

Decoupling CEO Wealth and Firm Performance: The Case of Acquiring CEOs

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Abstract:

We explore whether compensation policies in bidding firms counter or exacerbate agency conflicts by examining CEO pay and incentives around corporate takeovers. We find that even in mergers where bidding shareholders are worse off, bidding CEOs are better off three quarters of the time. In the years following mergers, CEOs of poorly performing firms receive substantial increases in option and stock grants that offset any effect of long-term underperformance on their wealth. As a result, the CEO's pay and his overall wealth become insensitive to negative stock performance, but his wealth rises in step with positive stock performance. Corporate governance matters; bidding firms with stronger boards retain the sensitivity of their CEOs' compensation to poor performance following the acquisition. In comparison, we find that CEOs are not rewarded for undertaking major capital expenditures, and that they receive only minor downside protection. Our results highlight that acquisitions are treated differently from other capital investments by the board in setting CEO compensation and our evidence is consistent with the self-serving management hypothesis in corporate acquisitions.

Keywords: acquisitions, capital expenditures, corporate governance, equity incentives, pay-performance sensitivity

JEL Classification: G34

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1. Introduction

The separation of ownership and control leads to many potential conflicts of interest between shareholders and corporate management. Since Jensen and Meckling (1976), the literature has focused much attention on how managerial ownership and compensation design can be used to align manager and shareholder interests. As we discuss below, the bulk of the empirical evidence supports the hypothesis that managers with greater ownership or managers with more equity-based incentives are less likely to take value-destroying actions.

The 1990s witnessed explosive growth in the grants of equity-based incentives (option and restricted stock grants) to corporate managers (Murphy (1999)). This raises the possibility that the value of the manager's annual flow of new grants is of the same order as the value of the incentive effect of his existing portfolio. That is, if compensation increases following an acquisition, this dynamic effect of compensation can offset the alignment normally provided by the CEO's existing portfolio. The existing portfolio is, of course, the aggregation of (past) compensation flows. It is this dual nature of compensation flows that we study here.

This paper asks whether compensation policies adopted in the 1990s may have altered the relationship between a manager's existing ownership and the firm's acquisition decisions. There is a large literature arguing that many acquisitions destroy value for the acquirer (e.g., Agrawal and Jaffe (2000)). Shareholders might assume that their CEOs' large portfolios of stock and options provide the necessary incentives to discourage them from making bad acquisitions. Our results show how this intuition could be wrong in the presence of dynamic compensation changes following acquisitions. In many cases, the value of the flow of new grants after an acquisition can swamp any incentive effect provided by the CEO's pre-acquisition portfolio.

We focus our study on acquisition events and on the incentives of bidding firm CEOs in particular for several reasons. First and foremost, acquisitions may be the most significant decisions about the allocation of corporate resources that managers make and the potential wealth destruction to investing firm shareholders is large, as documented in Moeller, Schlingemann and Stulz (2005). Thus, it is important to understand the managerial incentives behind corporate takeovers because of their impact on shareholder wealth and on the organization of assets in the economy. Further, by increasing the size of the firm and changing its scope of operations, acquisitions provide a natural opportunity for the CEO and the board to restructure his compensation. The increase in size and complexity of integrating the two firms could lead the CEO to argue for more pay and for pay that is less sensitive to performance for the first few years of the acquisition, or it could result in the board arguing for more sensitivity to ensure efficient integration. We investigate how the acquiring CEO's compensation changes and whether his wealth and compensation become more or less sensitive to the performance of the firm following the acquisition.

We employ a dataset linking acquisitions and compensation that overlaps with both the most recent merger wave and the massive shift in the composition of compensation contracts for top executives. Our study provides the opportunity to assess the applicability of extant results to the new compensation environment in the 1990s as well as to answer new questions related to current compensation structures. These questions include whether acquisition decisions generate additional information that is used by the board to reward or punish its CEO. For example, in the event of a poorly performing acquisition, do changes in the flow of new grants offset or magnify the negative effect of the acquisition on the personal wealth of acquiring CEOs? We present results using various measures of CEO compensation and of the sensitivity of CEO pay and wealth to firm performance. Evidence of the costs and benefits to bidding firm CEOs will aid in understanding the forces that determine when and why takeovers are initiated.

Furthermore, our results will have general implications for compensation policy and research on agency problems by demonstrating how new grants of equity affect the efficacy of existing portfolio (of stock and options) incentives.

We find that bidding firm CEOs have abnormally high compensation relative to their peers before making an acquisition. Nonetheless, CEOs are richly rewarded for growth through acquisitions. CEOs of bidding firms are given substantial new stock and option grants following completed acquisitions. In fact, large grants to CEOs of poorly performing firms offset the negative effect of poor merged-firm stock performance on their pre-acquisition portfolio of own-firm stock and options. Consequently, CEO pay and wealth are completely insensitive to poor post-acquisition performance, but CEO wealth remains sensitive to good post-acquisition performance. Bidding firms with stronger boards retain the sensitivity of their CEOs' compensation to poor performance following the acquisition. Our results bring into question the efficacy of existing equity portfolio incentives in the face of continuous flows of large new grants, and show that the strength of a firm's board affects the degree to which the new grants counter the incentives of the CEO's existing portfolio.

We compare our findings for CEO pay changes following acquisitions to those following large capital expenditures. We find that compensation changes around major capital expenditures are much smaller and more sensitive to performance than those following acquisitions. These findings suggest that the board and the CEO treat internal investment and acquisitions differently and that the incentives to undertake each differ as well. They also add to the growing evidence of fundamental differences between internal and external investment (see Andrade and Stafford (2004), for example).

The time trend of increasing compensation is a potential cause for concern in our tests, so we repeat our analysis using non-acquiring control samples matched on various

dimensions (size, industry and performance). All of our regression results using the ExecuComp universe are robust to comparisons with matched control firms.

We also conduct some additional investigation beyond the above main results. We begin by examining the total impact of corporate acquisition programs on CEO pay and incentives. Our findings show that poor post-merger performance serves as a natural check on a CEO's ability to embark on a series of self-serving deals, and we conclude that the perverse settling-up for CEOs after standalone acquisitions does not continue to the same extent in acquisition programs. We next check our results by controlling for whether the merger is diversifying, the method of payment, and the announcement return. The results are robust to all of these controls. Finally, we examine the subset of CEOs who did not survive at the acquiring firm following the completion of the merger, and find that the turnover frequency is not abnormal for CEOs making acquisitions.

Our results bear on the self-serving management hypothesis first postulated in Benston (1985). The hypothesis states that managers are likely to take firm-enlarging actions that yield greater remuneration for themselves but losses for shareholders. Using acquisition and compensation data in the 1970s and 1980s, studies by Benston (1985), and Avery, Chevalier and Schaefer (1998)) find mixed results.

This study contributes to the recent empirical literature examining the relation between managerial incentives and corporate acquisitions. On one hand, Datta, Iskandar-Datta and Raman (2001) document a strong positive relation between acquiring managers' equity-based compensation and merger performance. Also, Zhao and Lehn (2003) conclude that CEOs who make value-destroying acquisitions are more likely to be replaced subsequently. On the other hand, Bliss and Rosen (2001) show that CEO compensation typically increases after bank mergers even if the bidder's stock price declines. Grinstein and Hribar (2004) find the acquiring CEOs who have more power to influence board decisions receive significantly larger M&A bonuses. Unlike our study,

these studies focus on managerial incentives around acquisitions, while ours is the first to compare compensation policies implemented in firms that undertake either acquisitions or capital expenditures (external versus internal investment). Moreover, our paper is about the tension between the incentives derived from existing equity ownership versus those from new grants. We carefully address the dual nature of grants of stock and options on CEO incentives in the current period and in the future. Finally, we track the acquiring CEO wealth change post-merger to demonstrate the long-run CEO wealth effect of corporate acquisitions.

Our results agree with those in Bliss and Rosen (2001) that CEOs exhibit self-serving behavior in making acquisition decisions. In addition to the generous M&A bonuses documented by Grinstein and Hribar (2004), we find that acquiring CEOs are richly rewarded in all firm-specific incentives. Our paper demonstrates one specific channel—undertaking acquisitions—through which CEOs can achieve the asymmetric benchmarking in their pay that is shown in Garvey and Milbourn (2004). Finally, this study shows how differently internal and external investment are treated in the compensation-setting. Explaining this difference is an interesting challenge for future theoretical and empirical research.

The plan of the paper is as follows. We review the literature and present our hypotheses in the next section. Section 3 describes the acquisition sample and variables and provides summary statistics. Section 4 presents the change in CEO pay and wealth around acquisitions and interpretation, and Section 5 compares the evidence from acquisitions with the change in CEO pay and wealth around major capital expenditures. Section 6 conducts additional investigation and some robustness checks on our results. Section 7 concludes.

2. Literature Review and Hypotheses

As discussed in the introduction, acquisitions provide bidding managers their greatest opportunity for expressing their non-value-maximizing preferences. The empirical findings in support of the self-serving management hypothesis have been mixed.

Starting with Benston (1985), who finds the post-merger change in equity value of managerial holdings outweighs any increase in compensation, most early studies (e.g., Lewellen, Loderer and Rosenfeld (1985), and Agrawal and Mandelker (1987)) produce evidence inconsistent with the self-serving management hypothesis.

More recently, Datta et al. (2001) document a strong positive relation between acquiring managers' equity-based compensation and stock price performance around and following acquisition announcements. They conclude that their evidence indicates that managerial incentives can be effective in shaping long-term corporate investment policies and encourage managers to make decisions in the interests of shareholders.

On the other hand, Avery et al. (1998) find that there is no evidence that a CEO can increase his salary or bonus by undertaking an acquisition, while finding evidence that CEOs who undertake acquisitions obtain more outside directorships than their peers. Thus, their findings are consistent with the hypothesis that managers can gain power, prestige, and standing in the business community by undertaking acquisitions.

Bliss and Rosen (2001) undertake a detailed exploration of the relationship between bank mergers and CEO compensation. They find that mergers have a net positive effect on compensation, mainly via the effect of size on compensation.

Grinstein and Hribar (2004) examine CEO compensation and incentives around acquisitions with a focus on M&A bonuses. They show that CEOs who have more power to influence board decisions receive significantly larger bonuses, and that there is a positive relation between bonus compensation and measures of CEO efforts, but not between bonus compensation and deal performance. Their evidence is consistent with the argument that managerial power is the primary driver of M&A bonuses.

In summary, early evidence supports the hypothesis that managers with larger ownership stakes make better investment decisions. Subsequent research also supports the hypothesis that managers whose compensation plans are more equity-based make better investment decisions. Acquisitions enlarge firm size and scope, but the evidence is mixed on whether this is always wealth-enhancing to the bidding firm executives. Further, we are unaware of any evidence on the changes in the pay and wealth of managers making large capital expenditures. Much of the evidence that managers do not benefit from bad mergers is based on the effect of the merger on the managers' portfolios of stock (and sometimes including the effect on existing options). Prior studies have tended to examine either the portfolio incentives alone or the flow of compensation, but not how the two interact. In this study, we will account for not only the CEO's pre-merger portfolio wealth but also changes in pay following the merger. We examine how these changes affect both the level of his wealth and its sensitivity to performance. The interaction of the two provides insight into the total package of incentives facing the CEO at the time of acquisitions. Finally, our comparison of capital expenditures to acquisitions provides evidence on how these two types of investment are viewed by the board in setting compensation and the difference in incentives provided to undertake internal versus external investment.

The empirical analyses in this study are designed to distinguish between the *self-serving management hypothesis* and the *incentive alignment hypothesis*. If acquisitions are beneficial to CEOs even when they are detrimental to shareholders, then the self-serving management hypothesis is supported. Alternatively, if CEO compensation schemes ensure that acquisitions improve or do not diminish the link between CEO and shareholder wealth, then the incentive alignment hypothesis is supported.

We start by examining the flow of different components of CEO compensation around an acquisition and whether acquiring CEOs are over- or under- paid prior to the acquisition. We then compute the CEO pay and long-run wealth sensitivity to the impact

of the acquisition on firm shareholders' wealth, differentiating between positive versus negative acquisition performance. If acquisitions are associated with improved managerial incentives, we would expect both the amount of pay CEOs receive and also their total wealth to become more sensitive to firm (either positive or negative) performance after acquisitions. Finally, we examine the role of the board in affecting the sensitivity of CEO compensation to performance following the acquisition. Overall, the tests are designed to determine whether acquisitions improve or reduce CEO incentives, and exactly how changes in compensation around the acquisition achieve that result. We follow that analysis by contrasting the results with those from similar analysis performed on capital expenditures.

3. Sample Formation and Variable Construction

We begin with all completed US mergers with announcement dates between January 1, 1993 and December 31, 2000 as identified from the Mergers and Acquisitions database of Securities Data Company (7,076 deals).¹ We first require that bidders have available stock prices from the CRSP files, accounting information from Compustat, and executive compensation data from Standard and Poor's ExecuComp. The data availability requirement leads to 1,508 mergers over the sample period.

If acquisitions have any impact on executive compensation, the likelihood of capturing this effect will be greater when the firm makes a large acquisition. As a result, we require the ratio of the transaction value relative to the bidder (as measured by the market value of total assets at the fiscal yearend prior to the announcement) to be at least 10%. Our relative size requirement leads to 622 mergers.

¹ The reason for us to start our corporate acquisition sample in 1993 is that we require information on CEO compensation in the year prior to the acquisition, and the Standard and Poor's ExecuComp data started in 1992.

To clearly delineate the effect of each acquisition on executive compensation, in cases where a sample firm makes multiple acquisitions, only those acquisitions that do not overlap are included. We define an overlap to occur if the gap between the completion of one merger and the announcement of a second is no greater than two years (so that we have at least one whole fiscal year in between consecutive mergers by the same acquirer). The non-overlapping requirement eliminates 252 acquisitions. The final acquisition sample consists of 370 completed merger deals made by 361 firms. The mean (median) deal size relative to the market value of bidder assets is 0.51 (0.31).

Two event years become important in our analyses. First, year: *ayr*, is the fiscal year in which the announcement of a merger bid takes place. Second, year: *cyr*, is the fiscal year in which the merger is consummated. Of the 370 mergers in our sample, 244 close in the same year they are announced, 121 close in the following year, and the remaining 5 close within three-years of being announced. The fact that two-thirds of our mergers close in the same fiscal year as they are announced is consistent with the Grinstein and Hribar (2004)'s concurrent sample of mega-deals, where the median time to completion is four months.

Measures of CEO Compensation

Our empirical analysis is based on three different measures of CEO compensation: total cash compensation (cash pay), grants of stock and options for the current year (grants), and total direct compensation (total pay).

Total cash compensation is the sum of salary and annual bonus, whereas salary simply measures the component of compensation that is fixed at the beginning of the year. Salary and bonus have incentive effects in the current year only, as future firm performance does not affect CEO wealth through this dimension.

Stock and option grants are the sum of the value of the restricted stock and the value of stock options granted during the current year. The former can be obtained directly from ExecuComp (RSTKGRNT), while the latter is computed following Core and Guay (2002).² Grants of stock and options (if the underlying stock is retained) have both a short term and a long term incentive effect. Since the level of grants usually depends upon performance, this provides incentives in the current period. Moreover, since the value of these grants, and thus CEO wealth will be affected by future performance, these grants also provide incentives for firm performance in future years.

Total direct compensation is the sum of salary, annual bonus, value of restricted stock granted, value of stock option granted, long-term incentive payouts, and any other remuneration.

Estimating Normal Compensation

In this paper, we focus on examining the effect of mergers on acquiring CEO pay and incentives. The first thing we want to determine is how acquiring CEOs are being paid both before and after the merger relative to their non-acquiring peers. For that purpose, we construct a model of normal compensation by regressing the log of CEO compensation on firm characteristics identified in the compensation literature (for example, Murphy (1985), Agrawal and Walkling (1994), Yermack (1995), Core,

² Core and Guay (2002) estimate the grant date value of options granted during the year using a modified version of the Black-Scholes model. To account for the fact that executives view the life of the option (i.e., time to maturity) as being less than their expected time to exercise, and that they frequently exercise early, Core and Guay assume the expected time to exercise to be 70% of the option's stated maturity, and replace time to maturity with time to exercise in the Black-Scholes model. The expected stock-return volatility is measured as the annualized standard deviation of daily stock returns over the 120 trading days preceding the end of the fiscal year in which the grant was made. Expected dividend yield is estimated as cash dividends paid in the fiscal year the grant is made divided by year-end stock price, and the treasury-bond yield corresponding to the option's remaining time-to-maturity is used to estimate the risk-free rate. All these option pricing parameters are updated every year in our computation. We find that using either the Core and Guay measure or the ExecuComp's measure (GRANTS) for the value of stock and option grants during the year has no material effect on our conclusions (the correlation between the two measures in our sample is .97).

Holthausen and Larcker (1999), and Grinstein and Hribar (2004)), and including an indicator variable to isolate the pay to acquiring CEOs prior to the acquisition.

We expect that larger firms and firms with more growth opportunities will demand higher quality managers and thus offer higher pay. We proxy for firm size with sales. We proxy for growth opportunities in the firm's investment opportunity set with the firm's yearend market-to-book ratio averaged over the previous five years. We include 48 Fama-French industry dummies (Fama and French (1997)) to control for industry differences in the demand for managerial talent.

Agency theory suggests that the level of executive pay should be an increasing function of firm performance (Murphy (1985)). We employ three metrics for firm performance: sales growth, the accounting return on assets (ROA, computed as the ratio of earnings before interest and taxes to total assets), and the annual stock market return (computed as the 12-month raw return of the firm's stock in the fiscal year prior to the acquisition announcement).

Firm risk captures both the firm's information environment and operating environment and is shown to be an important determinant of executive pay (see for example, Core et al. (1999)). We have two total variance measures of firm risk: a measure of the risk of operating performance and a measure of the risk of the stock return. They are the standard deviation of ROA and the standard deviation of common stock returns. The latter is obtained as the standard deviation of annual percentage stock market return for the prior five years.

To capture the pay differential experienced by acquiring CEOs in the year prior to the acquisition, we introduce an indicator variable, *Acq YR-1*, takes the value of one in the year prior to the acquisition, and zero otherwise.

While the effectiveness of board monitoring is one factor that would affect the CEO pay, we are primarily interested in the economic determinants of normal levels of executive compensation. We take the relative effectiveness of corporate governance mechanisms at a firm to be one factor that would cause its CEO pay to deviate from this norm. Indeed, in later tests, we will be interested in the corporate governance of the acquiring firm as an explanation for changes in compensation policy.

In sum, the following is our model of normal CEO compensation:

$$Pay_{it} = \alpha_0 + f_{industry} + f_t + \beta_1 Sales_{it} + \beta_2 M / B_{it} + \beta_3 Sales\ Growth_{it} + \beta_4 ROA_{it} + \beta_5 \sigma_{ROA_{it}} + \beta_6 Return_{it} + \beta_7 \sigma_{Return_{it}} + \beta_8 Acq\ YR - 1_{it} + e_{it}, \quad (1)$$

where the left-hand-side variable is the natural logarithm of cash pay, grants or total pay, and year dummies are employed to account for economy-wide shocks.

The normal compensation model is estimated based on a panel data set that includes all ExecuComp firms over the entire sample period. The estimation has industry and year fixed-effects and uses standard errors that are robust to clustering at the firm level.

4. Results

Table 1 presents descriptive statistics of our sample of 370 completed acquisitions. Panel A reveals that acquisitions tend to be highly cyclical as the total number of acquisitions closely follows the business cycle expansion over most of the 1990s. The evidence suggests strong time series clustering of merger activity, in fact our sample period coincides with the latest aggregate merger wave. Panel B gives an industry breakdown of corporate acquisitions in our sample. The industries with the largest number of transactions are Banking and Business Services, consistent with the finding in Bliss and

Rosen (2001) that the banking industry is experiencing massive consolidation over the sample period.

Sample Characteristics

Financial and operating characteristics and CEO pay and incentives measured at the fiscal yearend prior to the announcement of acquisitions (year $ayr-1$), and the first year after the acquisition (year $cyr+1$) are reported in table 2, panel A. All dollar amounts are in inflation-adjusted 2002 dollars. The median acquiring firm is quite large; in the year prior to the acquisition, the market value of assets is \$4.3 billion. The median debt ratio (book value of debt divided by book value of total assets) is 0.21. The median market-to-book assets ratio is 1.5 and the median annual sales growth is 8%. The bidding firms are profitable in the year prior to the acquisition with median ROA at 16% and median annual stock return at 25%, which is significantly greater than the contemporaneous market return.

The 3-day bidder cumulative abnormal announcement return (not tabulated) has a mean of -1.3% and a median of -1.1% . These returns are larger in magnitude than Datta et al.'s sample, but are more comparable to Grinstein and Hribar's sample of large deals. The method of payment in 79% of our sample is bidder equity, which generally results in lower average abnormal returns (Travlos (1987)). Finally, 31% of our sample deals are diversifying in the sense that the bidder and the target are not members of the same Fama-French 48 industry groups.

The descriptive statistics for CEO pay and incentives in the year prior to the acquisition show that the median cash pay to CEOs of bidding firms is slightly above \$1 million, which is the limit for fully deductible non-performance based cash compensation since 1993 (Hall and Liebman (2000)). Almost equal in magnitude, the median grants of stock and options for that year is \$0.90 million. The median total pay is \$2.4 million. We

also compute the market value of the CEO's existing holdings of stock and options in the firm as a measure of the amount of personal wealth that the CEO has tied to the equity performance of the firm. Prior to the acquisition, the bidding firm CEOs have a median portfolio value of equity incentives of \$23 million, about ten times annual total pay.

Following the acquisition, by any measure the size of the acquiring firm increases somewhat more than the median transaction size of 30%. However, performance suffers; M/B, ROA and stock return all drop, and leverage increases. Meanwhile, the CEO's compensation and wealth increase substantially. In the year after the completion of the acquisition, the median cash pay to CEOs remains the same, while the median grants of stock and options for the year increases to one and a half times of the pre-acquisition level, at \$1.4 million. These numbers indicate that from an incentive perspective, CEOs of the bidding firms are rewarded with substantially more equity-based compensation. As a result, total pay also increases considerably to a median value equal of \$3.5 million. After the merger completion, the median total wealth of the bidding firm CEOs increases to \$33 million. The \$10 million change in wealth comes from a combination of new equity grants from year $ayr-1$ to year $cyr+1$ and an average 45% stock return for the bidding firm over a period that averages three-years. A more precise breakdown and analysis of the components of the change in CEO wealth is provided later in table 5.

Table 2, panel B gives us a clear picture of how the size of acquisitions is related to the change in acquiring CEO pay. We sort the size of the acquisition scaled by the bidding firm's market value of total assets into quintiles. Then for each size quintile, we report the average change in CEO pay. There are several noteworthy features in panel B. First, there is a wide dispersion in the size of acquisitions undertaken by the sample firms. Second, there is a clear, monotonically increasing relationship between the change in acquiring CEO pay, particularly CEO total pay, and the size of transaction value.

In summary, table 2 shows that bidding firms are performing very well prior to the acquisition and their CEOs are highly compensated as well. After the completion of acquisitions, the acquiring CEOs experience large increases in all three measures of compensation, suggesting that the acquiring CEOs clearly have direct financial incentives to undertake mergers. In the next subsection, we estimate a model of normal compensation to evaluate how much of the acquiring CEO's compensation is abnormal or excess compensation.

Estimating CEO Normal Compensation

We now turn to the question of whether pre-merger compensation is abnormal for acquiring CEOs. The first three columns of table 3 report the estimation results for our normal compensation model without the acquisition indicator variable using the ExecuComp firms over the entire sample period.³ Sales, our proxy for firm size and complexity, is positively associated with all three measures of CEO pay as expected. M/B, our proxy for firm growth opportunities, is positively related to CEO annual grants and total pay, but not to cash pay. Sales growth is positively related to CEO cash pay and annual grants, but not to total pay. ROA is positive and significant only for cash pay, presumably because of accounting-performance based bonuses. The consistently positive coefficient on stock return for all measures of pay demonstrates a positive pay-for-performance relation. The positive coefficients on standard deviations of ROA and stock return show that CEOs of more volatile firms get paid more in terms of annual grants. Total pay also responds positively to return volatility.⁴

³ Note that in estimating the normal compensation model, we do not include firm fixed-effects. If a firm tends to overpay its CEO in all years, then that would go into the fixed effect, leaving only over or under payment relative to the firm's own average pay. Since we are looking for over or under CEO compensation relative to other firms, we do not want that to be lost to the fixed effect. Instead, to address autocorrelation in the model, we use Huber-White robust standard errors in all panel estimations. These standard errors are robust to both serial correlation and heteroskedasticity.

⁴ The adjusted R^2 in table 3 indicates our normal compensation model for grants has the poorest fit. We attribute this to the fact that some firms do not make grants of stock and options on an annual basis (Core

The last three columns of table 3 report the estimation results for our normal compensation model including the acquisition indicator variable. The positive and significant coefficient on the Acq YR-1 indicator variable indicates that, compared to their ExecuComp peers, CEOs of the acquiring firms are significantly overpaid in the year prior to the acquisition.

It is notable that acquiring CEOs are overpaid relative to industry, time and economic determinants. One possible explanation stems from the interpretation, consistent with Core et al. (1999), that firms with overpaid CEOs have weak governance. Thus, it is not random that those CEOs who are able to undertake acquisitions are also those who are, on average, overpaid—they both could be manifestations of strong CEO power. With the pre-acquisition compensation picture in mind, we next examine how the sensitivity of new flows of compensation to performance changes around acquisitions.

Changes in CEO Pay-Performance Sensitivity after an Acquisition

In this next test, we extend the normal compensation model of table 3 to capture changes in how compensation is set after an acquisition. *A priori*, there is no reason to believe that pay and wealth sensitivities will be symmetric for positive and negative performance (Garvey and Milbourn (2004)). The practice of option repricing, alone, would produce asymmetry. Therefore, our test will allow for different pay sensitivities to positive and negative performance. We run the following pooled time series cross sectional regression over the entire sample period using the ExecuComp firms,

$$\begin{aligned}
 Pay_{it} = & \alpha_0 + f_{industry} + f_t + \beta_1 Sales_{it} + \beta_2 M / B_{it} + \beta_3 Sales\ Growth_{it} + \beta_4 ROA_{it} + \beta_5 \sigma_{ROA_{it}} \\
 & + \beta_6 \sigma_{Ret_{it}} + \beta_7 Acq_{it} + \beta_8 Positive\ Return_{it} + \beta_9 Negative\ Return_{it} \\
 & + \beta_{10} (Acq_{it} * Positive\ Return_{it}) + \beta_{11} (Acq_{it} * Negative\ Return_{it}) + e_{it}.
 \end{aligned} \tag{2}$$

and Guay (1999), and Hall (1999)), thus our annual economic determinants do a relatively poor job in explaining grants in any one year (this is the same as saying that one year may be a shorter than optimal interval to try to predict grant behavior).

The left-hand-side variable is the logarithm of CEO total pay in year t . Acq is a post-acquisition indicator variable set equal to one for acquiring firms in year $\text{cyr}+1$, and zero otherwise. The coefficient on this variable will capture any pure level reward that CEOs reap for doing an acquisition after controlling for expected changes in pay.

Positive Return is holding period fiscal year return from year $t-1$ to t if that return is positive, and zero otherwise. Negative Return is analogously set equal to the actual return if that return is negative, and zero otherwise. To capture the possible differential sensitivity of pay to performance for sample firms after the acquisition, we interact the return variables with the acquisition indicator variable. If the coefficient on the negative return interaction variable is negative, then through mergers, acquiring CEOs are able to detach their pay from any poor performance by their companies. Interaction terms are denoted by Acq* and represent the interaction of the acquisition indicator variable and the identified variables. Industry dummies are employed to control for industry compensation practices, and year dummies are employed to account for economy-wide shocks. The results of the estimation are presented in table 4.

From the first column in table 4, we see that there is no level effect of corporate acquisitions on CEO pay as the coefficient on the acquisition indicator variable is not statistically significant. In comparison to table 3, splitting stock returns into positive and negative returns yields some interesting insights. Changes in CEO pay are more strongly related to negative returns than to positive returns. Thus, CEO pay is more likely to be lowered after poor returns. However, the negative coefficient on the interaction of negative stock returns after acquisitions (Acq*Negative Return) counters the baseline positive link between poor stock performance and changes in compensation. The sum of the two coefficients (Negative Return and Acq*Negative Return) is statistically insignificantly different from zero. Thus, while (non-acquiring) CEOs normally are penalized for poor performance, acquiring CEOs are not penalized in the post-merger

period; the acquisition and subsequent changes in pay sever the link between performance and CEO pay. This evidence is suggestive of the existence of managerial self-serving behavior in undertaking acquisitions.

Corporate Governance and Post-Acquisition Pay-for-Performance

The results thus far show that there is a detachment between pay and performance after an acquisition. However, the downside protection afforded to the CEO could be optimally chosen by a board seeking to provide risk-taking incentives through convexity in pay with respect to performance. In particular, is the board simply compensating managers for attempting risky, but *ex-ante* good acquisitions that are *ex-post* (perhaps due to unforeseen factors) value-decreasing? To explore this issue, we divide sample firms by strong versus weak board bargaining position and try to relate the degree of dampening of the downside effect to this split. If the insensitivity of pay to performance when making an acquisition were optimal from a contracting perspective, then we would expect the same insensitivity in compensation policy irrespective of the negotiating strength of the board vis-à-vis the CEO.

The corporate governance literature has not settled on any one measure of the strength of the board (see Hermalin and Weisbach (2003) for a review), and specific measures of governance can be most relevant for different aspects of firm behavior. For board strength, we turn to the results of Hermalin and Weisbach (1998), who show that a measure based on CEO tenure is a robust proxy for the overall strength of the board vis-à-vis the CEO. Thus we construct our strong board indicator variable as follows: Strong Board is set equal to one for firms whose CEOs have below ExecuComp median years serving as the CEO, and zero otherwise (this measure is re-calculated each year). In the second column of table 4, we include the strong board indicator variable by itself, and

one interaction variable Strong Board*Acq*NegReturn to allow the post-acquisition pay-for-negative performance sensitivity to be different for firms with stronger boards.

The negative and significant coefficient on the strong board indicator variable shows that *ceteris paribus*, CEO pay is lower in the presence of strong boards.⁵ The coefficient on the Strong Board*Acq*NegReturn interaction term is large and positive, countering the opposite coefficient on the post-acquisition negative return interaction term (Acq*Negative Return). Thus, for bidding firms with strong boards, there remains an incentive-consistent relation between pay and negative performance after the acquisition (an F-test confirms that the total effect, $0.31 - 0.73 + 0.90 = 0.48$, is positive). This effect is absent for firms with weak boards, suggesting that the downside protection we observe is the result of captured boards rather than an attempt to provide optimal risk-taking incentives to CEOs with regard to acquisitions.

Overall, our results cast doubt on the hypothesis that boards optimally choose to provide downside protection following acquisitions, and are consistent with those of Garvey and Milbourn (2004), who show that only firms with weak shareholder protection exhibit strong asymmetry in compensation benchmarking.⁶ The results add to the body of research (e.g., Brickley, Coles and Terry (1994), Core et al. (1999), and Grinstein and Hribar (2004)) that suggests that the strength of the board vis-à-vis the CEO is critical for shareholders trying to estimate the likelihood of successful self-serving actions by their CEO.

⁵ An alternative and plausible interpretation of the negative effect of strong board on CEO pay is that CEO pay is positively related to CEO tenure (Murphy (1999)), and our Strong Board indicator variable might just capture the tenure effect on CEO pay. However, the above interpretation does not apply to the interaction term involving the Strong Board indicator variable, but it does emphasize the importance of including the indicator variable by itself in the CEO pay regression to pull the tenure effect out.

⁶ Garvey and Milbourn (2004) suggest one specific channel through which asymmetric payoffs to CEOs relative to firm performance could take place. They show that firms use a fixed-number granting policy when the stock price is driven up by exogenous forces, but attempt to maintain the value of the option grant when firm performance is poor by increasing the number of option granted. Other possible mechanisms include that the compensation committee tends to have a limited memory in setting CEO compensation, and/or, the adoption of multiple performance measures that in the limit, leads to the incentive to grow the firm through corporate acquisitions (Hall (1999), and Murphy (1999)).

The results so far show that, except for acquiring firms with strong boards, CEO pay becomes particularly insensitive to poor post-merger performance. The final question is how the changes in compensation practices interact with the effect of the CEO's existing portfolio to determine the net impact of the acquisition on his wealth.

Long-run Effect of an Acquisition on CEO Wealth

Our firm-specific CEO wealth-performance sensitivity measure captures the long-run change in the value of the CEO's equity portfolio to a change in firm value. As such, it is a measure of how closely associated CEO and shareholder wealth are over time.

Our analysis starts with the total value of the CEO's portfolio of equity incentives (stock and options) in the year prior to the bid announcement (year $ayr-1$) and then examines the effect of long-run firm performance on the value of that portfolio. This represents the expected wealth effect to a CEO contemplating an acquisition bid. In doing so, we start by measuring the change in the total value of the CEO's portfolio from before to after the acquisition. This includes the effect of firm performance on the value of the equity portfolio and the addition of any new grants to the portfolio during the period. We next account for the CEO's trading activities, adding back the value of any shares sold or options exercised during the same period. For any year in which his shareholdings in the firm decrease, we multiply the decrease in the number of shares by the midpoint of the share price that year to estimate his income from selling shares in that year. ExecuComp reports the value realized each year when a CEO exercises his options. We add this value to our estimate of the value gained from selling his shares in the firm to produce an estimate of the CEO's income from trading activities for that year. We cumulate the CEO's income from trading activities and add that back to the total value of the CEO's remaining portfolio at the end of the measurement period. Finally, we cumulate cash compensation to the CEO and add it to his total wealth. This approach

tracks the total impact of firm performance and any changes in compensation on the CEO's firm-specific wealth.⁷

Table 5, panel A presents the long-run association between CEO wealth and the stock performance of the acquiring firm. The first three rows give the acquiring CEOs' median starting portfolio and its breakdown into stock and options. The division between stock and options in the CEO's personal portfolio only slightly favors stock.

The first two columns show the average wealth change both in dollar terms and as a fraction of the CEO starting portfolio wealth (%SW) over the investment period (year $ayr-1$ to year $cyr+1$). The acquiring firms on average have a raw stock return of 45% over the three-year measurement period, underperforming the market by about 5%. Yet, the acquiring CEOs on average have a wealth increase of 121%, over a quarter of which comes from new grants of stock and options. (We use means here so that the percentages will add-up.) Compared to table 2, the mean values presented in table 5 suggest that the distribution of wealth change is very positively skewed, a fact confirmed in panel B of table 5.

To provide some further evidence on the sensitivity of CEO wealth to post-acquisition performance, in the remainder of panel A of table 5, we separate acquiring firms based on their performance relative to the market. The middle two columns show that positive performance is very richly rewarded, yielding an average wealth increase for the acquiring CEOs of \$47 million at the end of the year following the merger completion (doubling their starting wealth in year $ayr-1$). About two-thirds of these increases are driven by the strong performance of the underlying stock, which translates into more

⁷ If a CEO ceases to be employed, we set future compensation equal to zero and make a rough estimate of how the value of his portfolio would evolve: we multiply the last known total portfolio delta by the stock return over each succeeding year. We do this rather than dropping the CEOs who are no longer employed in order to avoid biasing our results upward by removing CEOs who are potentially fired for poor performance. We also perform the test without including CEOs who do not survive the acquisition and find that the inferences are unchanged.

valuable option exercises and stock holdings. Much of the rest comes from new grants of stock and options.

The last two columns of panel A show that while shareholders invested in the underperforming acquiring firms would have experienced almost no growth in their wealth, the CEOs of these same firms experience a net wealth *increase* of 70%. Offsetting the effect of below-market stock performance, are new grants of stock and options with a value equivalent to almost 30% of their starting wealth.⁸ In fact, the median raw stock performance of the underperforming sample is -3%, so the effect of pre-existing incentives would be to actually reduce the CEO's wealth in the event of the poor performance, if not for the large, offsetting additions to that portfolio after the acquisition.

Another way to look at the results is to note that the difference in firm performance between the outperforming sub-sample and the underperforming sub-sample is extreme (almost 110%), while the difference in stock and option grants for the CEOs of the two sub-samples is only about 10% of starting wealth. The fact that underperforming CEOs get new grants almost as large as the outperforming CEOs is even more striking when one considers that the underperforming CEOs have exercised considerably fewer options (8% vs. 15%). Part of the grants to the outperforming CEOs is likely to replace exercised options. While it is clear that CEOs still have an incentive to undertake good acquisitions, the key point here is that they do not have an incentive to avoid poor ones. Presented with two acquisitions, the CEO will clearly choose the better one. However, presented with doing an acquisition that may be questionable, the CEO will choose to do

⁸ It is important to note that the cumulative grant date value of grants made over the period cannot be simply aggregated with the other components of the change in CEO wealth. This value is implicitly part of the raw change in the CEO's portfolio value, which is driven by changes in the composition of the portfolio, changes in the factors affecting the value of the option portion of the portfolio, and the stock price performance. In particular, the value of the options in his portfolio at the end of year $cyr+1$ will differ from their value when granted. We track not only the total change in the value of the portfolio, but the value of the options when granted as a measure of the cost to the firm of these compensation flows.

the acquisition. The evidence is consistent with the self-serving management hypothesis that CEOs can undertake acquisitions without the fear that their wealth will likely suffer if their firm performance does.

Table 5, panel B presents the empirical distribution of change in long-run CEO wealth for the full and performance sub-samples. The CEOs of acquiring firms that underperform the market do not experience any wealth loss on average. Despite average stock underperformance of -52% , offsetting grants leave the median underperforming CEO to be 43% richer in the year following the merger.⁹ In fact, these large new grants are so pervasive that 78% of the CEOs of *underperforming* firms are better off following the merger.

Overall, these univariate results suggest that when the acquiring firm does well, the CEO enjoys exposure to the rising stock price and is additionally rewarded by new stock and option grants. Conversely, when the acquiring firm performs poorly, the CEO is left relatively unexposed to the stock performance by virtue of offsetting stock and option grants.

In panel C of table 5, we employ a regression model to more directly examine the association between post-merger CEO wealth and stock performance. The dependent variable is the percentage wealth change of the acquiring CEO from year $ayr-1$ to year $cyr+1$. The estimation result reveals a large positive intercept with an additional one-for-one increase in wealth for increases in stock return. However, the negative coefficient on the interaction term capturing negative stock performance largely negates any sensitivity the CEO's wealth has to performance on the downside. Thus, acquiring CEOs are generously rewarded for positive performance, but barely punished for poor performance. This asymmetric wealth change profile makes acquisitions an attractive corporate

⁹ Note that panel A of table 5 refers to the wealth effect of the CEO of the average underperforming firm (average underperformance), while panel B contains the median wealth effect of the underperforming sub-sample (the distribution presented is that of the wealth effect, conditional on performance).

strategy from a CEO's standpoint. Overall, these results are not consistent with incentive alignment, but rather are consistent with the self-serving management hypothesis.¹⁰

5. Comparing Acquisitions and Major Capital Expenditures

A priori, there is no reason to restrict our analysis to acquisitions. So we explore whether other size-enlarging corporate actions (such as capital investment) could lead to the same perverse incentives for CEOs as we have documented with acquisitions. Recent evidence by Titman, Wei and Xie (2004) shows that there is poor long-run abnormal performance following large capital expenditures, similar to that found following acquisitions.

Consequently, we examine the CEO pay and wealth change around major capital expenditures, requiring that investing firms have available stock prices from the CRSP files, accounting information from Compustat, and executive compensation data from Standard and Poor's ExecuComp.

The decision to acquire is inherently a lumpy one. That is, acquisitions are discrete, unusual events for a firm. Therefore, to better compare the acquisition and capital investment decisions of firms, we need a discrete measure of unusual capital investment. We follow Titman et al. (2004) to construct a measure of abnormal capital investment, which is the difference between the current period capital expenditure (Compustat data item 128) scaled by sales and last three-year average capital

¹⁰ We estimate an expanded regression model with a Strong Board interaction term similar to the final specification in table 4. The coefficient on the Strong Board interaction variable is insignificant, indicating that even firms with strong boards are unable to fully make their CEO wealth sensitive to negative performance. We attribute the difference between the results on CEO pay in table 4 and those on CEO wealth in table 5 to the fact that CEO pay is completely under the control of the board while CEO firm-specific wealth is not (it is affected by CEO trading decisions, etc.). In fact, when we estimate a similar regression, but using the scaled cumulative grants instead of total wealth change as the dependent variable, we find that cumulative grants given in firms with strong corporate governance mechanisms are sensitive to negative performance. Finally, defining the negative return indicator variable using the cumulative raw return instead of the cumulative abnormal return makes no material difference for our estimation results in panel C.

expenditures. To identify abnormal capital investment from the initial capital expenditure sample, we require the above measure to be positive.

We further require the size of capital expenditure relative to the firm's market value of total assets to be greater than 10%. Finally, we require at least one year apart between consecutive large capital investments by the same firm. The final capital expenditure sample consists of 242 large investments made by 211 firms. The mean (median) capital expenditure size relative to the investing firm is 0.14 (0.12). The industries with the largest number of transactions are Petroleum, Electronic Equipment, and Restaurants and Hotels.

We find that our capital expenditure sample firms are much smaller and their stock market performance before the investment is substantially worse than their acquiring peers; stock and option grants are not as large a fraction of total compensation for these CEOs as they are in our acquisition sample, and CEO total pay and firm-specific portfolio wealth only increase slightly after the capital investment.

Table 6, panel A gives us a clear picture of how the size of capital investment is related to the change in CEO pay. We sort the size of the investment scaled by the investing firm's market value of total assets into quintiles. Then for each size quintile, we report the average change in CEO pay from the year before (year $inv-1$) to the year after the investment (year $inv+1$). While we found a monotonic relation between the size of acquisition and increase in pay in table 2, panel B, there is no relationship between the change in CEO pay and the size of capital expenditures. In fact, CEOs of firms undertaking the largest capital expenditures actually realize lower stock and option grants, and slower growth in total pay. It is clear from the outset that the board views acquisitions and capital expenditures as very distinct corporate investments in evaluating the performance of the CEO, implying that the CEO should view them differently as well.

In table 4, we found that the total pay of acquiring CEOs was completely insensitive to poor-performance following a merger, unless overseen by a strong board. Repeating the analysis for the capital expenditure sample, we find much less downside protection and no relation between the strength of the board and the sensitivity of investing CEO's pay to performance.

Table 6, panel B presents the long-run association between CEO wealth and the stock performance of the investing firm, analogous to the analysis in table 5, panel A for acquiring CEOs. The first two columns show that the investing firms on average experience a raw stock return of 26% over the three-year period, underperforming the market by 12%. Nonetheless, the investing CEOs on average have a wealth increase of 90%, about a third of which comes from new stock and option grants.

We also separate the capital expenditure sample into performance sub-samples. The middle two columns show that positive performance is very generously rewarded, yielding an average wealth increase for the investing CEOs of \$23 million one year after the completion of the investment (about 1.8 times their starting wealth in year $inv-1$). About two-thirds of these increases are driven by the strong performance of the underlying stock, and much of the rest comes from new grants.

The last two columns show that while shareholders invested in the underperforming firms would have experienced an average 10% reduction in their wealth, the CEOs of these same firms experience a net wealth *increase* of 46%. Offsetting the downward pressure of the falling stock price on their wealth are new grants with a value equivalent to 21% of their starting wealth.

We see the performance differential between the outperforming and underperforming investing firms in the range of 110%, while the stock and option grants to the CEOs of these firms differ only by 19%. Although the table exhibits some of the insensitivity of CEO wealth to performance found in the acquisition sample, further

analysis shows the wealth of CEOs undertaking capital expenditures to be fairly sensitive to performance. While 78% of underperforming acquiring CEOs are better off, only 61% of underperforming investing CEOs are. Further, repeating the regression in panel C of table 5 for the capital expenditure sample reveals that the positive relation between performance and the wealth change of investing CEOs remains even if the firm is underperforming.

Our general finding that internal and external expansions are treated differently from a compensation standpoint echoes the view of Andrade and Stafford (2004) that the two forms of investment are different. They analyze industry patterns in acquisitions and internal investment and find them to be driven by different factors, concluding that they are not substitutes. Our results on CEO pay and incentives imply that the board views growth through acquisitions versus growth through capital investment very differently in setting CEO compensation. Our analysis supports our earlier supposition that corporate acquisitions are special because they serve as a natural setting for the board and the CEO to re-negotiate the latter's compensation. Overall, these results are not consistent with incentive alignment, but rather are consistent with the self-serving management hypothesis.

6. Additional Investigation

Control Sample

Due to the strong time trend in compensation during most of our sample period, we need to ascertain that the pay and wealth changes in table 2, panel A are indeed abnormal. As a check on the regression control approach employed throughout, we also adopt the control sample approach. Our control sample of non-bidding firms is obtained by identifying the set of all ExecuComp firms that were neither targets nor bidders in acquisitions with

relative size of at least 10% during our entire sample period (1993-2000). This is the base set of potential control firms. For each bidder in our sample, we select a control firm with the closest market value of total assets to that of the sample firm at the fiscal yearend after the merger is consummated. Matching is done without replacement, so a control firm is matched to only one sample firm. When compared to the pay and wealth changes in the control sample, it is clear that the pay and wealth changes experienced by the acquiring CEOs are abnormal. We also use the stock performance of control sample firms to benchmark the acquiring firms, and replicate the analysis in table 5 and find that our results remain. Our results are robust to whether matching is done on size, industry or prior stock performance.

Bid Characteristics

We also examine whether interactions that account for the characteristics of the bid or the abnormal stock price reaction to the announcement of the bid have any effect on the compensation and wealth changes. We separate bids based on whether they are diversifying and based on the method of payment (cash or stock). We also control for whether the bidder announcement return is positive or negative. Our finding that compensation changes made following a merger largely insulate the acquiring CEO from the effects of long-run performance on his wealth is robust to all of these controls. Further, there is no significant correlation between long-run performance and the announcement reaction. We do find some evidence that CEOs making bids that are met with negative announcement returns have greater abnormal compensation before the bid.

Acquisition Programs

Our analysis thus far has focused on standalone acquisitions. A natural question, particularly for investing shareholders, is whether their CEO, through making multiple acquisitions, continues to reap large increases in pay and wealth. To address such a

question, we retain all the large acquisitions in the sample (10% relative size filter applied) allowing for acquisitions that occur in consecutive years.

Table 7, panel A shows the time trend of the starting year of acquisition programs by our sample firms. Acquisition programs are highly cyclical, and for our sample firms, the number of acquisition programs peaked in 1995 when the US economy was in the course of full recovery from the recession in the early 1990's. In total, there are 58 acquisition programs initiated by the sample firms.

In untabulated results, we repeat the analysis in table 5 including programs and find that the change in CEO firm-specific wealth after the program has a wider spread and somewhat larger mean gains across the board. However, the general picture is unchanged. In particular, the empirical distribution in panel B of table 5 would look very similar, as would the regression in panel C using the larger sample including acquisition programs.

Table 7, panel B provides a parallel comparison of the pay change experienced by the program acquiring CEO and his non-program acquiring counterpart. The compensation variable is the ratio of CEO total pay in the year following the last acquisition in the program to his total pay in the year prior to the start of the program. The "years" column gives the length of the program from the start to end. For the non-program acquiring CEOs, for comparison, we compute the ratio of CEO total pay at the same number of years after his first and only acquisition to his total pay in the year prior to that acquisition. The contemporaneous average cumulative returns are computed for the program and non-program samples.

We find that total pay continues to increase very briskly for CEOs who do follow-on acquisitions. For example, at the end of the four-year program, the average program acquiring CEO has total pay equal to 2.3 times his starting compensation and over the same measurement period, his firm experiences a cumulative stock return of 123%. In

contrast, for the average non-program acquiring CEO four years after his only acquisition, his total pay is 169% of his starting compensation, and his firm's cumulative return over the same period is only 38%.

The inference to be drawn from panel B is that poor post-merger performance provides a natural check on a CEO's ability to string together a series of self-serving deals. Even if the board fails to penalize the CEO for a bad merger, the poor stock performance removes his ability to engage in another acquisition. Only those firms that have extremely good post-merger stock performance embark on additional acquisitions.¹¹ The perverse settling-up we documented for standalone acquisitions does not persist to the same extent in acquisition programs.

CEO Turnover

The first part of our analysis was limited to the sample of bidding firms whose CEOs remained in place through at least one year following the acquisition. However, our analysis of CEO wealth in table 5 treats a non-surviving CEO as one who gets no compensation at all after leaving the firm. Thus, if poor performance leads to CEO dismissal, we are being conservative in estimating the wealth of a dismissed CEO, and yet we still find that on average CEOs of poorly performing firms are far better-off than their shareholders.

Nonetheless, the possibility of being terminated may carry incentive effects that are not captured by a purely financial analysis. In 64 of the 370 acquisitions, the acquiring CEO turns over by the end of the year following the merger. We estimate a turnover probit using the universe of ExecuComp firms, which controls for firm, industry and performance characteristics (not tabulated). *Ceteris paribus*, acquiring CEOs have no greater or smaller chance of turning over following the acquisition than do non-

¹¹ Our evidence is consistent with the finding in Klasa and Stegemoller (2005) that acquisition programs rarely continue when the performance of the acquiring firm weakens.

acquiring CEOs. Thus, it does not appear that we are missing an aspect of incentives due to turnover.

Alternative Explanations

One possible mechanism through which even CEOs of poorly performing firms are able to get large grants post-merger could be that the board fixates on a set percentage of the firm's stock to give as an option grant.¹² This type of fixation appears to be common when the board is concerned about dilution. To explore this possibility further, we compute the target grant ratio by dividing the number of options granted in the year before the bid announcement by the contemporaneous number of shares outstanding. A board fixated on a set percentage of shares outstanding would continuously issue the same target ratio each time it makes a grant of options. The fixation story predicts the number of options granted in the year after the merger as the product of the number of shares outstanding that year and the target ratio (computed before the merger). Abnormal grants are computed as the deviation from this number.

There is some evidence of board fixation in our sample. While more than 90% of our firms increase their shares outstanding from before to after the merger, the mean and median abnormal grants in the year after the merger are both close to zero. This holds also for the cumulative grants and in the outperforming and underperforming sub-samples. However, there is a negative correlation between the abnormal cumulative grants and the performance of the firm. That is, for the underperforming sub-sample, the worse the acquiring firm performs, the larger is the abnormal amount of grants (more than would be due to pure dilution fixation). Thus, fixation appears to be part of the mechanism that allows poorly performing CEOs to increase their option grants (after stock-swap mergers), but it is not the whole story.

¹² We thank the referee for suggesting this mechanism.

Another alternative explanation of our finding in the paper is that CEOs are being rewarded for using overvalued equity to acquire less overvalued firms, as Shleifer and Vishny (2003) would suggest. In this case, the results would still be consistent with incentive alignment; the acquiring CEOs were just taking advantage of their overpriced shares, in the interest of long-term shareholders. It is true that under the Shleifer and Vishny overvaluation story, CEOs who use overvalued shares to buy target assets will be rewarded. However, if, as this story would require, the board knows that pre-merger performance was overvaluation rather than true value creation, then they should let the CEO's (inflated) wealth decrease to the true value along with the rest of the firm. Thus, the assumption that the CEO and the board know that the post-merger poor performance is simply due to the correction of pre-merger overpriced shares means that the board also knows that the CEO enjoyed unwarranted increases in his wealth prior to the merger. Rather than adjusting compensation to maintain these unearned increases, the board and the CEO should allow them to reverse along with the stock performance. Instead, we find the opposite.

7. Discussion and Conclusion

In the past, CEOs suffered along with shareholders through the effect of the investment on their stock portfolios (e.g., Benston (1985)). However, the common practice of supplementing CEO cash compensation with large grants of new options and restricted stock appears to have changed that. We find that current compensation practices give CEOs incentives to undertake an acquisition as their total pay and overall wealth increase substantially following one. More importantly, we show that, except in best-governed firms, a CEO's pay following a merger becomes markedly insensitive to performance—with large new grants of options and restricted stock coming even in underperforming firms. Thus, the net effect is that a CEO's wealth actually increases even if he makes a

poor acquisition decision. The experience is quite different for the shareholders of the firm; the acquisition arrests what had been superior stock performance and, on average, leads to underperformance, clearly making them worse off.

We compare the acquisition evidence to the experience of CEOs making large capital expenditures. These firms are smaller and have poor stock performance prior to the investment. Further, compensation changes after large internal investment are much smaller than those after acquisitions. We also find less evidence that CEOs are able to limit the downside exposure of their pay and wealth following internal investment. Overall, we conclude that CEOs and boards treat internal and external investment very differently. Acquisitions provide a natural impetus for CEOs to renegotiate their compensation whereas large capital expenditures do not. The evidence suggests that when CEOs are in a strong position relative to their boards, they are able to use this renegotiation to eliminate any downside risk from the performance of the acquisition.

Our evidence suggests that current compensation schemes may actually be less effective in controlling the agency conflict than previously thought. This is because the flow of new incentives following an acquisition can actually reduce the effectiveness of existing incentives. Thus, our results are consistently supportive of the self-serving management hypothesis rather than the incentive alignment hypothesis. These results complement recent research by Garvey and Milbourn (2004) who find in a broad setting that there is an asymmetry in executive compensation benchmarking; there is significantly less pay-for-luck when luck is down than when it is up. The critical component in both is that the CEO has some expectation about how he will be able to influence his compensation *after* the action is taken and performance is observed. Together, these results suggest that compensation research should begin to focus on how the flow of new compensation in reaction to an event or change in performance impacts the *ex-ante* perceived incentive effect of pre-event executive portfolios. Our results

highlight the fact that the strength of the board vis-à-vis the CEO is a critical component for an investing shareholder concerned about the kind of perverse ex-post settling-up documented here or for a CEO evaluating his potential payoffs from undertaking a questionable acquisition.

Finally, our results on compensation agree with the conclusion drawn by Andrade and Stafford (2004) that internal and external investment are different. Future research needs to explain why compensation changes so much and so favorably after acquisitions, regardless of performance, and does not do so after large internal capital expenditures. One potential explanation stems from the uncertainty and information asymmetry during the first few years of a merger integration. It is plausible that a CEO that has the trust of his board could convince the board that despite the performance of the stock, the merger will be successful and the performance will reverse in the longer-run. This type of argument would be harder to make by CEOs making internal investment. Such research will help us understand not only the determinants of executive compensation, but also the tradeoffs between internal and external investment.

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Table 1
Distribution of Corporate Acquisitions across Time and Industries, 1993-2000

The sample consists of 370 completed acquisitions (transaction value greater than 10% of the bidder's market value of total assets) announced during the period January 1, 1993, to December 31, 2000. The bidders are listed in Securities Data Company's Mergers and Acquisitions database and have executive compensation data in Standard and Poor's ExecuComp database. The industry classification follows Fama and French (1997).

Panel A: Distribution by Year			Panel B: Distribution by Industry		
	Frequency	Percent		Frequency	Percent
1993	12	3.24	Aircraft	6	1.62
1994	33	8.92	Apparel	2	0.54
1995	57	15.41	Automobiles and Truck	3	0.81
1996	55	14.86	Banking	55	14.86
1997	66	17.84	Business Services	41	11.08
1998	71	19.19	Business Supplies	8	2.16
1999	55	14.86	Candy & Soda	1	0.27
2000	21	5.68	Chemicals	13	3.51
Total	370	100%	Coal	1	0.27
			Communication	7	1.89
			Computers	10	2.7
			Construction	3	0.81
			Construction Material	8	2.16
			Consumer Goods	4	1.08
			Defense	2	0.54
			Electrical Equipment	4	1.08
			Electronic Equipment	18	4.86
			Entertainment	5	1.35
			Food Products	4	1.08
			Healthcare	6	1.62
			Insurance	18	4.86
			Machinery	16	4.32
			Measuring and Control	4	1.08
			Medical Equipment	10	2.7
			Miscellaneous	2	0.54
			Mining	2	0.54
			Personal Services	2	0.54
			Petroleum	12	3.24
			Pharmaceutical	8	2.16
			Precious Metals	2	0.54
			Printing and Publishing	5	1.35
			Restaurants, Hotels, etc	5	1.35
			Retail	16	4.32
			Rubber and Plastic	2	0.54
			Steel Works Etc	7	1.89
			Textiles	2	0.54
			Tobacco Products	1	0.27
			Trading	8	2.16
			Transportation	9	2.43
			Utilities	24	6.49
			Wholesale	14	3.78

Table 2
Descriptive Statistics of Acquiring Firms

Panel A: Sample Overview

The sample starts with the 370 completed acquisitions announced during the period January 1, 1993, to December 31, 2000, as summarized in table 1. All variable values are obtained at the fiscal yearend either before the merger announcement (year AYR-1) or after the merger completion (year CYR+1). All dollar values are measured in constant 2002 dollars (millions for firm characteristics, thousands for CEO compensation and portfolio value). We report the median, as well as the 5th and 95th percentile values. To make the compensation comparison before and after the merger meaningful, we require the CEO to remain the same between year AYR-1 and year CYR+1, leaving 306 acquiring firms for analysis in the table. MV Equity is obtained as the product of the number of shares outstanding and the stock price as of the fiscal yearend. MV Assets is obtained as book value of total assets minus book value of equity plus market value of equity. Leverage is captured by the ratio of book value of long-term debt and either market or book value of total assets. M/B is the ratio of MV Assets and book value of total assets. Sales Growth is the difference in log sales from year $t-1$ to t . ROA is the accounting return on assets, obtained as the ratio of earnings before interest and taxes to total assets. Return is the annual stock return during the fiscal year. Abnormal Return is the annual firm stock return adjusted for the contemporaneous annual return on the market portfolio. Cash Pay is the sum of salary and annual bonus. Grants is the total value of all restricted stock and options granted during the year. Total Pay is the sum of salary, bonus, other annual compensation, value of restricted stock granted, value of new stock options granted during the year, long-term incentive payouts and all other compensation. Portfolio Value of Equity Incentives is the market value of the CEO's existing holdings of stock and options at the fiscal yearend.

	AYR-1			CYR+1		
	5 th Pct	Median	95 th Pct	5 th Pct	Median	95 th Pct
<u>Firm Characteristics</u>						
MV Equity	266	1949	27313	273	3119	52457
MV Assets	408	4312	71465	653	6690	129456
Book Assets	184	2431	46905	338	3956	75120
Sales	161	1299	13544	293	2202	28777
Debt/MV Assets	0.001	0.131	0.362	0.002	0.167	0.458
Debt/Book Assets	0.004	0.206	0.491	0.004	0.244	0.515
M/B	1.013	1.517	4.535	0.970	1.425	4.391
Sales Growth	-0.172	0.082	0.465	-0.317	0.131	0.618
ROA	0.029	0.163	0.378	0.023	0.135	0.354
Return	-0.277	0.248	1.025	-0.539	0.052	0.820
Abnormal Return	-0.465	0.034	0.803	-0.661	-0.120	0.705
<u>CEO Compensation</u>						
Cash Pay	410	1144	3643	352	1167	5189
Grants	0	893	12385	0	1425	17663
Total Pay	558	2449	16579	722	3464	22087
Portfolio Value of Equity Incentives	2273	23235	342172	3751	33167	367097

Table 2, continued

Panel B: The Relation between Acquisition Size and Change in CEO Compensation

The size of the acquisition, relative to the bidder's market value of total assets, is given in the final column. The sample is split into quintiles based on the relative size of the acquisition. For each acquisition size quintile, we present the average percentage change in cash pay, grants, and total pay from year AYR-1 to year CYR+1 for CEOs in that acquisition size quintile.

Quintile	Cash Pay	Change in Grants	Total Pay	Relative Size
1	11.4%	51.0%	21.0%	13.0%
2	15.1%	46.1%	29.5%	20.6%
3	21.3%	77.3%	42.0%	34.4%
4	24.5%	51.2%	42.8%	63.0%
5	22.0%	63.6%	47.6%	116.7%

Table 3
Are CEOs of Acquiring Firms Overpaid?

This table reports the estimation results for our model of normal CEO compensation. The dependent variable is CEO compensation measured in natural logs, and we use all three measures of CEO compensation in our estimation. Sales is measured as its natural log. M/B is the mean market-to-book ratio of assets from the prior five years. Sales Growth is the difference in log sales from year $t-1$ to t . ROA is the accounting return on assets. Return is the annual stock return during the fiscal year. σ_{ROA} and σ_{Ret} are the standard deviations of ROA and stock return, computed over the prior five years. Acq YR-1 is an indicator variable set equal to one in the year prior to the acquisition, and zero otherwise. Industry dummies are employed to control for industry compensation practices, and year dummies are employed to account for economy-wide shocks. The model is estimated using all ExecuComp firms over the entire sample period 1993-2000. Corresponding p-values from Huber-White robust standard errors are reported in brackets.

	Cash	Grants	Total	Cash	Grants	Total
Intercept	4.171 [<.001]	-1.503 [0.003]	3.727 [<.001]	4.175 [<.001]	-1.492 [0.003]	3.733 [<.001]
Sales	0.289 [<.001]	0.671 [<.001]	0.437 [<.001]	0.289 [<.001]	0.669 [<.001]	0.436 [<.001]
M/B	-0.027 [0.133]	0.179 [0.001]	0.090 [<.001]	-0.026 [0.135]	0.179 [0.001]	0.090 [<.001]
Sales Growth	0.099 [0.008]	0.419 [0.010]	0.072 [0.250]	0.098 [0.008]	0.416 [0.010]	0.071 [0.257]
ROA	0.473 [<.001]	-1.249 [0.008]	-0.197 [0.191]	0.468 [<.001]	-1.264 [0.007]	-0.205 [0.173]
σ_{ROA}	-0.043 [0.861]	1.834 [0.023]	0.455 [0.121]	-0.047 [0.850]	1.824 [0.024]	0.450 [0.125]
Return	0.165 [<.001]	0.255 [<.001]	0.158 [<.001]	0.163 [<.001]	0.250 [<.001]	0.156 [<.001]
σ_{Ret}	-0.015 [0.552]	0.19 [0.090]	0.101 [0.007]	-0.015 [0.554]	0.19 [0.089]	0.101 [0.007]
Acq YR-1				0.131 [<.001]	0.399 [0.028]	0.210 [<.001]
Industry and Year Dummies?	YES	YES	YES	YES	YES	YES
Adj R ²	0.301	0.157	0.395	0.302	0.158	0.396
Number of Observations	10342	10342	10342	10342	10342	10342

Table 4
Changes in CEO Pay-Performance Sensitivity after the Merger

This table reports regression results examining the changes in CEO pay-performance sensitivities subsequent to acquisitions. The dependent variable is the logarithm of CEO's total pay for year t . Sales is measured as its natural log. M/B is the firm's mean market-to-book ratio of assets from the prior five years. Sales Growth is the difference in log sales from year $t-1$ to t . ROA is the accounting return on assets from year $t-1$ to t . σ_{ROA} and σ_{Ret} are the standard deviations of ROA and the stock return, computed over the prior five years. Acq is an indicator variable set equal to one in the year after the completion of an acquisition, and zero otherwise. Positive Return is set equal to the prior fiscal year stock return if it is positive, and zero otherwise. Negative Return is analogously set equal to the prior fiscal year stock return if it is negative, and zero otherwise. Interaction terms are denoted by Acq* and represent the interaction of the acquisition indicator variable and the identified variables. Strong Board is an indicator variable set equal to one for firms whose CEOs have below median years serving as the CEO, and zero otherwise. Strong Board*Acq*NegReturn captures the effect of a strong board on the post-acquisition sensitivity of pay to negative performance. Industry dummies are employed to control for industry compensation practices, and year dummies are employed to account for economy-wide shocks. The model is estimated using all ExecuComp firms over the entire sample period 1993-2000. Corresponding p-values from Huber-White robust standard errors are reported in brackets.

Table 4, continued

	Total Pay	Total Pay
Intercept	3.760 [<.001]	3.797 [<.001]
Sales	0.435 [<.001]	0.431 [<.001]
M/B	0.090 [<.001]	0.089 [<.001]
Sales Growth	0.072 [0.261]	0.073 [0.253]
ROA	-0.203 [0.180]	-0.203 [0.180]
σ_{ROA}	0.485 [0.094]	0.479 [0.100]
σ_{Ret}	0.115 [0.005]	0.114 [0.005]
Acq	0.037 [0.534]	0.042 [0.480]
Positive Return	0.075 [0.007]	0.075 [0.007]
Negative Return	0.313 [<.001]	0.312 [<.001]
Acq*Positive Return	-0.110 [0.841]	-0.107 [0.845]
Acq*Negative Return	-0.351 [0.187]	-0.728 [0.020]
Strong Board		-0.050 [0.098]
Strong Board*Acq*Neg Return		0.897 [0.049]
Industry and Year Dummies?	YES	YES
Adj R ²	0.395	0.396
Number of Observations	10342	10342

Table 5
Long-run CEO Wealth Sensitivity to Firm Performance

Panel A: Decomposition of Changes in Long-run CEO Wealth

This panel presents the median composition of acquiring CEOs' equity-based starting portfolio wealth (SW) in the year prior to the bid announcement (year AYR-1) and average changes in CEO wealth from the year before the bid announcement to the year after the deal completion (year CYR+1, usually 3 years). The wealth effects are also presented for performance sub-samples. Performance is defined as the return from the fiscal year before the merger announcement (year AYR-1) to the fiscal year after the merger completion (year CYR+1), adjusted for the market return. The panel shows the decomposition of CEO's total wealth change, which is the sum of the change in the portfolio value, the effect of any stock sales or option exercises over the period, and his cash pay over the same period. The cumulative grant date value of any option or restricted stock grants made over the period is also presented. This value is implicitly part of the raw change in the portfolio value, which is driven by changes in the composition of the portfolio, changes in the factors affecting the value of the option portion of the portfolio, and the stock price performance. If a CEO departs the firm, he is assigned zero compensation after the year of departure and we multiply the last known total portfolio delta by the stock return over each succeeding year. The final two rows show returns, raw and market-adjusted, that shareholders of the acquiring firm earned over the same period. The "% of SW" column scales the value column by the CEO's starting portfolio wealth before the acquisition.

	All		Outperforming		Underperforming	
	Value	% of SW	Value	% of SW	Value	% of SW
+ Starting Stock Value	12802	55%	13662	57%	10560	54%
+ Starting Option Value	10433	45%	10306	43%	9069	46%
= Starting Wealth	23235	100%	23698	100%	19629	100%
+ Raw Change: Portfolio Value	15990	69%	33665	140%	3934	20%
+ Cumulative Stock Sales	3729	16%	3995	16%	3066	16%
+ Cumulative Option Exercise	2600	11%	3696	15%	1631	8%
+ Cumulative Cash Pay	5823	25%	5577	23%	3934	26%
= Total Wealth Change	28140	121%	46934	194%	13789	70%
Cumulative Grants	7788	34%	9918	41%	5529	28%
Return	45.0%		109.1%		1.4%	
Abnormal Return	-5.2%		64.0%		-52.3%	
Number of Observations	316		128		188	

Table 5, continued**Panel B: Empirical Distribution of Changes in Long-run CEO Wealth**

This panel presents the distribution of the acquiring CEO's total wealth change as a fraction of his starting portfolio wealth for the full sample and performance sub-samples. The wealth change is computed as in panel A.

	Percentile				
	10 th	25 th	50 th	75 th	90 th
All	-5.8%	22.2%	85.9%	186.3%	307.7%
Outperforming	55.2%	112.6%	171.6%	250.6%	376.9%
Underperforming	-15.2%	5.3%	42.6%	107.7%	202.8%

Panel C: The Long-run CEO Wealth-Performance Sensitivity

This panel presents the results of a regression explaining the acquiring CEO's total wealth change between year AYR-1 to year CYR+1 as a fraction of his starting portfolio wealth in year AYR-1. If a CEO departs the firm, he is assigned zero compensation after the year of departure and we multiply the last known total portfolio delta by the stock return over each succeeding year. Abnormal Return is the cumulative abnormal (market-adjusted) return between year AYR-1 to year CYR+1. Negative Abnormal Return Indicator is set equal to one if the cumulative abnormal stock return is negative, and zero otherwise. The interaction term Negative Indicator*Abnormal Return takes the value of Abnormal Return when it is negative, and zero otherwise. Corresponding p-values are reported in brackets.

	Total Wealth Change
Intercept	1.307 [<.001]
Abnormal Return	1.014 [<.001]
Negative Abnormal Return Indicator	-0.396 [0.036]
Negative Indicator*Abnormal Return	-0.615 [0.018]
Adj R ²	0.334
Number of Observations	316

Table 6
CEO Pay and Wealth Change after Major Capital Expenditures

Panel A: The Relation Between Investment Size and Change in CEO Pay

The capital expenditure sample consists of 242 large, unexpected capital investments (the difference between current capital expenditure scaled by sales and past three-year average is positive, and the investment is greater than 10% of the investing firm's market value of total assets) during the period January 1, 1993, to December 31, 2000. We require that there is at least one year apart between consecutive, large capital investments by the same firm. All firms in the sample must have executive compensation data in Standard and Poor's ExecuComp database. The size of the capital expenditure, relative to the investing firm's market value of total assets, is given in the final column. The sample is split into quintiles based on the relative size of the investment. For each investment size quintile, we present the average percentage change in cash pay, grants, and total pay from the year before the investment (year INV-1) to the year after the investment (year INV+1) for CEOs in that investment size quintile.

Quintile	Cash Pay	Change in		Relative Size
		Grants	Total Pay	
1	8.9%	31.5%	23.4%	10.3%
2	15.7%	3.0%	27.6%	11.2%
3	7.2%	57.1%	13.2%	12.4%
4	8.9%	11.6%	14.0%	14.7%
5	17.5%	-24.8%	12.5%	21.3%

Panel B: Decomposition of Changes in Long-run CEO Wealth

This panel presents the median composition of investing CEOs' equity-based starting portfolio wealth (SW) in the year prior to the major capital expenditure (year INV-1) and average changes in CEO wealth from the year before to the year after a large capital expenditure is made (3 years). The wealth effects are also presented for performance sub-samples. Performance is defined as the return from the fiscal year before the major investment (year INV-1) to the fiscal year after completion of the investment (year INV+1), adjusted for the market return. The panel shows the decomposition of CEO's total wealth change, which is the sum of the change in the portfolio value, the effect of any stock sales or option exercises over the period, and his cash pay over the same period. The cumulative grant date value of any option or restricted stock grants made over the period is also presented. This value is implicitly part of the raw change in the portfolio value, which is driven by changes in the composition of the portfolio, changes in the factors affecting the value of the option portion of the portfolio, and the stock price performance. If a CEO departs the firm, he is assigned zero compensation after the year of departure and we multiply the last known total portfolio delta by the stock return over each succeeding year. The final two rows show returns, raw and market-adjusted, that shareholders of the investing firm earned over the same period. The "% of SW" column scales the value column by the CEO's starting portfolio wealth before the capital expenditure.

	All		Outperforming		Underperforming	
	Value	% of SW	Value	% of SW	Value	% of SW
+ Starting Stock Value	6749	57%	8486	65%	5561	54%
+ Starting Option Value	5092	43%	4569	35%	4738	46%
= Starting Wealth	11841		13055		10299	
+ Raw Change: Portfolio Value	4507	38%	14626	112%	15	0%
+ Cumulative Stock Sales	1294	11%	2196	17%	815	8%
+ Cumulative Option Exercise	1141	10%	2168	16%	624	6%
+ Cumulative Cash Pay	3698	31%	3995	31%	3250	32%
= Total Wealth Change	10642	90%	22985	176%	4706	46%
Cumulative Grants	3275	28%	5268	40%	2178	21%
Return	25.9%		96.3%		-10.2%	
Abnormal Return	-12.1%		73.1%		-55.8%	
Number of Observations	242		82		160	

Table 7
Acquisition Programs

Panel A: Frequency Distribution of Acquisition Programs, 1993-2000

Multiple acquisitions by the same firm are called acquisition programs. Panel A presents the year in which the first acquisition within a program is made.

	Acquisition Program Starts	Percent of Sample
1993	4	6.90
1994	8	13.79
1995	20	34.48
1996	10	17.24
1997	8	13.79
1998	7	12.07
1999	1	1.72
Total	58	100%

Panel B: CEO Pay and Stock Performance in Program and Non-Program Acquiring Firms

Panel B presents CEO compensation and cumulative returns for program and non-program acquiring firms. CEO Pay is the ratio of CEO total pay in the year following the last acquisition in the program to his total pay in the year prior to the start of the program. Cumulative Return is the contemporaneous cumulative stock return on the acquiring firm. The years column gives the length of the program from the start to end. The non-program columns give average pay ratios and cumulative returns for non-program acquiring firms after the same number of years since the first and only acquisition. For example, acquisition programs in our sample take either four or five years. At the end of the four-year program, the average program acquiring CEO has total pay equal to 2.3 times his starting compensation and his firm has earned a cumulative stock return of 123%. For the average non-program acquiring CEO four years after his only acquisition, his total pay is 169% of his starting compensation and his firm's cumulative return is only 38%.

Cumulative		Cumulative		Years
CEO Pay	Return	CEO Pay	Return	
Programs		Non-Programs		
2.267	1.225	1.686	0.382	4
3.492	1.614	2.207	0.411	5