

# Equity Grants to Target CEOs Prior to Acquisitions

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## Abstract

In this paper, I investigate the magnitude, determinants, and consequences of equity grants to target firm CEOs prior to acquisitions. Median equity grants to the target CEO are generally largest in the year before the acquisition, both relative to prior years and to a control sample with similar size, growth opportunities, and industry association. There is some evidence that equity awards are used to compensate the CEO for his expected loss from selling the firm, but no evidence that the CEO uses his power to obtain excessive equity. Equity grants are positively related to acquisition premiums for target firms that do not initiate the sale. Overall, the evidence suggests that equity awards to the target CEO reflect the CEO's and board's information and incentives relating to the upcoming acquisition consistent with shareholder wealth maximization within the market for corporate control.

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# Equity Grants to Target CEOs Prior to Acquisitions

## 1. INTRODUCTION

The chief executive officer and other top executives of an acquisition target often engage in private talks and negotiations with a potential acquirer months before outside shareholders become aware of the deal. Median acquisition premiums paid by acquirers over the last 30 years exceed 35%, restrictions on unvested stock and options are typically lifted at the acquisition, and the target CEO often departs the combined firm within one year after the acquisition is completed. Given the anticipated horizon of the target CEO and the significance of the CEO's equity holdings around an acquisition, a natural question is whether the board's and CEO's information and incentives regarding the firm's sale influences the structure of executive compensation. In this paper, I provide evidence on the magnitude, determinants, and consequences of equity grants to these CEOs prior to an acquisition.

A rent extraction theory suggests that the target CEO uses his influence to obtain excessive equity awards prior to selling the firm. Most of the target's stock price increase takes place during the four weeks before and up through the acquisition announcement date (Schwert 1996). This creates an incentive for the CEO to maximize his equity holdings prior to the announcement. If stock and option grants are merely a disguised form of insider trading through which the CEO can obtain excessive equity at the expense of outside shareholders, then observed equity grants should be positively related to the power of the CEO and negatively associated with the acquisition price.<sup>1</sup>

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<sup>1</sup> This statement assumes that the total price the acquirer is willing to pay to make the acquisition (inclusive of the cost to settle employee options) is independent of the number of options outstanding, and implies that the price per share offered to stock holders should decrease in the number of employee stock options the acquirer must assume or liquidate.

An incentive alignment theory argues that equity awards are chosen by the board to maximize shareholder wealth.<sup>2</sup> In the market for corporate control, this has the following implications. First, the CEO gives up future compensation and benefits by agreeing to sell the firm, and has an incentive to oppose a takeover when then there is a private cost to him. Agreements to compensate the manager in the event the firm is acquired have been viewed as a mechanism to reduce agency costs.<sup>3</sup> Most CEOs are already covered by change-in-control agreements which generally provide for a lump-sum cash payment if the firm is acquired. If boards also use equity to offset CEOs' loss from selling their firms, then observed equity awards should be greater when payments from formal contracts do not fully compensate CEOs for their expected losses.

Second, after the decision to sell the firm is made, directors have a duty to obtain the highest value for the firm's shares. The CEO is usually the primary person conducting the negotiations, so boards likely increase equity grants to explicitly encourage CEOs to expend more effort on behalf of shareholders in the negotiation process. If the equity award affects CEO effort, then the acquisition premium paid to target shareholders should be positively associated with equity grants to the CEO prior to the deal. This prediction is consistent with the finding that shareholders enjoy larger takeover premiums when the target's top management has greater equity incentives (e.g. Cotter and Zenner 1994, Song and Walkling 1993). It is also consistent with recent evidence that equity grants and changes in equity holdings are positively associated

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<sup>2</sup> It is important to note that throughout this paper, the incentive alignment and rent extraction explanations are considered complimentary rather than competing explanations. Because rent extraction can still occur within an efficient contract, the empirical tests are generally interpreted as evidence on the extent to which each influence is present in the data.

<sup>3</sup> Knoeber (1986) and Jensen (1988) argue that these golden parachute contracts are an efficient contracting mechanism and Lambert and Larcker (1985) find that shareholders react positively to the news that a firm adopts a golden parachute.

with future accounting and stock price performance (e.g. Core and Larcker 2002, Hanlon, Rajgopal, and Shevlin 2003, Ittner, Lambert, and Larcker 2003).

I conduct this study on a sample of 233 target firms in which an acquisition was publicly announced between 1996 and 2000 and subsequently completed. During this period, the mergers and acquisitions market was relatively active and stock and option holdings and compensation data are readily available for a large number of target company executives.

I first investigate whether equity grants to target CEOs increase prior to a merger by examining the time series of equity awards leading up to the deal. To control for temporal and cross-sectional factors associated with levels of equity compensation in firms, I also measure equity awards relative to a control sample with similar size, growth opportunities, and industry association. Over the four years leading up to the acquisition, median equity grants to target CEOs are generally largest in the final fiscal year before the acquisition (also referred to as the acquisition year). The increasing usage of equity compensation over the 1990s does not completely explain this observation. Equity awards to target CEOs in the acquisition year exceed those from a control sample of non-target firms matched on year, industry, market capitalization, and book-to-market. The difference is most pronounced for the subsample of CEOs who have been in office at least five years.

Next, I investigate the determinants of new equity awards to the CEO prior to an acquisition. There is modest evidence that the magnitude of the equity award is positively associated with the CEO's expected loss from selling the firm, consistent with the incentive alignment hypothesis. For example, CEOs with more years to retirement receive larger grants in the acquisition year. There is no evidence to support the notion that entrenched CEOs obtain excessive equity grants, as corporate governance proxies are not correlated with equity grants in the predicted directions.

This lack of findings may not be surprising if firms with more entrenched CEOs are more likely to successfully resist a takeover attempt and not enter into the sample of completed deals examined here.

I then investigate whether new equity awards affect shareholder wealth by examining the association between the magnitude of the grant made to the CEO and the subsequent acquisition premium received by target shareholders.<sup>4</sup> For the entire sample, I find no significant association between grants and premiums. In further analysis, I document a positive association between grants and premiums for the 165 targets who did not initiate the takeover process, but not for the targets who did initiate it. Target initiated deals are often carried out via an auction process coordinated by a third party. An auction likely mitigates the influence of the CEO on deal value relative to a transaction that a CEO negotiates exclusively with a single acquirer.

In supplemental tests, I provide evidence on CEO trading in the acquisition year. CEOs with at least five years in office reduce their divestures in the acquisition year relative to prior years. Equity trades by target CEOs in the acquisition year are unrelated to new equity grants and recent stock price movements. One interpretation is that target CEOs are willing to bear the increase in firm-specific risk imposed by new equity granted in the acquisition year, but not in other years.

This paper makes several contributions. First, I use SEC mandated disclosures to document that target directors and executives are involved the target's sale process months in advance of a public announcement and privately initiate the acquisition process in many cases. This provides a

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<sup>4</sup> Although I test whether observed grants are consistent with managers being compensated for agreeing to sell the firm, I do not examine whether the grant affects the probability of entering into an acquisition, a decision which is presumed to have positive consequences for shareholder wealth. For this analysis, the natural comparison sample includes firms which were potential acquisition candidates, but whose executives and directors ultimately decided to remain independent. Public data on these deals is usually restricted to those transactions which were publicly announced but subsequently terminated, limiting the potential sample.

basis for the current and future studies which seek to understand how private information about the sale of the firm affects the behavior of target boards and managers. Second, I find that equity grants increase prior to the sale of the firm and that equity grants made prior to the acquisition are explained by factors related to incentive alignment issues during the acquisition process. This contributes to the literature on the economic determinants of compensation contracts. Third, I provide evidence that equity grants appear to have positive wealth consequences for target shareholders in certain conditions. This contributes to the literature which investigates the performance consequences of providing equity incentives to managers. Finally, I provide indirect evidence that the CEO's private trading activities reflect information about the upcoming sale of the firm. This contributes to the broad literature on the determinants of private trading by executives.

In the next section, I discuss the institutional background, related literature, and empirical predictions. In section three, I describe the sample and the empirical methodology and present results. In section four, I conclude.

## 2. THEORETICAL DEVELOPMENT

Top executives and directors of the target are often involved in the sale process months in advance of the first public announcement of the deal. In most cases, they respond to private inquiries from interested acquirers or actively seek an acquirer as part of an exit strategy. Most deals during the 1990s appear to be friendly, and the CEO is usually engaged in negotiations with the eventual acquirer throughout. In some cases, the target CEO obtains employment with the combined entity or receives a discretionary cash award as part of the negotiations (Hartzell, Ofek, and Yermack 2004). The deal is not normally made public until the terms of the agreement

have been finalized, so outside shareholders are often unaware of the private negotiations between the target and acquirer until the actual public announcement.<sup>5</sup>

The acquiring or target firm is generally required to disclose the background of the acquisition in merger-related SEC filings. Described in Appendix B, this data can be used to gain insight into the takeover process occurring before the deal becomes public. For the firms in my sample, the median time between the private initiation of the deal and the public announcement is almost five months. This is likely to be a biased estimate of how early target executives and directors prepare for the sale of the firm, as they are likely to know the firm is “in play” long before a specific acquirer is identified. Nearly three out of ten deals in the sample are initiated by the target firm.

The timing of private discussions and negotiations over the target firm’s sale is important. The board has more time to adjust the CEO’s equity holdings if the prospect of a sale makes a change in the CEO’s incentive structure appropriate. Likewise, the target CEO has more opportunity to extract rents by acquiring excessive equity through the compensation system and private trading activity. Whether information about the firm’s sale is reflected in equity awards given to the CEO and whether the awards are consistent with rent extraction or incentive alignment are empirical questions addressed in this paper.<sup>6</sup>

## **2.1. Sources and disposition of target CEO equity interests**

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<sup>5</sup> The Securities and Exchange Commission (SEC) requires ex post disclosure of private communications between the target and acquirer during the acquisition process as part of regulatory filings made in connection with a merger or tender offer. However, according to Gilson and Black (2000, p. 1192), “an issuer does not have an affirmative duty to disclose preliminary merger negotiations, simply because these negotiations are material...the issuer may delay the disclosure of any information about material merger negotiations for a valid business purpose, such as the risk that premature disclosure would jeopardize the deal, and respond to queries with silence or a statement of ‘no comment’.”

<sup>6</sup> The maintained hypothesis throughout the paper is that the board and CEO know about the firm’s sale far enough in advance to influence the contract. This will obviously not be the case for some sample firms, which introduces noise into the analysis and biases against finding the predicted results.

Equity in the target firm is a potentially powerful compensation and incentive mechanism in the context of an acquisition. Equity awarded prior to the public disclosure of an acquisition will accrue the stock price run-up occurring around the announcement, and in nearly all transactions, the target executive's stock options are either cashed out or their vesting schedule is accelerated.<sup>7</sup> The target CEO's stock holdings will either be exchanged for cash, shares of the acquirer, or both depending on the terms of the deal. If all options are in the money before the announcement, the value of stock and option holdings at deal completion increases dollar for dollar with the acquisition premium paid by the acquirer. The target CEO will likely divest a substantial amount of equity holdings in the process.<sup>8</sup>

Acquisition gains on CEO stock and option holdings are large. Hartzell, Ofek, and Yermack (2004) find that median acquisition gains on the CEO's equity holdings exceed estimated payouts from golden parachutes by about 75%. In my sample, the average (median) acquisition premium accruing to the CEO's total equity portfolio is \$13.4 million (\$4.7 million). Option holdings alone generate about 70% of the equity premium for the median CEO in the sample. The premium accruing to the stock and options granted in the acquisition year makes up 24% of the total premium on the CEO's equity holdings, on average, and substantially increases the sensitivity of the CEO's wealth to the acquisition price. Incentive alignment suggests that this growth is necessary to increase shareholder wealth, while rent extraction argues that some of the growth is driven by CEO opportunism. These hypotheses are discussed next.

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<sup>7</sup> Common alternative treatments of target stock options include: 1) cancel target stock options and compensate the employee in cash for the difference between the acquisition price and exercise price (this option was not permitted during the sample period if the acquiring firm desired to account for the transaction using the pooling method); 2) accelerate vesting of target stock options and convert them into acquirer stock options; or 3) convert target stock options into acquirer options and retain the original vesting schedule. In my sample, over 90% of the transactions call for cashing out target options or accelerating their vesting schedule.

<sup>8</sup> Executives will likely cash out if the terms of the deal are cash and outstanding options in the target are liquidated. If the consideration is acquirer stock, the target executive should be expected to sell much of those holdings and diversify unless they are required to hold onto the stock for contractual reasons.

## **2.2. Determinants of equity awards prior to an acquisition**

### *Rent extraction hypothesis*

Although granting equity to executives has been advocated as a means to reduce agency costs, Bebchuck, Fried, and Walker (2002) argue that the process allows managers to extract rents from shareholders. Because top managers have some control over their compensation, they can influence the timing and amount of equity granted by the board to maximize their wealth at the expense of shareholders. For example, a stock option's exercise price is almost always equal to the stock price on the date of the grant, so managers prefer that options be granted when stock price is low. Yermack (1997) finds that executives accelerate the timing of unscheduled grants to precede good news and delay grants to follow bad news. Aboody and Kasnik (2000) conjecture that firms manipulate disclosure releases surrounding scheduled grant dates, and find evidence that managers delay good news and accelerate bad news relative to a scheduled option grant. Lie (2005) speculates that some firms actually backdate the option grant date to coincide with low points in the firm's stock price. Both Lie (2005) and Narayanan and Seyhun (2005) present evidence consistent with the backdating hypothesis. The findings in these papers suggest that executives use private information and influence over the compensation process to increase the value of equity awards.

Consistent with the existing evidence of self-dealing in options, an entrenched target CEO has an incentive to persuade the board to grant excessive equity prior to the acquisition. This suggests at least three empirical predictions associated with the rent extraction hypothesis. First, target CEOs receive excessive equity awards prior to the acquisition. Second, the ability of the CEO to obtain excessive equity awards should be related to his ability to obtain excessive compensation in the past (Yermack 2005). Thus, opportunistic equity grants made prior to the

acquisition should be more likely for managers who were over-compensated in prior years.

Second, empirical evidence in Core, Holthausen, and Larcker (1999) is consistent with the view that stronger CEOs are able to extract rents through the compensation system. This implies that opportunistic grants should be greater in firms where the governance structure is weaker.

Allegations that target executives received opportunistic equity awards prior to a takeover followed the 1999 acquisition of Fore Systems by GEC. According to SEC disclosures, GEC representatives contacted Fore Systems' CEO Thomas J. Gill on March 4, 1999 to determine whether he would be interested in selling the firm to GEC. On March 17, the parties signed a confidentiality agreement related to the acquisition. On April 6, representatives from GEC and Fore Systems discussed the general terms and structure of the potential acquisition. On April 7, the Fore Systems' board of directors granted a total of 1,300,000 stock options to top management at exercise prices ranging from \$13.44 to \$20.56 per share. On April 10, GEC made a written proposal to acquire the company. The boards of both companies approved the merger at \$35 per share in cash on April 26, and the deal was then announced to the public.

Certain groups of Fore Systems' shareholders subsequently sued GEC, Fore Systems, and the individual executives and directors claiming that the option grants were made "with the sole objective of providing [the executives] with windfall profits from the anticipated cash-out of those options upon the sale of Fore" and that "GEC was aware of the issuance...and paid [the executives] a total of \$26,065,050 for said option shares, in order to secure their support and approval of its tender offer." (*Millionerrors Investment Club v. General Electric*, 2000 U.S. Dist LEXIS 4778). The plaintiffs asserted that the \$26 million paid to the executives as a result of the option issuance would have been paid to the shareholders had the well-timed grant not been made. They argued that the grant and subsequent liquidation of target stock options increased the

amount that target executives received for their shares and thereby GEC violated provisions under section 14(d) of the Securities Exchange Act, which requires that all holders of the target's securities get the best price offered to any other shareholder in a tender offer. While the courts appeared to agree with shareholders in this and similar cases at the time, a recent proposal by the SEC would make such grants legal in most situations.<sup>9</sup>

### *Incentive alignment hypothesis*

There are two related means by which equity grants to target executives can increase shareholder wealth in the market for corporate control. The first relates to compensating the CEO for agreeing to sell the firm, and is discussed in this section. The second relates to providing incentives to the CEO to bargain on behalf of shareholders once the decision to sell the firm has been made, and is discussed in the following section.

CEOs have significant firm-specific human capital invested in the firm. The value of this capital is realized in the form of current and future compensation and other non-pecuniary benefits. A CEO who anticipates losing this future stream of earnings if his firm is acquired has an incentive to resist the acquisition if not compensated for the expected loss. Because target shareholders usually gain from an acquisition, Jensen (1988) and Knoeber (1986) argue that shareholders have an incentive to write a contract which holds the CEO indifferent to selling the firm. Lambert and Larcker (1985) find that investors react positively when the firm adopts a

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<sup>9</sup> Ebert (2002) summarizes the legal issues associated with compensating a target manager during a tender offer. However, the SEC released a proposal on December 15, 2005 which would create an exemption from 14(d) for transactions between the board and managers relating to compensation and incentives granted during a tender offer. The SEC noted that such transactions were never intended to be interpreted as additional payments for existing equity. Transactions between the board and managers will usually be acceptable as long as they relate to compensation for past or future services, are not based on the shareholdings of the executive, and are granted by a compensation committee composed entirely of independent directors.

golden parachute contract, which suggests that these contracts reduce agency costs in many firms.<sup>10</sup>

Golden parachutes, or change-in-control agreements, are frequently written contracts for top management. In my sample, over 78% of the CEOs have such contracts in place at the time of the acquisition. Formal parachute contracts typically specify payment of a multiple of prior salary and bonus if the executive is dismissed or resigns within a certain period of time after a change in control of the firm. However, the present value of future compensation and benefits the CEO gives up by agreeing to an acquisition is not some fixed multiple of his salary implied by the terms of observed contracts, but is more likely to vary with past compensation and future opportunities. As a result, the optimal payment required to make the manager indifferent to selling the firm at any point in time is likely to deviate from what is specified in the contract. Rather than continuously re-write the formal contract, the target's board could implicitly contract with the CEO to provide supplemental compensation in the event of an actual sale. One approach to accomplish this is to pay the CEO additional cash at the acquisition. Hartzell, Ofek, and Yermack (2004) find that among CEOs with golden parachutes, those who receive discretionary cash payments at the close of the merger had lower expected payments from formal parachute contracts. Lambert and Larcker (1985, fn. 2) note, in a general sense, that equity could also be used to compensate the target CEO for selling the firm. Thus, an alternative and less transparent form of golden parachute is to grant additional equity to the CEO prior to the acquisition.<sup>11</sup>

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<sup>10</sup> Lambert and Larcker (1985) note that the positive reaction could be due to investors anticipating an acquisition from the adoption of the contract. However, Machlin, Choe, and Miles (1993) find that the adoption of a golden parachute contract does not signal an impending takeover.

<sup>11</sup> In one instance, approximately eight months before the acquisition of Santa Fe Snyder Corp by Devon Energy was announced in 2000, the CEO of the target agreed to receive restricted stock in exchange for terminating his employment agreement which provided severance pay under certain conditions if the firm was acquired. The value of the restricted stock received based on the acquisition price was over \$4.5 million, which was nearly 4.5 times the CEO's highest salary and bonus over the prior three years.

If boards use equity to compensate the CEO for selling the firm, several empirical predictions follow. First, many CEOs are not covered under formal change-in-control agreements. If the absence of an explicit contract means that the board has made an implicit promise to compensate the CEO in the event of an acquisition, then equity grants should be larger for managers without these contracts.<sup>12</sup> Second, the board may implicitly defer a portion of the CEO's annual compensation. If the CEO expects future wages to rise without an acquisition, then equity grants should be larger when the CEO received below-market wages in the past, consistent with a form of ex post settling up (Fama 1980).<sup>13</sup> In contrast to the rent extraction hypothesis, incentive alignment predicts that equity grants are negatively correlated with prior over-compensation. Third, the stream of unrealized future compensation and other benefits is longer for CEOs earlier in their careers. If these CEOs give up more personal benefits by agreeing to an acquisition, then equity grants should be greatest for CEOs farthest from retirement.

Finally, Cotter and Zenner (1994) and Mikkelsen and Partch (1989) document that executives with larger equity holdings are less likely to resist a proposed offer. One interpretation of this finding is that the gain on the CEO's existing equity holdings offset the expected loss from selling the firm. All else equal, this leads to the prediction that target CEOs who resist an acquisition attempt received smaller equity awards prior to the takeover.

This paper extends prior research which examines the relation between the portfolio of stock and option holdings and the likelihood of becoming a target. For example, Mikkelsen and Partch (1989) find that firms with lower managerial ownership are more likely to become the target of a

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<sup>12</sup> Alternatively, the absence of a parachute contract could imply that the CEO does not demand protection from the risk of a takeover. This would lead to an opposite prediction for the relation between the existence of a parachute contract and the level of equity granted. While little is known about the determinants of golden parachute contracts, Agrawal and Knoeber (1998) do find that CEOs are more likely to have a golden parachute when their stock ownership is low, when they have fewer years with the company, and when the firm is smaller. These factors are controlled for in the regression model.

<sup>13</sup> Prior compensation deferred under a formal agreement is usually paid out to the executive at the acquisition.

control attempt. Hadlock, Houston, and Ryngaert (1999) and Song and Walkling (1993) find that firms with lower managerial ownership are more likely to be acquired.<sup>14</sup> With respect to option holdings, Kahan and Rock (2002) conjecture that boards have made managers more receptive to selling the firm by increasing stock option incentives and including change-in-control provisions which lift restrictions on unvested stock and options if the firm is acquired. Cai and Vijh (2005) argue that CEOs with greater stock and option holdings are motivated to sell the firm in order to realize the executive “discount” on their equity holdings (e.g. Hall and Murphy 2002). However, both Cai and Vijh (2005) and Coates and Kraakman (2004) are unable to find consistent evidence that option holdings are associated with the decision to sell.<sup>15</sup> While these studies document the importance of stock and option holdings in the market for corporate control, they do not address whether new equity grants are related to boards’ and managers’ incentives in the takeover process.

### **2.3. The relation between equity grants and shareholder wealth**

When the decision to sell the firm is made, the target directors’ duty is to get the highest value reasonably achievable for shareholders, and directors can face liability for accepting lower offers.<sup>16</sup> Because the CEO is normally closely involved in negotiations, outside directors should be especially concerned about whether the CEO has the proper incentives to negotiate the best deal for shareholders. Consistent with the directors’ incentives in a control contest, Cotter, Shivdisani, and Zenner (1997) find that targets with more independent boards receive higher takeover premiums. This suggests that directors’ objectives in the takeover process could lead to

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<sup>14</sup> However, evidence suggests that when a control attempt is made, targets with higher managerial ownership put up less resistance and are able to obtain larger premiums (Cotter and Zenner 1994, Song and Walkling 1993, and Stulz, Walkling, and Song 1990)

<sup>15</sup> Coates and Kraakman (2004) do find that the association between the option portfolio and the probability of being acquired is greater for low-risk than for high-risk firms. This is consistent with options having a greater value to the CEOs from selling the firm when firm risk, hence the value of the options from remaining independent, is low.

<sup>16</sup> See Chapter 19 of Gilson and Black (2000) for additional discussion on the duties of the target’s directors in control transactions.

a shift in equity compensation prior to selling the firm and is consistent with Song and Walking (1993) and Stulz, Walking and Song (1990) who find that acquisition premiums are positively related to executive equity holdings in successful tender offers.

If boosting the target CEOs' equity holdings enhances incentive alignment in the takeover process, then the equity grants should be positively associated with takeover premiums. However, if the equity grants are opportunistic responses to the firms' sale, they should have a negative effect on premiums by reducing the price acquirers are willing to offer per outstanding share of common stock. It is important to note that a positive or null association between equity grants and acquisitions premiums does not imply zero rent extraction. Rather, a positive association between grants and premiums suggests that the gains from aligning CEOs' incentives exceed the losses from opportunism.

### *Limitations*

The ability of this study to detect whether an equity grant made before an acquisition is related to the takeover process is affected by measurement timing issues. During the sample period, equity grants are reported annually on the firm's proxy statement or 10-K filing.<sup>17</sup> The equity grants of interest are those occurring in the acquisition year, which I define as the latest available financial reporting year ending no later than the second full month following the month of the acquisition announcement. This timing is chosen to increase the likelihood that equity grants reflect the target CEO's and directors' private information about the firm's sale. However, for over half of the sample, the fiscal year-end date of the financial report for the acquisition year precedes the announcement date by more than five months. This timing constraint induces bias against finding empirical evidence consistent with theoretical predictions.

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<sup>17</sup> Under the Sarbanes-Oxley Act, firms are now required to report option grants to the SEC within two days of the option grant date. Narayanan and Seyhun (2005) examine whether this requirement affected option granting patterns.

There are also potential costs to target executives and directors which could mitigate incentives to increase stock and option grants prior to an acquisition. Insider trading allegations may arise, especially if the award is made late in the negotiation process. Anabtawi (2004) argues that opportunistic grants of stock options should fall within the scope of insider trading laws under certain conditions. However, the *Wall Street Journal* (May 14, 1999) cites a spokesperson for the SEC as saying that they were not aware of any insider trading cases brought by the SEC for option grants to target executives during private takeover negotiations. In addition, CEOs often engage in private talks to sell the firm which are never pursued. These private discussions may not be substantive enough to cause observable responses within the contracting environment.

#### **2.4. Private trading by executives prior to an acquisition**

Given the timing of private discussions in the takeover process, a related question is whether the CEO is willing to trade on that information prior to a public announcement. Seyhun (1992) finds only weak evidence that target executives trade prior to an acquisition. Sanders and Zdanowicz (1992) find no evidence that executives trade prior to the announcement date or around the privately observed acquisition initiation date. Agrawal and Jaffe (1995) find that target managers did not trade prior to acquisitions when the only enforced insider trading regulation required managers to return profits on stock purchases and sales made within six months. The consistent lack of findings suggests that the expected costs of increasing equity before an acquisition announcement exceed the expected returns. Unlike prior studies on target CEO trading before an acquisition, I include the effect of stock option exercises, and examine changes in the economic determinants of CEO trading as well as the magnitudes.

On average, target CEOs in the sample divest about 1% of their beginning equity holdings in the acquisition year, which is similar to the average divestiture rate for non-target CEOs, but much lower than the target CEOs' average increase due to grants of nearly 22% over the same year. Divestiture rates decline for longer tenured CEOs as the acquisition approaches. To provide additional evidence on the CEO's knowledge and incentives prior to an acquisition, I examine the determinants of the CEO's divestiture decisions. Cheng and Warfield (2005) and Ofek and Yermack (2000) find that executives divest equity in response to new equity awards, consistent with the prediction that executives actively manage their exposure to firm-specific risk. Prior research also finds that option exercises and share sales by executives follow stock price increases (Carpenter and Remmers 2001, Cheng and Warfield 2005, Lakonishok and Lee 2001). If the relations between divestitures and new grants or stock returns for the sample of target CEOs is the same in the acquisition year as in other years, one conclusion is that executives either had no information about the upcoming acquisition, or that the eventual outcome of the sale process was so uncertain that it did not influence trading decisions. I provide evidence on this point in a later section.

### 3. EMPIRICAL METHODOLOGY AND RESULTS

#### **3.1. Data and sample**

Using the SDC Mergers and Acquisitions database, I identify a sample of completed acquisitions of U.S. public companies announced between 1996 and 2000. I select this period because the mergers and acquisitions market was highly active and executive compensation data is readily available for a large number of target firms. In order for a transaction to be included in my sample, I require the following: The acquirer did not own a majority interest prior to the

acquisition and owns at least 80% after the acquisition, the target was not bankrupt at the time of the acquisition, the acquirer and target are both covered by CRSP and Compustat, and the target CEO has at least two years of executive compensation data available on ExecuComp, inclusive of the acquisition year. As described in Appendix B, I obtain data on the approximate date the sale process was privately initiated and whether or not the target initiated the process. I obtain CEO compensation amounts, stock option exercises, and stock and option holdings prior to the acquisition from the ExecuComp database. From the firm's annual proxy statement or 10-K filing relating to the acquisition year, I obtain basic details on the CEO's change-in-control agreement, the board and ownership structure of the firm, and the CEO's age.

Panel A of Table 1 reports two-digit SIC industry classifications for the 233 acquisition targets with sufficient data to be included in the sample. With the exception of the depository institutions (SIC 6000-6099) and communications (SIC 4800-4899) industries, both of which experienced active consolidation activity in the late 1990s, the industry distribution of target firms appears roughly similar to the distribution of firms covered by ExecuComp over a similar time period. Panel B presents the distribution of acquisitions by the calendar year in which the deal was announced. The trend in the number of deals per year is consistent with the broader trend in merger activity over the period.

Panel A of Table 2 presents data on acquisition characteristics. The mean (median) acquisition premium measured using CRSP beginning 20 days before the announcement and ending five days after is 33.3% (29.8%), consistent with prior research (e.g. Andrade, Mitchell, and Stafford 2001). The mean (median) ratio of deal value to acquirer market value measured 20 days before the announcement of the acquisition is 0.716 (0.280) which suggests that the acquisition tends to be material for the acquiring firm, but not surprising given the larger firms

covered by ExecuComp. Based on SDC classifications, 4.7% of the deals had a competing bid, and 3.0% of the deals were considered hostile.<sup>18</sup> Target shareholders were paid solely in cash 27.5% of the time. For half of the sample, there were at least 139 days between the initiation date of the deal, described in Appendix B, and the announcement date of the acquisition reported by SDC.

The period of focus is the acquisition year, which I define as the last fiscal year ending no later than the second full month following the announcement date of the acquisition. This timing is chosen to increase the likelihood that the equity grant coincides with the CEO's and board's knowledge of the acquisition. Panel B of Table 2 presents summary statistics for target firm characteristics in the acquisition year and similar statistics for ExecuComp firms not acquired in the subsequent year. The median market value of target equity at the beginning of the acquisition year is \$859 million, somewhat smaller than the median for non-targets of \$1,020 million over a similar time period. The median earnings before interest and taxes divided by total assets (ROA) of 8.5% is lower than the median of 9.4% for non-target firms. Target firms also underperform in the stock market in the acquisition year. The mean (median) market-adjusted annual stock return ending in the sixth month of the acquisition year is -7.8% (-12.9%) for target firms compared to -1.3% (-8.3%) for non-target ExecuComp firms.<sup>19</sup> Among the variables considered in panel B, the only statistically significant difference between target and non-target firms is for average stock returns.

CEO statistics are presented in panel C. The median tenure of the target CEO in the acquisition year is six years, equal to the median tenure of non-target ExecuComp CEOs for the

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<sup>18</sup> *SDC* classifies an acquisition with a competing bid based on publicly disclosed offers. This does not capture multiple private bids which are likely to occur in many of the acquisitions which are conducted through auctions. *SDC* classifies a transaction as hostile if the board officially rejects the offer.

<sup>19</sup> This offset return is used to ensure that stock return variables do not capture news about the acquisition.

period. Mean and median share ownership of target CEOs is smaller than that of non-target CEOs, consistent with prior research (Mikkelsen and Partch 1989). Equity grant values are generally larger for targets than for non-targets, and the difference is statistically significant at the median when grant value is scaled by market value and for the growth rate in the quantity of portfolio holdings from new grants. CEOs in the sample are about 56 years old when the firm is sold. 78% of them have a change-in-control agreement with a median expected payout based on salary and bonus reported in the acquisition year of \$1.98 million.<sup>20</sup> Using a sample of transactions from 1995 through 1997, Hartzell, Ofek, and Yermack (2004) find that 69% of target CEOs are covered by change-in-control agreements, with a median expected payment of \$0.90 million. The difference in payout size between these studies is likely driven by the inclusion of smaller firms in their sample.

### **3.2. Equity grants leading up to an acquisition**

I first examine the time-series of equity grants to target CEOs and cross-sectional differences relative to a control sample with similar characteristics. Prior research finds that industry membership, firm size, and growth opportunities are important factors in explaining the use of equity incentives (e.g. Core and Guay 1999, Smith and Watts 1992). To control for the effect of these factors, I sort all firms listed on ExecuComp into quartiles based on market value at the beginning of each year. Within each size quartile, I sort firms into quartiles based on book-to-market ratios. For each sample firm-year, the excess equity grant is equal to the actual less the median value from the set of firms, excluding targets, matched on two-digit SIC within the same

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<sup>20</sup> This methodology is also used by Hartzell, Ofek, and Yermack (2004), but is likely to understate the true value of the CEO's parachute contract. Many of these agreements also provide for accelerated vesting of pension benefits and restricted stock and options, extended medical coverage, or continued use of a company vehicle, among other things. Further, these payments are often "grossed-up" to the extent the CEO incurs a tax on excess parachute benefits. However, the calculated value appears to be a reasonable approximation for making cross-sectional comparisons.

size and book-to-market portfolio. If there are fewer than five matching firms in that portfolio for that year, I take the median value from non-target firms in the same one-digit SIC industry, size, and book-to-market portfolio. Approximately 45% of the matches are done at the two-digit SIC level.

I measure equity grants in terms of the total value of shares and options granted and as the grant's total value scaled by the market value of the firm at the beginning of the year (multiplied by 100 to adjust for scale). The value of an equity grant is defined as the Black-Scholes value of stock options on the grant date plus the value of restricted stock granted during the year. In some descriptive analyses, I also report the raw number of shares and options granted, and the number of shares and options granted scaled by the number of shares and options held at the beginning of the year.<sup>21</sup>

I report data on the measures of CEO equity grants for each of the four years leading up to the acquisition in panel A of Table 3. The sample size decreases as the measurement window increases because many target CEOs have shorter tenures and lack historical data.<sup>22</sup> I focus the discussion on median grant values because the annual averages are highly sensitive to the effect of a small number of large grants within a particular year.

Median equity grants generally increase leading up to the acquisition. Grant value, both in total and scaled by the market value of the firm, peaks in the acquisition year. In terms of numbers, the median quantity of shares and options granted in the first three years ranges from 50,000 to 59,000. In the acquisition year, this number increases to 77,000. The inferences are qualitatively similar if the number of shares granted is scaled by the number of shares and options held by the CEO.

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<sup>21</sup> Inferences are qualitatively similar if options are adjusted for delta.

<sup>22</sup> That is, I have data for both the acquisition year and the preceding year for the full sample of 233 CEOs. I lose 28 observations when I require an additional year of compensation and equity holding data, etc.

I also investigate the trend in the CEO's cash compensation. Although it is not the focus of this paper, the CEO also has an incentive to increase cash compensation prior to the merger. For an executive with an agreement to receive three times some measure of past salary and bonus following a change-in-control, a one dollar increase in salary or bonus in the acquisition year results in a three dollar increase in the severance payment. Alternatively, a CEO may find it more profitable to give up cash compensation in exchange for an equity grant.<sup>23</sup> I measure the growth in cash compensation as the percentage change in the CEO's cash compensation from the prior year. For all CEOs with available data, the median growth in cash compensation ranges from 8.1% to 15.5% over the four years, but has no identifiable trend.

Of the 233 CEOs who were in the position for the last two years prior to the acquisition, 82 began in the second, third, or fourth year preceding the acquisition. An analysis of CEOs listed on ExecuComp from 1993 through 2000 indicates that the growth rate in the total number of shares and options held due to new equity awards is highest for new CEOs, which could induce bias into some equity grant measures.<sup>24</sup> Further, newer CEOs may have been brought in by the board with the primary purpose of selling the firm. In this case, an additional equity grant in the acquisition year may not be necessary if the CEO and board contract on that outcome at the outset. To control for these effects, I limit the sample to the 111 CEOs who were in the position for at least five years ending in the acquisition year and for which I have compensation and

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<sup>23</sup> The executive may be able to trade off cash compensation for equity through ad hoc negotiation with the board or through formal exchange programs. An example of a formal program, Case Corporation "permits participants to exchange part of or their entire annual cash bonus for shares of common stock equal in value to 133 1/3% of the foregone cash award." (Case Corporation Proxy Statement, May 12, 1999). In a separate example, Rubbermaid's compensation committee approved a new program which allowed an executive to elect to receive stock options in lieu of cash compensation, performance shares, and the accrual to the executive's supplemental retirement plan. The plan was approved in 1997 prior to the acquisition of Rubbermaid by Newell Co. which was announced in 1998. In 1997, all Rubbermaid executives, including the CEO, exercised this option.

<sup>24</sup> The median growth in equity holdings due to new equity grants is 15.09% for CEOs in their second through fourth year in office. This rate drops to 10.54% for CEOs in their fifth through seventh year and further to 7.94% for CEOs in their eighth year or greater.

ownership data for all five years. For this subsample, the median value of equity granted again peaks in the acquisition year. In terms of the median number of units awarded, both in value and units, the grant is largest in the acquisition year. The rise in equity grants in the acquisition year is more pronounced in this subsample.

Panel B of Table 3 presents the series of equity grant statistics after subtracting the median value from a portfolio of firms matched on size, book-to-market, and industry described earlier. I exclude the unscaled number of shares and options granted from this analysis because share quantities are not comparable across sample and control firms. For all CEOs with data in the acquisition year, the only measure of equity awards which is significant at the median is the growth in shares and options held by the CEO.

Focusing on the subsample of tenured CEOs with complete data for five years, the medians of the three equity grant measures are statistically significant in the acquisition year only. The median excess value of the grant is about \$190,000, the median excess number of shares and options as a percentage of market value is 0.011%, and the excess grant as a percentage of shares and options held at the beginning of the year is 2.4%. The evidence suggests that equity grants are larger in the acquisition year, both relative to prior years and to a control sample of firms with similar characteristics.<sup>25</sup>

### **3.3. Determinants of CEO stock and option awards in the acquisition year**

The evidence in Table 3 suggests that equity awards to the target CEO increase prior to selling the firm. I now investigate the extent to which the rent extraction and incentive alignment hypotheses explain observed equity grants. For the 233 CEOs in the sample, I estimate the following regression:

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<sup>25</sup> The economic magnitude of equity grants relative to the control sample appears small if CEOs are able obtain large grants in anticipation of the firm's sale or if boards systematically increase equity grants to align incentives in the takeover process.

$$\begin{aligned}
\text{Equity grant}_t = & \beta_0 + \beta_1 \text{CEO is chair}_t + \beta_2 \text{Number of directors}_t + \beta_3 \text{Outside blockholder}_t \\
& + \beta_4 \text{CEO ownership}_t + \beta_5 \text{Excess compensation}_{t-1} \\
& + \beta_6 \text{Golden parachute}_t + \beta_7 \text{Years to retirement}_t + \beta_8 \text{Hostile acquisition} \\
& + \beta_9 \text{Tenure}_t + \beta_{10} \ln(\text{Market value}_{t-1}) + \beta_{11} \text{Book - to - market}_{t-1} \\
& + \beta_{12} \text{Market - adjusted return}_t + \varepsilon
\end{aligned} \tag{1}$$

The dependent variable in the regressions is either the total dollar value of the grant on the grant date or its total dollar value scaled by the market value of the firm at the beginning of the grant year. In sensitivity tests, I also use the ratio of grant value to total compensation as the dependent variable.

To investigate the relative importance of rent extraction in explaining equity grants to CEOs in the acquisition year, I include a measure of past excess compensation and proxies for the governance structure of the firm. Governance is captured by including four variables relating to board and ownership structure. If a CEO who is also the chairman of the board has more influence over the compensation process and information dissemination within the firm, equity grants should be larger when the CEO holds both these positions. If large boards are less effective in preventing the CEO from acting opportunistically (e.g. Jensen 1993), then equity grants in the acquisition year should be increasing in board size. If unaffiliated blockholders serve a monitoring role and restrict the CEO from taking opportunistic actions, grants should be lower in the presence of an outside blockholder. Finally if CEOs who own large amounts of stock have more power to extract rents from shareholders, as argued by Bebchuk, Fried, and Walker (2002), the relation between CEO percentage ownership and equity awards should be positive.

Consistent with the rent extraction hypothesis, equity grants in the acquisition year should be positively related to prior excess compensation. Excess compensation for year  $t - 1$  is measured

as the prior-year residual from the following regression of cash compensation on the log of market value, book-to-market, total stock returns for the current and prior years, and industry and year indicators (e.g. Hartzell, Ofek, and Yermack 2004):

$$\begin{aligned}
 (\text{Salary} + \text{Bonus})_t = & \beta_0 + \beta_1 \ln(\text{Market Value}_{t-1}) + \beta_2 \text{Book-to-market}_{t-1} \\
 & + \beta_3 \text{Return}_t + \beta_4 \text{Return}_{t-1} + \beta_k \text{Industry}_k + \beta_t \text{Year}_t + \varepsilon_t
 \end{aligned} \tag{2}$$

The regression is estimated using all ExecuComp CEOs with available data and has an  $R^2$  of 28.2%. The coefficients on the variables (untabulated) are qualitatively similar to prior research.

To provide evidence on the use of equity to compensate the CEO for agreeing to sell the firm, as suggested by the incentive alignment hypothesis, I examine the relation between equity awards and past excess compensation, the existence of a golden parachute, the number of years until retirement, and a dummy variable equal to one if the target resisted the acquisition. The association between equity grants and prior excess compensation should be negative if boards use equity grants to compensate managers for deferring past wages. Grants should be larger for CEOs without a parachute contract if the board implicitly contracts with the CEO to provide compensation in the event the firm is acquired. Years to retirement is equal to 65 minus the age of the CEO in the acquisition year, and should be positively related to equity awards under the argument that younger CEOs give up more future earnings by agreeing to an acquisition. Finally, the coefficient on the hostile transaction indicator should be negative if managers who resist deals were not adequately compensated prior to the takeover.

The evidence in Table 3 suggests that longer tenured CEOs have a significant increase in equity awards in the acquisition year. Core and Guay (1999) find that CEO tenure is positively related to the CEO's total equity incentives, consistent with the prediction in Gibbons and Murphy (1992). In untabulated results, target CEO tenure is positively correlated with prior over-

compensation, and negatively correlated with the number of years to retirement (although years to retirement only explains 12% of the variation in tenure), therefore, I control for CEO tenure in the model. I also include controls for firm size, growth opportunities, and prior performance, which have been shown to be related to equity grants in prior research (e.g. Core and Guay, 1999). Firm size is measured as the log of market value at the beginning of the year, growth opportunities is measured as the book-to-market value of equity at the beginning of the year, and performance is the market-adjusted stock return for the year ending in the sixth month of the acquisition year.

In Table 4, I present results from estimating equation (1). The dependent variables in columns (1) and (2) are the dollar value and scaled value of equity granted in the acquisition year. The dependent variables in columns (3) and (4) are the same measures less the values obtained from the control sample. Equity grants are not significantly different when the CEO is also the chairman and do not vary with CEO ownership. However, equity grants are significantly negatively related to the number of directors in all four regressions, and positively related to the existence of an outside blockholder in one regression, opposite the directions predicted if large boards or no outside blockholder are signals of weaker corporate governance.

Consistent with the incentive alignment hypothesis, equity grants tend to be larger for CEOs with more years until retirement. For example, when the dollar value of the equity award is defined relative to the control sample in column (3), the coefficient estimate is 0.095. This translates into a \$95,000 larger award each year the CEO is from age 65, and is consistent with compensating younger CEOs for giving up a longer stream of earnings. When equity awards are defined relative to the control sample, they are smaller when the transaction is considered hostile. The coefficient estimate in column (3) implies that CEOs who resist an acquisition attempt

received on average \$2.19 million less in equity awards in the acquisition year. Finally, the existence of a golden parachute contract is marginally significant in columns (1) and (3), with  $p$ -values of 0.120 and 0.104 using a two-tailed test. The coefficient estimate of -0.818 in column (3) implies that CEOs without formal parachute contracts received \$818,000 more in equity prior to the acquisition, all else equal. Overall, the results provide modest support for the idea that equity grants are used to compensate the CEO for selling the firm, consistent with the incentive alignment hypothesis. There is no evidence that CEOs use their power to obtain excessive equity grants prior to a merger. The findings are qualitatively similar controlling for year, industry, and stock return volatility.

To address the concern that the results may not be unique to the acquisition year, and thus do not relate to an upcoming acquisition, I run the regression for the 188 available observations for the year prior to the acquisition year.<sup>26</sup> The coefficients on the governance and acquisition-related variables are not associated with equity grants in this year. This provides further support for the notion that equity awards to target CEOs take into account incentive issues relating to the sale of the firm. I now examine whether the grants made in the acquisition year are related to subsequent changes in target shareholder wealth.

### **3.4. The association between equity grants and acquisition premiums**

To examine the extent to which equity granted to the target CEO affects shareholder wealth, I estimate the following regression:

$$\begin{aligned}
 \text{Acquisition premium} = & \beta_0 + \beta_1 \text{Equity grant}_t + \beta_2 \text{CEO ownership}_t + \beta_3 \ln(\text{Market value}_{t-1}) \\
 & + \beta_4 \text{Book - to - market}_{t-1} + \beta_5 \text{Market - adjusted return}_t \\
 & + \beta_6 \text{Deal value / Acquirer value} + \beta_7 \text{All cash} + \beta_8 \text{Tender offer} \\
 & + \beta_9 \text{Competing bid} + \beta_{10} \text{Hostile} + \varepsilon
 \end{aligned} \tag{3}$$

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<sup>26</sup> Prior excess compensation is unavailable for 17 CEOs in the year prior to the acquisition year, reducing the number of observations from 205 to 188.

The acquisition premium is measured as the cumulative stock return beginning 20 days before the announcement date reported by SDC and ending five days after. The equity grant measure is either the total grant value or total value scaled by the market value of the firm, both relative to the control sample. The remaining variables control for the effect of target size, growth opportunities, and other characteristics of the transaction, including payment method, acquisition method, and the existence of competing bidders (e.g. Schwert 2000).

The results from estimating equation (3) are presented in Table 5. The first two columns are the results for the full sample. The coefficients on both equity grant measures are insignificantly different from zero, providing no evidence that equity grants to target CEOs affect acquisition premiums. One potential factor is that target initiated deals, nearly 30% of the sample, are often done via an auction process. If the CEO has less influence over the pricing in an auction relative to a deal negotiated with a single acquirer, then the performance consequences of equity grants across these samples may differ. To investigate this conjecture, I estimate equation (3) separately for target and non-target initiated deals. The results for deals initiated by the target are presented in columns (3) and (4) and generally indicate no significant relation between equity grants and subsequent premiums. The regression *R*-squared is insignificant, which suggests that variation in premiums for these firms is not well captured by the model.

The results for the 165 deals not initiated by the target are presented in columns (5) and (6). For this sample, the coefficient on grant value is positive, but significant only at the 0.189 level using a two-tailed test. When grants are defined as a fraction of the market value of the firm, the coefficient is positive and significant (coeff. = 0.173, *p*-value = 0.038). One economic interpretation of this coefficient is that for every 0.10% of market value given to the CEO in the form of equity, the total acquisition premium increases by 1.73% of pre-deal market value. This

suggests that the gain to shareholders in terms of a higher premium exceeds the cost of the equity awarded to the CEO. Overall, the evidence provides some preliminary support for the hypothesis that equity grants before an acquisition increase shareholder wealth, but only for deals in which the takeover process was not explicitly initiated by the target. Empirically, there is no evidence that rent extraction dominates, on average.

### 3.5. CEO trading before the acquisition

To capture private trading activity, I measure the CEO's net equity sales as the number of shares held at the beginning of the year less the number of shares held at the end of the year plus the number of options exercised during the year (e.g. Jin and Kothari 2005). If this measure is negative, the CEO made a net purchase of equity during the year. For the subsample of 111 CEOs with five years of data, average (median) net sales as a percentage of beginning stock and option holdings are 0.53% (0.01%) in the acquisition year. However, in the year prior to the acquisition year, average (median) net sales are 1.97% (0.44%). In the year before that, average (median) net sales are 1.96% (0.33%). This suggests, at least for this subsample, that target CEOs reduce their rate of equity divestitures prior to selling the firm.

To provide further evidence on the CEO's information and incentives prior to selling the firm I examine the determinants of CEO divestiture decisions. Prior research finds that executive equity divestitures are positively related to option grants and prior stock returns (Carpenter and Remmers 2001, Lakonishok and Lee 2001, Ofek and Yermack 2000). To investigate the relation between these factors and the CEO's trading decisions, I estimate the following regression:

$$\begin{aligned}
 \text{Net sales}_t = & \alpha_1 + \alpha_2 \text{Acquisition year}_t + \alpha_3 \text{Grant quantity}_t \\
 & + \alpha_4 \text{Grant quantity}_t \times \text{Acquisition year}_t + \alpha_5 \text{Market - adjusted return}_t \\
 & + \alpha_6 \text{Market - adjusted return}_t \times \text{Acquisition year}_t + \varepsilon
 \end{aligned} \tag{4}$$

Following Jin and Kothari (2005), I scale net sales and grant quantity by total shares outstanding at the beginning of the year. Consistent with prior research, I expect the coefficient on  $\alpha_3$  and  $\alpha_5$  to be positive. I include an indicator variable equal to one if the time period is the acquisition year and zero otherwise. If the incentive to divest equity following a new grant is mitigated in the year before to the acquisition, then the coefficient on  $\alpha_4$  should be negative. Similarly, if CEOs divest less equity after a past run-up in stock price when an acquisition is forthcoming, the coefficient on  $\alpha_6$  should also be negative.

The regression is estimated with the 721 CEO-year observations available for the four years ending in the acquisition year and is reported in Table 6. For comparison purposes, the first column is a regression of net sales on grant quantity and market-adjusted returns for the entire sample of ExecuComp CEOs with at least two years in office over the fiscal years 1993 through 1999. The estimated coefficients on the current equity grant and stock return variable are positive and significant, consistent with prior research (e.g. Cheng and Warfield 2005, Jin and Kothari 2005). Turning to the sample of target CEOs in column (2), the estimated coefficient on grant quantity for the four years ending in the acquisition year is 0.395 ( $p$ -value = 0.001). For market-adjusted stock returns, the coefficient is 0.007 ( $p$ -value = 0.001). Both coefficients are larger for target CEOs than for the broader sample of target CEOs, and suggests that these CEOs divest more equity for a given equity grant or past movement in stock price.

In column (3), I test whether the trading behavior of target CEOs changes prior to the sale of the firm. The estimated coefficient on the acquisition year indicator is insignificantly different from zero, which implies that net sales are not abnormally different for the entire sample in the acquisition year, controlling for other factors. The coefficient on the interaction between grant quantity and the acquisition year indicator is -0.416 ( $p$ -value = 0.017), which is consistent with

the interpretation that target CEOs are willing to bear the increased exposure to firm-specific risk imposed by new grants. The coefficient on the interaction between stock returns and the acquisition year indicator is -0.007 ( $p$ -value = 0.002) which implies that CEOs are more likely to hold on to their equity after a stock price increase prior to the acquisition. In unreported tests, the total coefficients on grant quantity and market-adjusted returns for the acquisition year are insignificantly different from zero at the 10% level.

Overall, the evidence indicates that the effect of certain economic determinants on CEO divestitures are mitigated in the acquisition year, and suggests that information about the acquisition influences target CEOs' private trading decisions. These results extend prior studies (e.g. Agrawal and Jaffe 1995, Seyhun 1992) which find little evidence that trading by the target's executives is affected by an upcoming takeover. The regression results are robust to controlling for size, book-to-market, and industry and year effects, and hold when the sample is limited to the subsample of 111 CEOs with five years of data.

#### 4. CONCLUSION

In this paper, I investigate the magnitude, determinants, and consequences of equity grants to target CEOs prior to acquisitions. The rent extraction hypothesis predicts that CEOs use their power to obtain excessive equity grants prior to the public announcement of the deal, while the incentive alignment hypothesis predicts that boards use equity grants to compensate the CEO for selling the firm and to motivate the CEO to bargain for the highest price.

Empirical analysis reveals that equity grants appear to increase in the acquisition year, both over time and relative to a control sample. There is modest evidence that equity awards before the acquisition are used by the board to align CEO's and shareholders' incentives. Equity awards

are consistent with boards using equity to compensate CEOs for selling their firms, and acquisition premiums are positively related to equity awards in the subsample of deals not initiated by the target. I also find evidence which suggests that CEO trading activities are influenced by an upcoming acquisition. Longer tenured CEOs reduce the rate of divestiture prior to selling the firm, and target CEOs do not diversify the increase in firm-specific risk from new equity granted in the acquisition year.

Overall, the evidence in this paper suggests that equity awards to the CEO in the acquisition year reflect information about the upcoming sale of the firm, and that the grants are more likely explained by incentive alignment issues within an acquisition setting. There is no evidence that opportunistic actions by the target CEO drive observed equity grants prior to the firm's sale.

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## Appendix A – Variable definitions

### *CEO variables*

Tenure <sub>t</sub>	=	Number of years in office of CEO
Years to retirement <sub>t</sub>	=	65 – CEO age
Salary <sub>t</sub>	=	Total salary for the year
Bonus <sub>t</sub>	=	Total bonus for the year
Grant value <sub>t</sub>	=	Black-Scholes value of stock options on grant date plus the value of restricted stock granted during the year
Grant quantity <sub>t</sub>	=	Number of options and shares granted during the year
Portfolio quantity <sub>t</sub>	=	Number of options and shares held at the end of the year
Net sales <sub>t</sub>	=	Number of shares held at the beginning of the year plus number of options exercised during the year minus the number of shares held at the end of the year
Growth in cash compensation <sub>t</sub>	=	$[(\text{Salary} + \text{Bonus})_t / (\text{Salary} + \text{Bonus})_{t-1}] - 1$
CEO ownership <sub>t</sub>	=	Number of shares held by the CEO divided by total common shares outstanding at the end of the year
Golden parachute <sub>t</sub>	=	One if the CEO has a change-in-control agreement, zero otherwise
Golden parachute payment <sub>t</sub>	=	Payment according to terms of change-in-control agreement based on the CEO's salary and bonus in the acquisition year

### *Firm variables*

Market value <sub>t</sub>	=	Market value of common equity at end of year
Book-to-market <sub>t</sub>	=	Book value of equity / market value of equity at end of year
ROA <sub>t</sub>	=	Earnings before interest and taxes / total assets
Market-adjusted return <sub>t</sub>	=	Value-weighted market-adjusted stock return for year ending in sixth month of year
CEO is chair <sub>t</sub>	=	One if CEO is also chairman of the board, zero otherwise
Number of directors <sub>t</sub>	=	Number of directors on the board
Outside blockholder <sub>t</sub>	=	One if there is a 5% outside blockholder (not a director or executive), zero otherwise

### *Deal variables*

Acquisition premium	=	Cumulative stock return for target beginning 20 days before SDC announcement date through five days after
Deal value / Acquirer value	=	Market value of target firm five days after the announcement / market value of acquiring firm 20 days before the announcement
Competing bid	=	One if SDC indicates there was a competing bidder
Hostile	=	One if SDC indicates that the board resisted the transaction
All cash	=	One if the consideration was entirely in cash
Tender offer	=	One if the deal was carried out via a tender offer
Target initiated	=	One if the target initiated the takeover process
Days between initiation and announcement	=	Number of days between initiation of the deal (as defined in Appendix B) and the SDC announcement date

## **Appendix B - Merger-related disclosures on the acquisition process before public announcement**

The S-4 filing made in conjunction with a registration of securities in connection with a merger requires that the acquiring firm “Describe any past, present or proposed material contracts, arrangements, understandings, relationships, negotiations or transactions...between the company being acquired or its affiliates and the registrant or its affiliates, such as those concerning: a merger, consolidation or acquisition; a tender offer or other acquisition of securities...” (Item 6, Form S-4). Disclosure requirements in 14A (proxy statement) and 14D (tender offer) filings are similar. The following excerpt is from Eastman Chemical’s 14D filing on May 12, 2000 and illustrates the disclosure required by the SEC. Parent refers to the acquirer, Eastman Chemical Co., and Company refers to the target, McWhorter Technologies.

Parent continually evaluates and considers other businesses of varying sizes as potential strategic partners and candidates for acquisition. In the fall of 1999, Parent was approached by the Company's previous financial advisor to determine whether Parent had any interest in a strategic transaction involving the Company. Following additional conversations between Parent and the Company's previous and current financial advisors, on November 12, 1999, Parent and the Company entered into a confidentiality agreement.

On December 13, 1999, Allan R. Rothwell, President of the Chemicals Group of Parent, James P. Rogers, Senior Vice President and Chief Financial Officer of Parent, and Bruce E. Moore, Vice President and General Manager of Coatings, Adhesives and Specialty Polymers of Parent, together with other members of Parent's senior management, met with John R. Stevenson, Chairman of the Company Board, Jeffrey M. Nodland, President and Chief Executive Officer of the Company, Louise M. Tonozzi-Frederick, Chief Financial Officer of the Company, and the Company's current financial advisor. This meeting continued to be exploratory in nature, with the parties discussing in general terms the strategic benefits of Parent's proposed acquisition of the Company. Following this meeting, members of Parent's senior management engaged in a series of conversations with the Company's financial advisor regarding potential valuations of the Company and other due diligence matters.

In January 2000, Parent retained Chase Securities Inc. to provide financial advice regarding a potential business combination with the Company.

On February 2 and February 3, 2000, members of Parent's management, together with Parent's financial advisor, met in Chicago, at the offices of the Company's outside legal counsel, with members of the Company's management, together with the Company's financial advisor, and commenced Parent's initial due diligence investigation.

In addition, on February 3, 2000, at a meeting of the Finance Committee of Parent's Board of Directors (the "Parent Board"), Mr. Rogers briefed the committee on the status of discussions between the Company and Parent.

On February 17, 2000, Parent submitted a letter to the Company, through the Company's financial advisor, indicating that Parent was considering a transaction in which it would acquire all of the Company's issued and outstanding Shares at a price of \$20.00 per Share, subject to further due diligence. Parent also requested a period of exclusive negotiations with the Company.

If a disclosure indicates that the parties initially discussed a potential alliance or joint venture, and later discuss the possibility of a merger, I use the date when the term “merger”, “acquisition”, “business combination”, or similar expression was first used in the disclosure. In the example disclosure contained here, I would use November 12, 1999 as my estimate of the initiation date, even though formal negotiations did not appear to begin until sometime in early 2000. I classify a target as the initiator if the target firm approached the acquirer about a possible transaction or sought out potential bidders through a third party. In this example, I would classify McWhorter Technologies as the initiating firm.

**Table 1 – Industry and year distribution for 233 acquisitions announced between 1996 and 2000****Panel A: Industry membership**

Industry	Number	% of sample	% ExecuComp
13 – Oil and gas extraction	7	3.00%	3.12%
15 – Building construction	2	0.86	0.75
20 – Food and kindred products	4	1.72	2.35
24 – Lumber and wood products	2	0.86	0.73
26 – Paper and allied products	7	3.00	1.74
27 – Printing and publishing	2	0.86	1.96
28 – Chemicals and allied products	17	7.30	7.35
29 – Petroleum refining	6	2.58	0.93
30 – Rubber and plastic products	5	2.15	1.02
32 – Stone and concrete products	2	0.86	0.75
33 – Primary metal industries	6	2.58	2.45
34 – Fabricated metal products	4	1.72	1.58
35 – Machinery and computers	20	8.58	5.86
36 – Electronic equipment	14	6.01	6.90
37 – Transportation equipment	5	2.15	2.94
38 – Instruments	11	4.72	4.51
42 – Motor freight transportation	2	0.86	0.95
48 – Communications	12	5.15	2.07
49 – Utilities	18	7.73	7.10
50 – Wholesale durable goods	2	0.86	2.24
51 – Wholesale non-durable goods	6	2.58	1.19
53 – General merchandise stores	2	0.86	1.34
54 – Food stores	3	1.29	0.79
59 – Miscellaneous retail	5	2.15	1.75
60 – Depository institutions	22	9.41	5.95
61 – Non-depository institutions	4	1.72	0.82
62 – Brokers, dealers, exchanges	4	1.72	1.26
63 – Insurance carriers	8	3.43	3.64
73 – Business services	11	4.72	7.33
79 – Amusement and recreation	4	1.72	0.80
80 – Health services	3	1.29	1.41
Industries with 1 observation	13	5.56	8.27
Other	0	0.00	8.15
	233	100.00%	100.00%

**Panel B: Year acquisition announced**

Year announced	Number	% of sample
1996	23	9.87%
1997	47	20.17
1998	56	24.03
1999	57	24.46
2000	50	21.46
	233	100.00%

**Table 2 - Descriptive statistics for 233 transactions announced between 1996 and 2000****Panel A: Deal statistics**

	Mean	10%	Median	90%
Acquisition premium (-20,5)	0.333	0.071	0.298	0.644
Deal value / Acquirer value	0.716	0.030	0.280	1.093
Competing bid	0.047	0.000	0.000	0.000
Hostile	0.030	0.000	0.000	0.000
All cash	0.275	0.000	0.000	1.000
Initiated by target	0.292	0.000	0.000	1.000
Days between initiation and announcement	224	39	139	476

**Panel B: Target firm statistics in acquisition year**

	Target firms				Non-target ExecuComp firms	
	Mean	10%	Median	90%	Mean	Median
Market value <sub>t-1</sub> (\$billion)	3.334	0.226	0.859	6.699	4.622	1.020
Book-to-market <sub>t-1</sub>	0.459	0.150	0.429	0.778	0.476	0.420
ROA <sub>t</sub>	0.085	0.020	0.085	0.185	0.093	0.094
ROA <sub>t-1</sub>	0.089	0.019	0.089	0.185	-	-
Market-adjusted return <sub>t</sub>	-0.078	-0.524	-0.129	0.401	-0.013 <sup>c</sup>	-0.083
Market-adjusted return <sub>t-1</sub>	0.006	-0.411	-0.062	0.414	-	-

**Panel C: CEO statistics in acquisition year**

	Target firms				Non-target ExecuComp firms	
	Mean	10%	Median	90%	Mean	Median
Tenure <sub>t</sub>	7.618	2.000	6.000	16.000	8.112	6.000
Salary <sub>t</sub>	614.231	296.528	575.000	955.000	567.946 <sup>b</sup>	515.000 <sup>b</sup>
Bonus <sub>t</sub>	593.819	0.000	282.500	1,472.271	577.043	319.100
Grant value <sub>t</sub>	2,264.223	0.000	756.449	5,385.180	2,313.240	624.675
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	0.173	0.000	0.060	0.441	0.159	0.044 <sup>c</sup>
Grant quantity <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	0.222	0.000	0.129	0.499	0.209	0.096 <sup>b</sup>
Net sales <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	0.011	-0.099	0.000	0.163	0.011	0.000
CEO ownership <sub>t</sub> (%)	2.128	0.028	0.321	5.823	3.096 <sup>b</sup>	0.393
CEO age <sub>t</sub>	55.751	48.000	56.000	63.000	-	-
Golden parachute <sub>t</sub>	0.781	0.000	1.000	1.000	-	-
Golden parachute payment <sub>t</sub>	2,626.948	0.000	1,975.128	6,325.572	-	-

<sup>a,b,c</sup> differences significant at the 1%, 5%, 10% level (two-tailed t-test for means, sign test for medians)  
All dollar amounts in thousands, unless otherwise specified. All variables defined in Appendix A.

**Table 3 – Equity grants to 233 target CEOs prior to acquisition**

**Panel A: Equity grant values for target firm CEOs**

		Year relative to acquisition year			
		-3	-2	-1	0
<i>All CEOs with available data</i>					
Grant value <sub>t</sub> (\$Million)	Mean	1.646	1.924	1.634	2.264
	Median	0.468	0.411	0.716	0.756
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	Mean	0.181	0.185	0.152	0.173
	Median	0.046	0.047	0.043	0.060
Grant quantity <sub>t</sub> (millions of units)	Mean	0.193	0.170	0.141	0.172
	Median	0.059	0.050	0.055	0.077
Grant quantity <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	Mean	0.242	0.222	0.195	0.222
	Median	0.133	0.107	0.111	0.129
Growth in cash compensation <sub>t</sub>	Mean	0.211	0.194	0.229	0.184
	Median	0.155	0.092	0.122	0.081
<i>N</i> =		123	160	205	233
<i>Subsample of CEOs with five years of data</i>					
Grant value <sub>t</sub> (\$Million)	Mean	1.742	2.191	1.568	2.399
	Median	0.448	0.395	0.728	0.841
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	Mean	0.185	0.179	0.151	0.184
	Median	0.044	0.034	0.041	0.063
Grant quantity <sub>t</sub> (millions of units)	Mean	0.209	0.189	0.144	0.183
	Median	0.058	0.055	0.060	0.085
Grant quantity <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	Mean	0.222	0.149	0.134	0.221
	Median	0.098	0.080	0.103	0.127
Growth in cash compensation <sub>t</sub>	Mean	0.203	0.162	0.153	0.130
	Median	0.144	0.055	0.113	0.051
<i>N</i> =		111	111	111	111

**Table 3 (continued)– Equity grants to target CEOs prior to acquisition****Panel B: Equity grant values for target firm CEOs relative to a control sample**

		Year relative to acquisition year			
		-3	-2	-1	0
<i>All CEOs with available data</i>					
Grant value <sub>t</sub> (\$Million)	Mean	1.052 <sup>c</sup>	0.992 <sup>b</sup>	0.710 <sup>a</sup>	1.099 <sup>a</sup>
	Median	0.000	0.000	0.000	0.043
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	Mean	0.115 <sup>a</sup>	0.102 <sup>a</sup>	0.065 <sup>a</sup>	0.076 <sup>a</sup>
	Median	0.002	0.000	0.000	0.002
Grant quantity <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	Mean	0.128 <sup>a</sup>	0.087 <sup>a</sup>	0.081 <sup>a</sup>	0.105 <sup>a</sup>
	Median	0.005	0.000	0.000	0.034 <sup>b</sup>
<i>N</i> =		123	160	205	233
<i>Subsample of CEOs with five years of data</i>					
Grant value <sub>t</sub> (\$Million)	Mean	1.116 <sup>c</sup>	1.386 <sup>b</sup>	0.563 <sup>b</sup>	1.266 <sup>b</sup>
	Median	0.000	0.000	0.000	0.190 <sup>c</sup>
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	Mean	0.121 <sup>a</sup>	0.099 <sup>b</sup>	0.053 <sup>b</sup>	0.105 <sup>a</sup>
	Median	0.000	0.000	0.000	0.011 <sup>c</sup>
Grant quantity <sub>t</sub> / Portfolio quantity <sub>t-1</sub>	Mean	0.111 <sup>a</sup>	0.038 <sup>b</sup>	0.014	0.114 <sup>a</sup>
	Median	0.000	0.000	0.000	0.024 <sup>c</sup>
<i>N</i> =		111	111	111	111

<sup>a,b,c</sup> significant at the 1%, 5%, 10% level (two-tailed t-test for means, sign test for medians)

All variables defined in Appendix A.

**Table 4 – Determinants of equity grants in the acquisition year for 233 target firm CEOs**

	Unadjusted		Relative to control sample	
	Grant value (\$Million)	Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)	Grant value (\$Million)	Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)
	(1)	(2)	(3)	(4)
Intercept	-8.368 (0.001)	0.326 (0.004)	-5.815 (0.001)	-0.144 (0.216)
CEO is chair <sub>t</sub>	0.078 (0.869)	-0.000 (0.983)	0.061 (0.898)	0.005 (0.881)
Number of directors <sub>t</sub>	-0.146 (0.059)	-0.018 (0.002)	-0.146 (0.063)	-0.012 (0.042)
Outside blockholder <sub>t</sub>	1.011 (0.058)	0.028 (0.453)	0.627 (0.242)	0.020 (0.606)
CEO ownership <sub>t</sub>	0.572 (0.903)	-0.306 (0.361)	-1.240 (0.790)	-0.426 (0.216)
Excess compensation <sub>t-1</sub>	0.214 (0.841)	0.015 (0.287)	0.184 (0.790)	0.016 (0.309)
Golden parachute <sub>t</sub>	-0.774 (0.120)	0.011 (0.759)	-0.818 (0.104)	0.023 (0.530)
Years to retirement <sub>t</sub>	0.093 (0.014)	0.004 (0.110)	0.095 (0.013)	0.007 (0.009)
Hostile	-1.093 (0.336)	-0.108 (0.187)	-2.191 (0.057)	-0.148 (0.083)
Tenure <sub>t</sub>	-0.014 (0.719)	-0.003 (0.257)	-0.011 (0.753)	0.002 (0.516)
ln(Market value <sub>t-1</sub> )	1.445 (0.001)	-0.022 (0.075)	0.935 (0.001)	0.012 (0.359)
Book-to-market <sub>t-1</sub>	1.407 (0.081)	0.259 (0.001)	2.148 (0.009)	0.272 (0.001)
Market-adjusted return <sub>t</sub>	0.971 (0.022)	0.099 (0.018)	0.985 (0.025)	0.101 (0.002)
<i>N</i> =	231	230	231	230
Adj. <i>R</i> <sup>2</sup>	0.265	0.202	0.136	0.130

*p*-values in parentheses. Observations with absolute value of DFFITS statistic greater than two removed.  
All variables defined in Appendix A.

**Table 5 – The relation between acquisition premiums and equity awards to target CEOs**

	Dependent variable = Acquisition premium (-20,5)					
	All firms		Target initiated		Not target initiated	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.591 (0.001)	0.572 (0.001)	0.007 (0.977)	0.004 (0.989)	0.764 (0.001)	0.727 (0.001)
Grant value <sub>t</sub> (\$Million)	0.004 (0.327)		-0.001 (0.900)		0.008 (0.189)	
Grant value <sub>t</sub> / Market value <sub>t-1</sub> (X 100)		0.070 (0.246)		-0.059 (0.499)		0.173 (0.038)
CEO ownership <sub>t</sub>	-0.393 (0.345)	-0.383 (0.358)	-0.133 (0.803)	-0.135 (0.802)	-0.158 (0.810)	-0.049 (0.934)
ln(Market value <sub>t-1</sub> )	-0.038 (0.016)	-0.035 (0.025)	0.033 (0.303)	0.034 (0.293)	-0.059 (0.002)	-0.052 (0.005)
Book-to-market <sub>t-1</sub>	-0.068 (0.368)	-0.079 (0.303)	0.079 (0.563)	0.090 (0.484)	-0.119 (0.218)	-0.153 (0.109)
Market-adjusted return <sub>t</sub>	0.000 (0.999)	-0.003 (0.944)	-0.045 (0.567)	-0.039 (0.626)	0.001 (0.982)	-0.011 (0.827)
Deal value / Acquirer value	0.004 (0.577)	0.004 (0.615)	-0.059 (0.498)	-0.056 (0.505)	0.006 (0.463)	0.005 (0.529)
All cash	0.064 (0.262)	0.066 (0.254)	0.222 (0.026)	0.217 (0.029)	0.016 (0.823)	0.016 (0.823)
Tender offer	0.109 (0.064)	0.106 (0.073)	-0.060 (0.583)	-0.059 (0.583)	0.159 (0.026)	0.149 (0.035)
Competing bid	0.007 (0.936)	0.001 (0.994)	0.053 (0.750)	0.089 (0.612)	0.041 (0.712)	0.060 (0.595)
Hostile	-0.024 (0.840)	-0.018 (0.878)	0.111 (0.681)	0.109 (0.683)	-0.008 (0.958)	0.002 (0.991)
N	233	233	68	68	165	165
Adj. R <sup>2</sup>	6.44%	6.60%	-0.01%	-0.00%	9.67%	11.16%

*p*-values in parentheses. Observations with absolute value of DFFITS statistic greater than two removed.  
All variables defined in Appendix A.

**Table 6 – The relation between equity grants, prior returns, and equity divestitures by target CEOs**

	Dependent variable = Net sales <sub>t</sub> / Shares outstanding <sub>t-1</sub>		
	All ExecuComp CEOs (1993-1999) <sup>a</sup>	Target CEOs <sup>a</sup>	
	(1)	(2)	(3)
Intercept	0.001 (0.001)	0.000 (0.841)	-0.000 (0.776)
Acquisition year			0.111 (0.377)
Grant quantity <sub>t</sub> / Shares outstanding <sub>t-1</sub>	0.110 (0.001)	0.395 (0.001)	0.456 (0.001)
[Grant quantity <sub>t</sub> / Shares outstanding <sub>t-1</sub> ] X Acquisition year			-0.416 (0.017)
Market-adjusted return <sub>t</sub>	0.002 (0.001)	0.007 (0.001)	0.009 (0.001)
Market-adjusted return <sub>t</sub> X Acquisition year			-0.007 (0.002)
N =	8,234	721	721
Adj. R <sup>2</sup>	0.01	10.29	11.99

<sup>a</sup>Sample of target CEOs includes all with available data for the 233 target CEOs for the four years ending in the acquisition year. Sample of ExecuComp CEOs includes all CEO-year observations where the CEO has been in office at least two years.

*p*-values in parentheses.

All variables defined in Appendix A.