Growth-promoting Bonuses and Mergers and Acquisitions

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Abstract

One-third of U.S. top executives have bonuses that are explicitly linked to growing the firm's size. We study how such "growth-promoting bonuses" influence firms' mergers and acquisitions (M&A) activities. We find that executives with these bonus incentives are more likely to do M&A deals—especially acquisitions in a size range consistent with meeting their bonus targets. We use shocks to the distance to revenue-based bonus targets caused by plausibly exogenous exchange-rate changes to support a causal mechanism behind these findings. Abnormal returns around M&A announcements are on average negative for acquirers with growth-promoting bonuses, primarily due to lower merger synergies. Despite these negative returns, the bonus payouts are large enough such that executives still experience a net monetary benefit when they achieve their performance targets using mergers.

JEL Classification: G32, G35, J23

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1 Introduction

Mergers and acquisitions (M&A) regularly destroy value for the acquiring firms (e.g., Moeller et al. 2004, 2005).[1] A common explanation for why firms so often engage in value-destroying acquisitions revolves around agency problems, and in particular, executives' desires to "empire-build" (Harford et al. 2012; Masulis et al. 2007; Morck et al. 1990; Williamson 1963). The idea is that an acquisition can be in an executive's own interest because they get to run a bigger firm—with higher prestige, future pay raises, or more perquisites (Yermack 2006)—even if shareholders do not benefit. In the literature on empire-building, these benefits are typically indirect and not contractually specified prior to an acquisition. This paper builds on this literature by examining the special role of direct ex-ante monetary incentives for growing the firm, which we call "growth-promoting bonuses."

We define growth-promoting bonuses (GPBs) as performance-linked compensation contracts ("grants") to executives that explicitly tie their pay to measures of firm size. The vast majority (96%) of growth-promoting bonuses are tied to meeting a revenue-based target, while the remainder is linked to metrics such as market share or production; the payouts themselves typically take the form of stock ("performance-based stock") or cash ("non-equity incentives").[2] Growth-promoting bonuses are common: We document that over one-third of firms in the U.S. have them at any given time. These incentives are also economically important to the executives who have these grants, with an average outstanding value of bonuses tied to GPBs (across the top-five executives) of about $3.24 million per firm.

One consequence of having bonuses that explicitly depend on growing the firm's size is that executives may realize they can acquire another company to meet the growth target, allowing them to receive the bonus even when the firm's organic growth might have been insufficient. Executives could likewise be aware of how large any acquisition(s) would need to be to help them reach the target. The firm's growth figures could theoretically be adjusted to exclude "inorganic" growth when determining whether an executive has earned the bonus, but based on our analysis, almost no firms do so in practice.[3] Despite the direct role acquisitions can play in determining these bonuses, the role of these incentives in influencing

[1] See also, for example, *The Financial Times* (July 20, 2022) "Mergers destroy value. Without reform, nothing will change"; *The Economist* (August 24, 2022) "Firms' unwise addiction to mergers and acquisitions."

[2] Other common quantitative metrics used in these types of grants include EBITDA, EPS, as well as safety or diversity metrics. The fraction of overall executive pay that takes the form of quantitative performance-linked grants has grown over the last two decades and now makes up a sizable fraction of total compensation, while the fraction made up of stock options or time-vested stock grants has decreased (e.g., De Angelis and Grinstein 2015; Martin et al. 2023).

[3] In our sample, fewer than 3% of the bonus contracts that are tied to firm size include mention of terms like "organic" or "M&A." This is consistent with research on bonuses tied to EPS metrics, which rarely exclude the mechanical effect of share buybacks (e.g., Cheng et al. 2015).

M&A activity has—to the best of our knowledge—not previously been studied.[4] The goal of this paper is to fill this gap.

We establish three overarching results on the relation between growth-promoting bonuses and M&A activities. First, we find that companies with GPBs are more likely to acquire other firms. We further provide several pieces of evidence that indicate that the mechanism by which GPBs are related to merger activity is causal, and not driven by omitted variables. Second, we find that M&A deals by firms with GPBs result in value destruction for the acquiring shareholders, primarily due to the selection of merger targets that offer lower synergies. Finally, we quantify the net benefit to executives and find that a vast majority of executives tend to benefit when they make acquisitions to meet their bonus targets, despite the fact that the firm's share price declines on average.

AbbVie's acquisition of Pharmacyclics in 2015 serves as an illustrative anecdote (see Appendix A for additional details). Around the time of this merger, AbbVie's CEO had a compensation package that included a bonus worth $1.8 million that used revenues as one of the performance metrics. AbbVie narrowly ended up meeting the required revenue target, thus triggering the bonus to the CEO. However, this only happened after including the new sales from the acquisition of Pharmacyclics, while the company would have failed to reach the required growth otherwise. Notably, AbbVie's stock price fell by approximately 4% upon the announcement of this acquisition.[5]

Our sample encompasses firms from IncentiveLab—which covers around 1,200 of the largest U.S.-listed firms by market capitalization—from 2007 to 2017. IncentiveLab provides detailed data on performance-linked grants, including the metrics they are tied to and the required performance targets, as well as the value of the potential bonus payouts across different performance levels.[6] The data on mergers and acquisitions is from SDC Platinum and includes around 5,000 deals over this period for the firms in our sample.

Our first hypothesis is that executives with GPBs are more likely to pursue acquisitions. Consistent with this, we find that firms with GPBs are significantly more likely to do M&A deals. In economic terms, we observe a 25% higher likelihood of doing an M&A deal in a given year when the firm's executives have GPBs, and these effects are robust to controlling

[4]Several papers, including Anderson et al. (2004); Avery et al. (1998); Bliss and Rosen (2001); Harford and Li (2007) and Ozkan (2012) examine the more implicit incentives to engage in M&A activity that arise from the size-elasticity of executive pay. Dasgupta et al. (2024) study how EPS incentives affect M&A.

[5]Jonathan D. Rockoff and Peter Loftus, "AbbVie to Buy Pharmacyclics in $21 Billion Deal", *The Wall Street Journal*, March 5, 2015, retrieved from `https://www.wsj.com`

[6]A typical payout schedule for these grants includes a "threshold" level of performance that is the lowest level of performance where some of the bonus is paid. The bonus then typically increases linearly to a "target" level of performance, and the bonus might further increase to a "maximum" level of performance. The relation between performance and bonus is typically also linearly increasing between the target and maximum. Beyond the "maximum" level of performance, the bonus payout remains flat.

for a range of firm- and executive characteristics as well as industry-by-year fixed effects. These findings are consistent with executives strategically using acquisitions to boost their chances of meeting their growth-based performance targets.

A possible alternative explanation for why firms with GPBs make more acquisitions is that their boards intentionally want to see the firm grow—regardless of whether that happens through M&A activities or not. Under this scenario, executives may simply be responding to what the board wants and might have pursued more M&A deals even without bonus contracts that explicitly reward these deals. To help rule out this possibility and provide more direct causal evidence, we exploit a natural experiment based on exchange-rate-driven shocks to a firm's sales, which generate plausibly exogenous variation in the incentive to engage in GPB-motivated M&A. We also identify several additional pieces of non-experimental findings that collectively help support a causal story. We next discuss this evidence before we turn to the experiment.[7]

First, if a board seeks higher firm growth—regardless of whether it is organic—we might expect more acquisitions of all kinds. However, if acquisitions are motivated by an executive's desire to meet a growth-based bonus target, we should see more deals of a size that help push firms toward that target, but not necessarily larger deals that push them far beyond it. Our findings show that GPBs are primarily associated with more acquisitions of relatively smaller target firms, with deal values around 1%–2% of the acquirer's size. Such acquisitions can be pivotal for GPBs, which typically reward percentage growth in the low- to mid-single digits. Conversely, we do not find that GPBs increase the likelihood of relatively larger deals, such as those adding more than 5% to the acquirer's size.

Second, we find that the timing of merger completions within a fiscal year supports the hypothesis that M&A is used to achieve bonus targets. Only a prorated portion of the acquired firm's sales—based on the fraction of the fiscal year remaining after the acquisition—counts toward the acquirer's performance that year. This implies that late-year acquisitions contribute less to meeting performance thresholds tied to bonuses. Therefore, if executives are motivated by such incentives, we would expect fewer acquisitions to be completed late in the fiscal year. Consistent with this prediction, we find that firms with GPBs are 8% less likely to complete acquisitions in the last fiscal quarter than non-GPB firms. Because mergers are lumpy and begin contributing to revenues only after completion, they are an imperfect tool for fine-tuning year-end figures; and our findings instead suggest that executives accelerate acquisitions earlier in the fiscal year to give revenue growth a longer runway,

[7]When we compare firms with GPBs to those without, after matching them based on industry and year, we find that these groups are very similar across a wide range of observable characteristics. This similarity across observable characteristics also alleviates the concern that an omitted unobserved variable could spuriously confound the relationship between GPBs and merger activity.

thereby improving the chances of meeting bonus-linked targets by year-end.[8] We also find that acquisitions by GPB firms are completed 20% faster than those by non-GPB firms, consistent with a greater urgency to finalize deals. These findings importantly compare merger timing and duration between GPB and non-GPB firms, thus controlling for various operational and logistical factors that might influence why deals in general may be more likely to be completed at different times of the year, and instead point to incentive-driven behavior.

Third, if the positive relation between GPBs and merger activity stems from executives' personal incentives to boost bonus-related growth metrics, it should be stronger in firms with weak corporate governance. Consistent with this, we find a stronger GPB-merger link among firms with weaker governance, measured by CEO-Chair duality (Core et al. 1999). Also consistent with the view that excess cash exacerbates agency problems (Harford 1999; Jensen 1986), we find a stronger link between GPBs and merger activity among firms holding more cash.

To further support the specific causal mechanism that these M&A deals are motivated by bonus-related incentives, we exploit exchange-rate movements as a natural experiment. When the U.S. dollar weakens, exporting firms mechanically experience higher dollar-denominated revenues for the same level of foreign sales. This makes it easier for GPB firms to meet their revenue-based bonus targets—without, for example, needing to acquire another firm—but only for those GPB firms that are also exporters. Crucially, while this setting does not provide variation in whether firms have GPB contracts, it offers a plausibly exogenous shock that compresses the distance to the revenue targets specified in these contracts. Thus, by making these revenue targets easier for exporters to reach in certain years, the shock reduces the incentive to pursue acquisitions, helping to isolate the causal effect of bonus-driven incentives on M&A activity. For example, suppose an exchange-rate shock adds 3% to a particular firm's dollar-denominated sales, then it is as if the growth target was exogenously moved 3% lower, and we can study whether having such a correspondingly easier target makes firms less likely to engage in other ways of boosting performance. If the underlying mechanism behind the relationship between GPBs and merger activity is driven by executives using mergers as part of a strategy to meet performance targets, we would thus expect exporting firms with GPBs to become less likely to pursue mergers in those years when their revenues happen to be boosted from declines in the U.S. dollar. However, non-exporting GPB firms should not follow this pattern as they would not have experienced a similar currency-driven shock to their target at this time.

To operationalize this test, we use a triple-difference empirical framework, by comparing

[8]By contrast, finer-grained tools with immediate impact—such as accrual-based accounting adjustments—may be better suited to fine-tune revenues near the fiscal year-end.

exporting and non-exporting firms with and without GPBs in years with or without negative shocks to the U.S. dollar. We define these currency shocks as years when there is a 5% or larger year-to-year drop in the trade-weighted dollar index. Since the strength of the U.S. dollar may correlate with broader economic conditions, we account for any potential aggregate effects using time-fixed effects, allowing us to isolate differential changes in M&A activity across firms around these shocks; we similarly control for industry-by-year fixed effects to account for any possible industry-level variation over time. Our results show that in years with negative shocks to the dollar, GPB firms reduce their M&A activity, as compared with both non-exporting GPB firms and exporting non-GPB firms. Both of these "control groups" are important to account for any spurious confounders whereby business outlooks or optimal policies of either GPB firms or exporters might be correlated with exchange-rate changes. In fact, exporting firms (but only those without GPBs) actually slightly increase their merger activity in response to these currency-driven windfalls, which is consistent with these firms having higher dollar cash flows that may allow for more mergers. Overall, these results support the interpretation that executives use mergers strategically to hit growth-based targets but that they stop doing so when currency windfalls exogenously shrink the distance to the performance target. These findings are also difficult to reconcile with an omitted variables explanation, as any such confounders would have to be (i) exporter-specific, (ii) synchronous with FX moves, and (iii) differentially affecting only those exporting firms whose bonus targets hinge on revenue targets.

Next, we use an event study framework to examine how acquisitions by firms with GPBs affect shareholder value. We hypothesize that—if many of these acquisitions stem from agency problems and gaming the incentive system—these acquisitions will be more likely to have an adverse impact on the firm's share price. Consistent with this hypothesis, we find that the abnormal return around M&A deal announcements is significantly lower—by almost a full percentage point—when the executives in the acquiring firm have growth-promoting bonuses compared with acquisitions by firms that do not have these types of bonus contracts. Not only do GPB-motivated acquisitions underperform relative to other deals, but they also end up destroying shareholder value in absolute terms.[9] These findings support the hypothesis that managers with GPBs engage in acquisitions that are personally motivated despite being detrimental to shareholders. Moreover, it is hard to reconcile the negative announcement returns with an alternative hypothesis that these acquisitions are actually what boards had intended.

[9]The average acquisition announcement returns for firms with GPBs is –0.21% compared to 0.64% for firms without GPBs. These results are also robust to a range of firm- and deal-level control variables. Notably, this difference occurs despite GPBs being more associated with types of acquisitions that other studies suggest are more likely to create value, such as acquisitions of smaller firms, cash acquisitions, and within-industry acquisitions (e.g. Fich et al. 2018; Harford et al. 2012; Morck et al. 1990).

We then trace the underlying reasons behind the lower announcement returns for acquirers with GPBs—specifically, whether this happens because GPB firms are more likely to overpay or because these deals have lower value added from merger-related synergies. These potential explanations are not mutually exclusive: Executives motivated by growth-promoting bonuses might both be more willing to overpay for a deal and be less diligent about finding the highest-synergy targets. As a proxy for possible overpayment, we examine whether M&A deals by GPB firms have higher target premiums (i.e., offer price compared to the target firm's share price 50 days before the deal was announced) and whether the abnormal return for the *target firm* is higher around the deal announcement.[10] We find that even though mergers by GPB firms unconditionally are associated with higher premiums and higher target announcement returns, this relation becomes statistically insignificant after we account for a range of acquirer- and deal-level control variables. This indicates that GPB-motivated acquirers may not be overpaying for targets (at least not compared to M&A deals by other firms with otherwise similar firm-level characteristics). To measure synergies, we calculate the combined announcement return for acquirer and target. Here, we find that acquisitions by firms with GPBs have significantly lower combined announcement returns. This result also remains statistically significant after we account for a battery of additional control variables. This suggests that a primary reason why GPBs are linked with lower announcement returns for acquirers is that firms with GPBs may be less selective in terms of finding high-synergy targets.

How often do M&A deals actually make the difference between whether firms meet or miss the performance target? To analyze this question, we compare the actual sales of acquiring firms with GPBs to a "counterfactual" estimate of what the firm's sales would have been without the acquisition. This analysis shows that approximately 30% of firms that would have fallen somewhat short of the performance threshold (by 5% or less) actually end up surpassing it when accounting for the additional revenues from the acquisition. We also quantify how these acquisitions affect actual executive bonus payouts. To do so, we combine the estimates of firms' actual vs. counterfactual sales with the details regarding the bonus payout each executive earns at different levels of underlying performance. This analysis shows that executives with GPBs, on average, earn an additional $212,000 in bonus compensation when they make acquisitions (per grant).[11] Most executives own shares and options in their companies, and so they also have a reason to care about the firm's share price. However, the typical gains in bonus payouts of over $200,000 readily outweigh the

[10]To measure the target premium, we are limited to deals with merger targets that are publicly traded firms, and to measure the target abnormal return, we require the target to be publicly traded or to be a subsidiary of a publicly traded firm.

[11]This amount corresponds to a 22.1% increase in annual bonus pay and a 3.9% increase in total compensation on average.

average losses to executives' equity portfolios from the negative deal announcement returns, which we estimate to be around $18,000 on average. Overall, these estimates indicate that executives with GPBs benefit *on net* from pursuing acquisitions, even if these acquisitions on average have negative returns.

Finally, we examine how boards adjust the use of GPBs in future executive pay contracts, depending on whether the firm's past M&A deals have been a success or failure. We find that among firms that do not currently have GPBs, they are more likely to introduce new GPB contracts to executives after experiencing value-enhancing acquisitions (as measured by high announcement returns around mergers the previous year). However, among firms that have GPB contracts, we find that the success or failure of past deals plays no role in whether the firm discontinues offering these incentives. These results indicate an asymmetry: firms tend to adopt growth-promoting incentives after successful acquisitions but fail to abandon them following poor outcomes. This finding also aligns with prior research that has found that adverse changes in a firm's corporate governance are more likely in periods of strong performance (e.g., Schoar and Washington 2011).

This paper primarily contributes to the literature that argues that many executive bonus plans have design flaws that may incentivize executives to take actions that destroy shareholder value (e.g., Bebchuk and Fried 2003; Benmelech et al. 2010; Burns and Kedia 2006; Morse et al. 2011; Murphy and Jensen 2011). From a theoretical perspective, our findings speak to the issue of multi-tasking in a principal-agent setting (Holmstrom and Milgrom 1991) in that they are consistent with the idea that this type of incentive pay can have costs by incentivizing agents to sacrifice some dimensions (e.g., shareholder value) to achieve a more narrowly defined goal (e.g., growth) that is explicitly specified in their contract.

Our paper additionally contributes to the literature that examines the link between managerial incentives and M&A activities. Anderson et al. (2004); Avery et al. (1998); Bliss and Rosen (2001); Harford and Li (2007) and Ozkan (2012) study the role of empire-building incentives in M&A. Several papers also study the link between M&A performance and features of compensation, such as pay-for-performance sensitivity (Datta et al. 2001; Minnick et al. 2011), pay-risk sensitivity (Hagendorff and Vallascas 2011), inside debt (Phan 2014), and pay duration (Li and Peng 2021).[12] Perhaps most closely related, Grinstein and Hribar (2004) study the role of discretionary bonus payments that some firms award after the completion of acquisitions, i.e., *ex-post*. They find that these merger completion bonuses

[12]This is part of a larger literature that studies various determinants also beyond executive incentives behind the value-creation (or value-destruction) in acquisitions (e.g., Baker et al. 2012; Chatterjee et al. 2021; Gantchev et al. 2020; Gaspar et al. 2005; Harford 1999; Harford et al. 2012; Jensen 1986, 1993; Levi et al. 2014; Masulis et al. 2007; Moeller et al. 2005).

are more likely to be given to more powerful CEOs but that these bonuses are not associated with deal performance. A main difference in this paper is that GPB grants are determined ex-ante and reward growing the firm's size (regardless of how this growth happens).

While our paper highlights a negative—and likely unintended—consequence of revenue-based incentives, these incentives can also have important benefits. Bloomfield (2021) and Bloomfield et al. (2021) show that such contracts can be beneficial in certain contexts, as firms may strategically employ revenue-based ("cost-shielding") metrics in executive compensation to credibly commit to aggressive competition or to counteract myopic underinvestment. Thus, these studies suggest that such contracts can be beneficial in certain contexts. Our evidence adds to the other side of the ledger by documenting a significant cost. One key takeaway is that while GPBs can serve useful functions, they require careful design to avoid unintended distortions. For instance, a simple tweak—adjusting performance targets to exclude "acquired" sales—could allow boards to preserve benefits of these contracts while reducing the risk of value-destroying M&A.

Executive bonus contracts can also hinge on several other metrics beyond size, and several papers have focused especially on EPS-based metrics. For example, Dasgupta et al. (2024) and Aboody et al. (2000) find that compensation tied to earnings per share (EPS) impacts the structure of M&A deals. Other papers have studied the impact of bonuses tied to EPS metrics on other corporate outcomes such as share buybacks (Almeida et al. 2016; Cheng et al. 2015), management strategic disclosure (Martin et al. 2023) as well as accruals, discretionary spending, and R&D (Bennett et al. 2017). Almeida (2019) summarizes this literature and concludes that the focus on EPS has been harmful. Our paper adds to this literature by focusing instead on growth-based metrics, which have been studied much less in the literature to date.

2 Data and Sample

We start with data from ISS IncentiveLab, which identifies metrics used in executive compensation bonus contracts for the five highest-paid executives. While the term "bonus" traditionally refers to discretionary cash bonuses—now quite rare for publicly listed companies—we use it in a broader sense to describe payouts of stock or cash linked to meeting specific quantitative targets. This includes both "performance-based stock" when the payout is in the form of shares, and "non-equity incentives" when the payout is in cash.

Our data from IncentiveLab spans the years 2007 to 2017. During this period, IncentiveLab covers approximately 1,200 of the largest firms by market capitalization listed on U.S. exchanges each year. We match the IncentiveLab data to firm-level accounting and

stock market data from Compustat and CRSP.

We obtain data on M&A transactions from SDC for deals announced between 2007 and early 2017, which have a status of either completed or withdrawn and where the acquirer is a U.S.-domiciled publicly listed firm or a subsidiary of such a firm. We match this M&A transaction-level data with the firm-level panel data using the matching file provided by Ewens et al. (2025).

2.1 Summary statistics

Table 1 reports summary statistics for the grant-level data from IncentiveLab. Panel A shows that our data consists of a total of 159,178 bonus grants across 1,403 unique firms. Of these bonus grants, 33,837 (21% of the total) are specifically tied to measures of firm size, i.e., our definition of growth-promoting bonuses (GPB). 909 (65%) of the unique firms in the sample have at some point had a GPB, indicating that a majority of these firms at least occasionally award bonus grants where the payout depends on firm size.

When we analyze the criteria described in IncentiveLab more closely, we find that 2.5% of these grants that are tied to firm size metrics also specify that growth must be "organic," thus presumably precluding using acquisitions to meet the performance targets.[13] We exclude such grants from our classification of GPBs.[14]

TABLE 1 ABOUT HERE

We next examine which specific metrics underpin these GPB grants. Panel B of Table 1 details which specific measures of firm size these grants depend on. The most common measure, by far, is sales (96.1% of grants we classify as GPBs). Around one-quarter of these sales-based targets are specified in growth terms (i.e., as percent growth in sales), and the remaining are expressed as absolute sales targets in dollars. Other less commonly used metrics that we also include as part of GPBs include grants tied to market share (1.7%) or production (0.9%).

We next construct a panel dataset for the firms in the IncentiveLab data by collapsing the grant-level data to the firm-year level, resulting in a sample of 15,863 firm-years.[15] Panels C and D of Table 1 provide summary statistics at the firm-year level. In Panel C, we describe

[13] Our estimate of 2.5% aligns with findings from (Cheng et al. 2015), who studied the impact of bonuses tied to performance metrics (EPS) on corporate share buybacks. They report that in 0.5% of their sample, boards adjust for the impact of repurchases when determining whether an EPS target has been achieved.

[14] An additional 0.1% of the grant-level observations explicitly prohibit using acquisitions to achieve performance goals. We exclude these grants as well.

[15] Each firm has around five named executive officers, and each officer can have several grants that are tied to quantifiable metrics.

how common growth-promoting bonuses are at the firm-year level, after aggregating across all named executive officers in a firm and their grants. We calculate both the fraction of executives for each firm and year that has GPBs, and how many dollars in total are tied to these GPBs for each firm-year. We find that the average fraction of a firm's top-five executives with outstanding GPB grants is 34%. Most firm-years exhibit an all-or-nothing pattern: either none or all top-five executives have GPBs; however, we allow this fraction to be continuous to account for cases where only a subset of executives have GPBs. These incentives are roughly equally prevalent among CEOs (33%) and CFOs (32%). The dollars at stake in these grants are also significant. Among firm-years with non-zero outstanding GPB grants, these amounts total $3.24 million across the named executive officers. Finally, most of these outstanding bonus incentives have a relatively short remaining time until the end of the period when the performance is evaluated against the target: the average remaining vesting period is 11 months.

In Panel D of Table 1, we compare how common metrics based on size are when compared with other common metrics in executive bonus contracts such as EPS or stock price. This analysis shows that the top-five executives in a firm are, at any given time, subject to bonuses that depend on almost 7 unique performance measures (when counted across all grants). The most common performance measure is a measure of earnings (e.g., EBITDA), which is present in bonuses for an average of 70% of firm-years, followed by earnings per share (EPS), present in 41% of firm-years. Interestingly, growth-based incentives are almost as prevalent as EPS-based bonuses, even as these growth-based incentives have by comparison received much less attention in the literature to date. Less frequently used measures for determining bonuses include stock price, which is included in 13% of firm-years, and measures of operating performance (14%). Note that these all add up to more than 100%, because each executive can have more than one grant, and each grant can depend on meeting more than one metric. Importantly, incentives tied to earnings-related metrics can also encourage firms to expand, as sales and earnings tend to be correlated. In our analysis, we therefore separately compare the impact of earnings-based incentives with those of strictly growth-based incentives.

Table 2 presents summary statistics for M&A-related variables. Panel A shows that 21% of all firm-years in the sample (including both firms with and without GPBs) engage in at least one M&A deal, when including both acquisitions of private and public targets. 7% of firm-years acquire a target that is a public firm or a subsidiary of a public firm; we use this more limited sample of deals involving public targets when studying the sources behind value-creation or destruction, as this analysis requires announcement returns for the target in addition to the acquirer returns.

TABLE 2 ABOUT HERE

Panels B and C of Table 2 report summary statistics for deal-level characteristics. Our sample comprises a total of 4,989 M&A deals, with 1,343 deals (27%) involving targets that are either publicly listed or subsidiaries of publicly listed firms. Panel B reports summary statistics across all deals, while Panel C reports summary statistics for only the public-target deals. The relative target size—deal size normalized by the sum of the acquiring firm's market capitalization plus the deal size—is approximately 6% (and correspondingly higher, 12%, for public targets). Abnormal returns average 16% for targets (median: 5.91%), 0.33% for acquirers (median: 0.20%), and 1.39% for the combined acquirer+target (median: 0.71%). The average target abnormal returns are notably lower than those reported in many previous M&A studies—an important reason for this is that our sample for which we calculate target abnormal returns includes instances where only a subsidiary of the target firm is being acquired. The average premium paid for a publicly listed target is 43% (with a median of 55%). The payment methods in these deals are predominantly cash; 53% of deals are all-cash, while 43% involve both cash and stock, and only 4% of deals are all-stock.

3 Growth-promoting bonuses and M&A activity

In this section, we study the relationship between firms' use of growth-promoting bonuses and their M&A activities.

3.1 Baseline results

We begin by examining whether firms with growth-promoting bonuses are more likely to engage in M&A activity. To test this hypothesis, we estimate a linear probability model that relates growth-promoting bonuses to a firm's likelihood of engaging in M&A activity:

$$I[M\&A]_{i,t} = \alpha + \beta\, GPB_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \psi_{j,t} + \varepsilon_{i,t}, \tag{1}$$

The data is at the firm-year level, and i indexes firms, j indexes industries, and t indexes years. The dependent variable is an indicator for whether firm i makes an M&A deal in year t, including both public and private targets. *GPB* is measured either as (1) the fraction of the top-five executives in the firm who have outstanding growth-promoting bonus incentives during year t (i.e., that is granted in year t or earlier and that has a performance vesting date in year t or later), or as the logarithm of (one plus) the total dollar value underlying

these growth-promoting bonuses across the top executives. $\mathbf{X}_{i,t}$ represent a set of firm-level control variables, and $\psi_{j,t}$ are industry-by-year fixed effects. All variables are defined in the Appendix. Table 3 presents results.

Table 3 About Here

In Panel A of Table 3, we use the fraction of top executives in the firm who have growth-promoting bonuses (*GPB(% of executives)*) as the key independent variable, whereas in Panel B, we instead use the logarithm of (one plus) the total dollar value underlying the growth-promoting bonuses across the top-five executives. Columns (2), (3), and (4) include an expanding set of control variables, including governance- and compensation-related characteristics (CEO-chairman duality, fraction of board that is co-opted (Coles et al. 2014), board size, CEO tenure, CEO compensation delta) as well as firm-level control variables (including firm size, age, cash holdings, capital expenditures, profitability, industry Q).[16] Moreover, in model (4), we also control for whether executives have outstanding bonus incentives tied to earnings-based metrics (e.g., EBITDA). To account for any unobserved industry- or time-specific omitted variables, we include industry-by-year (based on 2-digit-SIC industries) fixed effects.

In model (1) in Panels A and B, we find that the relation between merger activity and GPBs is positive and statistically significant at the 1% level. These results remain similar when we include additional control variables. In terms of economic significance, Panel A shows that firms where all executives have GPBs are 4.4 percentage points more likely to become an acquirer, compared to if none of the executives have these incentives (recall, in most firms, this fraction is either 100% or 0%). This represents around a 20–25% increase in the probability relative to the base likelihood of 21%. We find similar results in Panel B, where a one-standard-deviation increase in the log dollar amount tied to GPBs is related to a 4.5 percentage point increase (log(3.65 million)*0.003=4.5) in the likelihood of becoming an acquirer.[17] In column (4), we find little evidence that earnings-based incentives influence the likelihood of becoming an acquirer. However, the coefficient on GPB remains stable and economically meaningful even after controlling for the presence of earnings-based grants. This suggests that growth-based incentives are uniquely associated with M&A activity in a way that earnings-based incentives are not, reinforcing the distinct role of growth-promoting bonuses in driving acquisition decisions.

[16] We report summary statistics for control variables in Internet Appendix Table A1.

[17] In untabulated tests, instead of the LPM in Table 3, we run logistic regressions and find similar results.

3.2 Deal types

To assess whether managers target specific deal types to help meet bonus thresholds, we next analyze how the GPB–M&A relationship varies by deal size and type. Specifically, if these deals are strategically motivated to boost the chances of meeting bonus targets, we should expect to see firms especially do more deals that are in the low single digits relative to the acquirer's size, as the bonus targets usually involve percentage growth in the low-to-middle single digits; implicit in this hypothesis, we assume most firms have some internal growth and the purpose of these deals is to provide sales with an extra boost to make it easier to meet the target. By contrast, we would not expect to see relatively more deals that are much larger than what the growth targets call for.

In Panel A of Table 4, we thus study whether the relation between GPBs and the likelihood of becoming an acquirer varies across different size ranges of target firms. To this end, we use specifications similar to those in Panel A of Table 3, but with the dependent variable in each model indicating whether a firm makes an M&A deal within a specific size bracket. We define these size brackets as follows: smaller than 1 percent of the acquirer, between 1 and 2 percent, 2–5%, 5–10%, and greater than 25%—all relative to the size of the acquirer. Table 4 shows that GPBs are primarily associated with deals that are smaller than 2%. By contrast, we find little evidence that having GPBs encourages firms to engage in more "megadeals." These results are consistent with M&A deals being used as part of a strategy to make it easier to meet or beat the performance target. Furthermore, smaller deals are also less likely to be challenged, scrutinized, or renegotiated, which means that they are less likely to receive pushback.

Table 4 About Here

In Panel B of Table 4, we additionally investigate whether these findings vary across other deal characteristics. First, in columns (1)-(3), we find an economically and statistically significant relation between GPBs for the likelihood of doing deals using either cash or mixed payment (cash+stock), but there is no relationship between growth-promoting bonuses and the likelihood of doing a stock deal. This is consistent with cash deals being faster and less scrutinized by boards and shareholders.[18] We also find that the relation between GPBs and M&A activity is concentrated among within-industry deals (i.e., where both acquirer and target are from the same industry). As with cash deals, within-industry deals also tend to be less likely to face scrutiny from the board.

[18]Harford et al. (2012) find that value-destroying deals by entrenched managers tend to be less likely to be stock offers.

The timing and speed of acquisitions are likely to be important considerations if managers engage in M&A deals to meet performance targets. In Figure 1, we plot the distribution of completion times for acquisitions of public targets made by firms with and without GPBs. As this figure shows, acquisitions by firms with GPBs are completed more quickly—on average about 27 days faster (equivalent to 20% faster)—than acquisitions by firms without GPBs. The timing within the fiscal year also matters, because the value of the target firm's sales that gets counted as part of the acquirer's sales is prorated by the fraction of the fiscal year remaining after the deal is completed. Therefore, acquiring a target late in the fiscal year contributes less toward meeting a GPB sales target. Consistent with avoiding "late deals," firms with GPBs are 8% less likely to complete an M&A deal in the fourth quarter when compared to firms without GPBs.[19]

FIGURE 1 ABOUT HERE

3.3 Cross-sectional variation: The role of corporate governance and cash holdings

Finally, we study cross-sectional differences across firms in the extent to which growth-promoting bonuses are related to making more acquisitions. First, we investigate whether poor corporate governance, especially in terms of the CEO's relative power when dealing with the board, strengthens the relationship between GPBs and M&A activities. If managers strategically use GPBs to meet their bonus performance targets, we expect this relation to be stronger in firms with poor corporate governance. To test this hypothesis, in Panel A of Table 5, we run regressions similar to those in Table 3, but where we additionally interact the measure of GPBs (*GPB(% of executives)*) with an indicator for CEO-chairman duality (Core et al. 1999). We find that the coefficient on this interaction term is both economically and statistically significant: Specifically, the link between GPBs and M&A activities is more than three times stronger in firms where the CEO also serves as the chairman of the board. This finding echoes Masulis et al. (2007), who show that stronger external governance can mitigate acquisitions motivated by empire-building.

TABLE 5 ABOUT HERE

Second, a firm's decision to become an acquirer can be influenced by how much cash they have on hand. Indeed, seminal papers such as Jensen (1986) and Harford (1999)

[19]Instead, firms with GPBs are relatively more likely to complete deals, especially in the second quarter, which is consistent with these deals being started in the first quarter.

argue that cash-rich firms are more likely than other firms to do value-destroying deals. We therefore examine whether the extent of a firm's cash holdings affects the strength of the relation between GPBs and M&A activities. To do so, in Panel B Table 5, we include an interaction term between GPBs and the firm's cash-to-assets ratio. Our findings show that firms with GPBs are relatively more likely to engage in M&A activities when they are also cash-rich.[20]

Taken together, the findings so far show that firms with growth-promoting bonuses are more likely to engage in acquisitions—especially smaller, quicker, and cash-based deals—and that this relation becomes stronger for firms that are cash-rich and that have more powerful CEOs.

3.4 Robustness: Comparison of firms with and without growth-promoting bonuses

Our results thus far indicate that firms with managers who have growth-promoting bonuses tend to make more acquisitions. One interpretation of these results is that managers with GPBs strategically increase M&A activity to boost the firm's size, thus making it more likely to meet their performance targets for bonus payouts. However, a competing explanation may be that unobserved firm characteristics—rather than the GPB incentives themselves—jointly drive both the use of growth-based bonuses and M&A activity. For example, suppose some firms would especially benefit from more growth—then, it may be optimal for these firms to also pay their managers in the form of GPBs in order to align incentives better, and it's possible that our current control variables and fixed effects cannot fully capture such differences in growth opportunities. Another possibility is that our governance proxies are imperfect and that poorly governed firms may simultaneously have more GPBs and also make more acquisitions. So even though we control for a range of firm-, executive-, and governance-related variables, as well as industry-year fixed effects, some omitted unobserved variables could still confound our results.

Any alternative hypothesis that relies on omitted unobserved variables tends to be more likely if firms with and without GPB contracts differ significantly across many observable dimensions. To examine how similar firms that offer GPBs are to other firms, Table 6 compares observable characteristics of firms with GPBs vs. those without. On the one hand, the comparison in Table 6 shows that firms with GPB incentives look different across several characteristics in univariate comparisons. For example, GPB firms are, on average, smaller

[20]In columns (2) and (3), we divide deals based on their method of payment, and we find that this result is concentrated among cash deals while having cash does not affect the relation between GPBs and stock deals.

and younger and have more cash than non-GPB firms. On the other hand, these "raw" differences across GPB and non-GPB firms are mostly driven by variation *across different industries*, as firms in some industries are more likely to have GPBs, and these industries, in turn, tend to have firms that have different average ages and sizes. To illustrate this, in the last column, we make the same comparison but across firms *within* the same industry and year. Crucially, we find that almost all of the differences between GPB and non-GPB firms disappear, as firms with and without GPBs are now similar in size, age, and cash. This comparison of differences within the same industry and year is the right comparison when considering a possible omitted variable concern in our empirical strategy because the only source of variation our regressions exploit is that within industry and year due to the inclusion of industry-by-year fixed effects. In addition to the differences (within industry and year) across the vast majority of firm characteristics being statistically insignificant, these differences are also economically small. The only remaining statistically significant difference at the 5% level is profitability, where firms with GPB have around 1.26 percentage points higher operating income before tax (scaled by assets), which nevertheless is quite small in economic terms. Moreover, we control for all of these observable variables, including profitability, in the regressions throughout the paper.

Table 6 About Here

Overall, this comparison shows that firms with and without GPB contracts are similar across many observables after accounting for industry-by-year fixed effects, which helps alleviate a concern that the relation between GPBs and merger activity could be driven by some third omitted factor. Still, in the remainder of the paper, we will offer three additional pieces of evidence to further support a causal mechanism behind our hypothesis that GPBs incentivize managers to strategically engage in more M&A deals in order to meet their performance targets. First, we exploit a natural-experiment setting that uses shocks to firms' sales that are driven by exchange-rate changes to isolate this mechanism that firms use acquisitions to help meet the performance target. Second, we analyze abnormal returns and find that GPB-motivated acquisitions tend to be associated with lower abnormal returns; importantly, this result is inconsistent with an alternative hypothesis that the firms that might benefit more from acquisitions also tend to offer GPBs to managers. Finally, in section 6, we show that a significant fraction of firms with GPBs whose executives would have otherwise just missed the performance threshold only meet this threshold due to an acquisition, and that managers, on average, benefit from doing mergers to meet the target even if these on average destroy shareholder value.

4 Exploiting shocks to sales from exchange rates to isolate mechanism

The evidence so far is consistent with executives conducting acquisitions to meet growth-based performance targets. However, this relationship may still be subject to concerns about omitted variables. To help rule out the possibility that some other mechanism explains the link between GPBs and acquisitions, we ideally need plausibly exogenous variation either in whether firms have these contracts or in features of these contracts—such as the quantitative performance target. To this end, the following section exploits exchange rate fluctuations that provide plausibly exogenous variation in the "distance to target" for specific firms and years. These shocks effectively act as an exogenous adjustment to the revenue threshold firms need to meet, thereby altering their incentives to pursue acquisitions as a strategic means of meeting performance benchmarks. Many firms in our sample export a significant fraction of their output, and even though a few globally traded goods are priced in U.S. dollars, many goods are priced in the local currency wherever they are sold. So suppose an American firm is exporting to the Euro area, and the strength of the U.S. dollar suddenly falls relative to the Euro's value during the year—in this case, every Euro the firm earns from its sales in the Euro area will translate into more dollars for the exporting firm.[21] The exporting firm then gains a "windfall" of additional sales as measured in dollars, and because the sales targets for GPBs are also set in dollars, reducing the need for acquisitions to hit the sales target. Since many GPBs involve low-to-mid single-digit growth thresholds, even small exchange-rate-driven windfalls can substitute for marginal M&A deals.[22]

Therefore, if the underlying mechanism for a positive relation between GPBs and merger activity is that executives use acquisitions to beat the performance target, we expect that exporting firms would become less likely to make acquisitions for this reason when the USD has fallen compared to other currencies. This means that we should observe this decline only among GPB firms with significant exports. Ideally, we would like to perform analysis separately for each export country and foreign-currency-to-USD pair, but we face the challenge of obtaining precise country-level export data for each firm. Therefore, to operationalize this test, we use Compustat Segment data and group all reported exports by each firm—regardless of whether those exports are reported, for example, at the country- or

[21] In this example, we imagine a scenario with constant prices in euros. Another possibility is that a weaker dollar enables exporters to lower their euro-denominated prices and thus increase quantities sold. In either case, USD-denominated sales would be expected to rise, either because of higher dollar-denominated prices or higher quantities.

[22] As Table 4 shows, the types of acquisitions that are relatively more likely for GPB firms are also precisely those deals around low-single-digit relative target sizes—so a similar boost from exchange-rate shocks can thus substitute for these kinds of acquisitions.

region- level—and use a USD trade-weighted exchange rate measure to capture the relative strength of the U.S. dollar over time.

These tests are based on the triple-difference regression:

$$\begin{aligned} I[M\&A]_{i,t} = \alpha &+ \beta_0 GPB_{i,t} + \beta_1 Exporter_{i,t-1} + \beta_2 GPB_{i,t} \times Exporter_{i,t-1} \\ &+ \beta_3 GPB_{i,t} \times USD\ shock_t + \beta_4 USD\ shock_t \times Exporter_{i,t-1} \\ &+ \beta_5 GPB_{i,t} \times USD\ shock_t \times Exporter_{i,t-1} + \eta' \cdot \mathbf{X}_{i,t} + \eta_t + \psi_{j,t} + \varepsilon_{i,t} \end{aligned} \tag{2}$$

The dependent variable is an indicator of whether the firm makes an acquisition during the year. *GPB* is also defined as in the previous regressions, using either *GPB (% of executives)* (in column 1) or *GPB (log $value)* (in column 2). *Exporter* is an indicator variable for whether the firm reported foreign sales in the Compustat customer-segment file as of the previous year.

We measure the strength of the U.S. dollar using the Nominal Broad U.S. Dollar Index, which is a trade-weighted index.[23] To validate the relevance of this experiment as a shock to exporters' sales, in Table A2, we show that the changes in this index significantly predict differential changes to sales for the firms that we classify as exporters in exactly the direction we would expect: When the dollar becomes relatively stronger relative to the trade-weighted basket of other currencies, the sales for exporting firms tend to decrease, and vice versa. To capture a significant drop in the relative strength of the dollar, we use an indicator *USD shock* based on whether there was a larger-than 5% year-to-year drop in the Nominal Broad U.S. Dollar Index, measured from the beginning of the first month of the previous fiscal year (*t-1*) to the first fiscal month of the year *t*. We define the shock based on a 5% threshold because this represents a shock to exporters' sales of around the same order of magnitude as the M&A deals that GPB firms tend to do relatively more of. Specifically, the average firm that we define as an exporter has around 40% of their total sales as exports, which means that a 5% exchange-rate shock implies a 5% $\times$ 40% = 2% shock to their USD-based sales; this magnitude of exogenous sales meaningfully boosts a firm's chances to beat their growth targets defined in GPB contracts in a way that is similar to a typical smaller M&A deal.

As in previous tables, all regressions include industry-by-year fixed effects and a range of firm-, executive-, and governance-related control variables. We also include time (*year-month* of the firm's fiscal year-end) fixed effects (η_t)—note that the industry-by-year fixed effects do not fully absorb these fixed effects since we additionally allow them to vary by month. The time fixed effects account for the fact that changes to the strength of the U.S.

[23]The data for this index is downloaded from the Federal Reserve Economic Data (FRED) website.

dollar could be related to aggregate economic conditions; these regressions thus control for such possible aggregate effects and only exploit cross-sectional differences in how exporting firms with GPBs differentially change their M&A activities in response to exchange-rate shocks relative to the other groups firms (non-exporters with or without GPBs, and exporters without GPBs). The year-month fixed effects, in turn, subsume the uninteracted variable *USD exchange-rate shock*$_t$ as this variable varies only by month.

The main coefficient of interest is the triple interaction between the firm having growth-promoting bonuses, being an exporter, and a negative shock to the U.S. dollar exchange rate. If firms use M&A as a way to boost sales to meet the performance target, we would expect this triple-interaction to be negative; this would imply that when the USD exchange rate falls, firms with GPBs that also have significant exports become less likely to acquire other firms as they have now experienced an exogenous boost to sales that makes it unnecessary to use M&A to achieve these ends. We report results in Table 7.

Table 7 About Here

Before we discuss the main coefficient of interest on the triple-interaction, we first describe the effects on the other explanatory variables. First, consistent with our findings from Table 3, we see that the baseline effect of having GPB contracts predicts a greater likelihood of acquiring other firms by around 2.4 percentage points (in this table, this coefficient captures the effect specifically for non-exporters outside of periods with negative exchange-rate shocks). The coefficient on *Exporter* is also positive, 0.028, and shows that exporting firms (here, specifically exporting firms that don't have growth-promoting bonuses) are more likely to acquire other firms compared to non-exporting firms. Next, firms with GPBs that are exporters are also more likely to acquire other firms (coefficient 0.02), although this effect is not statistically significant. The coefficient on the interaction *GPB*$\times$*USD exchange-rate shock* shows that firms with GPBs and that are non-exporters tend to make relatively more acquisitions when the USD exchange rate is weak, and the coefficient on *Exporter*$\times$*USD exchange-rate shock* shows that exporters in times of negative USD exchange rate shocks tend to make more acquisitions. The latter effect is consistent with exporting firms exogenously having higher cash flows when the U.S. dollar is weak, which they can use for acquisitions.

Finally, our main coefficient of interest, the triple-interaction, shows that firms with GPB and that are exporters—specifically in times when the USD exchange rate has suffered a negative shock—tend to do significantly *fewer* acquisitions. This effect is also economically large, around nine percentage points (column 1). That is, while exporting firms *without GPBs* tend to make *more* acquisitions when the dollar is weak, firms with GPBs reduce

their acquisition activity when a weaker USD boosts sales—consistent with substituting away from using M&A deals to meet bonus targets. In column 2, we use the dollar-based ("intensive-margin") measure for GPB and find qualitatively similar findings.[24]

These results help isolate the causal mechanism: firms with GPBs make more acquisitions because managers use M&A to meet growth-based performance targets, but they scale back such activity when exogenous sales shocks—like favorable exchange rate movements—make it easier to reach those targets without acquisitions. Additionally, these tests are difficult to reconcile with any alternative mechanisms that rely on other mechanisms or omitted variables (e.g., mechanisms related to unobserved governance problems or growth opportunities) as we do not see a reason for such omitted variables to also vary with the relative strength of the U.S. dollar compared to other global currencies (and to do so selectively only for the firms that happen to be both exporters and have GPBs).

For example, a natural alternative hypothesis for the baseline results might be that GPB firms have more to gain from acquisitions. However, then we wouldn't expect them to stop making these acquisitions just because sales happened to move in their favor in a particular year from exchange-rate movements—in fact, firms that don't have GPBs but experience such windfalls do the opposite. In the next section, we examine the returns on M&A deals by GPB firms, and the findings are also inconsistent with this alternative hypothesis.

5 Shareholder returns and value consequences

The natural question we next turn to is whether GPB-motivated M&A deals are different from other deals in terms of the consequences for shareholder value.

On the one hand, if these deals are strategically motivated by managerial incentives to meet the growth targets specified in their compensation contracts, we would expect that acquiring shareholders may see lower abnormal returns around these M&A announcements. On the other hand, under an alternative hypothesis, if GPB contracts are optimally awarded to firms that benefit more from growth through mergers, then we might expect GPB firms, on average, to experience higher abnormal returns than other firms when they announce new acquisitions. It is also possible that we wouldn't observe any abnormal returns in either direction. This may be the case even if these deals are good or bad on average, simply because these deals tend not to be that large compared to the acquiring firm's market cap, which in turn means that they may not move the needle on acquirer value enough to be

[24] In untabulated tests, we replace *Exporter* indicator variable with the ratio of exports to sales and find similar results.

statistically significant. To investigate these hypotheses, we estimate the following model:

$$Acquirer\ CAR_d = \alpha + \beta GPB_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \eta_t + \psi_j + \varepsilon_{i,t}, \tag{3}$$

where d indexes M&A deals, i indexes firms, j indexes industries, and t indexes years.

In this analysis, we focus on the sample of all deals where the target is publicly traded.[25] This results in 1,271 deal-level observations. The dependent variable is the acquirer's cumulative abnormal returns (CAR) around the announcement of the deal. We focus on a five-day window around the announcement date, from three days before the announcement to one day after the announcement. The reason for this window is to ensure we can better capture possibly leaked information in the immediate days leading up to the M&A announcement, as well as the stock price reaction immediately afterward.

The main explanatory variable is the fraction of the acquirer's executives that have growth-promoting incentives (*GPB(% of executives)*) (Panel A), or the log dollar amount underlying growth-promoting incentives (*GPB(log $value)*) (Panel B). In addition to the same firm-level control variables as in our previous regression models, we additionally include deal-specific control variables such as the (log) dollar value of the transaction and indicators for cash payment, mixed payment, and within-industry deals. All specifications include industry-fixed effects as well as year-fixed effects.[26] Table 8 reports the results.

Table 8 About Here

In column (1) of Panel A, the coefficient on this variable is negative (-1.186), and statistically significant at the 1% level. This means that firms with GPBs have a little over 1 percentage point lower abnormal announcement returns when they announce an M&A deal compared to firms without GPBs.

Given that the overall acquirer returns in our sample are only marginally positive (0.3%), this also means that the average abnormal return for deals by GPB firms is negative in an absolute sense, implying that these deals destroy value for their shareholders on average.[27]

The results remain similar when we control for additional firm- and deal-level characteristics (models (2), (3) and (4)). In Panel B of Table 8, we use the dollar amount underlying growth-promoting incentives (*GPB(log $value)*) as the independent variable, we find similar

[25] Our results remain unchanged if we also include deals where the target is privately held (see results in Internet Appendix Table A3).

[26] Note that it is challenging to include interacted industry-by-year fixed effects in these regressions because of the limited sample size, which means that many industries will have at most one deal in a particular year.

[27] The unconditional average acquirer returns for firms with GPB is -0.21%, compared to 0.64% for firms without GPB.

results.

5.1 What explains the negative returns?

If GPB firms engage in acquisitions to meet bonus-related performance targets, they may be more willing to overpay for targets to ensure deal completion, and such overpayment could explain the lower acquirer returns. But another (not mutually exclusive) possibility for the lower acquirer returns is that these are just worse deals on the whole because they have lower synergies. Thus, in this section, we will first examine whether GPB-motivated acquirers overpay for targets, and we then study whether the value of synergies tends to be lower for acquiring firms with GPBs.

To investigate possible overpayment, we study whether the premium paid to the target is higher when the acquiring firm's managers have growth-promoting bonuses. We estimate the following regression:

$$\textit{Offer Premium}_d = \alpha + \beta GPB_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \eta_t + \psi_j + \varepsilon_{i,t}, \tag{4}$$

The offer premium is the percent premium paid per share to the target shareholders, as compared to the target's share price 50 trading days before the deal announcement. The sample size is smaller than the total number of mergers in our sample (around 600) because to properly calculate the premium, we require the acquisition to be of an entire publicly traded firm (i.e., we exclude acquisitions of subsidiaries or assets that make up part of a firm). Panel A of Table 9 reports results.

Table 9 About Here

In models (1) and (2) in Panel A, the coefficient on *GPB* is positive and statistically significant at the 10% level. This implies that, on average, firms with GPBs pay larger offer premiums to target shareholders. However, in models (3) and (4), we find that the coefficient loses statistical significance after controlling for additional acquirer characteristics. This makes it difficult to attribute the higher offer premiums to GPBs specifically, although it does suggest there seems to be something about the kinds of firms that have GPBs that also results in higher premiums. In Panel B of Table 9, we instead examine the cumulative abnormal return (CAR) for the target firm as the outcome variable. As for the acquirer CAR, we measure this CAR in a window from three days before the deal announcement to one day after the announcement. Compared to the previous analysis on premiums, we additionally include acquisitions of subsidiaries or assets of public firms, which allows for roughly double the

sample size. Yet, similar to our results in Panel A, even though models (1) and (2) indicate higher target abnormal returns, these results nevertheless become statistically insignificant in models (3) and (4) where we include additional control variables. This means that, overall, we cannot reject the hypothesis that there is no difference in premiums paid for targets in deals by GPB firms vs. deals by firms that do not have these incentives after controlling for other firm characteristics.

A second (non-exclusive) possible explanation for the lower acquirer returns for GPB firms we found in Table 8 is that the deals these firms pursue are simply worse in terms of their potential economic value-added from synergies. This might be the case, for example, if managers with GPBs are motivated to do deals more quickly and thus scrutinize the potential synergies less carefully.

To test this hypothesis, we examine whether the *combined* target and acquirer returns are lower for deals where the acquirer executives have GPB contracts. We compute the combined gain of the acquirer and target by summing up the cumulative dollar abnormal returns of the target and acquirer around the announcement and then dividing by the combined market capitalization of the acquirer and target 50 trading days before the announcement (following, e.g., Ahern (2011)).

TABLE 10 ABOUT HERE

Table 10 reports results from OLS regressions where the dependent variable is the combined announcement returns of the acquirer and target in the [-3,+1]-day window. The main explanatory variable is the fraction of acquirer executives with growth-promoting bonuses (*GPB(% of executives)*). Control variables and fixed effects are the same as in Tables 8 and 9.

We find that the coefficient on *GPB* is positive and statistically significant at the 1% level in models (1) and (2), and it also remains statistically significant in models (3) and (4) where we include additional control variables. In economic terms, acquisitions by GPB firms yield 0.6–0.8 percentage points lower combined abnormal returns compared to acquisitions by non-GPB firms. This finding is consistent with GPB incentives encouraging managers to engage in less efficient "empire-building," which in turn can help explain the value destruction for the acquirer firm.

A possible alternative explanation of our results could be that the negative acquirer and combined returns don't reflect the quality of the deals themselves but rather signal something negative about internal growth opportunities (e.g., Lang et al. (1991)), and further, that this negative signal is stronger for GPB firms. For instance, the acquisition announcement could

signal an acquirer's need to "purchase growth" because its internal growth opportunities are limited. While it is difficult to rule out this possibility fully, our comparisons of firms show that firms with GPBs, if anything, tend to have *higher* market-to-book ratios, which is likely to indicate *more* internal growth opportunities rather than less. Similarly, firms with and without GPBs exhibit similar rates of past sales growth.

In sum, these results show that M&A deals by GPB firms, on average, result in value destruction for the acquiring shareholders, and we primarily attribute this result to lower value creation from merger synergies.

6 The difference that M&A makes to executives

6.1 Counterfactual sales and bonus thresholds

We next study the extent to which conducting M&A makes a measurable difference in whether a firm meets or misses the performance goals, and what difference that in turn makes for the actual bonus payouts to executives.

Executive bonus grants that are tied to quantitative metrics commonly identify three levels of performance: a "threshold" level, a "target" level, and a "maximum" level.[28] The payout from the grant is then tied to how the firm does in relation to these performance levels. In a typical contract, the manager would receive no bonus payout if performance is below the "threshold," and her payout then increases as performance exceeds the threshold all the way up to the maximum level, after which the payout does not change even if the firm does even better than the maximum.

To test whether mergers make the difference between meeting or missing performance goals, we focus specifically on the "threshold" level of performance. The reason is that this is the performance level where we typically see a *discontinuity* in the bonus payout function, which means that this creates a stronger incentive for managers to ensure this number is met. By contrast, the bonus payout is usually continuous around the target level of performance, so there is a lesser incentive for managers to get "just over" the target level; for the maximum performance, there is also no incentive to narrowly beat it, since there is essentially no difference in bonus payouts if a firm hits just above or below the maximum.

Our sample of firms in this analysis is by necessity smaller than in the previous tables, as here we only focus on firms that have GPBs, and where we additionally have detailed in-

[28] The range in performance between the threshold and maximum values is called the "incentive zone." The slope of the relation between performance and bonus payouts is sometimes different between the threshold and target vs. between the target and maximum, and sometimes there are only two levels of performance (e.g., threshold and a combined target/maximum.

formation from IncentiveLab on the bonus thresholds (not every firm systematically discloses these threshold levels).[29]

We start this analysis by comparing the threshold sales in the executive compensation contracts to the firm's reported sales for all firms—not only for those that engage in M&A activities.[30] The data are at the grant level. We next calculate the difference between the *realized* sales from Compustat and the *threshold* sales as identified in the pay contract to see how firms perform relative to the threshold.

In Figure 2, we report the histogram of this difference. We find that the distribution of the difference between realized and threshold sales has a discontinuity at zero. That is, a disproportionately large number of firms exceed the sales threshold by a small amount as compared to the number of firms that fail to meet the sales threshold by a small amount. This happens despite there being a fair amount of noise in the performance measure, as firms sometimes use discretionary "adjustments" to GAAP performance before comparing them to the bonus contracts—although executives may not necessarily know what these adjustments will be in advance. This result is not surprising since executives have a strong reason to "just beat" the threshold performance as this discontinuously affects their bonus payouts. These findings are also consistent with Bennett et al. (2017), who report similar discontinuities in firm performance relative to thresholds specified in bonus contracts.

FIGURE 2 ABOUT HERE

Next, we study how often M&A deals make a difference in whether firms meet or miss these bonus thresholds. On the one hand, M&A deals mechanically increase reported sales, so some firms that would have otherwise missed the performance threshold in their bonus contracts may surpass it due to the acquired sales. On the other hand, the deals associated with GPBs are typically not that large in relation to the acquirer's size, and many firms beat the threshold by a lot, so it remains an empirical question of how common it is that M&A deals actually matter for bonus payouts in practice.

We thus turn to the sample of GPB firms that completed an M&A deal; we include all deals in our sample from SDC, both of target firms that are publicly traded and privately held. For each deal, we look at the first realized sales from Compustat after the completion of each deal and compare this to the performance threshold level for GPBs that was outstanding at the time of the deal. To calculate the difference that M&A deals make, we then estimate a

[29] We also exclude Relative Performance Evaluation (RPE) contracts where the thresholds are set relative to a peer group. Thus, for all the grants in this sample, the exact thresholds are known to the managers at the start of the year as they are either sales levels or sales growth rates.

[30] If the performance metric in the GPB contract is defined as sales growth instead of sales level, we calculate the threshold sales level as the lagged realized sales times one plus the threshold sales growth.

"counterfactual" sales figure by subtracting the target firm's sales (weighted by the fraction of the fiscal year remaining from deal completion) from the realized sales figure. In order to consistently estimate sales for public and private firms, and because SDC often does not report figures beyond the transaction value of a deal, we estimate a target firm's sales for all deals by dividing the transaction value by the median Enterprise-Value-to-sales in each target firm's 2-digit-SIC industry.[31].

Panel A of Figure 3 shows a histogram of the difference between the realized sales and the threshold sales for the firms that complete an M&A deal. In Panel B of Figure 3, we instead show the counterfactual results where we use our estimate of what the realized sales would have been absent the merger.

A comparison of the two histograms in Panel A and Panel B shows that many executives who would have otherwise missed the threshold sales figures in their bonus contracts end up meeting this goal because of the contribution to sales from M&A deals. This shift is visually evident as a redistribution of mass from just below zero in Panel A to just above zero in Panel B, indicating that many firms cross the bonus threshold due to the acquisition. In all, there are 140 firms that, without the acquisition, appear to be fairly close to missing their bonus threshold level (i.e., within 5% of the threshold), and among these firms, 30% end up surpassing their bonus performance threshold as a result of the acquisition. When we expand the sample to include firms that would have missed their threshold by up to 10% without a deal, 23% of them reach their threshold sales due to the acquisition. This result indicates that even though these deals tend to be fairly small, they are meaningful in making an important difference to many firms that otherwise would have missed and, therefore, affect actual bonus payouts to these managers.

FIGURE 3 ABOUT HERE

Finally, in Figure 4, we redo Figure 3 for the sample of firms where the target firm is publicly traded. This reduces the sample size significantly; however, it allows a more accurate estimate of the counterfactual sales in the absence of the deal. This is because—unlike for private target firms—we can use the actual pre-merger target sales reported in Compustat before the deal completion to estimate the counterfactual sales. As illustrated in Figure 4, 47% of firms that would have narrowly missed their threshold sales in the absence of an acquisition ultimately met their bonus threshold due to the acquisition.

FIGURE 4 ABOUT HERE

[31]The median Enterprise-Value-to-sales ratio is calculated using all firms in CRSP-Compustat.

6.2 Quantifying the net gains to executives

The previous section showed that M&A deals can make a meaningful difference between meeting or missing bonus-related performance thresholds. We now will quantify the overall dollar gains to executives from making acquisitions when they have GPBs—that is, how much less executives would have been paid had they not made these acquisitions.

We do so by comparing executives' realized bonus payouts from GPB contracts to the counterfactual payouts had they not made these acquisitions. We focus on the sample of firms that have outstanding GPBs when they do an M&A deal, including acquisitions of both publicly traded and privately-held target firms. We then use the same method of calculating realized and counterfactual sales as we described in the previous section. We then combine this data with the bonus payouts described in the bonus contracts in IncentiveLab data, i.e., the different bonus payouts at the threshold, target, and maximum performance levels.[32] Some grants have a payout in the form of equity instead of cash, in which case we estimate the cash equivalent of the grant using the grant-date stock price. This methodology thus allows us to estimate actual bonus payouts, as well as the counterfactual bonuses had the merger not taken place, at the level of each grant. We then aggregate across grants for each executive in each year of our sample (in the case an executive has more than one grant that depends on sales). Overall, this provides us with a realized and counterfactual payout for each executive-year observation.

In Panel A of Table 11, we report the difference between the realized and counterfactual payouts from GPB contracts for each executive-year observation.[33] We also report the difference in these payouts when we aggregate at the firm-year level aggregate across all executives, thus indicating how much more the top executives of a firm collectively receive from their GPB contracts due to acquisitions.

We find that an individual executive receives around $82,000 more from their GPB contract when making an acquisition; or collectively, $335,136 across all named executives for whom we can estimate these figures. These findings are statistically significant at the 1% level. This average outcome includes those cases where the merger makes no difference to bonuses, e.g., if sales are already above the maximum performance level even absent the merger, or if realized sales were below the threshold level even with the merger.

Table 11 About Here

[32] We use interpolation to estimate the payout for each grant if sales are between the threshold and the maximum value indicated in the contract (i.e., if sales lie within the "incentive zone"). We estimate two different slopes—one for sales below target sales and one for sales above target sales.

[33] The sample size in our analysis in Table 11 is smaller than our previous analyses because only a subsample of these firms discloses the bonus threshold, target, and maximum value for each grant.

In Panel B of Table 11, we repeat the analysis in Panel A, restricting the sample of deals to only those that involve publicly traded targets. Even though this restriction reduces the sample size significantly (as is also the case in Figure 4), it nevertheless allows for a more accurate estimate of the acquirer's counterfactual sales, and consequently the counterfactual bonus payout. Here, partly because these targets tend to be large, we find an average increase of $211,747 in an executive's GPB payout as a result of making an acquisition. This result is also statistically significant, albeit only at the 10% level, which is likely to be a result of having a much smaller sample due to only including publicly-traded targets. These results indicate that making an acquisition in the presence of a GPB increases the value of bonus and total compensation for executives by about 22.1% and 3.9%.

Because acquisitions by firms with GPBs, on average, tend to result in negative acquirer returns, and executives own equity, there is also a personal cost in making such value-destroying acquisitions. What matters then is the net effect on executives' wealth.

To estimate the impact on executives' equity ownership in the firm, we multiply each executive's *delta*—i.e., the sensitivity of their wealth to a percent change in firm value (Coles et al. 2006)—by the abnormal announcement returns around each acquisition announcement.[34] These estimates show that executives, on average, lose $5,526 when we consider acquisitions of both public and private targets, or $17,827 when we consider only public targets.[35] It is not surprising that the losses are limited in magnitude, given that the negative acquirer announcement returns are not very large. Nevertheless, this means that the gains to executives from GPB payouts that are triggered as a result of making acquisitions far exceed the losses to their equity portfolios as a result of the (value-destroying) acquisitions. The fact that executives gain on average does not mean that there are not some executives who lose; yet, we find that 79% of managers had gains from their GPBs that outweigh any losses in their equity holdings. In sum, despite negative announcement returns, executives still have a net monetary incentive to conduct deals that help them meet the sales-based performance thresholds in their bonus contracts.[36] These findings are consistent with Harford

[34]We thank Lalitha Naveen for publishing the code that we use for the calculation of delta.

[35]Because we compare these figures to the gains from growth-promoting bonuses, this estimation is also conducted using only the subsample of acquirers with GPB contracts that disclose the bonus threshold, target, and maximum value for each grant. In this subsample, the average executives' total delta is $349,552, and the average acquirer CAR is -0.05%, resulting in a loss of $17,827.

[36]In addition to direct bonus incentives, executives may also be motivated by career concerns. Prior research suggests that missing performance targets increases the risk of forced turnover. This, of course, only further strengthens executives' incentives to meet these performance goals. To quantify this effect, we use an estimate by Bennett et al. (2017) that missing a performance goal is associated with an increase of 1.5% in the likelihood of forced turnover. We then compute the present value of the expected future compensation for each executive who would have missed their GPB threshold were it not for an acquisition (N=260). We assume that executives would have remained in their job for the average remaining tenure, calculated based on other executives in Execucomp, given their current tenure; that is, if an executive is in his fifth year on the job, we calculate the average tenure for all executives who made it to year five and

and Li (2007) who also find that acquiring CEOs can often benefit even in mergers where shareholders are worse off.

6.3 Alternative approach: Effects on non-equity incentive compensation

One limitation of our analysis in the previous section is that not all firms disclose the bonus threshold, target, and maximum performance levels for each grant, which means that this analysis can only be conducted for a more limited sample of firms. As an alternative method for estimating the difference that mergers make to performance payouts, we estimate a model that predicts the non-equity incentive pay awarded to a firm's top executives using data from Execucomp. This allows us to include essentially the full set of firms in our sample, regardless of whether they disclose the exact performance levels for bonus payouts.

To do so, we test if firms that award GPBs pay their executives more in non-equity incentive bonuses, especially in years when they do more M&A deals. To this end, we estimate the following model:

$$\begin{aligned} \$\textit{Non-equity incentives}_{i,t} = \alpha + \beta_1 GPB_{i,t} + \beta_2 M\&A\ \textit{value}_{i,t} \\ + \beta_3 GPB_{i,t} \times M\&A\ \textit{value}_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \nu_{j,t} + \varepsilon_{i,t}, \end{aligned} \tag{5}$$

The dependent variable is equal to the natural logarithm of (one plus) the value of non-equity incentive pay granted to the named executive officers of firm i in year t. Our measures for *GPB* are the same as before, namely the % of executives with GPB or the log dollar value of GPBs. *M&A value* is the total transaction value of acquisitions made in a given year, normalized by the sum of the acquiring firm's start-of-year market capitalization and the sum of the transaction values in that year. Our main variable of interest is the interaction between *GPB* and *M&A value*, which captures whether non-equity incentive pay changes differentially for GPB firms vs non-GPB firms in years when a company makes more acquisitions. We include the same firm-level control variables as in our previous regressions, as well as industry-by-year fixed effects. Table 12 reports the results.

subtract five from that number to estimate the expected remaining years. Then, using each executive's total compensation and remaining tenure in the year of the acquisition and a discount rate of 10%, we estimate an average present-value loss of $20.5 million in earnings if an executive is fired (this is a high estimate as it assumes the executive finds no other job afterward). We then multiply this figure by the Bennett et al. (2017) estimate of a 1.5% increase in the likelihood of forced turnover to obtain an expected loss of around $300,000 for executives had they not engaged in an acquisition and missed the GPB goal as a result. To put this estimate in perspective, in this subsample as reported in Panel C of Table 11, the incremental monetary gain from executives' GPBs as a results of dong M&A is around $740,000.

TABLE 12 ABOUT HERE

The results in Table 12 show that executives in firms with GPBs tend to receive higher non-equity incentive compensation, especially in years when they do more mergers. This is consistent with our hypothesis that mergers help raise performance-related bonuses for firms that have growth-promoting bonuses.

Even though this analysis has the advantage of a larger sample—unlike our analysis in Table 11 in the previous section—it is less precise as it uses less granular compensation data to estimate bonuses, which thus also includes performance-related bonuses that are not explicitly tied to the firm's size. Furthermore, the outcome variable also misses a part of GPB, as it does not include bonuses based on performance-based stocks (PSUs); this is because Compustat data does not allow us to cleanly separate performance-vested stock from time-vested stock. Still, this analysis lends further credibility and robustness to our analysis from the previous section, supporting the hypothesis that M&A deals can make a meaningful difference in raising executives' pay when they have incentives based on firm size.

This analysis also helps address a possible concern that firms may actually be adjusting the realized performance figures for mergers ex-post (i.e., subtracting the sales of the acquired firms when calculating whether an executive has met the performance goal), even if they don't say they will do so ex-ante. If that were true, then we shouldn't see higher non-equity incentive pay for GPB firms in years when they do mergers. We have also explicitly read through the descriptions of how bonuses were determined ex-post for a sample of firms that have done mergers, and in no case have we seen that firms actually have subtracted the "acquired" sales—yet we have seen cases where firms that also have performance goals tied to both EBITDA and sales that they have added to the realized EBITDA to compensate for merger integration costs while at the same time not accounting for the added realized sales.

In sum, this analysis provides further support to the notion that there are significant monetary incentives for executives with GPBs to grow their firms by making acquisitions.

7 Changes to growth-promoting bonus contracts following good and bad acquisitions

Since GPBs are associated with value-destroying acquisitions, an important question arises: why do boards award these contracts in the first place, and do they revise such incentives in response to acquisition outcomes? To shed light on these questions, we study whether firms are more likely to introduce GPB contracts after positive experiences with

mergers that enhance shareholder value and whether firms cease granting additional GPB contracts following mergers that erode shareholder value.

Panel A of Table 13 presents estimates from linear probability models analyzing the likelihood that an acquirer, which previously did not grant GPB contracts to any of its NEOs, introduces GPB contracts in the year following an acquisition, depending on the success of that deal. This analysis encompasses all deals, including acquisitions of both publicly traded and privately held targets. The model is as follows:

$$\textit{Introduce GPB}_{i,t+1} = \alpha + \beta \cdot \textit{Positive M\&A return}_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \nu_{j,t} + \varepsilon_{i,t}, \tag{6}$$

In column (1), the key independent variable, *Positive M&A return* is represented using the measure (*fraction of positive acquirer CAR*), which is calculated as the fraction of an acquirer's deals in the year t that had a positive CAR (in the [-3,+1]-day window around announcement). In models (2) and (3), we replace this variable with binary indicators: one that equals one if an acquirer conducts at least one M&A transaction with a positive CAR[-3,+1] in a year (*any positive acquirer CAR*) and another that equals one if an acquirer completes at least one M&A transaction with a negative CAR[-3,+1] in a year (*any negative acquirer CAR*), respectively. All models incorporate firm-specific control variables that may influence the board's decision to grant GPB contracts to executives, including CEO compensation delta, CEO-chairman duality, CEO tenure, board size, and the proportion of co-opted board members. Additionally, all specifications include industry-by-year fixed effects.

TABLE 13 ABOUT HERE

In model (1) in Panel A, we find that the coefficient on the *fraction of positive acquirer CAR* is positive and statistically significant at the 5% level, indicating that value-enhancing acquisitions increase the likelihood of firms adopting GPB contracts in the subsequent year. Similarly, in model (2), the coefficient on *any positive acquirer CAR* is positive and statistically significant at the 10% level, suggesting that conducting an M&A transaction with a positive CAR is associated with a 3.5 percentage point increase in the probability of introducing GPB contracts in the following year. The coefficient on *any negative acquirer CAR* in model (3) is statistically significant at the 5% level, suggesting that firms engaging in at least one M&A transaction with a negative CAR are less likely to introduce GPB contracts post-acquisition.

We next examine the converse question, namely whether firms that have GPB incentives are more likely to remove these incentives after they experience negative abnormal

returns around their M&A deals. To analyze this question, we estimate the following model:

$$Remove\ GPB_{i,t+1} = \alpha + \beta \cdot Negative\ M\&A\ return_{i,t} + \eta' \cdot \mathbf{X}_{i,t} + \nu_{j,t} + \varepsilon_{i,t}, \tag{7}$$

Panel B of Table 13 shows no significant relationship between acquirer CARs and the likelihood of discontinuing GPB contracts in the following year. Specifically, neither positive nor negative CAR from M&A transactions affects the probability of ceasing GPB grants among firms that had already awarded at least one NEO a GPB contract in the year of the acquisition.

On the one hand, our findings suggest that firms are more likely to introduce GPB contracts following M&A transactions that generate positive acquirer returns. Yet, on the other hand, they do not discontinue GPB contracts following M&A transactions that yield negative acquirer returns. These results align with Schoar and Washington (2011), who document that firms are more likely to implement governance measures that may not align with shareholder interests during periods of abnormally strong performance. These findings suggest that boards and shareholders may be inattentive to incentive misalignment in times when firm performance is strong.

8 Conclusion

Tying executive pay to specific measures of company performance has long been a central tenet of contract theory. However, depending on the choice of metric(s), this type of pay can have unintended consequences, for example, if executives manipulate these metrics or if they sacrifice other important dimensions of performance (e.g., Holmstrom and Milgrom 1991). Our research demonstrates that when firms tie bonus pay to growth-based metrics, executives are more likely to pursue acquisitions. These acquisitions often trigger payouts of these bonuses even as they, on average, destroy value for shareholders.

We conduct several additional tests to support a causal mechanism behind these results. One of these tests leverages shocks to sales caused by plausibly exogenous variations in the strength of the U.S. dollar against other currencies. Specifically, when the U.S. dollar suddenly weakens, it mechanically makes it easier for the exporting firms that have GPBs to meet their pre-determined sales targets to earn the bonus, thus reducing the incentive for these firms to rely on acquisitions to meet their targets. Consistent with firms using acquisitions to meet the sales-based bonus target, we use a triple-difference framework to show that exporting firms with GPBs stop doing more M&A in these times when the dollar

suddenly weakens (relative to exporting firms that do not have GPBs).

Also consistent with a causal mechanism, we find that the "additional" acquisitions by GPB firms are typically of a size that helps executives meet the bonus size threshold, and these acquisitions are often the difference between just meeting versus just missing the size threshold. Our findings further indicate that executives gain substantial net financial benefits from bonus payouts linked to M&A activity; specifically, the value of these bonuses significantly exceeds the losses executives face in their equity portfolios due to negative announcement returns.

The tendency for executives to pursue value-destroying acquisitions at the expense of shareholders is often associated with empire-building preferences, such as the desire for greater future benefits and perks that come with managing a larger firm. This paper provides evidence that growth-promoting bonuses serve as another motivating factor for such acquisitions and may serve as an even more direct link between personal incentives and merger activity. Given an increasing reliance on performance-based compensation that reward achieving various quantitative goals, it is crucial for boards and shareholders to closely examine the potential unintended consequences of focusing on a limited number of easily manipulated performance measures.

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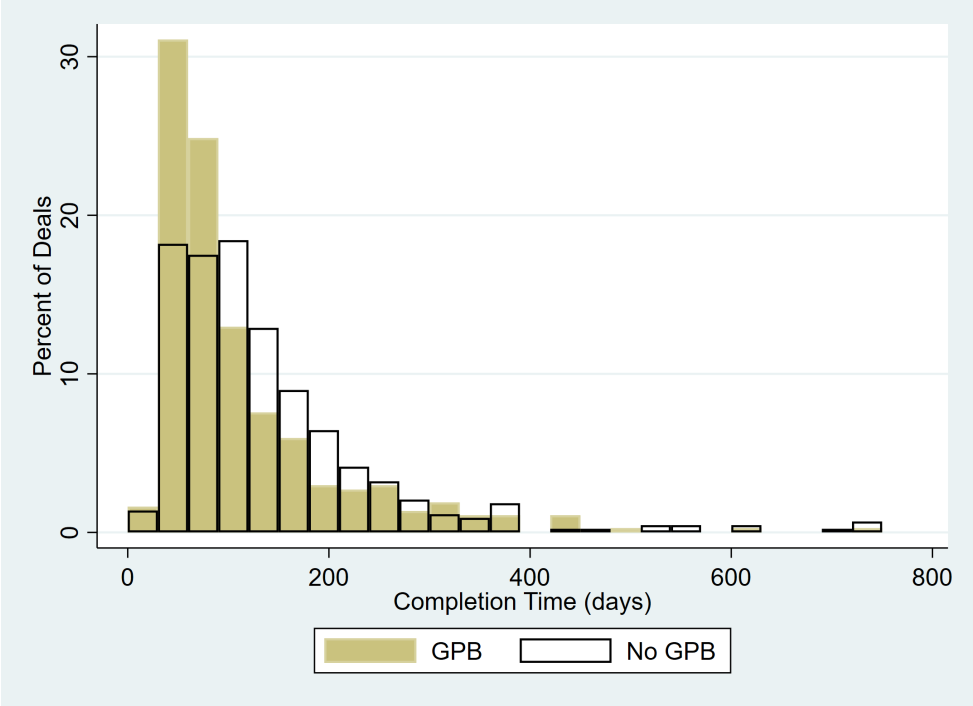


Figure 1: Distribution of the time between announcement and completion for deals with and without GPBs

This figure shows the distribution of completion time—the time between announcement and completion of acquisitions—for completed deals announced by firms (both those with and without GPBs) and where the target is a publicly listed firm, measured in days. The bin size is 30 days.

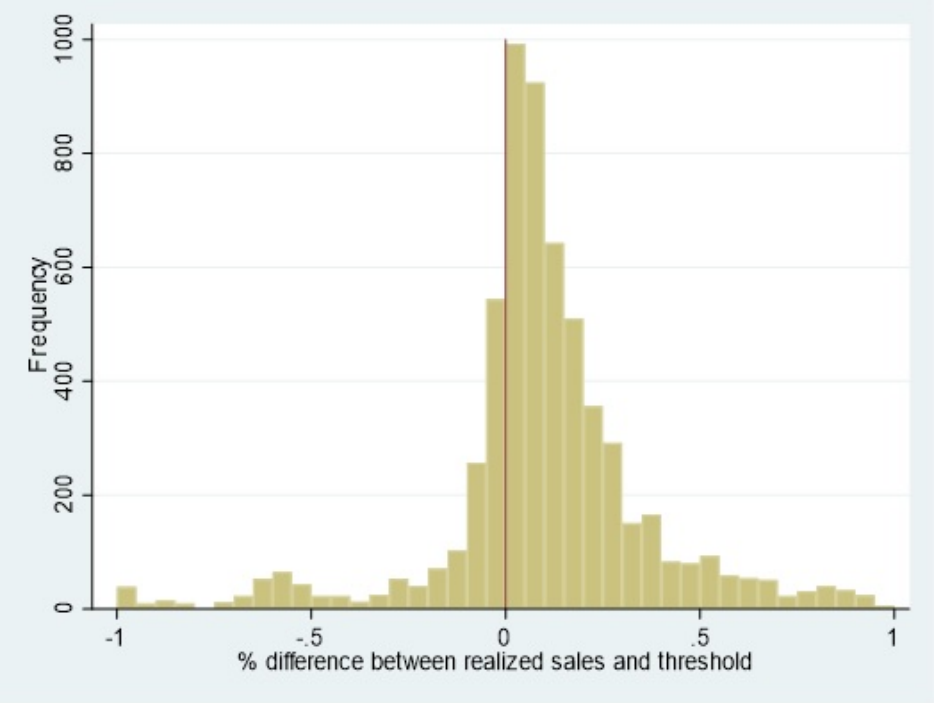
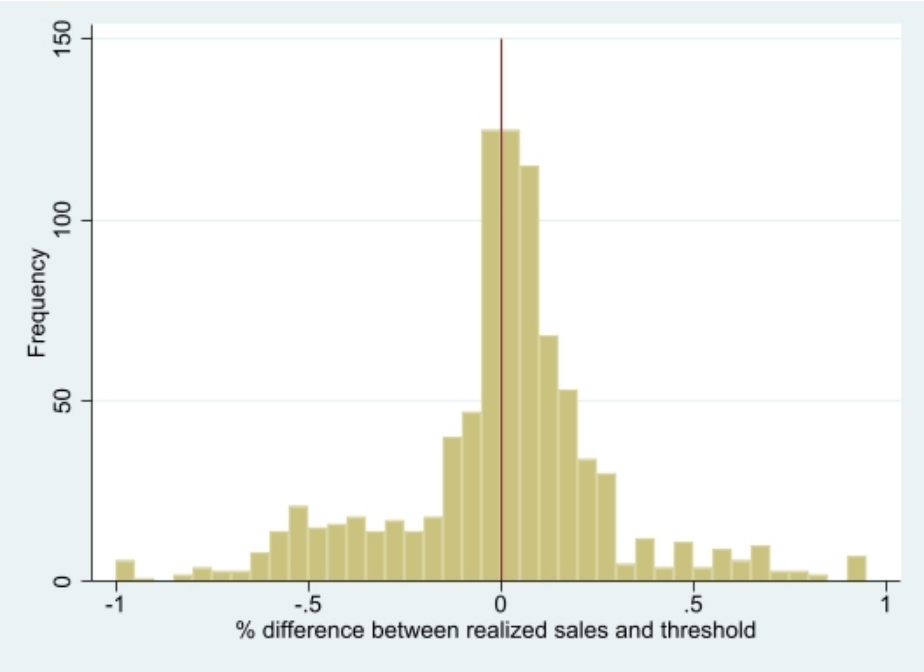
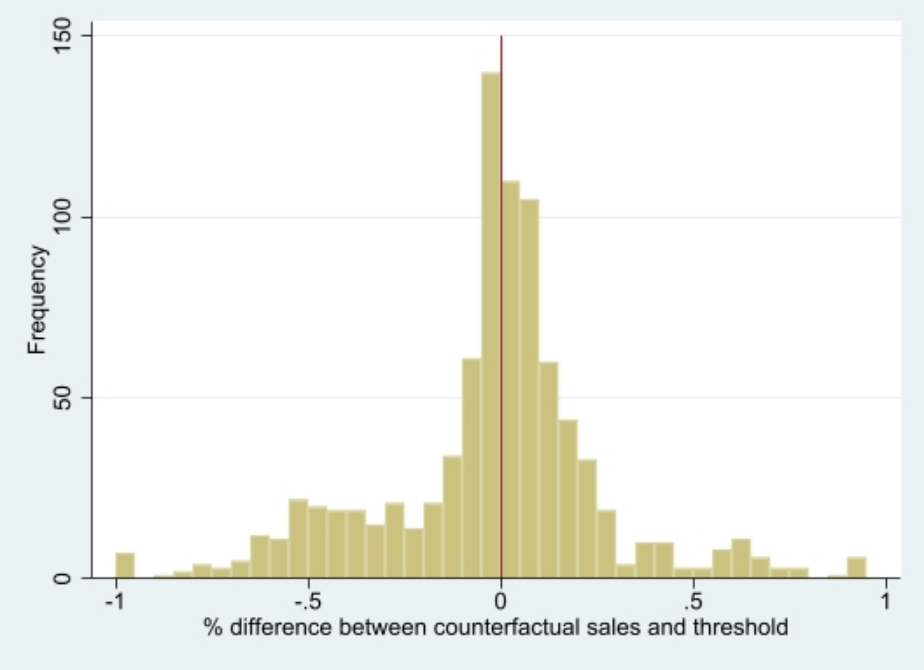


Figure 2: Distribution of the difference between realized sales and bonus thresholds for all firms with GPB contracts

This figure shows the distribution of the relative difference in percentages between Compustat-reported sales and threshold goals specified in GPB contracts, across all firms (not limited to firms doing M&A).



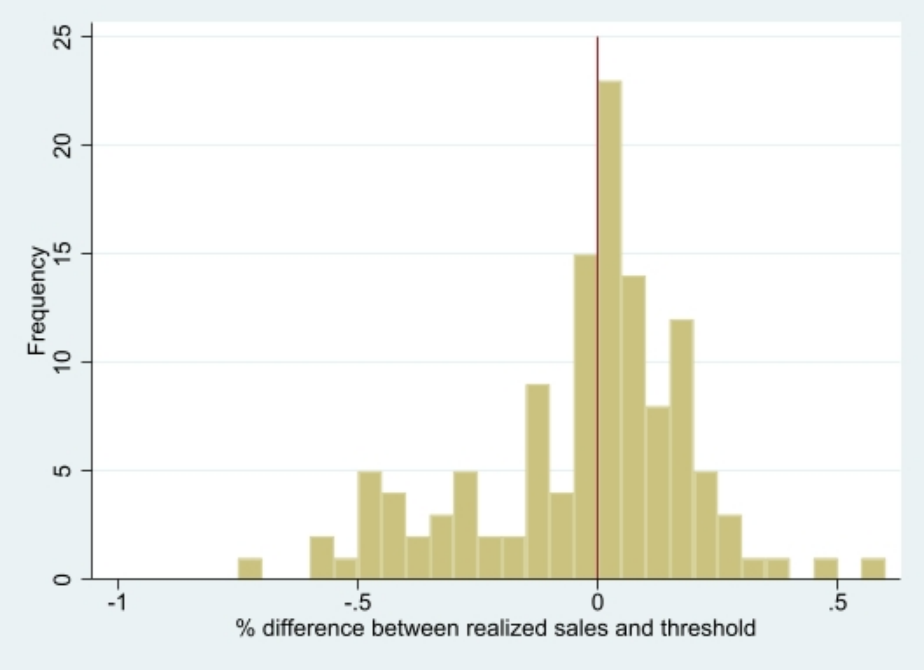
Panel A: Actual sales



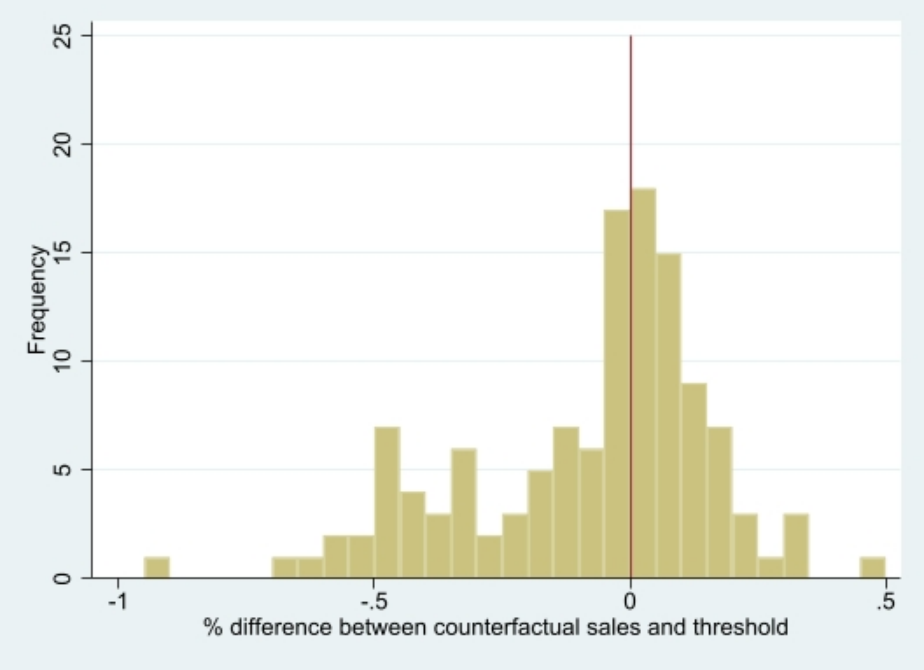
Panel B: Counterfactual sales

Figure 3: Actual vs. counterfactual distributions of the difference between realized sales and bonus thresholds for acquirers with GPB: Deal-level analysis

Panel A shows the distribution of the relative difference in percentages between actual sales as reported in Compustat and the threshold goals as identified in the pay contracts, for the sample of firms that completed an M&A deal. The observations are at the deal level. To calculate the difference around each deal, we use the first realized sales after the completion of the deal reported by Compustat. Panel B shows the distribution of the relative difference in percentages between counterfactual sales (i.e., the estimate of what sales would have been in the absence of the merger) and the threshold sales in the contracts, for the sample of firms that completed an M&A. To estimate the counterfactual sales of the acquirer, we subtract the weighted target's sales (weighted by the fraction of the fiscal year remaining from the deal completion date) from the first realized sales after deal completion. We estimate the target's sales by using the median Enterprise Value (EV) to sales multiple for the target firm's 2-digit SIC industry multiplied by the EV of the target firm.



Panel A: Actual sales



Panel B: Counterfactual sales

Figure 4: Actual vs. counterfactual distributions of the difference between realized sales and bonus thresholds for acquirers with GPB—only public targets

Panel A shows the distribution of the relative difference in percentages between actual sales as reported in Compustat and the threshold goals as identified in the pay contracts for the sample of firms that completed an M&A deal with a publicly traded target. To calculate the difference for every firm, we use the first realized sales after the completion of the deal reported by Compustat. Panel B shows the distribution of the relative difference in percentages between counterfactual sales (i.e., the estimate of what sales would have been in the absence of the merger) and the threshold sales in the contracts for the sample of firms that completed an M&A with a publicly traded target. To estimate the counterfactual sales of the acquirer, we subtract the weighted target's sales (weighted by the fraction of the fiscal year remaining from the deal completion date) from the first realized sales after deal completion. We estimate the target's sales as the actual pre-merger target sales reported in Compustat before the deal completion.

Table 1
Growth-promoting Bonuses: Descriptive statistics

This table reports summary statistics for growth-promoting bonus grants (GPB). The sample consists of IncentiveLab firms for the period between 2007 and 2017 for which data are available in Compustat and CRSP. GPB grants are defined as grants whose payment is made contingent upon meeting a threshold in one of the following metrics: sales, market share, bookings, production, book value, net asset value, or acquisitions. Panel A reports the prevalence of GPB in IncentiveLab at the grant level. Panel B reports the types of metrics and their prevalence that we classify as growth-promoting. Panel C reports the prevalence and value underlying GPB contracts aggregated at the firm-year level across each firm's top-5 executives. *GPB (% of executives)* is the fraction of executives who receive growth-promoting bonuses in that year. *GPB (CEO)* and *GPB (CFO)* are indicator variables equal to one if the CEO and the CFO receive GPB, respectively. *GPB ($value, all execs)* is the dollar value of the growth-promoting bonuses granted to the executives in that year. *GPB ($value, CEO)* and *GPB ($value, CFO)* is the dollar value of the GPB granted to the CEO and the CFO, respectively. We also separately report statistics for the 6,371 firm-year observations where at least one of the firm's executives has a GPB. Panel D reports descriptive statistics on the prevalence of "other" (i.e., not explicitly growth-dependent) measures in the bonus contracts.

Panel A: Prevalence of Growth-promoting bonuses (GPB) – Grant-level

	N	% of all grants	% of all firms
Total number of grants	159,178		
Number of grants with GPB	33,837	21 %	
Total number of unique firms	1,403		
Number of unique firms with GPB	909		65%

Panel B: GPB metrics

	Number of grants	% of all GPB grants	Number of unique firms
Sales	32,753	96.8%	862
Market share	574	1.7%	51
Production	309	0.9%	19
Bookings	236	0.7%	27
(Adjusted) Book value	140	0.4%	11
Acquisitions	126	0.4%	17
Net asset value	72	0.2%	7

Panel C: Prevalence of Growth-promoting bonuses (GPB) – Firm-year level

	Mean	SD	p1	p25	Median	p75	p99	N
GPB (% of executives)	0.34	0.45	0	0	0	1	1	15,863
GPB (CEO)	0.33	0.47	0	0	0	1	1	15,863
GPB (CFO)	0.32	0.46	0	0	0	1	1	15,863
GPB ($value '000, all execs)	1,299	3,654	0	0	0	821	21,300	15,863
GPB ($value '000, CEO)	553	1,682	0	0	0	263	9,555	15,863
GPB ($value '000, CFO)	150	426	0	0	0	86	2,465	15,863
GPB ($value '000, all execs) $\| GPB > 0$	3,236	5,194	11	492	1,231	3,357	27,000	6,371
Months until vesting $\| GPB > 0$	11	6	0	6	11	14	28	6,371

Panel D: Other metrics used in quantitative bonus contracts

	Mean	SD	p1	p25	Median	p75	p99	N
Number of unique metrics in grant	6.64	5.16	0	3.08	5.25	8.17	26.92	15,863
Stock price metric (% of execs)	0.13	0.32	0	0	0	0	1	15,863
Earnings metric (% of execs)	0.7	0.43	0	0.08	1	1	1	15,863
EPS metric (% of execs)	0.41	0.47	0	0	0	1	1	15,863
Operating metric (% of execs)	0.14	0.32	0	0	0	0	1	15,863

Table 2
M&A Activity: Descriptive statistics

This table reports descriptive statistics for the M&A deals in our sample. Panel A reports descriptive statistics for the firm-year observations on the incidence of acquisition announcements by the sample firms. Data on acquisitions is obtained from SDC and includes any deal with a disclosed value that is either completed or withdrawn. Panel B reports descriptive statistics on characteristics of acquisitions/deals announced by firms in our sample. Panel C reports descriptive statistics only for acquisitions of targets that are either publicly listed or are subsidiaries of publicly listed firms. All variables are defined in the Appendix.

Panel A: Likelihood of deals								
	Mean	SD	p1	p25	Median	p75	p99	N
Any deal	0.21	0.41	0	0	0	0	1	15,863
# Deals (firm-year)	0.3	0.65	0	0	0	0	3	15,863
Any public target deal	0.07	0.26	0	0	0	0	1	15,863
Panel B: Deal characteristics								
	Mean	SD	p1	p25	Median	p75	p99	N
Relative target size	0.06	0.11	0	0	0.02	0.07	0.56	4,989
Acquirer CAR[-3,+1] (%)	0.33	4.09	-9.82	-1.82	0.2	2.36	10.94	4,989
Target CAR[-3,+1] (%)	16.12	22.87	-8.49	0.17	5.91	26.75	91.59	1,343
Combined gains(%)	1.39	4.53	-7.73	-1.06	0.71	3	15.19	1,343
Offer premium (%)	43	31	-6	24	38	55	141	620
Cash deal	0.53	0.5	0	0	1	1	1	4,989
Stock deal	0.04	0.2	0	0	0	0	1	4,989
Mixed deal	0.43	0.49	0	0	0	1	1	4,989
Merger	0.38	0.49	0	0	0	1	1	4,989
Acquisition of assets	0.62	0.49	0	0	1	1	1	4,989
Public target	0.27	0.44	0	0	0	1	1	4,989
Panel C: Deal characteristics—only public targets								
	Mean	SD	p1	p25	Median	p75	p99	N
Relative target size	0.12	0.16	0	0.01	0.04	0.16	0.6	1,343
Acquirer CAR[-3,+1] (%)	0.28	4.64	-9.82	-2.19	0.07	2.59	10.94	1,343
Target CAR[-3,+1] (%)	16.12	22.87	-8.49	0.17	5.91	26.75	91.59	1,343
Combined gains (%)	1.39	4.53	-7.73	-1.06	0.71	3	15.19	1,343
Offer premium (%)	42.87	30.87	-6.11	24	38.04	54.58	141.21	620
Cash deal	0.56	0.5	0	0	1	1	1	1,343
Stock deal	0.06	0.24	0	0	0	0	1	1,343
Mixed deal	0.37	0.48	0	0	0	1	1	1,343

Table 3
Incentives to Grow and Merger Activity

The sample consists of 15797 firm-year observations from 2007 to 2017. The sample is reduced to 13597 and 11678 firm-year observations when adding governance and firm-specific control variables, respectively. All specifications are linear probability models and include interacted 2-digit SIC industry and year-fixed effects. The dependent variable in all specifications is *Any Deal*, which indicates whether the firm is an acquirer in that year. Model (2) includes governance control variables. Models (3) and (4) include additional firm-specific control variables. In Panel A, the main independent variable is growth-promoting bonuses (*GPB (% of executives)*), which is defined as the share of a firm's top-5 executives that have growth-promoting bonuses in a given year. In Panel B, the main independent variable is the logarithm of the dollar value of the growth-promoting bonuses granted to the executives in that year (*GPB (log $value)*). *Earnings incentives (% of executives)* is the fraction of executives who receive bonuses with earnings-based metrics. *Earnings incentives (log $value)* is the logarithm of the sum of the dollar value of the executives' bonuses tied to earnings-based metrics. CEO delta is the log $value of the CEO delta. All variables are defined in the Appendix. The t-statistics are based on robust standard errors clustered at the firm level and are reported in brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A				
	(1)	(2)	(3)	(4)
GPB (% of executives)	0.051***	0.044***	0.043***	0.044***
	[4.78]	[4.00]	[3.66]	[3.77]
Earnings incentives (% of executives)				-0.009
				[-0.76]
CEO delta		0.027***	0.017***	0.017***
		(7.11)	(4.35)	(4.31)
CEO-chairman duality		0.002	-0.004	-0.004
		(0.22)	(-0.41)	(-0.40)
Co-opted board		-0.007	-0.002	-0.001
		(-0.33)	(-0.09)	(-0.04)
CEO tenure		-0.024***	-0.016	-0.017*
		(-2.69)	(-1.63)	(-1.67)
Board size		0.089***	0.003	0.004
		(3.87)	(0.12)	(0.14)
Industry Q			-0.096	-0.096
			(-1.54)	(-1.54)
Cash/assets			-0.019	-0.021
			(-0.47)	(-0.52)
OIBDA/assets			0.189***	0.190***
			(3.18)	(3.19)
Capex/assets			-0.409***	-0.413***
			(-2.78)	(-2.80)
Firm size			0.035***	0.036***
			(6.69)	(6.74)
Firm age			-0.021**	-0.021**
			(-2.34)	(-2.37)
Industry × Year FE	Yes	Yes	Yes	Yes
N	15797	13597	11678	11678
Adjusted-R^2	18.8%	19.2%	21.0%	21.0%

Table 3 continued...

Panel B				
	(1)	(2)	(3)	(4)
GPB (log $value)	0.004***	0.003***	0.003***	0.003***
	[5.33]	[4.22]	[3.54]	[3.56]
Earnings incentives (log $value)				-0.000
				[-0.01]
CEO delta		0.027***	0.017***	0.017***
		(7.11)	(4.34)	(4.35)
CEO-chairman duality		0.002	-0.004	-0.004
		(0.23)	(-0.38)	(-0.38)
Co-opted board		-0.006	-0.002	-0.002
		(-0.32)	(-0.08)	(-0.08)
CEO tenure		-0.024***	-0.017*	-0.017
		(-2.69)	(-1.65)	(-1.65)
Board size		0.087***	0.002	0.002
		(3.77)	(0.08)	(0.08)
Industry Q			-0.095	-0.095
			(-1.54)	(-1.54)
Cash/assets			-0.020	-0.020
			(-0.50)	(-0.50)
OIBDA/assets			0.192***	0.192***
			(3.23)	(3.22)
Capex/assets			-0.408***	-0.408***
			(-2.77)	(-2.77)
Firm size			0.035***	0.035***
			(6.63)	(6.62)
Firm age			-0.021**	-0.021**
			(-2.35)	(-2.35)
Industry × Year FE	Yes	Yes	Yes	Yes
N	15797	13597	11678	11678
Adjusted-R^2	18.9%	19.2%	21.0%	21.0%

Table 4
Incentives to Grow and Deal Types

The sample consists of 11678 firm-year observations from 2007 to 2017. All specifications are linear probability models and include interacted 2-digit SIC industry and year-fixed effects. All specifications include the following governance and firm-specific control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, the extent that the board is co-opted, firm size and age, cash/assets, capex/assets, OIBDA/assets and industry Tobin's Q. The main independent variable is growth-promoting bonuses (*GPB (% of executives)*) measured as the fraction of executives who receive growth-promoting bonuses in that year. In Panel A, the dependent variable is an indicator variable that specifies whether a firm is an acquirer of a target firm that is in the specific relative size bracket (e.g., *Deal (1-2 pct)* equals one if the firm acquires a target firm that its market capitalization is within 1 to 2 % of the sum of the market capitalizations of the bidder and the target). In Panel B, *Cash deal* (*Stock deal*, *Mixed deal*) is an indicator variable that equals one if the deal is paid with cash (stock, combination of cash and stocks). *Within-ind* (*Across-ind*) is an indicator variable that equals one if the target and the acquirer are (not) from the same 2-digit SIC industry. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A: Relative size ((target/(target+acquirer))					
Dependent variable	Deal (< 1 pct)	Deal (1–2 pct)	Deal (2–5 pct)	Deal (5–10 pct)	Deal (10–25 pct)
	(1)	(2)	(3)	(4)	(5)
GPB (% of executives)	0.018**	0.018**	0.005	0.005	0.005
	[2.25]	[2.86]	[0.97]	[1.10]	[1.14]
Governance controls	Yes	Yes	Yes	Yes	Yes
Company controls	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
N	11678	11678	11678	11678	11678
Adjusted-R^2	15.5%	9.7%	9.0%	7.2%	8.4%
Panel B: Deal characteristics					
Dependent variable	Cash deal	Mixed deal	Stock deal	Within-ind	Across-ind
	(1)	(2)	(3)	(4)	(5)
GPB (% of executives)	0.028***	0.019**	-0.001	0.028***	0.015
	[2.72]	[2.29]	[-0.45]	[2.83]	[1.62]
Governance controls	Yes	Yes	Yes	Yes	Yes
Company controls	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
N	11678	11678	11678	11678	11678
Adjusted-R^2	15.7%	13.5%	0.07%	15.2%	15.2%

Table 5
The Role of Corporate Governance and Cash Holdings

The sample consists of 13597 firm-year observations from 2007 to 2017, which reduces to 11678 firm-year observations when adding firm-specific control variables. All specifications are linear probability models and include interacted 2-digit SIC industry and year-fixed effects. The dependent variable Panel A is *Any Deal*, which indicates whether the firm is an acquirer in that year. In Panel B, the dependent variables in models (2) and (3) are *Stock deal* and *Cash deal*, which are indicator variables that equal one if the firm does a deal that is paid with stock or cash, respectively. Growth-promoting bonuses (*GPB (% of executives)*) are measured as the fraction of executives of the firm who receive growth-promoting bonuses in that year. In Panel A, *CEO-chair duality* is an indicator variable that equals one if the CEO is also the chairman of the board. In Panel B, *Cash/assets* is the lagged cash to assets ratio. The specifications include the following governance and firm-specific control variables as indicated: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, the extent to which the board is co-opted, firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A: The role of governance		
Dependent variable:	Any deal	Any deal
	(1)	(2)
GPB (% of executives)	0.022	0.018
	[1.56]	[1.24]
GPB (% of executives) × CEO-chairman duality	0.048**	0.052**
	[2.43]	[2.53]
Governance controls	Yes	Yes
Company controls	No	Yes
Industry × Year FE	Yes	Yes
N	13597	11678
Adjusted-R^2	19.3%	21.1%

Panel B: The role of cash			
Dependent variable:	Any deal	Stock deal	Cash deal
	(1)	(2)	(3)
GPB (% of executives)	0.019	-0.001	0.003
	[1.21]	[-0.25]	[0.20]
GPB (% of executives) × Cash/assets	0.161**	-0.002	0.169***
	[2.27]	[-0.16]	[2.78]
Governance controls	Yes	Yes	Yes
Company controls	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
N	11678	11678	11678
Adjusted-R^2	21.1%	7.0%	15.8%

Table 6
Comparison of Firm Characteristics for Firms with and without GPB

This table reports summary statistics for firm characteristics. "with (without) GPB" indicates firms that do (not) grant GPB contracts to at least one of their executives in that year. The two latter columns report differences in these variables, both the raw difference and the difference *within* industry and year. All variables are defined in the Appendix. The sample consists of 12,169 firm-year observations from 2007 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively, in the differences in means of the variables.

Firms with and without GPB contracts						
	with GPB (N=4,645)		without GPB (N=7,524)		Differences	
Variable	Mean	Median	Mean	Median	Raw difference	Within-industry-year diff.
Firm size (log assets)	8.511	8.373	8.866	8.780	-0.3549***	0.0112
Firm age	26.897	23.000	28.839	25.000	-1.9412**	-0.3921
Cash/assets	0.171	0.123	0.118	0.071	0.0531***	0.0071
OIBDA/assets	0.144	0.140	0.119	0.110	0.0247***	0.0126**
Sales growth	0.050	0.029	0.032	0.013	0.0179*	0.0119
M/B	4.427	2.844	3.291	2.066	1.1355***	0.4219*
Capex/assets	0.038	0.027	0.042	0.027	-0.0041**	0.0015
CEO delta	5.736	5.792	5.633	5.648	0.103**	-0.0151
CEO-chairman duality	0.483	0.000	0.518	1.000	-0.0351**	-0.0053
Co-opted board	0.442	0.375	0.454	0.417	-0.0123**	-0.0157
Board size	9.640	9.000	9.922	10.000	-0.2813*	0.0377
CEO tenure	7.206	5.422	7.929	6.000	-0.7233**	-0.8008*

Table 7
Shocks to Sales from Exchange-rate Changes and Merger Activity

This table reports results for how exchange-rate shocks to sales affect the relationship between having growth-promoting bonuses (GPB) and firms' M&A activities. The observations are at the firm-year level. The dependent variable is *Any Deal*, which indicates whether the firm is an acquirer during the year. The explanatory variables are the following: Growth-promoting bonuses (*GPB (% of executives)*) is measured as the fraction of executives of the firm who receive growth-promoting bonuses in that year, and *GPB (log $value)* is the logarithm of the dollar value of the growth-promoting bonuses granted to the executives in that year. *Exporter* is an indicator of whether the firm is an exporter, based on reporting foreign sales in the Compustat customer-segment file. *USD exchange-rate shock* is an indicator for whether there was a year-over-year *drop* exceeding 5% in the Nominal Broad U.S. Dollar Index (from the beginning of the first fiscal month of the previous year to the first fiscal month of the current year); other things equal, a drop in the relative value of the U.S. dollar tends to raise the USD-denominated sales of exporting firms. The main variable of interest is the triple interaction between growth-promoting bonuses, being an exporter, and exchange-rate-driven shock to the relative value of the U.S. dollar. The regression includes interacted 2-digit-SIC industry and year fixed effects as well as time (calendar month of the firm's fiscal year-end) fixed effects. The uninteracted measure for *USD exchange-rate shock* is absorbed by the time-fixed effects, and this coefficient is not reported. We additionally include the following governance and firm-specific control variables (lagged): CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, the extent to which the board is co-opted, firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Dependent variable: M&A deal indicator		
	(1)	(2)
GPB (% of executives)	0.024*	
	(1.65)	
GPB (log $value)		0.002*
		(1.82)
Exporter	0.028*	0.028*
	(1.73)	(1.74)
GPB (% of executives) × Exporter	0.020	
	(0.88)	
GPB (log $value) × Exporter		0.001
		(0.81)
GPB (% of executives) × USD exchange-rate shock	0.048*	
	(1.86)	
GPB (log $value) × USD exchange-rate shock		0.004**
		(2.10)
Exporter × USD exchange-rate shock	0.052**	0.056**
	(2.07)	(2.22)
GPB (% of executives) × Exporter × USD exchange-rate shock	-0.090**	
	(-2.36)	
GPB (log $value) × Exporter × USD exchange-rate shock		-0.007***
		(-2.61)
Governance controls	Yes	Yes
Company controls	Yes	Yes
Industry × Year FE	Yes	Yes
Time (Year-by-Fiscal End Month) FE	Yes	Yes
N	11,677	11,677
Adjusted-R^2	22.3%	22.3%

Table 8
Incentives to Grow and Acquirer Returns

This table reports estimates from OLS regressions that examine the acquirer returns in acquisitions. The sample consists of acquisitions announced between 2007 and 2017 involving acquirers and targets that were both publicly listed U.S. firms. The sample consists of 1271 observations. The sample reduces to 1188 and 957 observations when adding governance and firm-specific control variables, respectively. The dependent variable is the market reaction around the acquisition announcement for the acquirer, which is computed as the acquirer's 5-day cumulative dollar abnormal returns around the acquisition announcement (CAR[-3,+1]). Model (2) includes the following deal characteristics as control variables: cash deal indicator, mixed deal indicator, the logarithm of the dollar value of the transaction, and the within-industry indicator. Model (3) includes the additional governance control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, and the extent to which the board is co-opted. Model (4) includes the additional following firm-specific control variables: firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. In Panel A, the main independent variable is growth-promoting bonuses (*GPB (% of executives)*) measured as the fraction of executives who receive growth-promoting bonuses in that year. In Panel B, the main independent variable is the logarithm of the dollar value of the growth-promoting bonuses granted to the executives in that year (*GPB (log $value)*). All specifications include 2-digit SIC industry and year-fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the bidder firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A:				
Dependent variable: Acquirer CAR[-3,+1]				
	(1)	(2)	(3)	(4)
GPB (% of executives)	-1.186***	-1.160***	-1.097***	-0.965***
	[-3.94]	[-3.83]	[-3.38]	[-2.76]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1271	1271	1188	957
Adjusted-R^2	8.2%	9.6%	11.5%	14.6%
Panel B:				
Dependent variable: Acquirer CAR[-3,+1]				
	(1)	(2)	(3)	(4)
GPB (log $value)	-0.077***	-0.074***	-0.069***	-0.057**
	[-3.94]	[-3.75]	[-3.35]	[-2.53]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1271	1271	1188	957
Adjusted-R^2	8.1%	9.5%	11.4%	14.4%

Table 9
Incentives to Grow, Offer Premia, and Target Returns

This table reports estimates from OLS regressions that examine the offer premium and target returns in acquisitions. The sample consists of acquisitions announced between 2007 and 2017 involving acquirers and targets that were both publicly listed U.S. firms. In Panel A, to be able to estimate the acquisition premium, we restrict the sample to deals in which the entire target firm is acquired in the deal. In Panel A, the sample consists of 602 observations. The sample reduces to 556 and 447 observations when adding governance and firm-specific control variables, respectively. In Panel B, the sample consists of 1271 observations. The sample reduces to 1188 and 957 observations when adding governance and firm-specific control variables, respectively. In Panel A, the dependent variable is the *Offer premium*, estimated as the initial offer price per share divided by the target's stock price 50 trading days before the acquisition announcement. In Panel B, the dependent variable is the market reaction around the acquisition announcement for the target, which is computed as the target's 5-day cumulative dollar abnormal returns around the acquisition announcement (CAR[-3,+1]). Model (2) includes the following deal characteristics as control variables: cash deal indicator, mixed deal indicator, the logarithm of the dollar value of the transaction, and the within-industry indicator. Model (3) includes the additional governance control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, and the extent to which the board is co-opted. Model (4) includes the additional following firm-specific control variables: firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. The main independent variable is growth-promoting bonuses (*GPB (% of executives)*) measured as the fraction of executives who receive growth-promoting bonuses in that year. All specifications include 2-digit SIC industry and year-fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the target firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A:				
Dependent variable: Offer premium				
	(1)	(2)	(3)	(4)
GPB (% of executives)	5.226*	4.901*	3.297	3.682
	[1.81]	[1.70]	[1.09]	[1.05]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	602	602	556	447
Adjusted-R^2	23.9%	28.0%	29.8%	30.4%
Panel B:				
Dependent variable: Target CAR[-3,+1]				
	(1)	(2)	(3)	(4)
GPB (% of executives)	3.184**	2.869*	2.290	1.794
	[2.01]	[1.87]	[1.40]	[0.97]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1271	1271	1188	957
Adjusted-R^2	10.9%	14.2%	14.3%	15.3%

Table 10
Estimating Synergies: Total Wealth Gains from Acquisitions

This table reports estimates from OLS regressions that examine wealth gains in acquisitions. The sample consists of acquisitions announced between 2007 and 2017 involving acquirers and targets that were both publicly listed U.S. firms. The sample consists of 1271 observations. The sample reduces to 1188 and 957 observations when adding governance and firm-specific control variables, respectively. The dependent variable is the combined gain of the acquirer and target around the acquisition announcement, which is computed as the sum of the bidder and target's 5-day cumulative dollar abnormal returns around the acquisition announcement (CAR[-3,+1]) divided by the sum of the acquirer's and target's market capitalizations 50 trading days before the acquisition announcement. Model (2) includes the following deal characteristics as control variables: cash deal indicator, mixed deal indicator, the logarithm of the dollar value of the transaction, and the within-industry indicator. Model (3) includes the additional governance control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, and the extent to which the board is co-opted. Model (4) includes the additional following firm-specific control variables: firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. The main independent variable is growth-promoting bonuses (*GPB (% of executives)*) measured as the fraction of executives who receive growth-promoting bonuses in that year. All specifications include 2-digit SIC industry and year-fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the bidder firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Dependent variable: Combined Gains				
	(1)	(2)	(3)	(4)
GPB (% of executives)	-0.780***	-0.806***	-0.748**	-0.579*
	[-2.67]	[-2.82]	[-2.47]	[-1.76]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1271	1271	1188	957
Adjusted-R^2	9.4%	11.8%	12.8%	16.8%

Table 11
Net Gains to Executives from M&A Deals

This table reports the payout for growth-promoting bonus grants (GPB) to executives. The sample consists of IncentiveLab firms that completed an M&A in the period between 2007 and 2017, which disclose the bonus threshold, target, and maximum value for each grant. GPB grants are defined as grants whose payment is made contingent upon meeting a threshold in one of the following metrics: sales, market share, bookings, production, book value, net asset value, or acquisitions. GPB payout (exec.) is the estimated payout to the executive from his GPB contract. GPB payout (firm) is the sum of GPB payout to the top executives in the firm. Realized payout is estimated using the first realized sales after the completion of the deal reported by Compustat and the threshold, target, and maximum value of the GPB contracts. Counterfactual payout is estimated using counterfactual sales (i.e., what would have been in the absence of the merger) and the threshold, target, and maximum value of the GPB contracts. The sample in Panel A includes acquirers in deals with both publicly traded and privately held target firms. In Panel A, to estimate the counterfactual sales of the acquirer, we subtract the weighted target's sales (weighted by the fraction of the year remaining in the fiscal from the date the deal is completed) from the first realized sales after deal completion. We estimate the target's sales using the median sales-to-EV multiple from the target's 2-digit SIC industry, multiplied by the transaction value of the deal. The sample in Panel B includes acquirers in deals only with publicly traded targets. In Panel B, to estimate the counterfactual sales of the acquirer, we subtract the weighted target's sales (weighted by the fraction of the year remaining in the fiscal from the date the deal is completed) from the first realized sales after deal completion. We estimate the target's sales as the actual pre-merger target sales reported in Compustat before the deal completion. Panel C restricts the sample to executives who qualified for GPB payouts based on realized sales but not under counterfactuals; lost compensation is estimated as the present value of compensation at risk from potential turnover due to otherwise missed thresholds. The present value is estimated assuming an annuity (discount rate=10% and N=the difference between the mean of tenure of executives with longer tenure and the executive's tenure). The marginal likelihood of forced turnover if the GPB threshold is missed is assumed to be 1.5% (see Bennett et al. 2017). t-statistics are computed for the one-tailed test of the mean against 0. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

Panel A: Public and private target firms					
	Realized Payout Mean($)	Counterfactual Payout Mean($)	N	Difference($)	t-stat
GPB payout (exec.)	527,902	445,903	2628	81,999	3.03***
GPB payout (firm)	2,157,585	1,822,449	643	335,136	2.51***
Panel B: Only public targets					
	Realized Payout Mean($)	Counterfactual Payout Mean($)	N	Difference($)	t-stat
GPB payout (exec.)	699,818	488,071	506	211,747	1.55*
GPB payout (firm)	3,000,913	2,092,916	118	907,997	1.33*
Panel C: If meets threshold only due to the merger					
	Realized Payout Mean($)	Counterfactual Payout Mean($)	N	Difference($)	t-stat
GPB payout (exec.)	1,323,067	578,269	260	744,797	2.79***
Lost compensation (exec.)	0	-307,558	260	307,558	

Table 12
Ex-post Non-equity Incentive Compensation for Executives

This table reports results for "ex-post" bonus payouts in the form of non-equity incentives. The dependent variable is the natural logarithm of (one plus) the total value of non-equity incentive compensation awarded to the top-5 executive officers in the firm. The independent variables are measures for growth-promoting bonuses (*GPB (% of executives)* and *GPB (log $value)*), the total transaction value of acquisitions made in a given year, normalized by the sum of the acquiring firm's start-of-year market capitalization and the sum of the transaction values in that year (*M&A value*), and the interaction of these two variables. The observations are at the firm-year level. All specifications include the same executive-, firm-, and governance control variables as in Table 3 as well as interacted 2-digit-SIC industry and year fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the bidder firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Dependent variable: Log of Non-equity incentive compensation		
	(1)	(2)
M&A value (annual)	-0.282	-0.329
	(-0.67)	(-0.78)
GPB (% of executives)	0.547***	
	(5.29)	
GPB (log $value)		0.038***
		(4.79)
M&A value (annual) × GPB (% of executives)	0.935*	
	(1.80)	
M&A value (annual) × GPB (log $value)		0.079**
		(2.02)
Executive controls	Yes	Yes
Governance controls	Yes	Yes
Company controls	Yes	Yes
Year-by-Industry FE	Yes	Yes
N	11675	11675
Adjusted-R^2	18.5%	18.4%

Table 13
Past Acquirer Returns and Changes to Growth-promoting Bonus Contracts

This table reports estimates from linear probability models that examine whether the likelihood of introducing/removing GPB contracts is related to the performance of past M&A deals. The sample consists of firms that were acquirers in an acquisition announced between 2007 and 2017 involving acquirers and targets where the acquirer is a publicly listed U.S. firm; the target can be either a publicly traded U.S. firm or a privately held U.S. firm. Panel A includes only firms that did not grant any of their NEOs GPB contracts in the year of becoming an acquirer (year t). Panel B includes only firms that grant at least one of their NEOs GPB contracts in the year of becoming an acquirer (year t). The dependent variable in Panel A is an indicator that equals one if a firm introduces GPB in the compensation contract of at least one of its NEOs in the year following acquisition (year t+1). The dependent variable in Panel B is an indicator that equals one if a firm stops granting GPB contracts to its NEOs in the year following acquisition (year t+1). *Fraction of positive acquirer CAR* is the fraction of deals conducted by an acquirer in year t that have a positive CAR[-3,+1]. *Any positive acquirer CAR* is an indicator that equals one if an acquirer conducts at least one M&A with a positive CAR[-3,+1] in year t. *Any negative acquirer CAR* is an indicator that equals one if an acquirer conducts at least one M&A with a negative CAR[-3,+1] in year t. All specifications include the following control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, and co-opted board. All specifications include interacted 2-digit-SIC industry and year-fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the bidder firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A: GPB Introduction (t to t+1)			
Dependent variable: Introduction of GPB indicator (year t+1)			
	(1)	(2)	(3)
Fraction of positive acquirer CAR (t)	0.048**		
	[2.26]		
Any positive acquirer CAR (t)		0.035*	
		[1.80]	
Any negative acquirer CAR (t)			-0.047**
			[-2.32]
Controls	Yes	Yes	Yes
Year-by-Industry FE	Yes	Yes	Yes
N	1297	1297	1297
Adjusted-R^2	19.8%	19.7%	19.9%
Panel B: GPB Removal (t to t+1)			
Dependent variable: Removal of GPB indicator (year t+1)			
	(1)	(2)	(3)
Fraction of positive acquirer CAR (t)	-0.005		
	[-0.25]		
Any positive acquirer CAR (t)		-0.009	
		[-0.52]	
Any negative acquirer CAR (t)			0.004
			[0.22]
Controls	Yes	Yes	Yes
Year-by-Industry FE	Yes	Yes	Yes
N	1181	1181	1181
Adjusted-R^2	27.6%	27.6%	27.6%

Internet Appendix

Table A1
Summary Statistics for Control Variables

This table reports descriptive statistics for the control variables. The sample consists of Compustat firms for the period between 2007 and 2017. All variables are lagged. All variables are defined in the Appendix.

	Mean	SD	p1	p25	Median	p75	p99	N
CEO delta	857	1,749	4	113	304	774	10,250	15,080
CEO-chair duality	0.47	0.5	0	0	0	1	1	14,860
Co-opted board (%)	0.45	0.32	0	0.18	0.4	0.7	1	14,300
CEO tenure	7.64	6.75	0.5	2.81	5.67	10.22	32.02	14,860
Board size	9.88	2.15	5	8	10	11	15	14,669
Industry Q	2	0.71	1.03	1.42	1.87	2.42	4.05	14,413
Cash/assets	0.13	0.14	0	0.03	0.08	0.19	0.64	14,414
OIBDA/assets	0.13	0.09	-0.09	0.07	0.12	0.17	0.39	13,641
Capex/assets	0.04	0.04	0	0.01	0.03	0.05	0.22	14,390
Firm size	25,408	64,975	232	2,467	6,424	18,629	496,943	14,414
Firm age	30	17	2	16	26	46	60	15,863

Table A2
Exchange Rates and Sales for Exporters

This table reports results for the relation between USD exchange rates and sales. The sample is at the firm level. The dependent variable is the change in sales, normalized by lagged assets. The first explanatory variable, *Exporter*, is an indicator of whether the firm is an exporter, based on reporting foreign sales in the Compustat customer-segment file. The second explanatory variable, Δ*USD Strength*, is the percent year-to-year change in the Nominal Broad U.S. Dollar Index from the beginning of the first fiscal month of the previous year to the first fiscal month of the current year. The main explanatory variable of interest is the interaction between these two variables, which studies the extent to which exporters' sales are differentially affected by the strength of the USD exchange rate. The regression includes industry-by-year and time (year-month of the firm's fiscal year-end) fixed effects. Note that the uninteracted Δ*USD Strength* is absorbed by the time-fixed effects and not reported. We additionally include the following governance and firm-specific control variables (lagged): CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, the extent to which the board is co-opted, firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Dependent variable: $\Delta Sales/Assets_{t-1}$	(1)
Exporter	-0.007
	(-1.64)
Exporter × ΔUSD Strength (%)	-0.130***
	(-2.65)
Governance controls	Yes
Company controls	Yes
Industry × Year FE	Yes
Time (Year-by-Fiscal End Month) FE	Yes
N	11,677
Adjusted-R^2	38.3%

Table A3
Incentives to Grow and Acquirer Returns—Including Deals with Private Targets

This table reports estimates from OLS regressions that examine the acquirer returns in acquisitions. The sample consists of acquisitions announced between 2007 and 2017 involving acquirers and targets where the acquirer is a publicly listed U.S. firm; the target can be either a publicly traded U.S. firm or a privately held U.S. firm. The sample consists of 4386 observations. The sample reduces to 4105 and 3323 observations when adding governance and firm-specific control variables, respectively. The dependent variable is the market reaction around the acquisition announcement for the acquirer, which is computed as the acquirer's 5-day cumulative dollar abnormal returns around the acquisition announcement (CAR[-3,+1]). Model (2) includes the following deal characteristics as control variables: cash deal indicator, mixed deal indicator, the logarithm of the dollar value of the transaction, and the within-industry indicator. Model (3) includes the additional governance control variables: CEO compensation delta, CEO-chairman duality indicator, CEO tenure, board size, and the extent to which the board is co-opted. Model (4) includes the additional following firm-specific control variables: firm size and age, cash/assets, capex/assets, OIBDA/assets, and industry Tobin's Q. In Panel A, the main independent variable is growth-promoting bonuses (*GPB (% of executives)*) measured as the fraction of executives who receive growth-promoting bonuses in that year. In Panel B, the main independent variable is the logarithm of the dollar value of the growth-promoting bonuses granted to the executives in that year (*GPB (log $value)*). All specifications include 2-digit SIC industry and year-fixed effects. All variables are defined in the Appendix. Corresponding t-statistics are reported in brackets. The t-statistics are based on robust standard errors clustered at the bidder firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A:				
Dependent variable: Acquirer CAR[-3,+1]				
	(1)	(2)	(3)	(4)
GPB (% of executives)	-0.493***	-0.497***	-0.516***	-0.358**
	[-3.23]	[-3.28]	[-3.30]	[-2.08]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	4386	4386	4105	3323
Adjusted-R^2	3.4%	3.6%	4.4%	6.5%
Panel B:				
Dependent variable: Acquirer CAR[-3,+1]				
	(1)	(2)	(3)	(4)
GPB (log $value)	-0.035***	-0.035***	-0.037***	-0.022**
	[-3.56]	[-3.59]	[-3.64]	[-1.98]
Deal controls	No	Yes	Yes	Yes
Governance controls	No	No	Yes	Yes
Company controls	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	4386	4386	4105	3323
Adjusted-R^2	3.5%	3.6%	4.5%	6.4%

Appendix A: AbbVie's Acquisition of Pharmacyclics

On March 4, 2015, AbbVie announced a definitive agreement to acquire Pharmacyclics in a tender offer with a price of $261.25 per share, with payment comprised of 58% in cash and the remainder in AbbVie stock. The price represented a 39% premium over Pharmacyclics' closing price from February 24, valuing Pharmacyclics at $21 billion.[37] Upon the announcement of the deal, AbbVie's stock price declined significantly.[38] By our estimates, the cumulative abnormal return (CAR) for AbbVie from three days before the announcement and ending one day after was –4.34%. This CAR is equivalent to a value loss in dollars of about $4 billion. The transaction was completed on May 26, 2015.[39]

The compensation packages for the named executive officers (NEOs) of AbbVie in the fiscal year of 2015 included performance-based cash bonuses that were based on AbbVie's performance during the fiscal year relative to specified targets that included sales as one metric. Thus, AbbVie fulfills our definition of having growth-promoting bonuses (GPB) in 2015, at the time of the Pharmacyclics acquisition.

We focus on the CEO of AbbVie, Richard A. Gonzales, whose bonus payout was specified as a multiple of his salary. The terms of Gonzales's contract stipulated that if AbbVie were to meet a target/threshold level of sales of $24.1 billion, he would receive a bonus worth 200% of his $1.5 million salary, amounting to $3 million. The contract assigned a weight of up to 60% to achieving the revenue target, with the remaining 40% contingent on meeting qualitative "strategic objectives." Gonzales would not receive the bonus if AbbVie failed to meet the sales target, and the bonus was "capped" in that exceeding the target further would not result in a larger bonus for Gonzales.[40]

Although AbbVie's GAAP sales in 2015 were only $22.85 billion, the company used a non-GAAP sales figure—adjusted upward for exchange rate effects—for bonus purposes. This adjusted sales figure amounted to $24.1 billion, which meant that the combined target/threshold for the bonus contract was met exactly, and Gonzales thus received the $3 million bonus for meeting the sales target. It is worth noting that although AbbVie used a non-GAAP sales measure for the bonus calculations, it did not adjust the sales figure downward to account for the acquisition of Pharmacyclics.

Given that the sales target was met exactly, the incremental revenue from the Pharma-

[37] AbbVie Investors, "AbbVie's Acquisition of Pharmacyclics", March 5, 2015, retrieved from `https://investors.AbbVie.com`

[38] Jonathan D. Rockoff and Peter Loftus, "AbbVie to Buy Pharmacyclics in $21 Billion Deal", *The Wall Street Journal*, March 5, 2015, retrieved from `https://www.wsj.com`

[39] AbbVie Investors, "AbbVie Completes Acquisition of Pharmacyclics", March 26, 2015, retrieved from `https://investors.AbbVie.com`

[40] See form DEF 14A filed by AbbVie dated March 21, 2016 (retrieved from `https://www.sec.gov/`).

cyclics acquisition was pivotal in triggering the GPB payout. Pharmacyclics' last reported sales figure before the acquisition was $729.7 million. This was largely driven by Imbruvica, a new drug recently launched by Pharmacyclics (its first). Imbruvica was experiencing rapid growth and had sales of $754 million after the acquisition in May 2015, according to an 8-K filed by AbbVie.[41] The sales figures for Pharmacyclics imply that the "counterfactual" sales of AbbVie, had the acquisition of Pharmacyclics not taken place, would almost certainly have been below the combined target/threshold of $24.1 billion, such that Gonzales would have not received the additional $1.8 million bonus from his GPB contract (60% $\times$ $3 million of his overall non-equity incentive bonus compensation, since sales accounted for 60% of the bonus) without the acquisition. To put this amount into perspective, Gonzales's total compensation in 2015 was $20.8 million, implying that without the acquisition of Pharmacyclics, his total compensation for 2015 would have been around 8.6% lower.

[41] See form 8-K filed by AbbVie dated January 29, 2016 (retrieved from `https://investors.AbbVie.com`).

Appendix B: Variable Definitions

This table contains the definitions and descriptions of the variables used in the paper.

Variable	Definition
GPB (% of executives)	Fraction of named executives in Execucomp in the firm who have bonuses explicitly tied to firm size/growth. Measured as of the end of the fiscal year in firm-year summary statistics; measured as of calendar month for merger outcomes analysis. (Source: ISS IncentiveLab)
GPB (log $value)	The natural logarithm of (one plus) dollar value of bonuses explicitly tied to firm size/growth. Measured as of the end of the fiscal year in firm-year summary statistics; measured as of calendar month for merger outcomes analysis. (Source: ISS IncentiveLab)
Relative target size	The ratio of the target firm's market capitalization (if public, or deal value if private) to the sum of the market capitalizations of the acquirer and the target (or deal value), where market capitalizations are measured 50 trading days before the announcement (Source: CRSP and SDC).
Any deal	Equals 1 if the firm is an acquirer in an M&A deal and 0 otherwise (Source: SDC).
Cash deal	Equals 1 if the firm is an acquirer and the method of payment offered by the acquirer consists only of cash and 0 otherwise (Source: SDC).
Stock deal	Equals 1 if the firm is an acquirer and the method of payment offered by the acquirer consists only of the acquirer's stock and 0 otherwise (Source: SDC).
Mixed deal	Equals 1 if the firm is an acquirer and the method of payment offered by the acquirer consists of both the acquirer's stock and cash and 0 otherwise (Source: SDC).
M&A value (annual)	Total transaction value of acquisitions made in a given year, normalized by the sum of the acquiring firm's start-of-year market capitalization and the sum of the transaction values in that year (Source: SDC).
Offer premium	Initial offer price per share divided by the target's stock price 50 trading days before the acquisition announcement minus one, reported as a percentage (Source: CRSP and SDC).
Combined gain	The sum of the target and acquirer's cumulative dollar abnormal returns in the (-3,+1) day window around the announcement of the acquisition divided by the sum of the target and acquirer's market capitalizations 50 trading days before the acquisition announcement date (Source: CRSP).
Acquirer CAR (-i,+j)	The cumulative abnormal return of the acquirer from day i to j relative to the announcement of the deal, computed using a 4-factor return model (Fama and French (1993), Carhart (1997)) with a 250-day estimation window ending 30 days before the announcement with at least 60 observations (Source: CRSP)
Target CAR (-i,+j)	The cumulative abnormal return of the target from day i to j relative to the announcement of the deal, computed using a 4-factor return model (Fama and French (1993), Carhart (1997)) with a 250-day estimation window ending 30 days before the announcement with at least 60 observations (Source: CRSP)
Cash/assets	Cash and short-term investments divided by total assets (Source: Compustat).

OIBDA/assets	Operating income before depreciation and amortization divided by total assets (Source: Compustat).
CEO-chairman duality	Equals 1 if the CEO is also the Chair of the board of directors and 0 otherwise (Source: Execucomp and BoardEx).
Co-opted board	The fraction of the directors on the board appointed after the current CEO took office (Source: Lalitha Naveen).
Sales	Net sales divided by total assets (Source: Compustat).
Industry Q	The average ratio of the market value of assets to book value of assets, computed following Baker and Wurgler (2002). (Source: Compustat).
Firm size	The logarithm of the firm's total assets (Source: Compustat).
Firm age	The number of years since the firm first appeared in Compustat (Source: Compustat).
CEO delta	The change (in thousands of dollars) in the dollar value of the executive's wealth derived from ownership of stock and stock options in the firm when the firm's stock price changes by 1%. We calculate the delta of the executive's compensation as the sum of the delta of the options holdings and the delta of the stock holdings. The delta of options holdings is calculated based on the methodology in Guay (1999) and Core and Guay (1999) (Source: Execucomp, calculated using code provided by Lalitha Naveen).
Capex/assets	Property, plant and equipment divided by total assets (Source: Compustat).
Board size	The logarithm of the number of directors on the firm's board (Source: BoardEx).
CEO tenure	Number of years since the CEO has become the CEO (Source: Execucomp).
Exporter	Indicator for whether the firm is an exporter, based on reporting foreign sales in the Compustat customer-segment file. (Source: Execucomp).
ΔUSD Strength	The percent year-to-year change in the Nominal Broad U.S. Dollar Index from the beginning of the first fiscal month of the previous year to the first fiscal month of the current year. (Source: FRED, Federal Reserve Economic Data).
USD exchange-rate shock	Indicator for whether there is a larger-than 5% year-to-year drop in the Nominal Broad U.S. Dollar Index (Source: FRED, Federal Reserve Economic Data).
Log of Non-equity incentive compensation	The natural logarithm of (one plus) the total value of non-equity incentive pay awarded to the top-5 named executive officers in the firm. (Source: Execucomp).
Fraction of positive acquirer CAR	The fraction of deals conducted by an acquirer in a year that have a positive CAR[-3,+1]. (Source: CRSP and SDC).
Any positive acquirer CAR	Equals 1 if an acquirer conducts at least one M&A with a positive CAR[-3,+1] in a year and 0 otherwise. (Source: CRSP and SDC).
Any negative acquirer CAR	Equals 1 if an acquirer conducts at least one M&A with a negative CAR[-3,+1] in a year and 0 otherwise. (Source: CRSP and SDC).