Contractual revisions in compensation: Evidence from merger bonuses to target CEOs*

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Do merger bonuses to target CEOs facilitate a *wealth transfer* from target to acquirer shareholders? We test this hypothesis against an alternative that bonuses enable a useful *contractual revision* in compensation contracts when takeovers generate small synergies. When target CEOs get a merger bonus, acquirers pay lower premiums, but they also typically get less in the form of low synergies. Moreover, both stock and accounting returns to the acquirers are lower on average in deals with target CEO bonuses. These results support the contractual revision alternative. Nevertheless, wealth transfer occurs when merger bonuses are present in deals where targets exhibit high pre-takeover abnormal accruals or are subject to SEC enforcement actions.

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1. Introduction

In this paper we consider a question often asked in the mergers and acquisitions (M&A) literature: whether eleventh hour extra benefits to target CEOs are explained by a rent-extraction agency problem, with target CEOs sacrificing merger premiums for personal gain.[1] More specifically, we study whether a merger bonus, a particular acquisition-related benefit often paid to target CEOs during takeover deals, generates a transfer of wealth from target shareholders to acquirer shareholders.

We propose and evaluate an alternative to the wealth transfer view, which we refer to as the *contractual revision hypothesis*. This alternative view posits that in acquisitions where target firms are expected to generate low takeover gains, a side payment that adjusts the target CEO's merger-related compensation is sometimes required to align manager and shareholder incentives. The side payment benefits target shareholders in the low gains situation, because without it the target CEO may block the deal and there would be no premium at all. This contractual revision can be thought of as compensation for the truncation of the stream of returns the target CEO would otherwise be expecting from investing in firm-specific human capital.

We empirically investigate our hypotheses about merger bonuses for target CEOs in a sample of 949 publicly traded targets that receive an acquisition bid during 1999-2009. We focus on how five different acquisition characteristics are associated with merger bonuses: (1) the premium offered to targets, (2) the total synergy created by the deals, (3) the acquirer M&A announcement returns in the transactions, (4) the post-acquisition accounting performance of the merged firms, and (5) the division of merger gains.

Univariate analyses show that a large fraction of the merger bonus payments given to the target CEOs in our sample are associated with the acquirer using the CEO in some fashion (e.g. as a consultant) or preventing this executive from competing against the merged firm. In terms of the shareholder wealth effects, our multivariate baseline tests show that in deals where the target CEO gets a merger bonus, targets get premiums about four percentage points lower. Consistent with the lower premiums paid for bonus-

[1] Morck, Shleifer, and Vishny (1988) recognize this issue arguing that target CEOs could be susceptible to bidder-provided incentives. These eleventh hour payments are in contrast to the *ex-ante* severance pay agreements studied by Rao and Xu (2013).

paying targets, we also find that these companies appear hard to sell (e.g. they are more likely to initiate their own takeover and they are less likely to be pursued by multiple bidders). However, on average, we do not detect a transfer of wealth to bidder shareholders from target shareholders in these transactions. Actually, the point estimates of the effect of bonuses on acquirer performance (short term stock return and industry-adjusted post-merger return on assets (ROA)) are *negative* (-1.84% and -1.63%) and statistically significant. We also show that synergies are about 1.58% lower in deals in which the target CEO gets a merger bonus. Moreover, targets that give their CEOs a merger bonus get a larger *share* of the acquisition gains (which we compute following Ahern (2012)). These results suggest that, on average, the presence of merger bonuses is consistent with the contractual revision alternative.

While we find evidence consistent with contractual revision for most acquisitions, we also find evidence of a transfer of wealth from target to acquirer shareholders in *other* takeovers with target CEO bonuses. Specifically, we use high abnormal accruals or SEC enforcement actions in the target firms as indicators of where agency problems are likely to be high, and therefore where wealth transfers from target shareholders are most likely to occur. In such transactions, target firms are sold for lower premiums while their acquirers experience higher (announcement and post-merger industry-adjusted accounting) returns (4% and 2.7%). Moreover, in these takeovers, targets capture a lower share of the gains. Deals with merger bonuses and target accounting irregularities are, therefore, particularly accretive for acquirer shareholders confirming the wealth transfer view (that target managers give away rents to the acquirers at the expense of target shareholders) in firms where agency problems are high.

In sum, we find that most merger bonus payments are benign because they appear to revise potential deficiencies in existing exit compensation for CEOs that sell their firms. However, while this is the dominant effect, other tests indicate that some bonuses result in wealth transfers. Importantly, what enables these wealth transfer bonuses to exist in equilibrium is the fact that they can pool with the benign ones. Otherwise, if there were no benign bonuses, it would be easy for shareholders to identify and prevent wealth transfers by opposing takeover with merger bonuses.

Although we have made every effort to carefully analyze the data, some qualifications remain. First, to address concerns related to reverse causality, co-determination, and omitted variables bias, we use two different techniques to evaluate the effects and associations involving bonuses: an instrumental variable (IV) approach and a propensity score matching procedure (PSM). The inferences from both methods are similar to those arising from our baseline tests. However, both the IV and the PSM are subject to important limitations that may confound the results. Second, while our empirical evidence supports the contractual revision hypotheses, we explain in Section 5 why the results could also be consistent with alternative hypotheses.[2] Third, because our sample includes bids for targets that are made public, we cannot know whether target CEOs demand merger bonuses or other benefits during negotiations in which a bid is never made public. Fourth, as with other studies in the accounting literature, we use high abnormal accruals or SEC enforcement actions as proxies for managerial opportunism, earnings management, and agency problems. As noted by Dechow, Ge, and Schrand (2010), however, these variables can also indicate benign characteristics that are not necessarily shareholder wealth reducing. Throughout the paper, we discuss these limitations in greater detail.

Our work advances the literature on several fronts. First, and most directly, this paper illustrates that merger bonuses do not generally facilitate wealth transfers from target to acquirer shareholders. Instead, our evidence suggests that in the typical transaction, a bonus represents a revision that improves contracting by aligning incentives within the target firm in response to a low synergy acquisition bid. Given this, our results are informative about a key role of the accounting system "because much of the motivation for accounting and auditing has to do with the control of incentive problems" (Lambert, 2001). Moreover, the findings supporting the contractual revision view contribute evidence to the theoretical literature modeling endogenously determined optimal wage contracts (see, for example, Hölmstrom (1979), Grossman and Hart (1983), and Hölmstrom and Milgrom (1991)). Our results also advance an extensive empirical literature

[2] Conformance with alternative hypotheses arises, for example, because we don't know how certain benefits map into a target CEO's utility function. Ross (2004) argues that attitudes towards risk depend not only on the convexity of an agent's pay schedule, but also on how the overall schedule maps into more (or less) risk averse regions of the agent's utility function.

that examines the endogenous relation between different corporate practices and firm value. In particular, our paper complements the results in Palia (2001). He examines the effect of incentive compensation on firm value and finds that taking into account the endogeneity of this compensation indicates that firms set managerial pay in response to their contracting environment.

This contribution adds important evidence to the specific literature studying merger bonuses dispensed during acquisitions. Grinstein and Hribar (2004) find that *bidding CEOs* often receive a merger bonus regardless of whether the acquisition creates value for the acquiring shareholders. In contrast, our evidence is consistent with the view that a merger bonus is typically used to mitigate conflicts of interest between *target CEOs* and their shareholders. More broadly, our study expands the literature on how CEO incentives are related to wealth changes experienced by shareholders during acquisitions.[3]

Our second contribution is to illustrate the importance of the accounting system as a control mechanism during acquisitions. As noted by Zimmerman (2001), well-functioning accounting systems perform a control function that helps motivate and monitor people in organizations to curb agency problems and self-interested managerial actions. Our findings suggest that accounting systems usually work well in this control function to achieve goal congruence between managers and outside shareholders, even when a firm receives a takeover bid. In high synergy bids, contingencies written into the usual compensation contracts help achieve congruence; in low synergy bids, an added merger bonus that revises the contract enables congruence. On the other hand, our evidence about accounting irregularities (high abnormal accruals and SEC enforcement actions) shows that noise in the accounting system is likely to be related to agency problems. In general, therefore, our findings show that the integrity and quality of the financial reporting system affects investment efficiency. In this regard, our paper advances the literature examining the impact of accounting on investment efficiency (e.g., Bens and Monahan, 2004; Biddle and Hilary, 2006; McNichols and Stubben, 2008; Biddle, Hilary, and Verdi, 2009; Bushman, Piotroski, and Smith, 2011; Ge and Lennox, 2011; Kravet, 2014).

[3] See, for example, Lewellen, Loderer, and Rosenfeld (1985), Tehranian, Travlos, and Waegelein (1987), Lambert and Larcker (1988), Grinstein and Hribar (2004), and Harford and Li (2007).

Third, our paper adds additional evidence related to a question dating back to Jensen and Meckling (1976) and posed by Shleifer and Vishny (1997) – "… why don't investors try to bribe the manager with cash … not to undertake the inefficient project?" The Shleifer and Vishny paper argues that commonly, and inconsistent with Coase (1960), investors do not engage in such bribes for individual actions, and the result is some ex post inefficiency. Our evidence suggests that merger bonuses can serve as the "bribing" mechanism to get closer to ex post efficiency and discourage managers from taking the inefficient action of preventing a merger that provides some benefit to shareholders. Perhaps this bonus mechanism is used here because the merger represents a final transaction between the target firm and the manager; therefore there is no threat of extorting bribes later by proposing similar inefficient actions.

Finally, our paper adds important information to the public policy discussion related to recent changes in securities laws that explicitly allow target firms to give merger bonuses and other benefits to their executives during takeovers.[4] From an academic perspective, our findings on bonuses demonstrate that examining individual components of the merger pay package to target CEOs reveals critical facts about the deal and about the impact of specific benefits. In this vein, our findings add to the literature examining the role of individual merger-related benefits given to target CEOs during M&A deals. Papers in this area study the effect of target CEOs that (i) negotiate shared control in the merged firm (Wulf, 2004), (ii) receive a bundle of merger-related benefits that may include an augmentation of their golden parachute (Hartzell, Ofek, and Yermack, 2004), (iii) join the corporate board of the merged company (Moeller, 2005), (iv) accept a job in the acquirer firm (Bargeron, Schlingemann, Stulz, and Zutter, 2010), and (v) obtain unscheduled stock options during private merger negotiations (Fich, Cai, and Tran, 2011).

[4] On October 18, 2006, the Securities and Exchange Commission (SEC) unanimously approved amendments to Rule 14d-10(a) (2) (commonly known as the "best price" rule) applicable to tender offers for securities registered under the Securities Exchange Act of 1934. This rule was originally written to ensure equal treatment among target shareholders by requiring the highest consideration paid to any one security holder in a class be the consideration paid to all security holders in the same class. The amendments expressly state that the best price rule does not apply to payments to top managers, directors, or other employees of a target company entered into in connection with an acquisition of the target. The amendments now enable the target's board of directors to approve cash bonuses, severance, or other employee benefit arrangements for its executives during an acquisition negotiation.

The paper proceeds as follows. Section 2 develops our hypotheses and describes their empirical predictions. Section 3 describes our data and the merger bonuses awarded to target CEOs. Section 4 presents our empirical analyses. Section 5 contains additional tests. Section 6 concludes.

2. Hypothesis development and empirical predictions

2.1. The wealth transfer hypothesis

Lambert and Larcker's (1985) study of golden parachutes (GPs) examines whether these merger-contingent payments, which insulate target managers against personal losses, lead to inefficient outcomes for target shareholders. Lambert and Larcker (1985) refer to this possibility as the *wealth transfer* hypothesis whereby target shareholders give up rents during a takeover.[5] Lambert and Larcker (1985, p. 186) warn "…since GPs have the potential to decrease the discipline on managers, the wealth transfer hypothesis predicts that GP adoption should have an adverse impact on [target] shareholder wealth." Under the wealth transfer hypothesis in Lambert and Larcker's setting, rents are transferred from target shareholders and captured by the target CEOs.

Since Lambert and Larcker's study, the literature has evolved to include the acquirer shareholders as potential recipients of the wealth transferred from the target. This is of particular concern when the target CEO obtains acquisition-contingent benefits (like bonuses) often required by the bidder. Moeller (2005, p. 168-169) notes that "…one way to solicit a target CEO's merger approval at a reduced takeover price is for the bidder to offer private benefits to the target CEO …" The evidence in Moeller suggests that some target CEOs negotiate lucrative deals for themselves by enabling bidding shareholders to capture additional rents from the target shareholders. Likewise, Wulf (2004, p.60) concludes, "…CEOs trade power for premium by negotiating shared control," in mergers of equals. Her evidence also indicates that in these mergers the acquirer firms exhibit significantly larger returns. Similarly, in reference to different bundles of merger

[5] Rosen (1985) argues that the "wealth transfer hypothesis" is essentially moral hazard. Other papers in the literature refer to this hypothesis as "rent extraction," "managerial discretion," or "managerial interest" (see, for example, Malatesta and Walkling (1998), Grinstein and Hribar (2004), and Moeller (2005)).

benefits given to target CEOs, Hartzell, Ofek, and Yermack (2004, p. 59) argue, "… the financial cost to target shareholders of these arrangements would seem to exceed substantially the benefits received by their CEOs.[6] This imbalance, arising from a conflict of interest between target CEOs and their shareholders, would seem to represent a *wealth transfer* from shareholders of the target to shareholders of the buyer." Fich, Cai, and Tran (2011) argue that unscheduled options given to target CEOs during M&A negotiations transfer wealth to acquirers. In our setting, the wealth transfer hypothesis predicts that merger bonus payments represent moral hazard where the target CEO's self-interest persuades him or her to deliver the target to the acquirer at a low premium.

2.2. The contractual revision hypothesis

Our alternative to the wealth transfer hypothesis is the *contractual revision hypothesis*, which holds that a side payment in case of a takeover bid can *circumvent* potential conflicts of interests. In this situation, an extra benefit provided during an acquisition attempt on the firm is a choice variable that maximizes the target firm's value given its operating and information environment as well as the reservation wage and future career opportunities of the target CEO.

The logic of the contractual revision view begins with the recognition that the incentives of target CEOs and target shareholders in an acquisition decision often differ *ex ante*, before considering special provisions in compensation contracts. Target CEOs are concerned about the impact of the acquisition on their overall personal wealth including private benefits, the present value of future compensation, and their current shareholdings. Target shareholders, on the other hand, are concerned almost exclusively about the financial value of their shares. Most firms write compensation contracts that assure that this *ex ante* potential conflict of interest will not forestall target-value-increasing merger bids with typical levels of premiums. Some of these contracts use equity-based pay, golden parachutes and the like so that incentives to accept bids are roughly aligned. When these provisions work effectively, both target managers and their outside

[6] In contrast to the results in Hartzell et al., Patrick (2014) does not find an association between changes in target shareholders' wealth and the renegotiation of the target CEOs' personal benefits.

shareholders share in the gains that accrue from a value-increasing takeover bid and no bonus is required to generate goal congruence.

When the synergies between the target and a potential acquirer are relatively low, however, manager and shareholder incentives to accept bids may not be aligned. In this case, the premium that the acquirer will offer will be low and therefore any gains to the target manager through equity incentives will be low. Furthermore, the cost to the CEO in future wages will be high because of the signal involved in selling the firm for a low premium.[7]

Thus, when synergies are low but positive, target managers are more likely to oppose outside-shareholder-wealth-increasing deals. This misalignment can cause wealth reductions for all parties if it prompts the target CEO to fend off a value-increasing offer.

Bonuses in this case may resolve the potential conflict of interest between the CEO and shareholders. In this situation, an extra cash benefit provided during an acquisition attempt can move the target CEO to support and enable a deal the CEO would otherwise oppose. In these circumstances, shareholders in low synergy targets also benefit because they are paid a premium they would have not otherwise received. In essence, therefore, such a low synergy transaction is worth inducing with a contractual revision because the resulting *ex post* contract enables targets to achieve their highest value.

Our alternative view also ties the use of a merger bonus as an inducement, as opposed to equity-value-based side payments, directly to low synergies. Because the premium paid for a low synergy target is small, the appreciation accruing to equity-based pay will be small. Therefore, all else equal, an unusually large amount of stock or options would be required to get buy-in from the target CEO. In such a scenario, a cash bonus provides a more practical way to deliver a payment in order to get the target CEO's support for the deal. The bonus, therefore, enables target CEOs to partly recover their firm specific human capital investment.

[7] Martin and McConnell (1991) show that CEOs of underperforming firms that are sold often have trouble getting future employment.

2.3. Predictions of the main hypotheses

The wealth transfer hypothesis and the contractual revision hypothesis have different predictions about both the causes and consequences of merger bonuses. In developing our predictions, we recognize that there will likely be different motivations and effects of bonuses in different transactions. Our predictions are therefore about *average* relations. Also, sometimes one or the other hypothesis lacks an explicit prediction about the direction of a particular effect while other times the direction of a particular effect will be the same under both hypotheses.[8] Because of these issues and to conserve space, we focus on the unambiguous predictions that potentially distinguish between our hypotheses.

The contractual revision hypothesis is predicated on low synergy deals giving rise to bonuses. Low synergies limit the premium that buyers will be willing to pay. Therefore, we expect bonuses to be associated with both low premiums and lesser synergies. The wealth transfer hypothesis also predicts low premiums where merger bonuses occur, but here the premiums are a direct result of agency problems rather than low synergies. Thus, both hypotheses predict that acquisitions with merger bonuses involve lower premiums paid to the target firm. Importantly, only the contractual revision hypothesis predicts the following.

> *Prediction 1 (contractual revision): Acquisitions with merger bonuses involve lower overall synergies.*

The wealth transfer hypothesis highlights the role of a bonus in generating extra wealth for the acquiring firm's shareholders, because agency problems lead target managers to transfer wealth to the acquirers at their own shareholders' expense. This hypothesis therefore implies that acquirer abnormal returns should

[8] Both hypotheses predict that merger bonuses are more prevalent and larger where the target CEO is more entrenched. According to the contractual revision hypothesis, bonuses are more prevalent or larger when the CEO's incentives to accept a bid differ significantly from those of target shareholders. Such a situation is likely to arise when the target CEO is more entrenched and thus likely to lose more private benefits from a takeover. The wealth transfer hypothesis also predicts bonuses where there is entrenchment, because in target firms with agency problems CEOs have undue power over their boards.

be higher in deals with merger bonuses to target CEOs, and we would expect the share of the gains from the merger to be lower for the target in these same deals.

> *Prediction 2 (wealth transfer): An acquirer's abnormal returns in bids associated with target merger bonuses are higher than the abnormal returns associated with other bids.*
>
> *Prediction 3 (wealth transfer): A target firm's relative gains from a merger deal with target merger bonuses are lower than the relative gains associated with other deals.*

In the work that follows, we first establish that, consistent with both hypotheses, merger deals with bonuses involve higher target firm entrenchment and lower premiums paid. We then develop findings related to our three predictions. We find in our overall sample that the evidence does not support the key predictions of the wealth transfer hypothesis but is consistent with the contractual revision alternative.

3. Data and Variable Definitions

In this section, we provide descriptive statistics for the sample we use and present information related to the merger bonuses given to target CEOs in the transactions we study.

3.1. Acquisition sample

We begin with 4,455 merger and acquisition (M&A) bids tracked by the Securities Data Company (SDC) announced during 1999-2009 in which the target is a publicly traded U.S. company.[9] This initial sample excludes spinoffs, recapitalizations, exchange offers, repurchases, self-tenders, privatizations, acquisitions of remaining interest, partial interests or assets, and transactions for which deal value is not disclosed. We retain 3,807 deals in which targets have stock market and accounting data available from the Center for Research in Security Prices (CRSP) and Compustat, respectively. We drop 324 bids due to the lack of acquisition premium data from SDC or other sources, which results in 3,483 deals. From this set, we keep 1,156 observations that have corporate governance data for the target companies available from

[9] Our M&A sample starts in 1999 because we require previous option granting activity (from the Thomson Financial's Insiders Filing database which starts in 1996) to establish each target CEO's option granting pattern. The sample stops in 2009 to enable us to use accounting data after deal completion to examine post-acquisition operating performance.

RiskMetrics. We discard 207 observations for which deal background and target CEO exit compensation arrangement information is not available from either the merger proxy filed by the target and/or acquirer with the SEC or from news event searches in Lexis/Nexis. These criteria yield our final sample of 949 deals.

In Panel A of Table 1, we report the temporal and industrial distribution of the 949 sample targets. The industrial distribution of our targets, which follows the classification in Fama and French (1997), mirrors the industrial distribution of targets in SDC during our sample period.[10] The annual number of mergers announced is higher at the beginning of our sample period, which coincides with times of economic expansion. Shleifer and Vishny (2003) argue that stock market health drives merger activity. Consistent with this, the incidence of mergers declines during the periods of economic weakness that occur during 2002-2003 and again in 2009.

Panel B of Table 1 reports the completion rate, mode of acquisition, method of payment, attitude, and other characteristics related to the deals we examine. The Appendix contains the definitions for these characteristics as well as for all other variables used in the paper. Transactions in our sample are completed almost 82% of the time and tender offers account for 18% of the sample. These statistics are comparable to those in Officer (2003). He reports a completion rate of 83% and a tender offer proportion of 20% in his merger sample during 1988-2000. We note that about 54% of bids in our sample are cash deals. Bates and Lemmon (2003) study mergers during 1989-1998 and find that 47% of the deals are paid in cash. We find that 89% of transactions in our sample consist of so-called friendly mergers. This frequency also resembles that in Bates and Lemmon (2003).

We read the S-4, DEFM 14, SC 14D9, SC TO, DEF 14, and 8-K filed by the acquirer and/or target firms with the SEC and find that in over 36% of our transactions, the target firm initiates the deal. This

[10] Specifically, for almost all industries, the percentage of our sample is quite similar to that in SDC. For example, 0.39 vs. 0.42 in Agriculture, 1.32 vs. 1.58 in Food Products, 0.93 vs. 0.95 in Apparel, 1.30 vs. 1.37 in Healthcare, 3.48 vs. 3.27 in Medical Equipment, 0.64 vs. 0.74 in Rubber & Plastic, 2.12 vs. 2.42 in Machinery, 0.09 vs. 0.11 in Defense, 0.27 vs. 0.21 in Precious Metals, 3.39 vs. 3.37 in Communications, 4.34 vs. 4.32 in Computer Hardware, 4.89 vs. 4.52 in Computer Software, 2.07 vs. 2.32 in Transportation, and 2.68 vs. 2.95 in Wholesale. The difference in proportions between our sample and SDC is not statistically significant for any of these industries.

incidence is close to that of 42% reported in the sample of deals occurring during 1994-2006 studied by Aktas, de Bodt, and Roll (2010). The bidder is from the same Fama and French (1997) industry as the target in 54% of our sample. For the same variable, Officer (2004) reports an incidence of 53%. Deals in our sample exhibit an average value of $4.611 billion. Grinstein and Hribar (2004) also report a large mean deal value of $4.7 billion for transactions in their sample of acquisitions during 1993-1999.

Table 1, Panel B also reports key firm characteristics for the target firms in our sample. The average (median) target has a market capitalization of $3.251 billion ($0.991) and a market-to-book ratio of 2.792 (1.976). On average, targets in our sample exhibit a leverage ratio of 0.258. For the same ratio, Bates and Lemmon (2003) report a mean value of 0.233 for the targets they study. The average premium offered to the targets in our sample is 34.73%, which is close to the 34.8% premium paid for the targets analyzed in Hartzell, Ofek, and Yermack (2004). As with the average synergy of 0.97% reported by Wang and Xie (2009), deals in our sample exhibit a mean synergy of 1.03%. Our bidder firms are met with average M&A announcement returns of -3.17% which match Moeller's (2005) average of -2.91% for the same variable. Ahern (2012) calculates the surplus obtained by the target as the difference in dollar gains between the target and the acquirer divided by the sum of their market values. He finds that the target's share of the M&A gains vs. the acquirer's share is, on average, 3.52%; for the same variable we estimate an average of 4.88%. Overall, the descriptive statistics of deals and targets in our sample appear in line with those reported in the previous literature.

3.2. Merger bonuses

We also read the different merger-related filings by either the target or the acquirer with the SEC to identify whether the target firm awards its CEO a merger bonus. Table 2 reports descriptive statistics related to merger bonuses given to target CEOs in the deals we study. According to the information in Panel A of Table 2, 219 target CEOs (or about 23%) receive a merger bonus.[11] Within this group, 29 CEOs have a

[11] This incidence is comparable to that in Hartzell, Ofek, and Yermack (2004).

merger bonus clause in their compensation contract when they are first hired by the target firm. We categorize the description given for the merger bonus in the proxy filings and report this information in Panel B of Table 2. Most target boards justify these payments as "consulting" fees (59 cases), "noncompetition" agreements (41 cases), "signing" consents (6 cases) or "management" (1 case) as required by the buyer. Other target firms categorize these payments as "retention" (58 cases), "special" (8 cases), "stay" (3 cases), "termination" (6 cases), "transition" (2 cases) or "separation" (1 case) made in consideration of the annulment of the CEO's employment agreement. The remaining boards award these payments in order to acknowledge the target CEO's leadership in executing the transaction. In these instances, the payments are described as "bonus" (20 cases), "merger" (17 cases), "transaction" (11 cases), or "special recognition" (1 case). The reasons for the merger bonus add to more than 219 because, in many instances, target firms use more than one rationale to justify this benefit.

For the 219 cases in which the target CEO is awarded a merger bonus, we report summary statistics of the cash paid for this benefit. This information appears in Panel C of Table 2. Relative to the median transaction value for deals in our sample (over $1.5 billion), merger bonuses appear to be quite modest. On average, these payments amount to about $1.6 million with a maximum value of $12 million.

4. Empirical Analyses

In order to distinguish among our hypotheses, we perform several tests aimed at examining the causes and consequences of merger bonuses awarded to target CEOs.

4.1. Which target firms give their CEOs merger bonuses?

To explore the characteristics of firms that provide a merger bonus in our sample of 949 targets, we run three regressions of the determinants of these benefits and report the results in Table 3. In the logit regression reported as model (1), we set the dependent variable to one if the target is among the 219 firms with a merger bonus and set it to zero otherwise. In the ordinary least squares regression (OLS) we report

as model (2), the dependent variable is the natural logarithm of the merger bonus value.[12] In model (3), we estimate a tobit regression in which the dependent variable is the dollar value of the merger bonus scaled by the total compensation the target CEO receives in the year prior to the acquisition announcement.[13] All regressions control for year and industry fixed effects and for other variables that we define in the Appendix. Because other components of the merger pay package to the target CEO might be simultaneously negotiated with the bonus, our tests control for other benefits such as golden parachutes, unscheduled stock options, and a job in the merged firm. Other control variables (e.g. CEOs near retirement age and CEO stock ownership) are similar to those in Hartzell et al. (2004).[14]

Table 3 provides evidence that entrenched target CEOs are more likely to receive merger bonuses. The first variable we employ to study this issue indicates target CEOs that also hold the title of "Chairman of the Board." Our use of this variable as a measure of entrenchment is rooted in the argument by Adams, Almeida, and Ferreira (2005) that the accumulation of titles (or roles) by CEOs often signals excessive managerial power. Nonetheless, being the board's chairman could also identify CEOs with higher skills that are well suited for the dual role. Based on the estimates in model (1), target CEOs who also chair their boards are 7.53 percentage points more likely to get a merger bonus.[15] Likewise, a one point increase in the Bebchuk, Cohen, and Ferrell (2009) entrenchment index (E-index) increases the likelihood of getting a merger bonus by 2.99 percentage points.

In addition, to measure the influence of the target CEO over the compensation committee we define a dummy variable which we label "handpicked compensation committee." This variable, defined following Fich, Starks, and Yore (2014), is set to one whenever the CEO has been in office longer than the majority of the members in the compensation committee. As such, handpicked compensation committees might

[12] The dependent variable in model (2) is set to zero if the target CEO does not a get a merger bonus.
[13] In untabulated tests, we also scale the bonus by the target's market value of equity. All results continue to obtain.
[14] Controlling for CEOs near retirement is important given the horizon problem documented in the literature (see, for example, Dechow and Sloan (1991)).
[15] We calculate the marginal effects as follows. First, we estimate the probability of having a merger bonus using zeros for all bivariate independent variables and using the sample means for all continuous independent variables. Second, we recalculate that probability by changing the value of the independent variable of interest one at a time.

proxy for both cronyism and managerial entrenchment. On the other hand, handpicking might be proxying for highly skilled managers that can preserve their employment longer.

The results in Table 3 indicate that target CEOs are 5.65 percentage points more likely to get a merger bonus when the board's compensation committee is handpicked. In line with the wealth transfer view, this last result suggests that target CEOs are able to extract additional acquisition-related benefits (in this case a merger bonus) when they control their board's compensation committee. But at the same time, a compensation committee giving a merger bonus to the target CEO could simply reflect the fact that these committees set pay according to the expected tenure of the CEO (see, Huson, Tian, Wiedman, and Wier (2011)). This alternative, which is consistent with the contractual revision hypothesis, supports the view in Lowry and Murphy (2007) that CEOs do not always influence executive compensation decisions for self-dealing purposes.

Malmendier, Opp, and Saidi (2015) find that cash targets experience a revaluation that becomes permanent in the event the deal is withdrawn. They argue that cash offers (but not stock offers) reflect positive news about the stand-alone value of the target which suggests that non-cash targets are of low quality relative to cash targets. The results in Table 3 document an inverse association between the Cash payment (0,1) indicator and all of our bonus proxies. According to the estimates in model (1), the probability of getting a merger bonus decreases by 7.69 percentage points when the transaction is structured as an all cash deal.

Panel B of Table 2 shows that many target CEOs' compensation contracts are adjusted with a merger bonus to possibly stop these executives from competing against the merged firm. Therefore, in Table 3, we control for whether non-competition agreements are enforceable in the state in which the acquisition takes place with a variable based on an index proposed by Garmaise (2011).[16] Notably, according to model (1),

[16] Garmaise proposes an enforceability index which is based on 12 questions analyzed by Malsberger (2004). For each jurisdiction, Garmaise assigns 1 point for each question if the jurisdiction's enforcement of that dimension of noncompetition law exceeds a given threshold. Possible totals therefore range from 0 to 12 where a higher value denotes a higher level of enforceability. Garmaise argues that laws governing the enforcement of non-competition agreements are largely static. Nonetheless, one major change during our sample period occurs during 2002-2003 whereby non-compete agreements become less enforceable in Louisiana due to changes in the laws protecting intellectual property rights in that state.

an increase of one unit in the non-compete index is associated with a 2.02 percentage point increase in the probability that the target CEO gets a merger bonus. This finding suggests that target firms are more likely to give their CEOs a merger bonus in jurisdictions where a related non-compete agreement can be enforced.

In a theoretical study about golden parachutes, Berkovitch and Khanna (1991) view parachutes as implicit deferred compensation, already earned but not yet received, that promotes managerial human capital investment in the firm. Our contracting revision hypothesis suggests that the merger bonus helps target CEOs recoup their firm specific human capital investment. Given this, one would expect that bonuses should be more prevalent when parachutes are small or not provided. This is what we find. We note that Table 3 documents an inverse and statistically significant association between bonuses and parachute provisions. The estimates in model (1) imply that a drop of one standard deviation in parachute value increases the probability of a bonus by 1.11 percentage points. The parachute estimate in model (2) indicates that a $1 decline in the parachute payment raises the bonus by $0.67. This evidence indicates that golden parachutes and merger bonuses are substitutes and reinforces the idea in the contractual revision hypothesis that bonuses are given to circumvent potential problems with ex-ante compensation contracts.[17] Moreover, the inverse association between parachutes and bonuses implies that the latter are not determined in isolation, but instead negotiated simultaneously with the rest of the target CEO's merger pay package. This suggests that simply controlling for the other pay package elements in a subsequent test might be insufficient or inappropriate. To address this issue, we complement the remaining multivariate tests with systems of equations analyses in which the merger bonus is instrumented from a first stage regression similar to model (1) in Table 3.

4.2. Empirical strategy

In the tests that follow, we use four different metrics for the merger bonus as independent variables. The first is a (0,1) dummy variable set to one if the target CEO receives a merger bonus. The second proxy

[17] We also investigate the role of very large parachutes later in Section 5.6.

is the natural logarithm of the merger bonus payment. The third is the dollar value of the merger bonus scaled by the total compensation the target CEO receives in the year prior to the acquisition announcement.

Our fourth proxy is the fitted bonus dummy from a first stage regression (model (1) in Table 3). In that first stage test, we use the index of the enforceability of non-compete agreements by state proposed by Garmaise (2011) as an instrument. The results in Table 3, in which the coefficient for the index is statistically different from zero, indicate that this variable satisfies the relevance condition.[18]

In terms of the exclusion restriction, we believe that the enforceability of non-compete agreements is orthogonal to takeover premiums, synergies, or acquisition return outcomes. This view is supported by Garmaise's (2011, p. 414) conclusion that "the enforceability of non-competition agreements has no net effect on firm value."

It is important to note what the exclusion restriction in our tests requires and what it doesn't. What it requires is that the *enforceability* of a non-compete agreement not influence the *change in value* to any of the parties to a merger. One way to achieve this is if non-compete agreement enforceability has no influence on the *level* of firm value. With this "strong" condition holding, the value of the combined firms both before and after a merger are independent of enforceability, and therefore the change in value is also independent of the enforceability. This strong condition, which is one interpretation of what Garmaise finds, is sufficient (but not necessary) for our exclusion restriction to be met.

Importantly, however, there are weaker conditions where enforceability may not influence the change in value, even though it might influence the *level* of value itself. Garmaise (2011) discusses several potential effects of enforcing non-compete agreements on firms, and while these effects may change in importance when a merger occurs, they may also roughly cancel out in their impact on deal values. Specifically, for many of our targets (particularly those with poor performance), the alternative to a takeover would be to remove the CEO. Whether the CEO is removed by a merger or not, the enforceability of a non-compete

[18] The first-stage χ^2 is large, indicating that our estimation is efficient. Furthermore, the F-statistic on the instrument in our first stage is above critical values from a Stock-Yogo weak identification test. We employ the methods outlined by Stock and Watson (2010) and by Hall and Peixe (2003) to test the validity of our instrument and ensure that the relevance condition is satisfied.

agreement should have an equal value effect on the firm whether it is acquired or survives as a stand-alone entity. To clarify further, the ex-ante pricing of the target firm's stock will have a discount for the lack of enforceability of a non-compete agreement before any merger bid, because of the expected CEO removal. Similarly, the post-merger-bid pricing of the stock should include an offsetting discount for the lack of enforceability of a non-compete agreement, because of the expected CEO departure. In either case, the CEO will be expected to be leaving and enforceability of a non-compete agreement will therefore have the same effect on value. Consequently, the enforceability of non-compete agreements should not directly affect target premiums, synergies, or acquirer returns in this case.

Nevertheless, since other scenarios are possible and the exclusion restriction is not testable, we recognize that our IV method and our arguments to justify the exclusion restriction might not be completely convincing. Therefore, in Section 4.7, we use propensity score matching techniques to estimate the effect of the merger bonus and evaluate the robustness of all the findings related to our instrumental variables (IV) regressions.

4.3. Merger bonuses and acquisition premiums

In Table 4, we test the association between merger bonuses to target CEOs and the bid premiums received by their firms. We estimate four regressions with year- and industry-fixed effects using the four-week premium reported by SDC as the dependent variable and the four proxies for the merger bonus (described above) as the respective key independent variables.[19] Our target premium tests closely follow the specification in Bargeron, Schlingemann, Stulz, and Zutter (2010).

We note that the estimates for several control variables in Table 4 are in agreement with the existing M&A literature. For example, we find acquisition premiums to be higher in deals characterized as tender offers (Huang and Walkling, 1987) and in all cash transactions (Malmendier, Opp, and Saidi, 2015). Premiums also increase with the existence of a target termination fee (Bates and Lemmon, 2003, and

[19] Following Officer (2003), we limit the premium to values between 0 and 2 (or 200%).

Officer, 2003). In contrast, acquisition premiums are inversely related to the size of the target firm, also decline when the bidder is a private company (Bargeron, Schlingemann, Stulz, and Zutter, 2010), and when the transaction is characterized as a merger of equals (Wulf, 2004, and Wang and Xie, 2009).

The premium tests in Table 4 control for target initiated deals because the findings in Aktas, de Bodt, and Roll (2010) suggest that this variable is a reasonable proxy for the target's bargaining power. The results in Table 4 suggest that bargaining power affects the gains to target shareholders in mergers: bid premiums are about 3.07% to 3.27% lower in deals initiated by the target firm. This result agrees with those in Fich, Cai, and Tran (2011). They also document an inverse association between acquisition premiums and target initiated deals.

More importantly, the merger bonus coefficients in all models of Table 4 document an economically important inverse association between this benefit and takeover premiums. According to the estimates in model (1), the presence of a bonus is associated with a decline in premium of 4.3 percentage points. Such a decline implies a drop of about $207 million in terms of deal value. Similarly, according to the estimates in model (2), every $1 increase in the merger bonus lowers deal value by about $11. Thus, although the merger bonus is quite small relative to the average deal size, it is associated with a disproportionately large premium decline.[20]

Using our aforementioned IV approach, in Table 4 we address the possibility of co-determination of merger bonuses and takeover premiums. The IV approach also reduces concerns related to the possibility of omitted variables in our specification. Mitigating these concerns could be particularly important because we theorize that, in somewhat unobservable ways associated with anticipated synergies, eventual

[20] In recent empirical work, Wintoki, Linck, and Netter (2012) revisit well established findings in the corporate governance literature related to the association between board size and firm performance and also between board independence and performance. Wintoki et al. (2012) find that the inverse and significant association between board size and performance documented by Yermack (1996) and others is not robust to controls for different lags of performance. Similarly, those authors also find that board independence (Weisbach, 1988) is no longer significantly related to firm performance once performance lags are used as additional explanatory variables. Wintoki et al. argue that their findings illustrate an often ignored source of endogeneity in the literature: that current observations of the key explanatory variable (board size or board independence in their analyses) are not independent of past values of the (performance) dependent variables. In our case and following the rationale in Wintoki et al., it is possible that the merger bonus the target CEO receives is not independent of previous firm performance. To investigate this issue, in untabulated analyses we re-estimate the target premium regressions reported in Table 4 including three lags of annual stock performance. These tests show that the inverse association between the bonus and the premium is robust to controls for different lags of target firm performance.

compensation losses, and the target CEOs' utility functions, bonuses align the incentives of these executives with those of their shareholders.

In the last column of Table 4 and in all other tests in which the fitted bonus is used as the independent variable, the standard errors are adjusted due to the instrumentation. For this purpose (and because the regression for the presence of a merger bonus is a logit model), we follow the procedure outlined by Maddala (1983, p. 244-245). Consistent with the results from the other regressions in Table 4, the coefficient on the instrumented bonus variable is statistically significant with an estimate of -4.33%. All of this evidence is consistent with both of our hypotheses, which predict that premiums should be inversely related to the presence (and size) of a merger bonus.

4.4. Merger bonuses and acquisition synergies

To test *Prediction 1* of the contractual revision hypothesis (that synergies are lower where merger bonuses are given), we estimate four regressions of the acquisition synergies for the 497 transactions in our sample where the bidder is a publicly traded firm.[21] These tests, which are reported in Table 5, follow those in Wang and Xie (2009) and include year and industry fixed effects. As in Bradley, Desai, and Kim (1988), the dependent variable in all models is the total percentage synergistic gain from acquisitions (or merger synergy). We compute this variable as the three day cumulative abnormal return (CAR) for a value-weighted portfolio of the acquirer and the target around the merger announcement date.[22] This CAR is calculated as the residual from the market model estimated during the one year window ending four weeks prior to the merger announcement. The independent variables of interest in the four regressions reported in Table 5 are our four merger bonus proxies, respectively.

[21] The proportion of public acquirers that bid for a public target in our sample is 497 / 949 = 52%. This is close to the incidence of public acquirers that we can infer from the tests in Bates and Lemmon (2003). They run target return tests for all public targets as well as bidder return regressions for subsamples of public acquirers. Based on the number of observations they report, we estimate that the proportion of public bidders in their data is 57% to 59%.

[22] When necessary, we adjust for the percentage of target shares held by the bidder two days prior to the merger announcement.

The parameter estimates related to our control variables in Table 5 yield results that agree with those in the existing literature. For example, the inferences related to statistically significant variables such as bidder size, cash payment (0,1), and merger of equals (0,1), are similar to those in Wang and Xie (2009).

The results associated with our key independent variables document an inverse association between all of our proxies for the merger bonus and the synergy gains. According to the coefficient estimate in model (1), the presence of a merger bonus is associated with a 1.58% decline in synergies. These results are therefore consistent with *Prediction 1* and the contractual revision hypothesis.

4.5. Merger bonuses and acquirer returns

In this section, we analyze the returns to acquirers to test *Prediction 2*. Under this prediction and according to the wealth transfer hypothesis, both short- and long-run returns should be higher when the target CEO receives a merger bonus.

4.5.1. Acquisition announcement returns

To analyze the possible effect of merger bonuses on acquirer returns, we use the standard event-study methodology to estimate the three-day market model-adjusted CAR centered on the announcement of the acquisition and accruing to the 497 publicly traded buyers in our sample. As before, the market model is estimated during the one year window ending four weeks prior to the merger announcement. Table 6 reports four OLS regressions using this CAR as the dependent variable and the four merger bonus proxies as the respective key explanatory variables. All regressions control for various deal, market, and bidder characteristics similar to those in the acquirer return regressions estimated in Moeller, Schlingemann, and Stulz (2004) and in Masulis, Wang, and Xie (2007).

Looking at the control variables in Table 6, we note that several produce results that conform to the existing literature. For example, as in Masulis, Wang, and Xie (2007), the relative size variable yields negative estimates. In addition, similar to Moeller, Schlingemann, and Stulz (2004), bidder size is inversely

related to the acquirer return. As in Malmendier, Opp, and Saidi (2015) acquirer returns are higher when cash is used to buy the target firm.

The estimates for the merger bonus variables in all regression models reported in Table 6 are negative and statistically significant. The coefficient for the merger bonus dummy in model (1) indicates that acquirer returns decline by 1.84% when deals include this benefit. The results from our second stage IV regression reported in the last column of Table 6 indicate a more severe acquirer return reduction of 2.30%. Because the acquirer is paying for the bonus, there is a *natural* negative relation between this benefit and the acquirer's return. Nonetheless, the size of the bonus itself cannot explain much of the acquirer CAR. Indeed, according to the estimates in model (2) of Table 6, a $1 increase in the merger bonus is associated with a decline of about $52 (on average) in the bidder's market capitalization. Inconsistent with *Prediction 2*, the evidence in Table 6 documents an inverse association between merger bonuses to target CEOs and the M&A announcement returns accruing to their acquirers.

4.5.2. Accounting returns to mergers

We now perform a test based on an ex-post (long-run) accounting measure of performance. The advantage of this approach is that it provides evidence based on accounting realizations rather than on future expectations embedded in market data. Consequently, our operating gain to mergers tests are unlikely to be biased by either market sentiment or investors' perceptions.[23]

In Table 7, we estimate four OLS regressions of the operating gains to mergers, calculated as the mean industry-adjusted ROA over the three-year post-merger period. These regressions examine the 417 completed deals made by U.S. public bidders in our sample. Our operating gains to mergers tests follow

[23] This test is also useful because we are concerned that the market reaction may not be the best place to look for the synergy value when the offer price is low. That is, following the theory in Shleifer and Vishny (2003), it is possible that target shareholders accept a low offer because they *believe* the synergies are low (and thus the market reaction is low). In such a scenario, the acquirer could be getting a good deal –and the target CEO may have needed a side payment (such as a merger bonus) to let this happen– it is just the market that does not know. This lack of knowledge could explain the lower announcement returns to the acquirer firms in these deals. In fact, Shleifer and Vishny (2003) model a case in which a similar situation happens: the short-run CEO is "paid" to sell the company for less than it is worth in the long-run and the market does not notice.

those in Healy, Palepu, and Ruback (1992) and in Harford, Humphrey-Jenner, and Powell (2012). Our tests control for, among other things, pre-merger industry-adjusted ROA which we estimate as the combined acquirer-target industry-adjusted ROA for the fiscal year before the takeover. We augment the specification used in previous studies by including our merger bonus proxies as additional control variables.

As in Harford et al. (2012), the coefficient estimate for pre-merger industry-adjusted ROA is positive and significant. More importantly, all of our merger bonus variables exhibit significantly negative estimates. According to the merger bonus indicator in model (1), over the three years following the deal, the industry-adjusted operating performance of the merged firm declines by 1.63% relative to deals without bonuses. The second-stage IV regression suggests a sharper decline of 2.11%.[24]

Together with the target premium results, those in Tables 6 and 7 show that in many transactions acquirers of targets that provide their CEOs a merger bonus are paying less for the target but are not capturing rents from the shareholders of the firms they buy. In fact, the performance of these acquirers is worse in deals where bonuses exist, in terms of both stock market returns and accounting performance. These results contradict *Prediction 2* of the wealth transfer hypothesis.

4.6. Merger bonuses and the division of gains during acquisitions

In this section, we test *Prediction 3* related to share of the gains to target firms from a merger deal where target CEO bonuses are used. To ascertain how value is shared, we follow the procedure in Ahern (2012). Specifically, in Table 8 we estimate four regressions in which the dependent variable is the target's gain relative to the acquirer's gain. To construct this variable we first estimate the target $CAR and the acquirer $CAR as the cumulative abnormal return earned over three days (centered on the merger announcement date) adjusted by the equally weighted CRSP index and then multiplied by the market equity of the firm two days prior to the announcement. Next, we compute the target $CAR minus the acquirer

[24] The results in Table 7 should be interpreted with caution because, as noted by Huson, Malatesta, and Parrino (2004), restructuring activities that (i) change the overall capital intensity of a firm's businesses, (ii) eliminate businesses or product lines, or (iii) result in writing down the book values of certain assets, can trigger meaningful changes in operating performance.

$CAR. We then divide this difference by the sum of acquirer and target market values 50 trading days before the merger announcement to obtain our relative gain dependent variable. The key independent variables and all other control variables in the Table 8 regressions are similar to those in Table 7.

Model (1) of Table 8 indicates that target firms get a relatively *higher* share of the gains when their CEOs get a merger bonus. In this circumstance, the presence of a bonus is associated with an increase of 1.58% in the relative gain of the target vs. the acquirer per dollar of total market value. Thus, the effect of the bonus appears economically important given that in our sample the unconditional mean relative gain is 4.9%. We note that the results related to industry dependence (proxied by Acquirer purchases / Total target sales) and target prior returns are consistent with the findings in Ahern (2012). The evidence in Table 8 therefore is inconsistent with *Prediction 3* of the wealth transfer hypothesis. Hence, rather than transferring wealth in the average transaction, it appears that the merger bonus revises the target CEO's compensation contract to align manager-shareholder incentives in the target firm.

Overall, our evidence on *Predictions 1* through *3* is consistent with the contractual revision alternative that suggests that the dominant effect of merger bonuses is to align the interests of target CEOs and their shareholders.

4.7. Propensity score matching

If our instrument fails the exclusion restriction of being uncorrelated with the error term in the second-stage equations, our IV estimates in Tables 4 - 8 can be biased. This could happen if nonlinear relations of our variables or omitted covariates bias our estimates. Moreover, our claim that the enforceability of non-compete contracts meets the exclusion restriction might be vulnerable in the context of an acquisition. Specifically, Garmaise's conclusions notwithstanding, one would expect that the amount a bidder is willing to pay for a target depends on the bidder's ability to capture the value created in the acquisition. If that value creation is partially embodied in a target CEO who may be able to leave the firm and compete against it, the potential synergies are surely affected. So, even if the net effect of non-compete enforceability on the

standalone firm value is not observably different from zero (Garmaise, 2011), the opposite can be true in a merger. Indeed, as we mentioned earlier, Garmaise's explanation for the lack of a value effect relies on offsetting effects that arguably may become unbalanced in a merger setting.

To address the potential issues related to our IV approach and further assess the robustness of our baseline results, we follow Gerakos, Lang, and Maffett (2013) and Armstrong, Jagolinzer, and Larcker (2010) and use a propensity score matching procedure. We employ propensity matching to estimate an average treatment effect (ATE) of merger bonuses to target CEOs on acquisition outcomes.

The first step of our propensity score matching procedure uses a logit model to estimate the probability of being in the treated group (i.e., of awarding a merger bonus to the target CEO) as a function of *observable* characteristics. In the second step, we use the estimated ex ante probability of being in the treated group to form matched pairs of observations with similar estimated ex ante probability of being in the treated group but different ex post realizations of the treatment.

The key feature of our propensity score procedure is that it analyzes target firms that are jointly similar in all the matching dimensions but different in terms of their bonus award decision. Therefore, our method estimates the counterfactual outcomes of target firms by using the outcomes from a subsample of matched target firms from the other group (treatment or control). Differences in performance measures between the two groups (such as target premiums or acquirer returns) measure the effect of the merger bonus. This measurement however relies on the crucial assumption that we have enough controls –pre-treatment covariates and outcomes– so that, conditional on those controls, treatment assignment is essentially randomized (Imbens and Rubin, 2013).

In our matching procedure (reported in Panel A of Table 9), we use all the control variables and fixed effects we use in our baseline specification in model (1) of Table 3. Following Abadie and Imbens (2008), we obtain confidence intervals using a matching estimator that uses a Gaussian kernel with 500 bootstrap repetitions. Since we are matching jointly on multiple variables, treatment and control samples may not have the same size or similar characteristics in all matched dimensions. Nevertheless, our results do not

change if (a) we use different subsets of these matching characteristics, or (b) we use neighborhood matching instead of Gaussian kernel.

The empirical results from our propensity matching score methodology show that deals in which the target CEO gets a merger bonus exhibit significantly lower target premiums, synergies, acquirer returns, and post-deal operating performance. Panel B of Table 9 reports the respective ATE for these variables, -5.26%, -2.11%, -1.94%, and -2.27%. Panel B also shows that targets with bonuses get a larger share of the gains relative to their acquirers (ATE of 1.27%). These effects generate inferences similar to those arising from our earlier analyses.

We recognize that in our particular setting, the use of propensity score matching is not without potential issues. In this paper we argue that, in partially *unobservable* ways related to expected synergies, expected lost wages and the CEO's utility function, merger bonuses are used to align target CEOs' incentives with those of their shareholders. Because of this, matching deals on *observable* characteristics might not create an appropriately random separation between the treatment and control groups. Nonetheless, in addition to confirming the robustness of our baseline results, the results from both our IV and propensity score matching tests are consistent with the predictions of the contractual revision hypothesis about merger bonuses and would be hard to reconcile with alternative explanations.

5. Additional tests

This section describes further analyses to consider alternative explanations and probe the robustness of the preceding findings.

5.1. Accounting irregularities and wealth transfer

*S*ome subset of deals might involve wealth transfers even if the dominant effect of the merger bonus is consistent with the contractual revision view. In this subsection, we identify such a subset by looking at target firms in which accounting systems are not working well.

Our logic for identifying this group as a subset where wealth transfer is most likely to occur is as follows. The wealth transfer hypothesis presumes large agency problems between target managers and their outside shareholders; therefore, where agency problems are more severe, wealth transfer is more likely. More severe agency problems are likely to occur where the control mechanisms that align incentives and monitor management break down. Healy and Palepu (2001) note that financial reporting and disclosure provide some of these important control mechanisms. These mechanisms are weakened, however, when financial reporting is strategically manipulated (see, for example, Farber (2005) and Ege (2014)). Therefore, we examine here two potential indicators of the manipulation in the accounting system – abnormal accruals (identifying potential earnings management) and SEC enforcement actions – as indicators of severe agency problems and therefore a higher likelihood of wealth transfer.

We believe that high accruals and enforcement actions provide a useful link to agency and governance concerns. Indeed, these are two of the most commonly used measures in the accounting literature to proxy for earnings manipulation (see Dechow et al (2010)). For example, Klein (2002) documents an inverse association between the size of accruals and several corporate governance attributes that are important in monitoring managers. With regards to SEC enforcement actions, Dechow, Sloan and Sweeney (1996) note that, due to limited resources, the SEC pursues cases where it can demonstrate that management knew or should have known that the information contained in its financial statements was flawed. Thus, it is reasonable to assume that typical firms facing enforcement actions by the SEC knowingly and intentionally engaged in severe accounting violations, suggesting that large agency costs are likely. Consequently, given the large agency costs, subsets of target firms with SEC enforcement actions filed against them (or with consistently high abnormal accruals) should be more likely to have merger bonuses that generate wealth transfers to acquiring shareholders.

We recognize that our identification of agency problems is not perfect. As explained in Dechow, Ge, and Schrand (2010), there are many potential reasons for large abnormal accruals and SEC enforcements, some of which have nothing to do with agency problems. These variables can indicate benign characteristics such as the innate volatility in the firm's cash flows, the amount of resources the firm has invested in

maintaining good internal control systems (which vary with firm size and profitability), and the complexity of the firm's operations. In fact, even if these variables proxy for earnings management, such activity is not always shareholder wealth reducing. For example, shareholders might benefit if earnings are managed to reduce the likelihood of technical covenant defaults or to avoid costly government regulatory actions.

Furthermore, the precise mechanism by which accounting irregularities affect takeover incentives is never quite clear. On the one hand, these accounting irregularities could be evidence of target firms with high agency costs. On the other hand, targets with accounting irregularities may have inherently noisier accounting systems that do not provide precise signals about their managers' performance, thereby allowing managers more opportunities to shirk and consume perks. Under either of these possibilities, however, high accruals are likely to be present in firms where it is difficult to monitor and control managers.

Despite the limitations, the evidence in the extant literature suggests that these measures can be useful. Furthermore, using the two different indicators of accounting-related agency problems can be especially helpful in distinguishing signal from noise. As DeFond (2010) points out in related research on earnings quality, "when … proxies are simply noisy measures of the same underlying theoretical construct, triangulation may rule out the possibility that the observed association is driven by the noise component of a given measure." Therefore, in our context, it is unlikely that both SEC enforcements and high accruals will be associated with wealth transfers due to noise.

We explicitly investigate the idea that wealth transfer may be more likely where agency problems are high by utilizing accounting irregularity indicator variables. Specifically, we use the modified Jones (1991) model proposed by Dechow, Sloan, and Sweeney (1995) and implemented by Klein (2002) among others, to define an abnormal accrual (0,1) indicator. This variable is set to one if the value of a target's discretionary accruals in each of the three fiscal years before the merger announcement is above its industry median. Otherwise the indicator is set to zero.[25] We also define an SEC enforcement indicator which we set to one for firms charged by the SEC for alleged financial accounting violations committed during the

[25] Using either the original Jones (1991) model or the Dechow and Dichev (2002) model instead of the Jones modification produces qualitatively similar results. Based on our definition, there are 192 instances of earnings management in the sample.

fiscal year before the merger announcement date.[26] Firms are required to disclose formal SEC investigations for such violations to its shareholders. Note that our accruals measure proxies for potential self-dealing which is perhaps distinguishable by outsiders before merger completion. Conversely, the SEC enforcement action is a measure that typically comes to light only after the merger bid's resolution.

To ensure that accounting irregularities in our sample identify situations in which agency problems are likely to be high, we first estimate their correlations with several governance characteristics. The estimates are reported in Panel A of Table 10. We note that both our earnings management variable and our SEC enforcement indicator exhibit negative correlations with the independent board indicator and positive correlations with the CEO-Chairman dummy. These results are consistent with those in Klein (2002). In interpreting her results she argues "…that boards structured to be more independent of the CEO are more effective in monitoring the corporate financial accounting process." Likewise, Cornett, Marcus, and Tehranian (2008) argue that the dual leadership structure enables CEOs to effectively control information available to other board members and thus may deter effective monitoring, resulting in greater use of discretionary accruals. Consistent with our correlations, Beasley (1996), Dechow et al (1996), and Farber (2005) also find a lower incidence of SEC accounting enforcement actions for firms with more independent boards. Thus it appears that the evidence in Panel A of Table 10 validates the use of our accounting irregularity variables to indicate agency. We also estimate (but do not tabulate) correlations between our accounting irregularity indicators and variables that likely identify firms with high risk (e.g., Beta, standard deviation of stock returns, low credit rating, and an indicator for "junk" debt). Only half of the correlations are positive and none achieves statistical significance. This evidence casts doubt on the possibility that, in our case, the accounting irregularity indicators are proxying for risk.

[26] The SEC issues enforcement actions against firms that it identifies as having violated the financial reporting requirements of the Securities Exchange Act of 1934. Following Karpoff, Lee, and Martin (2007), we track post-merger bid enforcement actions initiated by the SEC for pre-merger violations of any of three provisions of the 1934 Act, as amended by the Foreign Corrupt Practices Act of 1977: (i) 15 U.S.C. §§ 78m(b)(2)(A), which requires firms to keep and maintain books and records that accurately reflect all transactions; (ii) 15 U.S.C. §§ 78m(b)(2)(B), which requires firms to devise and maintain a system of internal accounting controls; and (iii) 15 U.S.C. §§ 78m(b)(5), which establishes that no person shall knowingly circumvent or knowingly fail to implement a system of internal accounting controls or knowingly falsify any book, record, or account. In our sample, there are 46 instances of SEC enforcement actions.

We use Table 10, Panels B through F, to test whether the inclusion of these measures for extreme agency problems affects the results we present in Tables 4 through 8. In particular, we would like to see if our inferences about the role of bonuses would change and we would instead find wealth transfers occurring where the normal control system was failing. We are particularly interested in the coefficients on interaction terms between these accounting irregularity dummy variables and our bonus variable.

In Panel B of Table 10, we run two premium regressions which are specified similar to model (1) in Table 4. To conserve space and avoid repetition we only report the estimates for key variables in Panel B. The results indicate that premiums are lower for target firms with high abnormal accruals or SEC enforcement actions. More importantly, premiums are *even lower* (by 2% to 2.5%) when target CEOs get a merger bonus and their firms exhibit any of the two accounting irregularities we study. Whether the negative association between bonuses and premiums is due to a wealth transfer to acquirers or low synergies necessitating contractual revision, there is a stronger effect in the subsample of firms with accounting abnormalities.

In Panel C of Table 10 we report the key estimates of two acquisition synergy regressions in which we interact the Bonus (0,1) indicator with our two accounting irregularity variables, respectively. As with the results in Table 5, estimates for the Bonus (0,1) indicator in Panel C continue to be negative and statistically significant and associated with a synergy decline of 1.69% to 2.06%. Neither of the indicators for accounting irregularities attains significant coefficients, though the point estimates are negative for both in the presence of accounting abnormalities. However, the value of the interaction term of the bonus and the accounting irregularity indicator is positive and significant in both regressions. The interaction terms indicate that deals with targets that pay their CEOs a merger bonus and have accounting irregularities exhibit synergies that are 3.18% to 3.84% *higher*, inconsistent with contractual revision. This finding, in tandem with the lower premiums paid for these targets, suggests that acquirers in deals with merger bonuses capture a *larger* share of the surplus in the accounting irregularity subsamples.

In Panels D through F of Table 10, we directly investigate the acquirer returns and the division of synergies in the accounting irregularity subsamples. For this purpose, we again use interaction terms of the

bonus with our accounting irregularity variables. Consistent with the estimates in Table 6, the coefficients for the Bonus (0,1) variable are negative and significant in Panel D. Conversely, estimates for the accounting irregularity indicators are negative but not significant. However, the interaction terms of the bonus and the accounting irregularity dummy are positive and statistically significant in both tests. The interaction results indicate that acquirer M&A announcement stock returns are about 4% higher in deals in which a bonus-paying target firm is associated with either high accruals or an SEC enforcement action. In Panel E we study the post-merger operating performance for deals with bonus-getting target CEOs that lead firms implicated in accounting irregularities. The results in Panel E show that post-deal accounting performance is 1.14% to 1.73% higher in mergers involving targets with both an accounting irregularity and a target CEO merger bonus. Panel F provides evidence about the sharing of synergies in deals with target firms that are involved in accounting irregularities. The estimates show that these target firms exhibit a decrease of 1.34% to 1.82% in the relative gain vs. their acquirers per dollar of total market value. Collectively, the findings in Panels D through F of Table 10 lend support to the wealth transfer hypothesis in targets with accounting irregularities. This is consistent with the conjecture that severe agency problems in targets with accounting irregularities lead to the use of merger bonuses to transfer wealth to acquirers. Hence, while our contractual revision alternative appears to be the dominant and average effect of merger bonuses, it does not hold in all subsamples.

5.2. Hard-to-sell targets

For the average M&A deal we study, the lower takeover premiums received by targets that give their CEOs a merger bonus coupled with the lower average acquirer returns in these deals do not support the wealth transfer hypothesis. Instead, and consistent with the contracting revision alternative, in these transactions acquirers pay less for the targets but also get less in the form of low synergies. It is possible that, *ceteris paribus*, the lower synergy gains associated with these firms do not make them attractive takeover targets. In this scenario, which is also consistent with the contracting revision view, the merger

bonus could be provided to CEOs heading hard-to-sell targets. That is, the bonus is a reward given to CEOs able to negotiate and successfully accomplish the takeover of their hard-to-sell targets.

We run two (untabulated) logit models to evaluate the hard-to-sell conjecture. Specifically, in one model we estimate the probability that the deal involves multiple bidders (two or more) using a specification similar to that in Officer (2003). In the other, we estimate the probability that the deal is initiated by the target firm with a logit regression similar to that in Aktas, de Bodt, and Roll (2010). The main independent variable in both of these tests is a bonus indicator that is set to one if the target awards a merger bonus to its CEO (and set to zero otherwise). The estimate for the bonus indicator in the first test (-0.7033, *p*-value = 0.0285) implies that deals with this benefit are 5.89 percentage points less likely to involve multiple bidders. In our second test, the bonus (0,1) coefficient (0.4415, *p*-value = 0.0278) indicates that targets are 10.18 percentage points more likely to initiate their own sale when their CEO receives a merger bonus. This last result is noteworthy because, as noted by Aktas et al., targets that initiate their own sale earn low premiums. In general, the results of our multiple bidders and target initiation tests suggest that targets that give their CEOs a merger bonus appear to be hard-to-sell-targets.

The results here lend credence to the contractual revision view in that they suggest that the target managers are not *too* eager to sell their companies for selfish reasons. That is, for the average transaction there are typically no better offers that target managers are preempting for the personal gain of a bonus. When targets are hard-to-sell, any offer at a price above the stand-alone price is likely to benefit target shareholders.[27] The evidence that these targets are hard-to-sell, therefore, makes it more likely that the contractual revision of the bonus has helped generate gains to all parties.[28]

[27] Using a bonus rather than modifying an existing golden parachute (or enacting a new parachute) is probably easier for target firms looking to revise existing compensation exit packages for their CEOs given that the usual parachute rarely exceeds three times the CEO's annual cash salary.

[28] The fact that merger bonuses encourage CEOs to accept low-synergy deals suggests that these payments may contribute to suboptimal resource allocation in the economy. In the extreme, a merger bonus may lead a target to accept a lower synergy deal even when a somewhat higher synergy deal exists. Nonetheless, the results on the lack of competition for bonus-paying targets appear to rule out this possibility.

5.3. Target CEO bargaining power hypothesis

Many of our results are consistent with a setting in which more powerful target CEOs negotiate a larger share of the synergies for their shareholders, as well as a bonus for themselves. In Table 3, we observe that bonuses are higher when the CEO is also chairman, and is more entrenched, but are lower in a tender offer (going around the target CEO and the board). In Table 8, we note that bonuses correlate with more of the surplus going to the target. Collectively, this evidence suggests that the bonus might identify the target CEO's personal bargaining power or deal-blocking ability.

Given this discussion, it is hard to distinguish the bargaining power hypothesis from the contractual revision view, and it is not clear how distinct they really are. CEO bargaining power is necessary to force recontracting (if the CEO has no power, there is no need to incentivize her with a bonus to do the deal). However, the inferences are subtly different because the contractual revision view conjectures that the bonus is needed to induce the target CEO to undertake a deal that benefits her shareholders. In contrast, the conjecture under the CEO bargaining hypothesis is that in the process of bargaining for a good deal for her shareholders, the target CEO also bargains for a bonus for herself. Our problem in discriminating between the two hypotheses, as more generally noted by Prendergast (2002), is that we do not observe the roles, intentions, and responsibilities behind the corporate decision-making process, including how these vary across different decisions and settings. Therefore, we acknowledge that our evidence is also consistent with the target CEO bargaining power hypothesis.

5.4. Bad acquirer hypothesis

Another possibility that might rationalize our results is a "bad acquirer" hypothesis. Under this hypothesis, the acquirer is badly managed and/or has agency problems so it makes a bad bid, requests a bonus for the target CEO to make sure that the deal goes through, and mismanages the assets going forward. Of course, this is only a problem for target shareholders if there is an alternative acquirer that would submit a higher bid for their firm. Therefore, our evidence on the lack of multiple bidders undermines the

possibility that this is a problem. But the evidence we have compiled so far does not completely rule out the bad acquirer alternative, which is a reasonable explanation for why some acquirers are doing these deals. We investigate this alternative hypothesis next.

To consider the bad acquirer alternative, we re-estimate our probability of multiple bidders regression by including (as a control variable) an interaction term between the bonus and a proxy for the *acquirer's* governance (and potential agency problems). Our first governance proxy is the acquirer's Gompers, Ishii, and Metrick (2003) governance index (G-index). Neither the interaction term nor the standalone G-index variable attains statistical significance. In contrast, the coefficient for the bonus indicator is still negative and significant. We estimate the same regression two more times by respectively replacing the G-index with variables that, as noted by Armstrong, Guay, and Weber (2010), proxy for the firm's financial reporting informativeness: a (0,1) indicator to track independent boards and a different (0,1) indicator for independent audit committees. None of the interaction terms using these indicators attains statistical significance. Results are similar when we replace the G-index with the board's equity holdings (as a % of the acquirer's common equity).

We also repeat (but do not tabulate) our main tests with the acquirer's G-index, the board's equity holdings, and the two indicator variables just described as additional control variables. After controlling for these, the results are qualitatively similar. In the presence of merger bonuses, premiums are 4.9% lower, synergies are 1.4% smaller, acquirer returns are 1.5% lower, post deal ROA is 1.6% smaller, and target relative gains are 1.5% higher.

A different way to identify "bad" acquirers is by tracking post-acquisition write-offs of goodwill. Li, Shroff, Venkataraman, and Zhang (2011) find that overpayment for takeover targets predicts the impairment of goodwill. Relatedly, Gu and Lev (2011) maintain that a dysfunctional acquisition strategy is often highlighted by post-merger goodwill write-offs. An important takeaway from these studies is that write-offs might be a symptom of empire-building acquirer CEOs and/or acquirer firms with agency

problems. Therefore, we study whether the payment of a merger bonus to the target CEO affects the likelihood of a post-acquisition goodwill write-off.

In untabulated tests, we run logistic regressions in which the dependent variable is set to one if the acquirer reports an impairment of goodwill related to the merger in year 1 or year 2 immediately after deal completion. Otherwise, the dependent variable is set to zero. This procedure follows that employed in both Gu and Lev (2011) and Li et al. (2011) and, in our tests, some of the control variables produce results that conform to their work. For instance, consistent with the predictions in Gu and Lev (2011), we find that acquirer overvaluation (proxied by the market to book ratio in our tests) is positively related to the likelihood of a write-off. Our results indicate that merger bonuses are not generally related to the write-off of goodwill after acquisitions. These findings do not support for the bad acquirer alternative.

Importantly, our goodwill analyses show that write-offs are less likely in deals with target CEO bonuses in which the target firms are implicated in accounting irregularities. Transactions involving these targets are nearly 7 percentage points less likely to exhibit a goodwill write-off. This result appears economically important given that, in our data, write-offs occur in 21 percent of completed deals involving public bidders. Consistent with the wealth transfer hypothesis, this finding suggests that deals with merger bonuses performed by agency afflicted targets are particularly accretive for the acquirers.

5.5. Bonus objectives

As can be seen in Panel B of Table 2, much of the sample comprises bonus payments that are designed to somehow keep the CEO from working for the competition (non-compete, consult or retention). This suggests that often, the bonuses are directly paying the CEO for lost wages and flexibility. At the same time, it is likely that in situations where the synergies are small, it is even more important to secure them from any potential reduction by preventing the target CEO from competing against the merged firm. Yet, we note that in many instances the bonus payment does not prevent the target CEO from competing.

Given the above discussion, the documented differences in the stated goal of the bonus payment raise the issue of whether our results vary according to the bonuses' stated purpose. To address this issue, in Panel A of Table 11, we split our sample according to whether the bonus prevents competition by the target CEO. To do so, we consider the 151 cases in which the bonus is tied to a non-compete clause, a consulting agreement, or a job for (retention of) the target CEO. We contrast these observations with the 68 cases in which the merger bonus does not prevent ex-post competition by the CEO. To do so, we evaluate mean and median premiums, acquirer returns and synergies. The evidence indicates that the results differ according to the bonus objective. In situations where the bonus prevents competition, premiums are higher while both synergies and the merger announcement returns to the bidder are significantly lower.[29] Consistent with the contractual revision hypothesis, the synergies result supports the idea that if synergy is lower it might be more important to prevent competition from the target CEO.

5.6. Strength of the merger-related incentives

As noted by Hartzell, Ofek, and Yermack (2004, p. 38): "By selling the firm, target CEOs may be giving up substantial expected utility from both future wages (if they are not retained) and the lost ability to extract personal benefits from the firm." In addition, as noted by Moeller (2005, p. 172) "… a CEO with a long tenure at the firm could have built up more firm-specific human capital that she could lose in a takeover." All of these issues lead the target managers to consider a tradeoff in dealing with a takeover bid – a positive gain from the takeover premium for the shares or options they own compared with the losses in human capital they will suffer upon the sale of their firm.

[29] Note that the association of non-compete agreements with differences in premiums, synergies, and acquirer returns does not imply that the exclusion condition for the Garmaise index is violated in our IV estimation. The exclusion restriction is about the non-compete agreement *enforceability index*, not the agreement itself. In results not tabulated, we find that for bonus-giving targets with non-compete agreements, firms in states with high Garmaise indexes have approximately the same average premiums, synergy, and acquirer returns, as firms in low Garmaise index states. Similarly there are no significant differences across the Garmaise index in these three key variables for bonus-giving targets without non-compete agreements. Thus, while having an agreement matters to returns, it matters the same in a high Garmaise index state as in a low Garmaise index state. This similarity in effect is analogous to what we require for our IV exclusion restriction to hold.

The above discussion suggests that our results may vary according to the pre-bonus strength of the target CEOs' merger-related incentives. We evaluate this possibility in Panel B of Table 11 by splitting the sample of target CEOs that receive a merger bonus in two groups. The first includes 72 target CEOs with large incentives to complete a deal in the absence of a bonus, because: (1) the golden parachute value is in the top quartile of all CEOs in the sample, or (2) the value of the CEO's existing stock and option holdings is in the top quartile of all CEOs in the sample, or (3) the CEO negotiates an increase in the value of an existing golden parachute, or (4) the CEO gets unscheduled option grants during merger negotiations. The second group includes all other bonus-getting target CEOs. The results show that CEOs in the first group are associated with lower premiums and both higher synergies and acquirer returns. These findings suggest that bonuses to the highly incentivized group of 72 CEOs are candidates for generating wealth transfers to acquirer shareholders. Nevertheless, the results from the latter group of 147 target CEOs in which both synergies and acquirer returns are lower, as well as the results reported in Tables 4 through 8, reinforce the view that the dominant effect of merger bonuses is consistent with the contractual revision hypothesis.[30]

5.7. Acquisition premium and acquirer return alternatives

The tests presented in Table 4 use the four-week premium reported by SDC as the dependent variable. We re-estimate the Table 4 regressions using three different premium measures. The alternative premium proxies are (1) the target's CAR during the window (-20, +1) relative to the announcement date as in Jarrell and Poulsen (1989), (2) the target's CAR during the window (-42, +126) following Schwert (1996), and (3) the "combined" merger premium defined in Officer (2003) as the dependent variable.[31]

[30] The evidence showing negative acquirer returns in each bonus subgroup may be taken as some support for the "bad bidder" hypothesis discussed earlier. But as Netter, Stegemoller, and Wintoki (2011) show, this may be due to our sample selection procedures. In any case, the bidders with bonuses are no worse than the bidders without bonuses in our sample.

[31] Specifically, following Officer (2003), we first estimate a premium based on component data using the aggregate value of cash, stock, and other securities offered by the bidder to target shareholders as reported by SDC. We then estimate premiums based on initial price and final price data, respectively. These prices are also reported by SDC. All premium measures are then deflated by the target's market value 42 trading days prior to the bid announcement. The combined premium is based on the component measure if it is greater than zero and less than two. Otherwise, the premium relies on the initial price measure (or on the final price measure if initial price data are missing).

The results from the ancillary tests, which appear in Panel C of Table 11, also document an inverse association between the use of a merger bonus and the takeover premium. According to the estimates, premiums are 3.85 to 5.28 percentage points lower when these benefits are part of the merger pay package given to target CEOs. Premiums are even lower (by 1.56% to 3.89%) in deals in which a target firm that pays a merger bonus to its CEO is associated with either pre-takeover abnormal accruals or an SEC enforcement action. The use of the alternative premiums, in general, does not change any of our previous inferences.

In Panel D of Table 11 we also estimate alternative *acquirer* return regressions similar to those reported in Table 6. In those tests, we follow the procedure in Masulis, Wang, and Xie (2007) and replace the acquirer's return with the CAR accruing to the bidder on deal announcement during the (-2, +2) and (-5, +5) windows. In both tests, the coefficients for the merger bonus are still negative and significantly related to the acquirer's return. For instance, the estimate for the merger bonus indicator in the regression that measures acquirer returns during the (-2, +2) window is -0.0173, *p*-value = 0.0365. Nonetheless, the interaction term of the bonus and an accounting irregularity shows that, in these circumstances, acquirer returns are 3.27% to 3.35% higher. This last result is consistent with the wealth transfer hypothesis of merger bonuses in deals involving the subgroup of targets with breakdowns of accounting controls.

5.8. Examining different subsamples

Earlier we note that 29 CEOs in our sample have a merger bonus provision in their compensation contracts once they are hired. Upon closer examination of these 29 cases, we note that in all instances the bonus amount is never disclosed. Instead, these provisions state that the bonus payment is to be "determined at a later time." Nevertheless, we are concerned that for these 29 CEOs the bonus does not necessarily provide a contractual adjustment. As a result, we rerun our tests excluding these 29 cases. All of our results continue to hold after omitting these observations. For example, deals in which the target CEO receives a merger bonus exhibit 3.67% lower premiums (*p*-value = 0.0489), 1.53% lower synergies (*p*-value =

0.0374), 1.79% lower acquirer returns (*p*-value = 0.0376), and 1.79% lower post-merger operating performance (*p*-value = 0.0232). In the same transactions, targets get a larger share of the gains relative to their acquirers (1.73%, *p*-value = 0.0253). These findings are consistent with those reported earlier.

We also are concerned that the subsample that includes all publicly traded bidders (the 497 cases which we use in Tables 5 and 6) is somewhat different from the overall sample. To address this concern and further evaluate the robustness of our results, we use this subsample to re-estimate the bonus determinants and the takeover premium regressions. The inferences arising from the new results match those from the tabulated results. For instance, the probability of getting a bonus increases by 9.6% for CEOs who also chair their boards and by 3% for a one point increase in the E-index. The probability declines by 2% for target CEOs for a one standard deviation increase in the value of their golden parachute and by 2.1% for a one point decrease in the non-compete index. In this subsample of public bidders we find that the presence of a bonus is associated with a decline in the takeover premium of 4.94% (*p*-value = 0.0420). This ancillary evidence indicates that the samples analyzed in Tables 5 and 6 are not unusual.

In Section 3.1. herein, it is noted that we discard 207 observations for which deal background and target CEO exit compensation information is not available from either the merger proxy filed by the target and/or acquirer with the SEC or from news event searches in Lexis/Nexis. Under disclosure regulation, it is likely that the lack of exit pay information in these 207 cases indicates that bonuses, parachutes, stock options, etc. were never awarded to the target CEOs. Alternatively, it is possible that some of these cases are the really egregious ones in which undeserved exit payments and other benefits are concealed. While we cannot tell whether such lack of disclosure is benign (there were no exit payments to disclose), we can investigate the impact of the discarded cases in our analyses. Assuming that merger bonuses are not really paid in the aforementioned 207 M&A deals, we re-estimate our main analyses by including these deals. The coefficient for the bonus (0,1) indicator in the premium, synergy, acquirer return, accounting return, and division of gains regressions is -0.0419 (*p*-value = 0.0359), -0.0189 (*p*-value = 0.0177), -0.0196 (*p*-value = 0.0138), -

0.0138 (p-value = 0.0461), and 0.0174 (p-value = 0.0243), respectively. The estimates from these robustness tests yield inferences that are consistent with those from our tabulated baseline results.

6. Conclusions

We examine whether merger bonuses to target CEOs enable a *wealth transfer* from target to acquirer shareholders. We advance an alternative hypothesis that these bonuses are used to implement a *contractual revision* in compensation to circumvent conflicts of interest that arise between target CEOs and target shareholders – particularly in takeover deals that generate small synergies. We develop and test predictions from both hypotheses.

Our empirical evidence indicates that for the average takeover that includes a merger bonus, deals do not exhibit a transfer of wealth from shareholders of the target to shareholders of the acquirer. These findings support the contractual revision hypothesis. In this regard, our evidence indicates that in low synergy targets, merger bonuses serve an important economic role by providing a necessary adjustment in the takeover-related compensation received by target CEOs that aligns their incentives with those of their shareholders.

Despite these results about averages and the dominant effects of bonuses, we cannot reject the wealth transfer hypothesis for every individual deal. When we isolate situations likely to involve severe agency problems, we find that wealth transfers seem to occur in deals of bonus-paying target firms with accounting abnormalities. Specifically, wealth appears to be transferred from target to acquirer shareholders when a bonus-paying target firm has persistently high abnormal accruals or is subject to an SEC enforcement action. Overall then, according to our analyses, both hypotheses are supported in subgroups of the data, but the contractual revision view appears to be the dominant motivation for awarding target CEOs a merger bonus.

In general, our analyses show that firm- and transaction-specific circumstances could justify additional managerial benefits in somewhat counterintuitive situations (in our case, low synergy takeovers). In fact,

our evidence suggests that merger bonuses can benefit target shareholders especially when their companies generate low synergies with potential bidders. In this regard, our results indicate that larger executive compensation packages and even side payments –particularly when payoffs to shareholders are low– do not necessarily represent nefarious managerial behavior and may have productive consequences in encouraging useful deals. At the same time, our findings also show that managers in takeover targets with breakdowns in their accounting systems may compromise the interests of their own shareholders.

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Table 1: Sample description

This table describes our sample which consists of 949 merger and acquisition (M&A) bids announced during 1999-2009 and tracked in the Securities Data Company's (SDC) M&A database. We require that target firms have stock market, accounting, governance, and deal background data available from the Center for Research in Security Prices (CRSP), Compustat, RiskMetrics, and proxy filings/Lexis Nexis search, respectively. In Panel A we report the Fama and French (1997) 48 industrial and temporal distribution of the sample targets. In Panel B we report deal status, mode of acquisition, method of payment, attitude, deal value, and deal performance. Deal characteristics are obtained from SDC. Information on the sale procedure and the deal initiator is obtained from the merger background section in the proxies filed by parties to the merger with the SEC. Financial variables are measured at the fiscal year end before the merger announcement date. All variables are defined in the Appendix.

Panel A: Industrial and temporal distribution for targets

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total	Pct.
Agriculture	1	–	–	1	–	–	–	1	1	–	–	4	0.42
Food Products	–	9	3	–	–	1	–	–	–	2	–	15	1.58
Candy Soda	–	–	–	–	–	–	–	–	–	–	2	2	0.21
Beer Liquor	–	–	–	–	–	–	–	–	–	1	–	1	0.11
Tobacco Products	–	1	–	–	–	–	–	–	–	1	–	2	0.21
Recreation	–	–	–	–	–	–	–	–	2	–	–	2	0.21
Entertainment	3	4	1	–	–	6	–	6	–	–	–	20	2.11
Printing Publishing	–	3	–	–	–	–	1	4	2	–	–	10	1.05
Consumer Goods	3	–	2	1	1	–	3	2	–	–	2	14	1.48
Apparel	1	1	–	–	1	–	2	–	3	1	–	9	0.95
Healthcare	1	1	–	–	–	1	5	–	4	1	–	13	1.37
Medical Equipment	3	6	3	1	–	3	3	3	4	4	1	31	3.27
Pharmaceuticals	10	6	2	1	3	3	4	4	8	5	4	50	5.27
Chemicals	5	1	–	1	–	2	1	3	1	2	–	16	1.69
Rubber Plastic	4	1	–	–	–	–	–	1	1	–	–	7	0.74
Textiles	–	2	1	–	–	1	–	1	–	–	–	5	0.53
Construction Materials	5	6	–	–	2	2	–	4	1	–	–	20	2.11
Construction	–	2	2	–	–	–	–	–	–	–	1	5	0.53
Steel Work	4	1	–	–	–	2	1	6	4	–	–	18	1.90
Fabricated Products	2	–	–	–	–	–	–	–	–	–	–	2	0.21
Machinery	4	4	2	1	–	3	4	1	2	1	1	23	2.42
Electrical Equipment	2	3	–	–	–	–	2	1	1	–	–	9	0.95
Automobiles Trucks	2	4	–	1	–	–	–	2	–	–	–	9	0.95
Aircraft	2	1	–	–	–	–	–	–	1	–	–	4	0.42
Shipbuilding Railroad	6	1	2	–	–	–	–	–	–	–	–	9	0.95
Defense	–	–	–	–	–	1	–	–	–	–	–	1	0.11
Precious Metals	–	1	1	–	–	–	–	–	–	–	–	2	0.21
Non–metallic Mining	2	–	–	1	–	–	–	–	–	–	–	3	0.32
Petroleum Natural Gas	3	7	9	2	2	6	5	6	1	1	–	42	4.43
Utilities	26	7	3	–	2	2	2	9	2	4	–	57	6.01
Communication	13	3	2	1	–	3	2	5	3	–	–	32	3.37
Personal Services	1	–	–	1	2	–	–	1	2	1	–	8	0.84
Business Services	15	14	8	5	10	12	20	20	25	7	5	141	14.86
Computer Hardware	7	4	2	1	2	–	8	6	3	4	4	41	4.32
Computer Software	6	5	3	2	1	5	4	5	9	3	–	43	4.53
Measuring Equipment	1	–	1	–	–	1	–	–	4	2	1	10	1.05
Business Supplies	2	7	1	–	1	1	1	–	2	–	–	15	1.58
Shipping Containers	–	–	–	–	–	–	–	–	1	–	–	1	0.11
Transportation	5	4	4	–	1	–	1	2	4	–	1	22	2.32
Wholesale	5	3	4	2	1	3	3	3	2	2	–	28	2.95
Retail	6	3	1	1	5	1	13	7	9	5	–	51	5.37
Restaurants, Hotels	2	2	2	2	–	2	1	2	3	2	–	18	1.90
Banking	7	13	7	1	5	11	7	7	8	4	2	72	7.59
Insurance	9	3	2	1	4	2	2	1	4	5	–	33	3.48
Real Estate	–	–	–	–	–	–	–	1	–	–	–	1	0.11
Trading	–	4	1	1	2	1	4	3	6	2	1	25	2.63
Others	1	–	–	–	1	–	–	–	1	–	–	3	0.32
Total	169	137	69	28	46	75	99	117	124	60	25	949	100
Pct.	17.81	14.44	7.27	2.95	4.85	7.90	10.43	12.33	13.07	6.32	2.63	100	

Panel B: Deal and target characteristics

	Proportion of sample	Mean	Median
Deal characteristics			
Completion	0.8156		
Tender offer	0.1781		
Stock only	0.1359		
Cash only	0.5385		
Friendly attitude	0.8936		
Target initiated	0.3635		
Same industry	0.5437		
Deal value (US$ billion)		4.6107	1.5463
Premium		0.3473	0.3130
Synergy		0.0103	0.0053
Acquirer return		-0.0317	-0.0235
Post-deal operating performance (ROA)		0.0642	0.0395
Division of merger gains		0.0488	0.0381
Target characteristics			
Market value of equity (US$ billion)		3.2506	0.9913
M/B		2.7917	1.9761
Leverage		0.2583	0.2503
Prior year market adjusted stock return		-0.0183	-0.0524

Table 2: Descriptive statistics of merger bonus

Panel A provides a breakdown of our sample deals based on whether the target CEO receives a merger bonus. Panel B shows the number of cases under different terms used by the target board to indicate a merger bonus. We obtain this information by reading the merger proxies, the last annual proxies and other forms before the merger announcement filed by either the target or the acquirer with the SEC (for example, S-4, DEFM 14, SC 14D9, SC TO, DEF 14, 8-K). In Panel C, we report the summary statistics of the merger bonus value for 219 cases in which the target CEO is awarded a merger bonus, and the same value scaled by the target CEO's total compensation during the fiscal year prior to the merger announcement.

Panel A: Target level information	
Full sample	949
Targets in which the target CEO is awarded a merger bonus	219
Target CEOs that have a merger bonus clause when they are first hired	29

Panel B: Terms used by the target board to indicate a merger bonus	
Bonus	20
Consulting bonus	59
Management bonus	1
Merger bonus	17
Noncompetition bonus	41
Retention bonus	58
Separation bonus	2
Signing bonus	6
Special bonus	8
Special recognition bonus	1
Stay bonus	3
Termination bonus	6
Transaction bonus	11
Transition bonus	2

Panel C: Merger bonus value

	Mean	Min	Q1	Median	Q3	Max
Bonus value (US$ million)	1.5900	0.0225	0.4000	1.0000	2.0000	12.0000
Bonus value / Total compensation	0.9114	0.0065	0.1612	0.4343	0.9614	24.5389

Table 3: Determinants of merger bonus

The sample consists of 949 M&A bids announced during 1999-2009 described in Table 1. The dependent variable in model (1) equals one if the target CEO receive a merger bonus and zero otherwise. The dependent variable in model (2) is the natural logarithm of the merger bonus value. The dependent variable in model (3) is the merger bonus value scaled by the target CEO's total compensation during the year prior to the merger announcement. The dependent variable in models (2) and (3) equals zero if the bonus is not offered. All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable =	Bonus (0,1)		Bonus value		Scaled bonus	
	Model (1)		**Model (2)**		**Model (3)**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Target characteristics						
Non-compete index	**0.1376****	**0.0310**	**0.1464****	**0.0398**	**0.0101****	**0.0376**
Size	-0.2786***	0.0006	-0.2241***	0.0097	-0.0451***	0.0001
M/B	-0.0025	0.8123	-0.0066	0.5297	-0.0007	0.5258
Leverage	-0.5408	0.4546	-0.4147	0.5811	0.0520	0.5090
Operating cash flow	0.7786	0.1863	0.8663	0.1979	0.0361	0.6085
Liquidity	0.6044	0.3261	0.7277	0.2964	0.0312	0.6689
Prior year market adjusted return	0.0441	0.8257	0.1690	0.4527	0.0663	0.4510
Earnings management (0,1)	-0.3836	0.1090	-0.4029	0.1123	-0.0348	0.1899
Target CEO characteristics						
CEO-chairman (0,1)	**0.5128****	**0.0103**	**0.5384****	**0.0127**	**0.0510****	**0.0243**
CEO-founder (0,1)	-0.3580	0.2326	-0.3662	0.2567	-0.0071	0.8338
CEO near retirement age (0,1)	-0.1303	0.6008	-0.1528	0.5689	0.0048	0.8635
CEO stock and option ownership	0.4003	0.5627	0.3537	0.6715	0.0506	0.5624
Golden parachute	**-0.0756****	**0.0467**	**-0.0675***	**0.0799**	**-0.0115*****	**0.0093**
Parachute augmentation (0,1)	0.4957	0.1622	0.5060	0.2269	0.0171	0.6969
Unscheduled option grant (0,1)	0.2010	0.3978	0.1484	0.5688	0.0179	0.5108
Post-deal employment (0,1)	0.1818	0.3289	0.2906	0.1553	0.0476	0.1266
Target governance characteristics						
Entrenchment index	**0.2037*****	**0.0093**	**0.2152****	**0.0102**	**0.0237*****	**0.0070**
Board size	0.0691*	0.0962	0.0725	0.1118	0.0071	0.1369
Board ownership	-1.1323	0.3050	-0.5394	0.4713	-0.0636	0.4175
Independent board (0,1)	0.2758	0.3307	0.2829	0.3474	0.0286	0.3652
Handpicked compensation committee (0,1)	**0.3850***	**0.0522**	**0.4114***	**0.0544**	**0.0073****	**0.0433**
Institutional ownership	0.5820	0.3221	0.4375	0.4961	-0.0883	0.1900
Deal characteristics						
Private acquirer (0,1)	-0.2477	0.3700	-0.3205	0.2750	-0.0305	0.3217
Toehold	-0.0272	0.2429	-0.0165	0.3695	-0.0001	0.9463
Cash payment (0,1)	**-0.5239****	**0.0150**	**-0.5904****	**0.0140**	**-0.0545****	**0.0306**
Tender offer (0,1)	-1.0535***	0.0005	-0.9131***	0.0016	-0.0748**	0.0133
Hostile (0,1)	0.6051	0.2743	0.4900	0.3647	0.0283	0.6174
Competed deal (0,1)	-0.3953	0.1848	-0.3396	0.2452	-0.0325	0.2881
Target termination fee (0,1)	0.3166	0.1593	0.2554	0.2825	0.0151	0.5443
Lockup (0,1)	1.1954*	0.0502	1.5766**	0.0375	0.0254	0.7489
Same industry (0,1)	-0.2546	0.2310	-0.2670	0.2414	-0.0425*	0.0752
Merger of equals (0,1)	-0.6833	0.2321	-0.6833	0.2464	0.0032	0.9585
Target initiated deal (0,1)	0.1370	0.4629	0.1782	0.3913	0.0005	0.9829
Acquirer input / Total target output	-6.4257	0.2177	-3.9030	0.4933	0.4497	0.4514
Acquirer purchases / Total target sales	-0.0457	0.9916	0.1436	0.9763	-0.1939	0.7014
Target industry M&A liquidity index	-0.9161*	0.0688	-1.0388*	0.0507	-0.0372	0.5045
One year macroeconomic change	0.0195	0.7277	0.0343	0.5578	0.0060	0.3270
Constant	-10.3028	0.9649	0.8944	0.6379	0.2601	0.1918
Year and industry fixed effects	Yes		Yes		Yes	
N	949		949		949	
Regression's *p*-value	0.0001		0.0012		0.0078	

Table 4: Merger bonus and acquisition premiums

The sample consists of 949 M&A bids announced during 1999-2009 described in Table 1. We run acquisition premium regressions similar to those in Bargeron, Schlingemann, Stulz, and Zutter (2010). All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable = Four week SDC acquisition premium							
	Model (1) OLS		**Model (2) OLS**		**Model (3) OLS**		**Model (4) IV**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	**-0.0431****	**0.0152**						
Bonus value			**-0.0058****	**0.0236**				
Scaled bonus					**-0.0309****	**0.0207**		
Fitted bonus							**-0.0433*****	**0.0021**
Target characteristics								
Non-compete index	0.0035	0.5103	0.0034	0.5217	0.0029	0.5896		
Size	**-0.0128****	**0.0496**	**-0.0124***	**0.0579**	**-0.0125***	**0.0592**	**-0.0269*****	**0.0001**
M/B	0.0002	0.7631	0.0002	0.7776	0.0002	0.7618	0.0004	0.5832
Leverage	0.1274**	0.0241	0.1285**	0.0229	0.1325**	0.0193	0.1473***	0.0063
Operating cash flow	0.0979*	0.0526	0.0976*	0.0535	0.0937*	0.0642	0.0849**	0.0149
Liquidity	0.1149**	0.0282	0.1148**	0.0284	0.1115**	0.0335	0.1179**	0.0114
Prior year market adjusted return	-0.0571***	0.0008	-0.0565***	0.0009	-0.0554***	0.0012	-0.0737***	0.0001
Earnings management (0,1)	-0.0473**	0.0132	-0.0474**	0.0129	-0.0462**	0.0157	-0.0522***	0.0056
Target CEO characteristics								
CEO-chairman (0,1)	0.0053	0.7435	0.0050	0.7588	0.0034	0.8329	0.0344**	0.0407
CEO-founder (0,1)	-0.0025	0.9184	-0.0021	0.9320	-0.0002	0.9949	-0.0095	0.7000
CEO near retirement age (0,1)	-0.0347*	0.0848	-0.0349*	0.0830	-0.0339*	0.0932	-0.0401**	0.0500
CEO stock and option ownership	-0.0448	0.4742	-0.0445	0.4767	-0.0450	0.4728	-0.0359	0.5766
Golden parachute	-0.0036	0.2528	-0.0035	0.2683	-0.0035	0.2754	-0.0056*	0.0912
Parachute augmentation (0,1)	-0.0051	0.8715	-0.0058	0.8542	-0.0082	0.7946	-0.0110	0.7355
Unscheduled option grant (0,1)	-0.0419**	0.0321	-0.0419**	0.0322	-0.0422**	0.0313	-0.0358*	0.0751
Post-deal employment (0,1)	0.0230	0.1343	0.0233	0.1297	0.0231	0.1348	0.0237	0.1339
Target governance characteristics								
Entrenchment index	-0.0035	0.5769	-0.0036	0.5727	-0.0041	0.5190	-0.0076	0.2401
Board size	-0.0009	0.7994	-0.0009	0.7961	-0.0011	0.7513	0.0018	0.5931
Board ownership	-0.0096	0.8648	-0.0088	0.8755	-0.0076	0.8921	0.0561	0.3114
Independent board (0,1)	-0.0063	0.7792	-0.0065	0.7744	-0.0072	0.7491	-0.0185	0.4134
Handpicked comp. committee (0,1)	-0.0029	0.8563	-0.0027	0.8652	-0.0053	0.7392	-0.0006	0.9717
Institutional ownership	-0.0715	0.1386	-0.0730	0.1305	-0.0783	0.1059	-0.0511	0.2881
Deal characteristics								
Private acquirer (0,1)	**-0.0532****	**0.0159**	**-0.0536****	**0.0153**	**-0.0526****	**0.0173**	**-0.0904*****	**0.0001**
Toehold	-0.0009	0.5121	-0.0009	0.5148	-0.0008	0.5594	0.0005	0.7060
Cash payment (0,1)	**0.0431****	**0.0171**	**0.0433****	**0.0167**	**0.0451****	**0.0129**	**0.0142**	**0.4269**
Tender offer (0,1)	**0.0737*****	**0.0007**	**0.0740*****	**0.0007**	**0.0770*****	**0.0004**	**0.0820*****	**0.0001**
Hostile (0,1)	0.0365	0.3684	0.0365	0.3681	0.0346	0.3954	0.0335	0.3727
Competed deal (0,1)	0.0154	0.4827	0.0154	0.4833	0.0164	0.4570	0.0027	0.9040
Target termination fee (0,1)	**0.0525*****	**0.0033**	**0.0521*****	**0.0035**	**0.0511*****	**0.0043**	**0.0673*****	**0.0002**
Lockup (0,1)	-0.0799	0.1606	-0.0797	0.1617	-0.0881	0.1219	0.0100	0.8654
Same industry (0,1)	-0.0026	0.8810	-0.0029	0.8637	-0.0027	0.8750	-0.0133	0.4223
Merger of equals (0,1)	**-0.1565*****	**0.0004**	**-0.1557*****	**0.0005**	**-0.1517*****	**0.0006**	**-0.1888*****	**0.0001**
Target initiated deal (0,1)	**-0.0315****	**0.0433**	**-0.0317****	**0.0425**	**-0.0327****	**0.0366**	**-0.0307***	**0.0532**
Acquirer input / Total target output	-0.2376	0.5785	-0.2210	0.6053	-0.1844	0.6670	-0.1585	0.6232
Acquirer purchases / Total target sales	-0.2348	0.5166	-0.2331	0.5198	-0.2399	0.5085	-0.0485	0.8642
Target industry M&A liquidity index	0.0108	0.7870	0.0107	0.7879	0.0156	0.6954	-0.0094	0.6946
One year macroeconomic change	-0.0077*	0.0782	-0.0077*	0.0801	-0.0077*	0.0803	-0.0057**	0.0128
Constant	0.5043***	0.0004	0.4980***	0.0005	0.5009***	0.0005	0.6155***	0.0001
Year and industry fixed effects	Yes		Yes		Yes		Yes	
N	949		949		949		949	
Regression's *p*-value	0.0001		0.0001		0.0001		0.0001	

Table 5: Merger bonus and acquisition synergies

From the original 949 M&A bids announced during 1999-2009 described in Table 1, we examine 497 offers made by U.S. public bidders with available data from CRSP, Compustat and RiskMetrics. We run acquisition synergy regressions similar to those in Wang and Xie (2009). All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable = Acquisition synergy							
	Model (1) OLS		**Model (2) OLS**		**Model (3) OLS**		**Model (4) IV**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	**-0.0158****	**0.0269**						
Bonus value			**-0.0021****	**0.0381**				
Scaled bonus					**-0.0179***	**0.0582**		
Fitted bonus							**-0.0160****	**0.0283**
Target characteristics								
Non-compete index	-0.0016	0.4559	-0.0017	0.4477	-0.0018	0.4250		
Size	-0.0022	0.5671	-0.0020	0.5944	-0.0023	0.5532	-0.0045	0.2578
M/B	-0.0001	0.6214	-0.0001	0.6241	-0.0001	0.6685	-0.0001	0.6718
Leverage	-0.0129	0.5454	-0.0130	0.5440	-0.0099	0.6453	-0.0177	0.4086
Operating cash flow	-0.0090	0.6889	-0.0091	0.6861	-0.0117	0.6027	-0.0042	0.8537
Liquidity	-0.0315	0.1573	-0.0313	0.1601	-0.0302	0.1756	-0.0220	0.3304
Prior year market adjusted return	-0.0034	0.6503	-0.0032	0.6746	-0.0018	0.8070	-0.0042	0.5778
Earnings management (0,1)	-0.0030	0.7312	-0.0027	0.7548	-0.0017	0.8479	-0.0014	0.8732
Acquirer characteristics								
Size	**-0.0084*****	**0.0073**	**-0.0084*****	**0.0076**	**-0.0084*****	**0.0079**	**-0.0081*****	**0.0087**
M/B	0.0015***	0.0072	0.0015***	0.0077	0.0015***	0.0087	0.0015***	0.0077
Leverage	-0.0153	0.5168	-0.0155	0.5116	-0.0138	0.5611	-0.0111	0.6388
Operating cash flow	-0.0206	0.3509	-0.0203	0.3572	-0.0182	0.4096	-0.0149	0.5011
Liquidity	-0.0551**	0.0223	-0.0545**	0.0239	-0.0532**	0.0274	-0.0507**	0.0350
Prior year market adjusted return	-0.0058	0.1795	-0.0058	0.1836	-0.0057	0.1897	-0.0047	0.2823
Target CEO characteristics								
CEO-chairman (0,1)	-0.0051	0.4608	-0.0054	0.4414	-0.0059	0.3979	-0.0010	0.8945
CEO-founder (0,1)	-0.0118	0.2594	-0.0118	0.2623	-0.0107	0.3091	-0.0134	0.2049
CEO near retirement age (0,1)	-0.0067	0.4488	-0.0065	0.4671	-0.0054	0.5459	-0.0057	0.5214
CEO stock and option ownership	0.0248	0.2595	0.0249	0.2587	0.0260	0.2391	0.0308	0.1624
Golden parachute	0.0060	0.2518	0.0061	0.2427	0.0057	0.2764	0.0034	0.5279
Parachute augmentation (0,1)	-0.0155	0.1858	-0.0158	0.1780	-0.0164	0.1624	-0.0122	0.3047
Unscheduled option grant (0,1)	0.0086	0.2773	0.0087	0.2744	0.0093	0.2423	0.0099	0.2094
Post-deal employment (0,1)	-0.0097	0.1292	-0.0096	0.1315	-0.0095	0.1404	-0.0087	0.1766
Target governance characteristics								
Entrenchment index	-0.0020	0.4343	-0.0020	0.4466	-0.0019	0.4723	-0.0011	0.6844
Board size	0.0012	0.3671	0.0012	0.3648	0.0013	0.3521	0.0017	0.2082
Board ownership	0.0256	0.1944	0.0259	0.1889	0.0271	0.1703	0.0245	0.2150
Independent board (0,1)	-0.0054	0.6028	-0.0053	0.6131	-0.0044	0.6747	-0.0028	0.7861
Handpicked comp. committee (0,1)	0.0037	0.5891	0.0038	0.5824	0.0025	0.7165	0.0047	0.4970
Institutional ownership	-0.0083	0.7088	-0.0087	0.6963	-0.0102	0.6492	-0.0070	0.7524
Deal characteristics								
Relative size (Target/Acquirer)	0.0225***	0.0007	0.0226***	0.0007	0.0229***	0.0006	0.0231***	0.0004
Toehold	0.0011	0.1512	0.0010	0.1624	0.0010	0.1648	0.0012*	0.0944
Cash payment (0,1)	**0.0245*****	**0.0018**	**0.0245*****	**0.0019**	**0.0246*****	**0.0018**	**0.0193****	**0.0196**
Tender offer (0,1)	0.0042	0.6509	0.0044	0.6378	0.0055	0.5535	-0.0021	0.8373
Hostile (0,1)	0.0122	0.3779	0.0123	0.3754	0.0119	0.3925	0.0158	0.2578
Competed deal (0,1)	-0.0120	0.2522	-0.0119	0.2580	-0.0121	0.2520	-0.0163	0.1253
Target termination fee (0,1)	-0.0196**	0.0137	-0.0194**	0.0145	-0.0196**	0.0135	-0.0168**	0.0372
Lockup (0,1)	-0.0076	0.8289	-0.0068	0.8465	-0.0101	0.7731	0.0008	0.9821
Same industry (0,1)	0.0059	0.4225	0.0056	0.4541	0.0053	0.4722	0.0042	0.5726
Merger of equals (0,1)	**-0.0503****	**0.0201**	**-0.0501****	**0.0206**	**-0.0500****	**0.0212**	**-0.0567*****	**0.0098**
Target initiated deal (0,1)	-0.0118*	0.0803	-0.0118*	0.0803	-0.0126*	0.0620	-0.0117*	0.0831
Acquirer input / Total target output	-0.1728	0.1381	-0.1709	0.1428	-0.1591	0.1724	-0.1732	0.1374
Acquirer purchases / Total target sales	0.1397	0.1548	0.1398	0.1550	0.1292	0.1892	0.1352	0.1684
Target industry M&A liquidity index	-0.0152	0.4718	-0.0150	0.4768	-0.0118	0.5745	-0.0223	0.3036
One year macroeconomic change	-0.0023	0.2083	-0.0022	0.2203	-0.0020	0.2656	-0.0019	0.3081
Constant	0.2124***	0.0035	0.2099***	0.0038	0.2031***	0.0051	0.2192***	0.0026
Year and industry fixed effects	Yes		Yes		Yes		Yes	
N	497		497		497		497	
Regression's *p*-value	0.0001		0.0001		0.0001		0.0001	

Table 6: Merger bonus and acquirer returns

From the original 949 M&A bids announced during 1999-2009 described in Table 1, we examine 497 offers made by U.S. public bidders with available data from CRSP, Compustat and RiskMetrics. We run acquirer return regressions similar to those in Moeller, Schlingemann, and Stulz (2004) and Masulis, Wang, and Xie (2007). All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable = Acquirer deal announcement *CAR* (-1,+1)							
	Model (1) OLS		**Model (2) OLS**		**Model (3) OLS**		**Model (4) IV**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	**-0.0184****	**0.0335**						
Bonus value			**-0.0029****	**0.0200**				
Scaled bonus					**-0.0294****	**0.0100**		
Fitted bonus							**-0.0230****	**0.0227**
Target characteristics								
Non-compete index	-0.0027	0.2906	-0.0027	0.2849	-0.0028	0.2630		
Size	0.0054	0.1235	0.0054	0.1181	0.0058*	0.0976	0.0055	0.1116
M/B	-0.0001	0.6978	-0.0001	0.6805	-0.0001	0.7046	-0.0001	0.6657
Leverage	0.0105	0.6539	0.0105	0.6521	0.0147	0.5293	0.0009	0.9699
Operating cash flow	-0.0153	0.5207	-0.0153	0.5210	-0.0193	0.4179	0.0029	0.9099
Liquidity	-0.0332	0.2003	-0.0336	0.1951	-0.0333	0.1981	-0.0158	0.5552
Prior year market adjusted return	-0.0017	0.7804	-0.0015	0.8054	-0.0009	0.8769	-0.0017	0.7768
Earnings management (0,1)	-0.0050	0.6138	-0.0050	0.6184	-0.0043	0.6688	-0.0041	0.6788
Acquirer characteristics								
Size	**-0.0164*****	**0.0002**	**-0.0163*****	**0.0002**	**-0.0167*****	**0.0002**	**-0.0214*****	**0.0001**
M/B	0.0020***	0.0065	0.0020***	0.0067	0.0020***	0.0057	0.0020***	0.0046
Leverage	-0.0549	0.1485	-0.0568	0.1347	-0.0551	0.1461	-0.0468	0.2164
Operating cash flow	-0.0023	0.2973	-0.0023	0.2978	-0.0020	0.3435	-0.0021	0.3422
Liquidity	-0.0644**	0.0135	-0.0639**	0.0140	-0.0639**	0.0139	-0.0648**	0.0128
Prior year market adjusted return	0.0106	0.1586	0.0107	0.1535	0.0106	0.1570	0.0089	0.2344
Target CEO characteristics								
CEO-chairman (0,1)	-0.0001	0.9942	0.0000	0.9985	-0.0003	0.9661	0.0096	0.3218
CEO-founder (0,1)	-0.0118	0.3309	-0.0119	0.3277	-0.0103	0.3931	-0.0185	0.1439
CEO near retirement age (0,1)	0.0023	0.8214	0.0024	0.8183	0.0035	0.7370	0.0024	0.8129
CEO stock and option ownership	0.0281	0.2928	0.0277	0.2989	0.0296	0.2659	0.0388	0.1458
Golden parachute	0.0056	0.3557	0.0056	0.3564	0.0047	0.4460	0.0011	0.8614
Parachute augmentation (0,1)	-0.0210	0.1271	-0.0213	0.1208	-0.0227*	0.0963	-0.0101	0.4954
Unscheduled option grant (0,1)	0.0226**	0.0135	0.0225**	0.0138	0.0232**	0.0110	0.0259***	0.0052
Post-deal employment (0,1)	-0.0030	0.6903	-0.0027	0.7128	-0.0021	0.7762	0.0009	0.9054
Target governance characteristics								
Entrenchment index	0.0000	0.9918	0.0001	0.9696	0.0003	0.9309	0.0034	0.3469
Board size	0.0012	0.4590	0.0012	0.4571	0.0012	0.4553	0.0023	0.1655
Board ownership	-0.0167	0.4831	-0.0165	0.4880	-0.0153	0.5182	-0.0219	0.3627
Independent board (0,1)	0.0103	0.3834	0.0102	0.3861	0.0108	0.3580	0.0125	0.2876
Handpicked comp. committee (0,1)	0.0070	0.3939	0.0073	0.3738	0.0046	0.5724	0.0135	0.1423
Institutional ownership	-0.0014	0.9588	-0.0019	0.9424	-0.0061	0.8142	0.0051	0.8485
Deal characteristics								
Relative size (Target/Acquirer)	**-0.0151****	**0.0381**	**-0.0150****	**0.0397**	**-0.0145****	**0.0458**	**-0.0140***	**0.0527**
Toehold	-0.0273	0.1938	-0.0277	0.1880	-0.0265	0.2059	-0.0349	0.1044
Cash payment (0,1)	**0.0258*****	**0.0053**	**0.0257*****	**0.0054**	**0.0259*****	**0.0049**	**0.0153**	**0.1387**
Tender offer (0,1)	-0.0012	0.9132	-0.0015	0.8871	-0.0007	0.9501	-0.0182	0.1926
Hostile (0,1)	0.0051	0.7531	0.0052	0.7460	0.0047	0.7705	0.0124	0.4524
Competed deal (0,1)	0.0012	0.9240	0.0012	0.9236	0.0008	0.9492	-0.0038	0.7521
Target termination fee (0,1)	-0.0134	0.1545	-0.0132	0.1603	-0.0132	0.1577	-0.0074	0.4476
Lockup (0,1)	-0.0181	0.6550	-0.0168	0.6786	-0.0228	0.5718	0.0013	0.9747
Same industry (0,1)	-0.0021	0.8177	-0.0026	0.7748	-0.0030	0.7436	-0.0075	0.4324
Merger of equals (0,1)	0.0221	0.3943	0.0219	0.3968	0.0218	0.3981	0.0086	0.7467
Target initiated deal (0,1)	-0.0013	0.8722	-0.0012	0.8798	-0.0017	0.8287	0.0013	0.8659
Acquirer input / Total target output	0.0026	0.9900	0.0094	0.9640	0.0331	0.8735	-0.0933	0.6641
Acquirer purchases / Total target sales	0.1530	0.4337	0.1566	0.4224	0.1643	0.3992	0.1468	0.4518
Target industry M&A liquidity index	-0.0283	0.1848	-0.0285	0.1801	-0.0241	0.2532	-0.0473**	0.0467
One year macroeconomic change	0.0017	0.4196	0.0017	0.4136	0.0018	0.3954	0.0022	0.2894
Constant	0.0735	0.4597	0.0711	0.4735	0.0705	0.4768	0.0978	0.3324
Year and industry fixed effects	Yes		Yes		Yes		Yes	
N	497		497		497		497	
Regression's *p*-value	0.0001		0.0001		0.0001		0.0001	

Table 7: Merger bonus and post-acquisition performance

From the original 949 M&A bids announced during 1999-2009 described in Table 1, we examine 417 completed deals made by U.S. public bidders with available data from CRSP, Compustat and RiskMetrics. We run three-year post-deal operating gain regressions similar to those in Healy, Palepu, and Ruback (1992) and Harford, Humphrey-Jenner, and Powell (2012). All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable = Post-deal combined industry-adjusted ROA							
	Model (1) OLS		**Model (2) OLS**		**Model (3) OLS**		**Model (4) IV**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	**-0.0163****	**0.0306**						
Bonus value			**-0.0017****	**0.0283**				
Scaled bonus					**-0.0057****	**0.0282**		
Fitted bonus							**-0.0211****	**0.0205**
Pre-merger combined ROA	**0.6294*****	**0.0001**	**0.6287*****	**0.0001**	**0.6289*****	**0.0001**	**0.6240*****	**0.0001**
Target characteristics								
Non-compete index	-0.0027	0.2321	-0.0027	0.2334	-0.0027	0.2347		
Size	-0.0001	0.9806	0.0003	0.9371	0.0005	0.8903	-0.0041	0.3433
M/B	0.0072*	0.0537	0.0071*	0.0589	0.0068*	0.0680	0.0070*	0.0591
Leverage	-0.0193	0.3448	-0.0186	0.3627	-0.0167	0.4168	-0.0276	0.1801
Operating cash flow	0.0251	0.2578	0.0238	0.2854	0.0206	0.3536	0.0371	0.1207
Liquidity	-0.0091	0.7015	-0.0089	0.7092	-0.0077	0.7489	0.0079	0.7533
Prior year market adjusted return	0.0005	0.9289	0.0006	0.9075	0.0008	0.8827	0.0015	0.7764
Earnings management (0,1)	0.0105	0.2425	0.0106	0.2402	0.0109	0.2265	0.0109	0.2225
Acquirer characteristics								
Size	0.0004	0.8971	0.0004	0.9065	0.0003	0.9203	0.0004	0.8991
M/B	-0.0010	0.6202	-0.0009	0.6504	-0.0007	0.7334	-0.0004	0.8177
Leverage	-0.0566	0.1042	-0.0573	0.1013	-0.0564	0.1083	-0.0583*	0.0953
Operating cash flow	0.0020	0.5943	0.0021	0.5792	0.0023	0.5357	0.0025	0.5020
Liquidity	-0.0549**	0.0225	-0.0540**	0.0252	-0.0531**	0.0281	-0.0549**	0.0229
Prior year market adjusted return	0.0117*	0.0853	0.0112*	0.0976	0.0104	0.1243	0.0101	0.1344
Target CEO characteristics								
CEO-chairman (0,1)	0.0045	0.5353	0.0040	0.5859	0.0031	0.6687	0.0124	0.1631
CEO-founder (0,1)	0.0007	0.9496	0.0009	0.9339	0.0017	0.8821	-0.0053	0.6551
CEO near retirement age (0,1)	-0.0139	0.1294	-0.0133	0.1465	-0.0125	0.1757	-0.0139	0.1317
CEO stock and option ownership	-0.0023	0.9169	-0.0017	0.9382	0.0002	0.9925	0.0062	0.7806
Golden parachute	-0.0003	0.8285	-0.0003	0.8488	-0.0003	0.8315	-0.0015	0.3583
Parachute augmentation (0,1)	-0.0001	0.9962	-0.0007	0.9574	-0.0014	0.9094	0.0077	0.5590
Unscheduled option grant (0,1)	-0.0025	0.7642	-0.0026	0.7494	-0.0028	0.7398	-0.0006	0.9460
Post-deal employment (0,1)	-0.0075	0.2659	-0.0079	0.2421	-0.0086	0.2059	-0.0042	0.5536
Target governance characteristics								
Entrenchment index	0.0003	0.9295	0.0001	0.9775	-0.0004	0.8950	0.0027	0.4276
Board size	0.0011	0.4427	0.0010	0.4680	0.0009	0.5060	0.0021	0.1721
Board ownership	-0.0232	0.2768	-0.0222	0.2994	-0.0210	0.3276	-0.0264	0.2213
Independent board (0,1)	-0.0104	0.3481	-0.0103	0.3546	-0.0098	0.3812	-0.0071	0.5234
Handpicked comp. committee (0,1)	0.0012	0.8659	0.0009	0.8970	-0.0005	0.9496	0.0068	0.4071
Institutional ownership	0.0124	0.5967	0.0116	0.6215	0.0100	0.6706	0.0195	0.4209
Deal characteristics								
Relative size (Target/Acquirer)	0.0073	0.4393	0.0073	0.4386	0.0073	0.4409	0.0089	0.3495
Toehold	-0.0028**	0.0274	-0.0029**	0.0265	-0.0029**	0.0270	-0.0034**	0.0113
Cash payment (0,1)	0.0143*	0.0866	0.0143*	0.0865	0.0147*	0.0798	0.0063	0.4988
Tender offer (0,1)	0.0048	0.6298	0.0056	0.5759	0.0072	0.4684	-0.0088	0.5003
Hostile (0,1)	-0.0005	0.9707	-0.0006	0.9679	-0.0015	0.9168	0.0049	0.7459
Competed deal (0,1)	-0.0033	0.7559	-0.0031	0.7699	-0.0028	0.7936	-0.0075	0.4855
Target termination fee (0,1)	0.0008	0.9202	0.0008	0.9238	0.0005	0.9527	0.0056	0.5318
Lockup (0,1)	0.0133	0.6885	0.0126	0.7061	0.0088	0.7930	0.0308	0.3862
Same industry (0,1)	-0.0082	0.3062	-0.0084	0.2953	-0.0082	0.3140	-0.0125	0.1388
Merger of equals (0,1)	-0.0191	0.4158	-0.0187	0.4273	-0.0181	0.4430	-0.0330	0.1806
Target initiated deal (0,1)	0.0057	0.4369	0.0057	0.4383	0.0053	0.4724	0.0082	0.2707
Acquirer input / Total target output	0.0336	0.8614	0.0462	0.8107	0.0602	0.7559	-0.0241	0.9033
Acquirer purchases / Total target sales	-0.3106*	0.0636	-0.3120*	0.0632	-0.3188*	0.0585	-0.3226*	0.0543
Target industry M&A liquidity index	-0.0103	0.5780	-0.0090	0.6280	-0.0055	0.7646	-0.0240	0.2494
One year macroeconomic change	0.0024	0.2172	0.0024	0.2114	0.0025	0.1986	0.0031	0.1207
Constant	0.1002	0.2479	0.0949	0.2747	0.0910	0.2974	0.1150	0.1935
Year and industry fixed effects	Yes		Yes		Yes		Yes	
N	417		417		417		417	
Regression's *p*-value	0.0001		0.0001		0.0001		0.0001	

Table 8: Merger bonus and division of merger gains

From the original 949 M&A bids announced during 1999-2009 described in Table 1, we examine 417 completed deals made by U.S. public bidders with available data from CRSP, Compustat and RiskMetrics. We run regressions of the relative gain of the target vs the acquirer per dollar of total market value similar to those in Ahern (2012). All variables are defined in the Appendix. The reported *p*-values are White (1980) heteroskedasticity consistent. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent variable = Relative gain of target vs acquirer per dollar of total market value							
	Model (1) OLS		**Model (2) OLS**		**Model (3) OLS**		**Model (4) IV**	
	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	**0.0158****	**0.0316**						
Bonus value			**0.0027****	**0.0119**				
Scaled bonus					**0.0294*****	**0.0032**		
Fitted bonus							**0.0346***	**0.0511**
Target characteristics								
Non-compete index	0.0025	0.2516	0.0025	0.2466	0.0026	0.2337		
Size	0.0268***	0.0001	0.0268***	0.0001	0.0274***	0.0001	0.0278***	0.0001
M/B	0.0000	0.8886	0.0000	0.8625	0.0000	0.9139	0.0000	0.9269
Leverage	-0.0773***	0.0070	-0.0776***	0.0067	-0.0846***	0.0032	-0.0724**	0.0125
Operating cash flow	0.0007	0.9727	0.0005	0.9815	0.0044	0.8345	-0.0013	0.9524
Liquidity	-0.0031	0.8944	-0.0027	0.9084	-0.0037	0.8712	-0.0089	0.7115
Prior year market adjusted return	**-0.0329*****	**0.0001**	**-0.0331*****	**0.0001**	**-0.0330*****	**0.0001**	**-0.0315*****	**0.0001**
Earnings management (0,1)	-0.0123	0.1557	-0.0123	0.1545	-0.0133	0.1212	-0.0133	0.1271
Acquirer characteristics								
Size	-0.0185***	0.0001	-0.0186***	0.0001	-0.0189***	0.0001	-0.0187***	0.0001
M/B	-0.0004	0.5765	-0.0003	0.5927	-0.0004	0.5459	-0.0004	0.4984
Leverage	0.1020***	0.0024	0.1041***	0.0019	0.1039***	0.0019	0.0967***	0.0042
Operating cash flow	-0.0013	0.4906	-0.0013	0.4968	-0.0014	0.4412	-0.0016	0.3932
Liquidity	0.0771***	0.0007	0.0768***	0.0007	0.0759***	0.0008	0.0749***	0.0010
Prior year market adjusted return	0.0010	0.8409	0.0009	0.8693	0.0001	0.9868	0.0008	0.8760
Target CEO characteristics								
CEO-chairman (0,1)	0.0024	0.7366	0.0022	0.7549	0.0021	0.7698	0.0013	0.8808
CEO-founder (0,1)	0.0088	0.4049	0.0090	0.3949	0.0076	0.4716	0.0093	0.4000
CEO near retirement age (0,1)	-0.0080	0.3724	-0.0080	0.3756	-0.0090	0.3130	-0.0098	0.2799
CEO stock and option ownership	-0.0138	0.5543	-0.0132	0.5703	-0.0146	0.5266	-0.0197	0.4003
Golden parachute	-0.0033	0.5296	-0.0033	0.5349	-0.0022	0.6801	-0.0024	0.6784
Parachute augmentation (0,1)	0.0218*	0.0685	0.0219*	0.0659	0.0229*	0.0533	0.0198	0.1274
Unscheduled option grant (0,1)	-0.0199**	0.0126	-0.0198**	0.0129	-0.0205***	0.0096	-0.0207**	0.0109
Post-deal employment (0,1)	0.0079	0.2225	0.0076	0.2397	0.0067	0.2977	0.0074	0.2716
Target governance characteristics								
Entrenchment index	-0.0015	0.5759	-0.0017	0.5289	-0.0019	0.4831	-0.0018	0.5774
Board size	-0.0005	0.7097	-0.0005	0.6984	-0.0006	0.6499	-0.0007	0.6218
Board ownership	0.0260	0.2103	0.0259	0.2111	0.0251	0.2244	0.0266	0.2070
Independent board (0,1)	0.0012	0.9076	0.0013	0.8999	0.0006	0.9518	0.0000	0.9966
Handpicked comp. committee (0,1)	-0.0021	0.7635	-0.0026	0.7154	-0.0004	0.9514	-0.0021	0.7916
Institutional ownership	-0.0139	0.5388	-0.0136	0.5477	-0.0105	0.6412	-0.0144	0.5349
Deal characteristics								
Relative size (Target/Acquirer)	-0.0011	0.8677	-0.0012	0.8550	-0.0015	0.8081	-0.0024	0.7064
Toehold	-0.0066	0.7137	-0.0062	0.7327	-0.0061	0.7359	-0.0055	0.7677
Cash payment (0,1)	0.0061	0.4399	0.0063	0.4275	0.0066	0.4046	0.0091	0.3166
Tender offer (0,1)	0.0082	0.3878	0.0087	0.3560	0.0084	0.3730	0.0105	0.3924
Hostile (0,1)	0.0199	0.1600	0.0197	0.1634	0.0200	0.1546	0.0178	0.2180
Competed deal (0,1)	-0.0144	0.1714	-0.0144	0.1715	-0.0138	0.1888	-0.0126	0.2381
Target termination fee (0,1)	0.0170**	0.0377	0.0168**	0.0395	0.0166**	0.0410	0.0157*	0.0679
Lockup (0,1)	-0.0035	0.9213	-0.0052	0.8830	-0.0013	0.9699	-0.0037	0.9211
Same industry (0,1)	0.0093	0.2373	0.0099	0.2119	0.0104	0.1884	0.0097	0.2459
Merger of equals (0,1)	-0.0735***	0.0012	-0.0731***	0.0012	-0.0723***	0.0013	-0.0707***	0.0027
Target initiated deal (0,1)	-0.0029	0.6738	-0.0030	0.6609	-0.0025	0.7142	-0.0030	0.6651
Acquirer input / Total target output	-0.1464	0.4203	-0.1514	0.4031	-0.1779	0.3242	-0.1453	0.4394
Acquirer purchases / Total target sales	**-0.3150***	**0.0642**	**-0.3180***	**0.0611**	**-0.3208***	**0.0581**	**-0.3037***	**0.0758**
Target industry M&A liquidity index	0.0122	0.5109	0.0128	0.4902	0.0091	0.6191	0.0137	0.5098
One year macroeconomic change	0.0025	0.1682	0.0025	0.1704	0.0024	0.1872	0.0024	0.2011
Constant	-0.0033	0.9689	-0.0018	0.9833	-0.0025	0.9761	0.0088	0.9179
Year and industry fixed effects	Yes		Yes		Yes		Yes	
N	417		417		417		417	
Regression's *p*-value	0.0001		0.0001		0.0001		0.0001	

Table 9: Propensity score matching estimates

In Panel A, we report the propensity score matching estimates, the sample means of the treatment and control samples, and the *p*-values of the difference in means. In Panel B, we report the average treatment effects on deal performance where the treatment is defined as situations in which the target CEO is given a bonus. Matching estimates use the Gaussian kernel with a fixed bandwidth of 0.10. We report the *p*-value of the treatment effects using 500 bootstrap repetitions in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Propensity score model estimates for merger bonus

	Dependent variable = Bonus (0,1)	Treatment sample mean	Control sample mean	*p*-value for difference
Target characteristics				
Non-compete index	0.1376**	5.6530	5.6400	0.9139
Size	-0.2786***	7.4890	7.4110	0.6017
M/B	-0.0025	2.8000	3.5020	0.5393
Leverage	-0.5408	0.1760	0.1680	0.5744
Operating cash flow	0.7786	-0.0290	0.0000	0.2413
Liquidity	0.6044	0.1860	0.1850	0.9651
Prior year market adjusted return	0.0441	-0.0280	0.0350	0.1948
Earnings management (0,1)	-0.3836	0.1640	0.1470	0.6186
Target CEO characteristics				
CEO-chairman (0,1)	0.5128**	0.6260	0.6780	0.2577
CEO-founder (0,1)	-0.3580	0.1140	0.0850	0.3200
CEO near retirement age (0,1)	-0.1303	0.1690	0.1800	0.7614
CEO stock and option ownership	0.4003	0.0520	0.0420	0.3124
Golden parachute	-0.0756**	6.4820	6.7810	0.2611
Parachute augmentation (0,1)	0.4957	0.0870	0.0760	0.6795
Unscheduled option grant (0,1)	0.2010	0.1690	0.1710	0.9634
Post-deal employment (0,1)	0.1818	0.6210	0.6400	0.6872
Target governance characteristics				
Entrenchment index	0.2037***	2.3790	2.3740	0.9698
Board size	0.0691*	9.0780	8.8910	0.5295
Board ownership	-1.1323	0.0610	0.0750	0.4046
Independent board (0,1)	0.2758	0.8810	0.8910	0.7519
Handpicked comp. committee (0,1)	0.3850*	0.5480	0.5730	0.5951
Institutional ownership	0.5820	0.2380	0.2420	0.8243
Deal characteristics				
Private acquirer (0,1)	-0.2477	0.1640	0.1470	0.6186
Toehold	-0.0272	0.8450	0.7090	0.7448
Cash payment (0,1)	-0.5239**	0.4380	0.4030	0.4570
Tender offer (0,1)	-1.0535***	0.0910	0.0900	0.9633
Hostile (0,1)	0.6051	0.0270	0.0330	0.7272
Competed deal (0,1)	-0.3953	0.1000	0.0950	0.8435
Target termination fee (0,1)	0.3166	0.7810	0.7960	0.6970
Lockup (0,1)	1.1954*	0.0320	0.0280	0.8314
Same industry (0,1)	-0.2546	0.5620	0.5640	0.9612
Merger of equals (0,1)	-0.6833	0.0230	0.0280	0.7136
Target initiated deal (0,1)	0.1370	0.3970	0.4360	0.4162
Acquirer input / Total target output	-6.4257	0.0260	0.0260	0.8357
Acquirer purchases / Total target sales	-0.0457	0.0330	0.0330	0.9603
Target industry M&A liquidity index	-0.9161*	0.4220	0.4220	0.9721
One year macroeconomic change	0.0195	1.6030	1.7210	0.2665
Constant	-10.3028			
Year and industry fixed effects	Yes			
N		219	210	

Panel B: Average treatment effect on deal performance for merger bonus

Performance measures (Bonus = 1 vs. Bonus = 0)	Treatment N	Control N	Average treatment effect (*p*-value)
Four week target premium	219	210	-0.0526** (0.0296)
Synergy	125	123	-0.0211** (0.0130)
Acquirer CAR (-1,+1)	125	123	-0.0194** (0.0399)
Merged firm post-deal operating performance (yr-1,yr+3)	110	109	-0.0227** (0.0426)
Relative gain of target vs acquirer per dollar of total market value	110	109	0.0127* (0.0722)

Table 10: Accounting irregularities

In this table, we estimate the effect of merger bonuses on deal performance in the presence of accounting irregularities measured by earnings management and SEC enforcement. There are 192 instances of earnings management and 46 instances of SEC enforcement actions in the sample. In Panel A, we report correlations and/or Chi-square tests for the relationship between the two accounting irregularity measures and the target's corporate governance variables. In model (1) of Panels B to F, we add the interaction term between merger bonus (0,1) and earnings management (0,1) to the original regressions in model (1) of Tables 4 to 8, respectively. In model (2) of each panel, we replace earnings management (0,1) with SEC enforcement (0,1). *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Correlations

	Accounting irregularity = Earnings management (0,1)		Accounting irregularity = SEC enforcement (0,1)	
	Correlation	*p*-value	Correlation	*p*-value
CEO-chairman (0,1)	**0.0527***	**0.0647**	**0.0658****	**0.0428**
Entrenchment index	0.0213	0.5125	0.0055	0.8657
Board size	0.0363	0.2640	-0.0416	0.2002
Board ownership	-0.0517*	0.0705	-0.0301	0.3549
Independent board (0,1)	**-0.0511***	**0.0759**	**-0.0596***	**0.0713**
Handpicked compensation committee (0,1)	0.0730**	0.0280	0.0685**	0.0350
Institutional ownership	-0.0062	0.8491	-0.0048	0.8824

Panel B: Acquisition premiums

Dependent variable = Four week SDC acquisition premium	**Model (1)** Accounting irregularity = Earnings management (0,1)		**Model (2)** Accounting irregularity = SEC enforcement (0,1)	
	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	-0.0381**	0.0332	-0.0387**	0.0287
Bonus (0,1) × Accounting irregularity (0,1)	**-0.0197****	**0.0379**	**-0.0247*****	**0.0042**
Accounting irregularity (0,1)	-0.0415**	0.0311	-0.0623*	0.0765
Other control variables as in Table 4 Model (1)	Yes		Yes	
Joint value: Bonus (0,1) + interaction term (*p*-value of *F*-test)	-0.0578***	0.0025	-0.0634***	0.0010
Year and industry fixed effects	Yes		Yes	
N	949		949	
Regression's *p*-value	0.0001		0.0001	

Panel C: Acquisition synergies

Dependent variable = Acquisition synergy	**Model (1)** Accounting irregularity = Earnings management (0,1)		**Model (2)** Accounting irregularity = SEC enforcement (0,1)	
	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	-0.0206***	0.0045	-0.0169**	0.0175
Bonus (0,1) × Accounting irregularity (0,1)	**0.0384*****	**0.0034**	**0.0318***	**0.0517**
Accounting irregularity (0,1)	-0.0086	0.3307	-0.0133	0.4037
Other control variables as in Table 5 Model (1)	Yes		Yes	
Joint value: Bonus (0,1) + interaction term (*p*-value of *F*-test)	0.0178**	0.0185	0.0149**	0.0385
Year and industry fixed effects	Yes		Yes	
N	497		497	
Regression's *p*-value	0.0001		0.0001	

Panel D: Acquirer returns				
Dependent variable = Acquirer announcement *CAR* (-1,+1)	**Model (1)** Accounting irregularity = Earnings management (0,1)		**Model (2)** Accounting irregularity = SEC enforcement (0,1)	
	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	-0.0195**	0.0281	-0.0152*	0.0808
Bonus (0,1) × Accounting irregularity (0,1)	**0.0400****	**0.0106**	**0.0402****	**0.0400**
Accounting irregularity (0,1)	-0.0141	0.1785	-0.0071	0.7112
Other control variables as in Table 6 Model (1)	Yes		Yes	
Joint value: Bonus (0,1) + interaction term (*p*-value of *F*-test)	0.0205**	0.0195	0.0250**	0.0229
Year and industry fixed effects	Yes		Yes	
N	497		497	
Regression's *p*-value	0.0001		0.0001	
Panel E: Post-acquisition performance				
Dependent variable = Post-deal combined industry-adj ROA	**Model (1)** Accounting irregularity = Earnings management (0,1)		**Model (2)** Accounting irregularity = SEC enforcement (0,1)	
	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	-0.0138*	0.0668	-0.0156**	0.0399
Bonus (0,1) × Accounting irregularity (0,1)	**0.0311****	**0.0318**	**0.0270***	**0.0685**
Accounting irregularity (0,1)	0.0008	0.9354	-0.0064	0.6873
Other control variables as in Table 7 Model (1)	Yes		Yes	
Joint value: Bonus (0,1) + interaction term (*p*-value of *F*-test)	0.0173**	0.0238	0.0114*	0.0964
Year and industry fixed effects	Yes		Yes	
N	417		417	
Regression's *p*-value	0.0001		0.0001	
Panel F: Division of merger gains				
Dependent variable = Relative gain of target vs acquirer	**Model (1)** Accounting irregularity = Earnings management (0,1)		**Model (2)** Accounting irregularity = SEC enforcement (0,1)	
	coeff	*p*-value	coeff	*p*-value
Bonus (0,1)	0.0161**	0.0349	0.0140*	0.0591
Bonus (0,1) × Accounting irregularity (0,1)	**-0.0295****	**0.0291**	**-0.0322***	**0.0572**
Accounting irregularity (0,1)	-0.0087	0.3362	-0.0183	0.2737
Other control variables as in Table 8 Model (1)	Yes		Yes	
Joint value: Bonus (0,1) + interaction term (*p*-value of *F*-test)	-0.0134*	0.0896	-0.0182**	0.0304
Year and industry fixed effects	Yes		Yes	
N	417		417	
Regression's *p*-value	0.0001		0.0001	

Table 11: Additional analyses

In Panel A, we estimate the mean and median premiums, acquirer returns and synergies for subsamples based on whether the bonus prevents competition by the target CEO. In Panel B, we estimate the mean and median premiums, acquirer returns and synergies for subsamples based on whether the target CEO has large incentives: (1) the golden parachute value is in the top quartile of all CEOs in the sample, or (2) the value of the CEO's existing stock and option holdings is in the top quartile of all CEOs in the sample, or (3) the CEO negotiates an increase in the value of an existing golden parachute, or (4) the CEO gets unscheduled option grants during merger negotiations. In Panel C and Panel D, we estimate the effect of merger bonuses using alternative measures of acquisition premiums and acquirer returns, respectively. We report the coefficients for the interaction variables separately included in each regression and *p*-values in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Bonus objective

Performance measures Mean [Median]	Bonus with competition allowed (N=68)	Bonus with non-compete (N=151)	Difference *t* [*z*]
Premium	0.2495	0.3324	-2.20**
	[0.2114]	[0.2930]	[-2.66***]
Synergy	0.0262	-0.0177	3.17***
	[0.0221]	[-0.0093]	[3.31***]
Acquirer CAR (-1,+1)	-0.0111	-0.0514	2.49**
	[-0.0126]	[-0.0435]	[2.75***]

Panel B : Incentive strength

Performance measures Mean [Median]	Bonus together with other large incentives (N=72)	Other bonuses (N=147)	Difference *t* [*z*]
Premium	0.2561	0.3314	-2.03**
	[0.2265]	[0.2579]	[-2.24**]
Synergy	0.0077	-0.0154	1.79*
	[0.0005]	[-0.0101]	[1.93*]
Acquirer CAR (-1,+1)	-0.0225	-0.0535	2.19**
	[-0.0189]	[-0.0489]	[2.47**]

Panel C: Target premium and return alternatives

	Target CAR(-20,+1)	Target CAR(-42,+126)	Combined premium
Bonus (0,1)	-0.0385**	-0.0423**	-0.0528**
	(0.0277)	(0.0189)	(0.0369)
Bonus (0,1) × Earnings management (0,1)	-0.0156*	-0.0227*	-0.0389**
	(0.0670)	(0.0516)	(0.0189)
Bonus (0,1) × SEC enforcement (0,1)	-0.0241**	-0.0367**	-0.0387***
	(0.0013)	(0.0192)	(0.0013)

Panel D: Acquirer return alternatives

	Acquirer CAR(-2,+2)	Acquirer CAR(-5,+5)
Bonus (0,1)	-0.0173**	-0.0128*
	(0.0365)	(0.0812)
Bonus (0,1) × Earnings management (0,1)	0.0327*	0.0202*
	(0.0223)	(0.0790)
Bonus (0,1) × SEC enforcement (0,1)	0.0335*	0.0323**
	(0.0554)	(0.0462)

Appendix: Variable definitions

Merger bonus proxies	
Bonus (0,1)	one if the target CEO receive a merger bonus and zero otherwise
Bonus value	the natural logarithm of the merger bonus value and zero if the bonus is not offered
Scaled bonus	the merger bonus value scaled by the target CEO's total compensation during the year prior to the merger announcement and zero if the bonus is not offered
Fitted bonus	the fitted value of bonus obtained from the first stage regression of the probability of having a merger bonus (Model (1) of Table 3)
Financial characteristics	
Non-compete index	Garmaise (2011)'s enforceability index which measures the enforcement level of non-compete agreements for executives in different U.S. states. A lower non-compete index means less enforceability.
Size	the natural logarithm of the market value of assets
M/B	the market value of equity divided by the book value of equity
Leverage	the book value of debt divided by the sum of book value of debt and market value of equity.
OCF	the cash flow from operations scaled by the value of assets
Liquidity	the net liquid assets (net working capital) scaled by the value of assets
ROA	the operating income before depreciation divided by the average of beginning- and ending-period book value of assets
Pre-merger combined ROA	the combined acquirer-target industry-adjusted ROA for the fiscal year before the takeover
Prior year market adjusted return	the cumulative abnormal return during the one year window ending four weeks prior to the merger announcement, calculated as the residual from the market model estimated during the year before
Earnings management (0,1)	one if the discretionary current accruals (using the modified Jones (1991) model proposed by Dechow, Sloan, and Sweeney (1995)) is above its industry median in each of the three fiscal years before the merger announcement date.
SEC enforcement (0,1)	one if the firm is subject to an SEC enforcement action after merger resolution, due to accounting violations that were present at the fiscal year end before the merger announcement.
CEO characteristics	
CEO-chairman (0,1)	one if the CEO is the chairman of the board
CEO-founder (0,1)	one if the CEO is among the firm's founders
CEO near retirement age (0,1)	one if the CEO is at least 62 years old at the time of the merger announcement
CEO stock and option ownership	the equity owned by the CEO as a proportion of the firm's shares outstanding
Golden parachute	the natural logarithm of the golden parachute payment estimated for the target CEO before the acquisition
Parachute augmentation (0,1)	one if the target board increases the parachute value for the target CEO at the time of the acquisition as in Hartzell, Ofek, and Yermack (2004)
Unscheduled option grant (0,1)	one if the target CEO receives an unscheduled option award during merger negotiations as in Fich, Cai, and Tran (2011)
Post-deal employment (0,1)	one if the target CEO already holds or obtains either a directorship or an executive appointment such as CEO of the acquirer or a subsidiary, chief financial officer, chief operating officer, chairman, vice-chairman, president, or vice-president in the bidder firm after deal completion. In case of withdrawn deals, it equals one if the target CEO already holds any of the positions just described or if the merger proxy states that the target CEO will be employed by the bidder upon deal completion
Target governance characteristics	
Entrenchment index	the sum of six antitakeover provisions tracked by RiskMetrics (staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments) as in Bebchuk, Cohen, and Ferrell (2009)
Board size	the natural logarithm of the number of directors on the board

Board ownership	the equity owned by all directors (excluding the CEO) as a proportion of the firm's shares outstanding
Independent board (0,1)	one if at least half of the board's directors are independent. A director is considered independent if s/he is not a current or former employee of the firm or a subsidiary, and is not affiliated with the company as defined by RiskMetrics.
Handpicked comp. committee (0,1)	one if at least half of the compensation committee's directors are appointed after the current CEO is in the chief executive position
Institutional ownership	the equity owned by all institutions as a proportion of the firm's shares outstanding
Deal characteristics	
Acquisition premium	the offer price divided by the target's stock price four weeks before the merger announcement date, as reported by SDC and limited between 0% and 200%
Synergy	the three day cumulative abnormal return (CAR) for a value-weighted portfolio of the acquirer and the target around the merger announcement date similar to the method of Bradley, Desai, and Kim (1988). This CAR is calculated as the residual from the market model estimated during the one year window ending four weeks prior to the merger announcement. The target's weight is adjusted for the bidder's toehold.
Acquirer CAR (-1,+1)	the acquirer's CAR over the window (-1,+1) around the merger announcement date, calculated as the residual from the market model estimated during the one year window ending four weeks prior to the merger announcement
Merged firm post-deal op. performance	the operating gain to mergers, calculated as the mean industry-adjusted ROA over the three-year post-merger period as in Harford, Humphrey-Jenner, and Powell (2012)
Division of merger gains	the target's gain relative to the acquirer's gain defined as target $CAR minus acquirer $CAR divided by the sum of acquirer and target market values 50 trading days before the merger announcement as in Ahern (2012). This division of merger gains measure represents the relative gain of the target versus the acquirer for each dollar of total market value, without the concern that total gains may be negative.
Goodwill impairment (0,1)	one if the acquirer reports an impairment of goodwill related to the merger in year 1 or year 2 after the completion date
Relative size (Target/Acquirer)	the target's market value of equity divided by the acquirer's market value of equity
Private acquirer (0,1)	one if the bidder is not publicly traded
Toehold	the percentage of the target's shares owned by the bidder
Cash payment (0,1)	one if the deal is paid entirely in cash
Tender offer (0,1)	one if the form of the deal is tender offer
Hostile deal (0,1)	one if the deal is classified hostile by SDC
Competed deal (0,1)	one if the deal has a competed offer identified by SDC
Target termination fee (0,1)	one if the target has a termination fee provision in the merger contract
Lockup (0,1)	one if the deal includes a lockup of target or acquirer shares
Same industry (0,1)	one if both the target and the acquirer belong to the same Fama and French (1997) 48 industrial classification group
Merger of equals (0,1)	one if the deal is classified by SDC as a merger of equals
Target initiated deal (0,1)	one if the deal is initiated by the target
Acquirer input / Total target output	the industry-level percentage of dollars of acquirer industry input for each target industry output dollar as in Ahern (2012)
Acquirer purchases / Total target sales	the percentage of all target industry sales purchased by the acquirer industry as in Ahern (2012)
Target industry M&A liquidity index	the liquidity of the market for corporate control for the target firm's industry. This variable is defined as the value of all corporate control transactions for US$1 million or more reported by SDC for each year and industry divided by the total book value of assets of all Compustat firms in the same industry and year, as in Schlingemann, Stulz, and Walkling (2002)
One year macroeconomic change	the difference in the industrial production index over one year before the merger