CEO compensation. The evidence from our analyses of compensation committee reports and from our change in pay regressions suggests that deal making is an important component of the CEO compensation decisions reached by boards.

Principal-agent theories (e.g., Lazear and Rosen, 1981; Lazear, 2000; Raith, 2008; Zhao, 2008) predict that boards can monitor inputs as well as outputs in their compensation decisions, but that such compensation schemes could invite agency problems. We present several pieces of evidence showing that, in some cases, deal making appears to be associated with agency problems. First, our results show that deal-making activities strengthen (remove) the sensitivity of the CEO’s pay to good (poor) performance. These findings, which complement the general result on asymmetry in executive compensation by Garvey and Milbourn (2006), suggest that deal making can enable CEOs to achieve asymmetry in their pay structure. Second, other results suggest that entering into deals can aid a CEO in entrenchment in that we find that deal making curtails the inverse firm performance-CEO turnover relation shown in the literature (e.g., Weisbach, 1988; Parrino, 1997a).

Third, considering the academic evidence regarding each of the deal types, we examine whether specific deal features are more likely to be associated with a compensation increase. These tests reveal that CEOs are compensated for value-increasing deals, but they are also compensated for deals that are not met with positive market reactions (which are associated with empire building and a lack of organic firm growth). Thus, our findings show that CEOs can receive meaningful rewards for deal volume irrespective of the deals’ expected value.

Overall, the findings related to CEO turnover, to pay-performance sensitivities, and to CEO pay raises for deals related to empire building or a lack of organic firm growth lead to the question of how such behavior can continue in equilibrium. One explanation derives from theories by Hermalin and Weisbach (1998) and by Harris and Raviv (2008) showing that managerial agency problems can manifest under weak oversight by the firm’s board of directors. Consequently, we evaluate the monitoring strength of the board to provide insight into the mechanisms that could allow agency problems such as empire building for higher pay to persist for some firms. Consistent with the predictions in the theory, we find that non-value-increasing deals and those labeled as insulating or empire building are more likely to occur under weak board monitoring. Moreover, we find that weak boards issue higher pay raises and give more perks to their deal-making CEOs.

Our evidence on how boards set managerial pay has broad implications for compensation policy and research on agency problems. We find that CEO deal making is associated with compensation increases for both value-increasing and non-value-increasing deals. Thus, using CEO deal-making activity to compensate the CEO can be beneficial or detrimental, depending on the firm, the CEO, and the board. In some cases, such practices can provide CEOs with incentives to engage in deal transactions to increase both their compensation and tenure, which can result in benefits for themselves but not necessarily for their shareholders.

Appendix A. Examples of board decisions around deal-making from proxy statements

Following are example excerpts from “The Reports on Executive Compensation” which we obtain by searching proxy statements filed by some of the deal-making companies in our sample. These proxies are available from the SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system and Lexis Nexis.

A.1. American International Group

“In its consideration of the Chief Executive Officer’s compensation, the Committee reviewed the activities and accomplishments of the Chief Executive during 2000 in promoting the long term development of AIG. In particular, the Committee considered his leadership in developing and implementing AIG’s strategies for growth and global expansion, building AIG’s life business globally, creating alliances and affiliations to broaden distribution, emphasizing technology and training and creating successful new business models in financial services and asset management.”

A.2. American Telephone & Telegraph

“Under Mr. [Michael] Armstrong’s leadership, 1999 was a year in which the Company continued to improve financial performance while also progressing to position AT&T in critical new markets for the future…. In addition to
its strong financial results, the Company initiated a number of important strategic actions in 1999...: It developed and implemented a Joint Venture with British Telecommunications plc to position AT&T as a global communications leader.”

A.3. Applied Biosystems Inc.

“For the fiscal year ended June 30, 2000, Mr. [Tony] White earned a contingent compensation award of $1,364,769. This award was based on the financial performance of the Company and Mr. White’s leadership during fiscal year 2000, including his continuing initiatives in the development of the Celera Genomics business, the successful completion of the follow-on offering of Celera Genomics Stock, and the development of the Company’s senior management team.”


“The committee also determined that Mr. [Vernon] Loucks earned an $800,000 bonus because the Company exceeded its net income growth and operational cash flow goals for 1996. The Company’s success in 1996 and, in particular, the successful spinoff of Allegheny Corporation, reflects Mr. Loucks’ continued commitment to the strategic direction of the Company toward an objective of leadership in health care.”

A.5. Caterpillar Inc.

“In 2003, Mr. [Glen] Barton achieved his goal of pursuing new business opportunities for the company. Several of these initiatives were approved for further due diligence, and agreements were finalized on a number of these initiatives in 2003. Solar Turbines Incorporated, a subsidiary of Caterpillar Inc., announced a five-year agreement with ChevronTexaco Corporation to supply turbomachinery systems, including industrial gas turbine engines, gas compressors and aftermarket products and services. Caterpillar consummated a five-year global alliance with BHP Billiton pursuant to which Caterpillar will supply an estimated $1.5 billion in equipment and support to BHP Billiton’s diversified global resources operations. The company also entered a multi-year alliance with Blount International, Inc. to bring a full line of purpose-built forestry equipment to Cat dealers and customers. Finally, the company finalized a joint venture agreement with Eaton Corporation to provide a total systems approach to integrated, reliable electric power solutions for customer needs. The product lines for the joint venture include paralleling switchgear and automatic transfer switches used for emergency or prime power applications for a wide variety of facilities, ranging from commercial and industrial facilities to utility and generation installations.”

A.6. Citigroup Inc.

“The Committee believes that the management of the Company performed exceedingly well in 2000 and that the leadership of Mr. [Sanford] Weill, the Company’s sole Chairman and Chief Executive Officer since April, was central to these accomplishments... The Company successfully accomplished a number of strategic transactions around the world, including the acquisitions of Associates First Capital, Schroders and Bank Handlowy, as well as significant alliances with the Fubon Group and AOL.”

A.7. General Mills Inc.

“In determining Mr. [Stephen] Sanger’s 2000 incentive amount, the Committee determined that return-on-capital and earnings-per-share targets had been met. Then the Committee considered, in addition to the corporate performance rating, Mr. Sanger’s personal performance against pre-established objectives in numerous areas, including Company financial performance, growth, innovation, productivity improvement, new ventures, organizational development, diversity, and customer and shareholder relations.”

A.8. Lockheed Martin Corp

“The Committee reviewed the compensation of the Chief Executive Officer and the other executive officers in the context of the Corporation’s performance in 2002. Among the specific accomplishments were the:

- Securing of eight international partners for the F-35 tactical combat airplane (Joint Strike Fighter).

The bullet point references the following joint ventures and strategic alliances (SDC Deal Number):

- BEA Systems Inc. and Lockheed Martin Corp—Strategic alliance (1292705045)
- GE Aircraft Engines and Lockheed Martin Corp—Joint venture (1313299045)
- Harris Corp and Lockheed Martin Corp—Strategic alliance (1342567045)
- Loral Space and Communications Ltd and Lockheed Martin Corp—Joint venture (1300740045)
- Lockheed Martin Corp and Siebel Systems Inc.—Strategic alliance (1346804045)

A.9. Qualcomm Inc.

“The Company completed several major strategic initiatives during fiscal 2000, including the creation of Wingcast, LLC with the Ford Motor Company, the acquisition of SnapTrack Inc., and the sale of the CDMA [code division multiple access]-based consumer phone business to Kyocera. In consideration of his leadership during fiscal 2000 and the Company’s financial performance, at the end of fiscal 2000 the Committee awarded Dr. [Paul] Jacobs a $850,000 bonus and a stock option grant to purchase 280,000 shares of the Common Stock at an exercise price of $86.00 per share.”

References


