

The Acquisitiveness of Youth: CEO Age and Acquisition Behavior

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Abstract

I document that firm acquisition propensity is decreasing in the age of the CEO: a firm with a CEO who is 20 years older is 30% less likely to announce an acquisition. I interpret this finding in terms of age-related variation in agency problems. I propose the compensation benefits of acquisitions as one possible mechanism. Specifically, I demonstrate that acquisitions are accompanied by large, permanent increases in CEO compensation, which create strong financial incentives for CEOs to pursue acquisitions earlier in their career. Consistent with an agency interpretation, the effect of age on acquisition propensity is attenuated in firms with strong governance. I examine alternative explanations and find that the age effect cannot be explained by the selection of young CEOs by acquisition-prone firms, nor by the effect of time-invariant CEO characteristics that may be cross-sectionally correlated with age. This paper highlights the role that CEO characteristics play in shaping corporate policies and the role that governance plays in restraining the influence of CEO incentives.

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1 Introduction

Since the 1970s, acquisitions have been bad news for acquiring firm shareholders, as negative market reactions reduced firm value (Andrade, Mitchell, and Stafford, 2001). More recently, between 1998 and 2001, acquisition announcements have resulted in losses of \$220 billion to acquiring firm shareholders (Moeller, Schlingemann, and Stulz, 2005). The scale and persistence of acquirer losses raise the possibility that acquisitions are not undertaken solely in order to create value; instead, CEO agency problems likely play an important role (Jensen and Meckling, 1976).

Prior research has primarily relied on firm characteristics to explain the presence of agency problems. For example, some firms have too much free cash (Jensen, 1986; Harford, 1999); suffer from poor governance (Bertrand and Mullainathan, 2003; Masulis, Wang, and Xie, 2007); or fail to properly align the CEO's incentives (Lewellen, Loderer, and Rosenfeld, 1985; Datta, Iskandar-Datta, and Raman, 2001). However, these works have largely ignored the possibility that CEO characteristics can be a source of agency problems (Bertrand and Schoar, 2003).

In this paper, I examine the effect of CEO age on acquisition policy. I find that firm acquisition propensity is decreasing in CEO age: a firm with a CEO who is 20 years older is 30% less likely to announce an acquisition. I offer two interpretations of this finding. First, the compensation benefits of empire-building are greater for CEOs with longer career horizons. CEO compensation is largely tied to firm size, so CEOs who grow the firm enjoy a new, permanently higher level of compensation. Thus younger CEOs have stronger incentives to pursue acquisitions, since they have longer career horizons over which to reap the benefits. Second, physiological or psychological changes that accompany aging, such as declining energy levels or overconfidence, can make older CEOs less inclined to pursue acquisitions.

Although I am unable to distinguish between these two interpretations, I demonstrate that young CEOs face powerful financial incentives to pursue acquisitions. I estimate that

the median CEO in my sample experiences an annual compensation increase of \$300,000 following a sizeable acquisition.¹ This is a *permanent* increase in compensation that the CEO enjoys every year for the remainder of his career. Thus CEOs farther from retirement face stronger incentives to pursue acquisitions.

The relationship between CEO age and acquisition propensity cannot be explained by observable differences between firms that have young versus old CEOs. For example, younger CEOs likely lead younger firms, which may be more likely to pursue acquisitions for firm life cycle-related reasons. Misspecification of a control variable like firm age could result in a spurious correlation of age with acquisition activity. However, matching estimation assures that the CEO age effect is not the result of correlation with observable characteristics such as firm size, firm age, or valuation.

I address two main alternatives to the causal interpretation of CEO age on firm acquisition propensity. First, I examine the explanation that the age effect reflects the selection of young CEOs by acquisition-inclined (“acquisitive”) firms. If acquisitive firms seek young CEOs—for reasons specific to or incidental to their acquisition ability—then the resulting acquisition activity reflects the firm’s acquisition propensity, not the CEO’s. This story suggests that appropriate controls for the firm’s acquisitiveness should make the effect of CEO age disappear. If firm acquisitiveness is a fixed characteristic, then the age effect should not survive the inclusion of firm effects. However, I find that even within-firm, younger CEOs are more likely to engage in acquisitions. Alternately, firm acquisitiveness can be a time-varying characteristic, if firms hire younger CEOs when they are *about* to engage in acquisitions. The matching estimation shows that the age effect is robust to observable, time-varying controls for firm acquisitiveness. However, this story further suggests that the effect of age should be most pronounced in the years closest to hire. I find the opposite: the age effect is stronger among long-tenured CEOs.

A second alternative explanation is that the findings reflect the causal effect of fixed

¹Defined as acquisitions that exceed 5% of the firm’s market capitalization (for the sample of CEOs of S&P 1500 firms in 1992-2007).

CEO characteristics that are correlated with age in the cross-section. These time-invariant traits may either be related to *becoming* a CEO at a young age (“Charisma Effect”) or be disproportionately possessed by young CEOs (“Cohort Effect”). For example, exceptional charisma or leadership ability may characterize those who become CEO at a young age, and such traits may also drive acquisition behavior. Or, business degrees (MBAs) or financial expertise tend to be over-represented in younger cohorts of CEOs, and may also make CEOs more acquisitive. I address these stories with the inclusion CEO fixed effects, and find that an individual CEO’s acquisition propensity declines from the early to later periods of his career.

This paper presents evidence that CEO characteristics have direct causal effects on corporate policy. This then raises questions about whether boards are able to curb the effect of CEO incentives. I thus examine how governance affects the age-acquisition relationship. Consistent with the agency interpretation of the age effect, strong governance attenuates the heightened acquisition propensity of young CEOs. I then turn to examining how governance and age-related incentives affect the quality of acquisitions. Poor governance and young age have negative (but insignificant) direct and interacted effects on announcement day returns. This suggests that young CEOs pursue lower quality acquisitions, especially in poorly governed firms. Moreover, I find evidence that governance is effective in restraining young CEOs from *completing* low quality announced acquisitions. Acquisitions withdrawn by young CEOs have lower announcement day returns than deals that proceed to completion, and this effect is concentrated in well-governed firms. These findings indicate that governance plays an important role in checking the incentive of young CEOs to pursue acquisitions. Governance prevents first, the announcement of acquisitions, and second, the completion of especially poor quality ones.

These findings speak to the complexity of the task facing boards in selecting and monitoring the CEO. I show evidence that boards do not actively select young CEOs to do acquisitions. If age is one of many important characteristics that determine a CEO’s ability

to add to firm value, then it may not be optimal for boards to focus primarily on the effect of age on acquisitiveness. For example, although young CEOs may pursue inefficient acquisition policies, their enthusiasm and energy might be more effective in motivating employees or implementing difficult strategies. However, if boards do not prioritize a CEO's acquisition propensity when hiring one, it is likely that the CEO's incentives with respect to acquisition policy will be misaligned ex post. I demonstrate that governance plays an important role in mitigating the influence of CEO incentives on acquisition policy. However, the fact that the relation between young CEOs and acquisitions still persists empirically reveals the limits of governance, especially in the face of powerful incentives.

The rest of the paper is organized as follows. Section 2 discusses why age should matter for CEO incentives, and formalizes the intuition that acquisition propensity is decreasing in CEO age. Section 3 describes the data and Section 4 presents evidence that younger CEOs are more likely to do acquisitions. Section 5 examines firm selection and other alternative interpretations of the findings. Section 6 explores the effect of governance on the age-acquisition relationship. Section 7 estimates the compensation benefits of acquisition activity and examines its risks. Section 8 concludes.

2 Why Should Age Matter?

Existing theories offer several reasons for why age should matter for acquisitions. Compensation benefits associated with empire-building suggest CEOs have greater incentives to pursue acquisitions earlier in their career. However, career concerns may make younger CEOs reluctant to jeopardize future earnings, and therefore avoid risky activities. These theories relate to changing incentives that CEOs face over their career (“Incentives” interpretation). Alternately, CEO characteristics may change with age. The psychological and physiological changes that occur with aging can directly affect a CEO's inclination to pursue acquisitions (“Characteristics” interpretation). I explore these channels in turn to understand how a

CEO's acquisition propensity might change over time.

2.1 Compensation benefits of empire-building

Empire-building theories suggest that incentives to pursue acquisitions will decline with a CEO's career horizon. Acquiring firm CEOs are rewarded with large bonuses (Grinstein and Hribar, 2004) and new stock and option grants (Bliss and Rosen, 2001; Harford and Li, 2007), but more importantly for the purposes of this paper, they experience *permanent* increases in compensation. Acquisitions increase firm size, a primary determinant of compensation. Therefore, a one-time action to expand the firm results in a future stream of compensation benefits, which can create strong financial incentives for CEOs to pursue acquisitions early in their career.

The evidence is mixed on whether the relationship between firm size and compensation is efficient.² However, if the compensation increases that accompany acquisitions represent rents above that required to compensate for effort or risk, then CEOs will have private incentives to pursue acquisitions. The responsiveness of pay to increases, but not decreases, in firm size (Bebchuk and Grinstein, 2007) suggests that compensation reflects CEO efforts to extract rents. In addition, the greater sensitivity of compensation to acquisitions than comparable internal investments is also consistent with CEOs using acquisitions as opportunities to renegotiate their compensation (Harford and Li, 2007). Finally, institutional practices such as the common use of compensation consultants (Jensen and Murphy, 2004)—who make compensation proposals based on firm size benchmarks—allow CEOs to justify and solidify their compensation gains.

I formalize the CEO's incentives as follows. Consider a CEO who has T periods remaining in his career. If he does nothing, he receives a per period compensation of $W(S)$ which is

²The optimal contracting view of CEO pay holds that high compensation in large firms reflects compensation for effort, risk, or returns to ability (Rosen, 1992; Baker and Hall, 2004; Edmans and Gabaix, 2008; Gayle and Miller, 2008). In contrast, proponents of the managerial power view of CEO pay argue the relationship is primarily explained by the greater scope for rent-extraction in larger firms (Bebchuk and Fried, 2003; Jensen and Murphy, 2004).

increasing in firm size S . His remaining lifetime compensation is therefore $W(S) T$.³

The CEO has an acquisition opportunity of size B and quality q . Acquisitions entail a one-time fixed cost F , which can include costs to research the deal, meet with the board, negotiate with target management, arrange financing, and then implement the deal. In addition, the acquisition entails a risk of being fired with probability p , which is a decreasing function of quality q (Lehn and Zhao, 2006). If the CEO is not fired, his compensation will increase to $W(S + B)$, which the CEO will receive for every period thereafter. Therefore, if he pursues the acquisition he can expect to earn over his lifetime $W(S + B)(1 - p) T - F$. Thus the CEO's net lifetime benefit to doing the acquisition is given by

$$U = T [W(S + B)(1 - p) - W(S)] - F.$$

The CEO will do the acquisition if $U \geq 0$.

With these assumptions, the relationship between CEO utility and age is given by

$$\frac{\partial U}{\partial T} = W(S + B)(1 - p) - W(S).$$

This expression is positive if $p < \Delta W/W(S + B)$. If the termination risk is sufficiently low relative to the gains from the acquisition, then CEO utility is increasing in his remaining time horizon and younger CEOs will be more likely to pursue acquisitions.

2.2 Career concerns and acquisition risk

The literature on career concerns raises the possibility that younger CEOs face higher risks of doing acquisitions. Chevalier and Ellison (1999) and Hong, Kubik, and Solomon (2000) find that younger, more inexperienced mutual fund managers and security analysts are more

³This assumes CEO survival until the end of his career and ignores a baseline likelihood of termination. This is unimportant for the tradeoffs he will make on whether or not to pursue an acquisition and is therefore omitted.

likely to be fired for poor performance.⁴ In response to these incentives, younger managers take less risk and exhibit herding behavior. These works suggest that if younger CEOs are more likely to be fired for bad acquisitions, they will be less likely to pursue them.⁵

However, I explore whether such incentives exist for acquiring CEOs in Section 7. I find no evidence for such incentives. Younger CEOs are not more likely to be fired for poorly performing acquisitions and their firing is not more sensitive to acquisition quality. Therefore the career concerns interpretation that younger managers avoid risky activities is likely not an important consideration in this setting.

2.3 Age-related CEO characteristics

The changes in personal characteristics that occur with age can also affect a CEO's acquisition propensity. For example, Bertrand and Mullainathan (2003) argue that CEOs have a preference for the quiet life. These preferences likely increase with age. As people grow old, energy levels decline (Roberts and Rosenberg, 2006; Harman, 1991) and acquisitions can be perceived as more costly.⁶ Thus, physiological changes that occur with age can make older CEOs less inclined to pursue acquisitions.

Alternately, psychological changes that occur with age can affect CEO acquisition propensity. For example, Roll (1986) and Malmendier and Tate (2008) propose that CEOs suffer from overconfidence. They explain the prevalence of value-destroying acquisitions with the tendency of CEOs to overestimate their own ability to create value. This cognitive bias could plausibly decrease *or* increase with age. Some research in the management and psychology literature suggests that younger people are more overconfident (Taylor, 1975; Kovalchik, et al., 2005; Forbes, 2005). However, these studies are based on sample subjects who arguably

⁴Consistent with Holmstrom (1999) and Gibbons and Murphy (1992), they attribute the greater sensitivity of young manager termination to performance to the initially noisy assessment of young manager ability, which is more prone to large downward revision.

⁵These incentives correspond to assumptions that acquisition-related termination probability is decreasing in age ($\frac{\partial p}{\partial T} > 0$), or that termination is more sensitive for younger CEOs ($\frac{\partial^2 p}{\partial T \partial q} < 0$).

⁶This corresponds to the assumption that $F'(T) < 0$.

differ in important ways from CEOs of S&P 1500 firms.⁷ If instead overconfidence results from survival and self-attribution bias (Doukas and Petmezas, 2007; Billet and Qian, 2008), overconfidence could be higher in older CEOs. Given that CEOs of S&P 1500 firms are a very select group of people, it is not clear whether CEOs become more or less overconfident with age.⁸

There are numerous other characteristics that can change with age, which also potentially affect a CEO’s acquisition propensity.⁹ I am unable to distinguish among the effects of CEO characteristics that vary with age. Under the “Characteristics” interpretation, I view age as a proxy for the aggregate effect of all such characteristics.

Because CEO age and expected career horizon are highly collinear, I am also unable to distinguish between the “Characteristics” and “Incentives” interpretations.¹⁰ Therefore the primary focus of this paper is to explore the causal effect of CEO age, consistent with either the “Characteristics” or “Incentives” interpretations. However, in Section 7 I quantify the incentive effect of acquisitions, and show that this channel alone could reasonably generate declining CEO acquisition propensity with age.

⁷Taylor (1975) uses a sample 79 line managers of a heavy manufacturing company; Kovalchik, et al. (2005) compare a sample of young college students with a group of elderly individuals; and Forbes (2005) examines a sample of 108 entrepreneurs of new ventures, which are on average 24 months old and have 8.6 employees.

⁸Overconfidence corresponds to the idea that CEOs overestimate acquisition quality, i.e., CEOs *perceive* $q^* = q + e$, with $e \geq 0$, and base their assessment of termination probability p on $p(q^*)$. Thus overconfident CEOs underestimate the termination probability and are more likely to undertake acquisitions. However, as discussed above, it is not clear whether $e'(T) > 0$ or $e'(T) < 0$.

⁹Potentially any physiological, psychological, mental, or emotional characteristic can vary with age: enthusiasm, optimism, even-temperedness, wisdom, decisiveness, ambitiousness, etc.

¹⁰Many firms have a mandatory retirement policy at age 65, and therefore CEOs can anticipate approaching retirement. But I will not be able to attribute the resulting decline in acquisition activity to career horizon-related incentives or to changes associated with aging.

3 Data

3.1 Data sets and sample construction

I require data on CEOs and the acquisitions that they announce. Execucomp collects compensation data on the top 5 earners of S&P 1500 firms in 1992-2007, and includes data on CEO age and tenure. Using the start and end dates of tenure, I construct a panel of CEO service by firm. To exclude interim CEOs and possible errors in misreported start and end dates of CEO tenure, I restrict the sample to CEOs whose total service period exceeds 6 months. To cleanly attribute acquisition activity to a single individual, I exclude periods of overlapping tenure by multiple CEOs (which often reflect co-CEO arrangements). The resulting data set is at the firm-CEO-year level, with multiple observations possible at the firm-year level due to mid-year CEO turnover. In addition, I further restrict the sample to firms with stock and financial data in CRSP and Compustat.

I collect data on M&A transactions from Thomson's SDC Spectrum database. I consider acquisitions involving US targets, and match each deal to a firm-CEO-year observation using the announcement date of the acquisition. For each firm-CEO-year observation, I code $\% \text{ Acquisition} = 1$ if the CEO announces an acquisition in the firm-year whose deal value exceeds 5% of the firm's market capitalization. This threshold reflects an effort to restrict the incidence of acquisitions to those that would plausibly require the CEO's attention or effort.¹¹ This is the dependent variable for the main specifications that explore the effect of age on acquisition propensity.

3.2 Summary statistics

Table 1 reports sample summary statistics. Panel A shows that the distribution of acquisition activity is quite skewed, with less than a quarter of observations involved in acquisitions of any size (6,687 out of 28,549 observations). Of acquiring firms, the mean deal size (rel-

¹¹This is consistent with Malmendier and Tate (2008) and Morck, Shleifer, and Vishny (1990).

ative to acquirer market capitalization) is 0.26 while the median is 0.08. The rate of “5% Acquisitions” in the sample is 14%.

Panel B reports summary statistics of firm and CEO characteristics, for the full sample and for the subsample of observations where 5% Acquisition=1. Acquiring firms tend to be smaller in size (assets, market capitalization, and total capitalization); this is explained by the “relative size” nature of the definition of “acquisition,” whereby a large acquiring firm is unlikely to be able to find targets that are also large relative to itself. In addition, acquiring firms tend to be younger, have higher market to book ratios, and higher prior year returns. Acquiring firms also have younger CEOs who earn more. The median CEO in the full sample is 55 years old, has 5 years of tenure, and earns \$2.0M per year. Panel C displays pairwise correlations between select variables, and shows that CEO age is highly correlated with log(assets), firm age, and CEO tenure.

4 CEO Age and Acquisition Propensity

4.1 Basic age-acquisition relationship

In Table 2, I show that firm acquisition propensity is declining in CEO age. I estimate a linear probability model

$$(5\% \text{ Acquisition})_{ijt} = \beta_0 + \sum_{n=1}^6 \beta_n (\text{Age Group } n)_{jt} + X_{ijt}\delta + \epsilon_{ijt}$$

where the dependent variable equals one if CEO j of firm i announces an acquisition in year t whose deal value exceeds 5% of the firm’s market capitalization. In case the relationship between CEO age and acquisition propensity is not linear across the age spectrum, I present age as binary variables corresponding to 6 equal-sized age groupings. β_n estimates the effect on acquisition propensity of a CEO whose age falls in Age Group n . X_{ijt} is a matrix of controls for CEO and firm characteristics. Errors ϵ_{ijt} are assumed to be independent across

but not within firms.

Column 1 includes only the six age-related binary variables, and shows that the rate of acquisition activity declines monotonically across the CEO age groups. Column 2 controls for drivers of acquisition activity which may also be correlated with age. CEO tenure is positively correlated with age but has the opposite effect on acquisition activity: if acquisitions are risky and tenure proxies for CEO ability or entrenchment, tenured CEOs will be more likely to undertake acquisitions. Log(assets) controls for firm size. As a measure of valuation or investment opportunities, the market to book ratio is expected to have a positive coefficient; instead, column 2 shows a negative coefficient. This is explained by the mechanically inverse relationship it has with “relative size” nature of the dependent variable. As predicted by theories of acquisitions driven by stock market misvaluation (Shleifer and Vishny, 2003) and free cash flow (Jensen, 1986), prior year stock returns and cash flow have the expected positive coefficients. Controlling for firm age shows that younger firms are more likely to do acquisitions. Column 3 adds year and Fama-French 48 industry fixed effects, since mergers occur in aggregate and industry-specific waves (Mitchell and Mulherin, 1996; Andrade, Mitchell, and Stafford, 2001). Column 4 includes industry by year fixed effects, to control for the possibility that acquisition activity clusters by industry-year.

Even after controlling for key firm characteristics and using only within industry-year variation, column 4 shows that the effect of age on firm acquisition propensity holds steady. Relative to a 27-48 year old CEO (in the omitted Age Group I), a 63-92 year old CEO (in Age Group VI) is 4 percentage points less likely to do an acquisition. This represents a 30% reduction in acquisition likelihood relative to the average sample acquisition probability of 14%.

Table 3 explores the robustness of the basic result to alternative definitions of “acquisition activity.” Column 1 considers a higher acquisition size threshold of 10% instead of the 5% considered in Table 2. The effect is still monotonically decreasing across the age groups. Column 2 considers all announced acquisitions with no minimal size cutoff, while column 3

considers only acquisitions under the 5% cutoff (i.e. dependent variable equals one if CEO announces an acquisition whose value does not exceed 5%). The age effect is noisier in column 2, and disappears altogether for small acquisitions in column 3. This is consistent with CEO age having an effect only in larger acquisitions that both require CEO attention and have the potential to affect his compensation. In column 4 the dependent variable equals one if the CEO announces an acquisition exceeding \$50 million in deal value. The absolute size threshold in this specification produces the expected sign on market to book. Column 5 estimates a logistic regression as an alternative to the linear probability model. The results are presented as odds ratios and show that CEOs in the 63-92 age group are 30% less likely to do an acquisition than CEOs in the omitted 27-48 age group. Whereas columns 1-5 model a binary acquisition variable, column 6 considers a Tobit specification that uses as the dependent variable the transaction value of the announced deals scaled by the market capitalization. Results are again consistent with prior findings, showing a steadily negative effect of age on acquisition activity.

4.2 Nonlinear controls and effect of CEO tenure

Because improper specification of control variables could bias the coefficient on CEO age, Table 4 examines nonlinear effects of select control variables which are highly correlated with age: firm size, firm age, and CEO tenure. However, first, in columns 1 and 2, I show the standard specification but depart from the 6 groupings of age used in previous regressions. Column 1 includes age linearly, and the coefficient indicates that a CEO who is 20 years younger is 4 percentage points more likely to do an acquisition. This is a 30% greater likelihood relative to the baseline acquisition rate of 14%, consistent with earlier estimates. Column 2 also shows the effect of tercile groupings of age (Mid Age=53-59, Old=60-92, with omitted group Young=27-52).

Column 3 adds controls for quadratic forms of tenure, firm age, and firm size ($\log(\text{assets})$) variables, and column 4 controls for quartic forms of these variables. Columns 3 and 4 show

that the effect of age on acquisition propensity is still robustly negative, and is not driven by misspecification of the effect of tenure, firm age, or firm size on acquisition propensity.

In columns 5 and 6, I explore potential nonlinear effects of tenure on acquisition propensity. Tenure has a positive predicted effect on acquisition propensity, consistent with its interpretation as a measure of CEO quality or entrenchment (Hermalin and Weisbach, 1998);¹² if acquisitions are risky or difficult, CEOs may want to establish a reputation with or influence over the board before undertaking them. Tenure is an important control variable because it is highly correlated with age but has the opposite effect on acquisition propensity. Omitting tenure will result in attenuation of the age effect, but in certain specifications, including tenure can result in multicollinearity: a simultaneous increase in both tenure and age result in inability to separately identify their effects. However, a nonlinear effect of tenure—in particular, an effect that diminishes over time—would suggest ways to isolate the effect of age on acquisition propensity.

I show that the effect of tenure is indeed nonlinear. Column 5 represents tenure in tercile groupings. While there is a sizeable increase in acquisition propensity going from CEOs who have 0 to 3 years of tenure (first tercile) to 4 to 8 years (second tercile), the effect of tenure on acquisition propensity does not continue to increase from the second to third terciles. Column 6 compares the effect of an additional year of tenure for CEOs who have less than 5 years versus 5 or more years of tenure.¹³ Although *being* tenured (“ ≥ 5 yrs Tenure”=1) has a large effect on acquisition propensity, the marginal effect of a year of tenure dissipates for long-tenured CEOs.¹⁴ In contrast, the effect of a year of tenure for untenured CEOs is large. These findings are consistent with the interpretation of tenure

¹²In signaling models such as Hermalin and Weisbach (1998), CEO tenure is a proxy for quality, as low-quality CEOs are dismissed early. Quality CEOs, however, also have greater bargaining power over the board, and as a result, are able to take actions to further entrench themselves (such as nominate insiders to the board). Thus CEO tenure is also often used as a proxy for entrenchment (Berger, Ofek, and Yermack, 1997; Rose and Shepard, 1997; Bertrand and Mullainathan, 2001).

¹³5 years is the median CEO tenure in the sample. In addition, Gregory-Smith, Thompson, and Wright (2009) find that the likelihood of forced departures declines sharply from the fifth year of a CEO’s tenure.

¹⁴The negative coefficient on “Tenure, ≥ 5 yrs” may capture end-of-tenure effects, whereby CEO who are on their way out do not, or are not allowed to, initiate acquisitions.

as entrenchment: once a CEO is entrenched, additional years of tenure are unimportant. Despite the correlation between age and tenure, an additional year of each will not have uniform effects on acquisition propensity. In particular, for the set of long-tenured CEOs, the effect on acquisition propensity of an additional year on the job will likely largely reflect the effect of age, and not of tenure.

4.3 Propensity score analysis

Table 5 presses the concern of functional form misspecification further, by using a type of matching estimation method. As Panel A1 shows, there are substantial differences among firms that have Young CEOs (in lowest age tercile, 27-52) and firms that do not. Younger CEOs have less tenure, and serve on smaller, younger, more overvalued firms with high prior stock performance but low cash flows. If the linear controls employed in the baseline specification are inadequate, then age could be picking up nonlinear effects of these characteristics on a firm’s acquisition propensity. Ideally, I would have two comparison samples that are comparable for all covariates but differ only on CEO age.

I apply a propensity score-based weighting and regression method to address the concern that the age results are being driven by differences in observable characteristics of firms that have young versus old CEOs (Rosenbaum and Rubin, 1983; Hirano, Imbens, and Ridder, 2003). This method re-weights observations in the young versus old CEO samples to replicate “ideal” comparison samples which have comparable covariate distributions but differ only on age. The propensity score, $p(X)$, is defined as the probability of receiving treatment conditional on the covariates X , and is typically estimated as a logit of the treatment indicator on X . Treated and control observations are then weighted by $1/p(X)$ and $1/(1 - p(X))$, respectively, in the regression of interest. Intuitively, observations with characteristics that result in high likelihood of treatment, $p(X)$, are down-weighted in the treatment group; similarly, observations with a low likelihood of treatment are down-weighted in the control group. This procedure evens out differences in the covariates between the control and treat-

ment groups. Imbens and Wooldridge (2007) also suggest trimming observations with $p(X)$ outside of the interval $[0.1, 0.9]$ to eliminate poor candidates for matching across the control and treatment samples. The regression on the weighted, trimmed sample then produces estimates of treatment effects independent of distributional differences in the initial control and treatment groups.

In this context, I consider “treatment” to be having a Young CEO. Panel A2 shows that after weighting and trimming, the differences in the distribution of covariates between treatment and control samples evident in Panel A1 disappear. Panel B column 1 shows the effect of the “Young CEO” treatment indicator on the original sample. The propensity score $p(X)$ used to weight the observations in the original sample is computed as the fitted values from the specification in column 2. Column 3 shows the regression results on weighted, trimmed sample: the “Young CEO” treatment variable still indicates that younger CEOs are more likely to do acquisitions, and affirms that the age result is not driven by distributional differences in observed covariates between firms with old versus young CEOs.

5 Alternative Explanations

I document a robust relationship between CEO age and acquisition activity. The propensity score analysis provides assurance that the results are not merely driven by differences in key firm characteristics like size, age, or valuation for firms that have young versus old CEOs. I argue that these findings are consistent with the causal effect of CEO age on acquisition propensity, which reflect the greater incentives or inclinations of younger CEOs to pursue acquisitions. There are two leading alternative interpretations.

One alternative explanation is that acquisitive firms happen to select younger CEOs. There are several different ways such selection can take place. One possibility is that acquisitive firms select young CEOs because they recognize the aligned incentive of young CEOs to do acquisitions and do them more successfully (possibly because of their energy, or because

of longer expected tenure at the firm, where they can be held accountable, etc.). Another possibility is that acquisitive firms prefer young CEOs for reasons unrelated to their acquisition ability (e.g., they like youthful, dynamic CEOs, for misguided or unexplained reasons). Lastly, acquisitive firms may select not on age, but on a characteristic correlated with age. What these stories have in common is that the acquisition propensity characterizes the firm and not the CEO; acquisitive firms select CEOs who tend to be young, but CEO age has no causal effect on acquisition activity. This explanation suggests that better controls for firm acquisitiveness should make the age effect disappear.

The second alternative explanation is that the findings could be due to the causal effect of fixed, time-invariant CEO characteristics that are correlated with age in the cross-section. In the “Charisma Effect,” traits that are correlated with *becoming* a CEO at a young age—such as charisma, or exceptional leadership ability that allows one to rise quickly through the ranks—also make CEOs more inclined to pursue acquisitions. However, such charismatic CEOs will not get less acquisitive as they age, as CEO age does not reflect a causal effect. A similar idea is the “Cohort Effect,” that characteristics that are overrepresented in younger cohorts of CEOs—such as possessing an MBA, or technical or financial expertise—make CEOs more acquisitive. These traits create an association between CEO age and acquisitiveness in the cross-section and yet result in no change in acquisition behavior as the individual CEO gets older. Because these explanations relate to CEO characteristics that are correlated with age in the cross-section but are fixed in the CEO’s lifetime, they suggest that inclusion of CEO fixed effects should make the age effect disappear.¹⁵

5.1 Selection by acquisitive firms

In Table 6, I include firm fixed effects to control for all observed and unobserved time-invariant firm characteristics that may be correlated with acquisition propensity. Column 1

¹⁵If the potentially omitted CEO characteristic actually varies *with* a CEO’s age, that does not pose a problem for the interpretation that age has a causal effect. I offer age as a proxy for underlying CEO characteristics that change over a CEO’s lifetime (which can include experience, ambition, overconfidence, energy levels, wisdom, etc.), or for incentives that change over his lifetime.

shows the baseline specification with firm fixed effects. I find that the basic cross-sectional findings still hold within-firm: acquisition activity decreases with age. Since CEO age and tenure are collinear for a given CEO at a given firm, within-firm identification of age and tenure effects come from episodes of CEO turnover. When a younger CEO joins a firm, acquisition activity increases.

This result shows that the age effect is not due solely to acquisitive firms selecting young CEOs, if acquisitiveness is a time-invariant firm characteristic. However, this result leaves open the possibility that firms that are “about to be acquisitive” hire young CEOs. These firms may hire young CEOs either consciously, in anticipation of acquisition activity, or coincidentally, in advance of an acquisitive period. Thus periods of acquisition activity may coincide with, but not be caused by, young CEO leadership of the firm. This hypothesis suggests that the effect of young CEOs on acquisition activity would be most pronounced in the years closest to hire. Therefore, in column 2 I exclude observations where the CEO has fewer than 5 years of tenure to verify whether this effect persists. The point estimate in column 2 gets bigger, inconsistent with the explanation that the age-acquisition relationship is driven by young CEOs hired near periods of high acquisition activity.

However, I note that the sign on tenure flips in column 2; this suggests that at 5 or more years of tenure, the tenure coefficient essentially picks up an age effect. Table 4 showed that the marginal effect of tenure is important for the first few years on the job but that this effect dissipates after the first 5 years. Thus for this sample of long-tenured CEOs, the effect of an incremental year on the job on acquisition propensity essentially reflects the effect of age, not tenure. This suggests dropping the tenure variable, and in column 3 I find that CEO age effect is highly significant and much bigger in magnitude than in the overall sample.¹⁶ This is clear evidence that board selection is not driving the effect of age on acquisition propensity: the effect of age is much stronger years after the proposed effect should have been evident.

¹⁶In the full sample where tenure still matters for (has positive effect on) acquisition propensity, dropping tenure results in an attenuated age effect.

5.2 Omitted time-invariant CEO characteristics

Next, I address the hypothesis that the age results are driven by “Charisma” or “Cohort” effects—time-invariant CEO characteristics, such as possessing charisma or an MBA, that may be correlated with age in the cross-section. If acquisition propensity is really driven by characteristics that are fixed over the CEO’s lifetime, then including CEO fixed effects should make the age effect disappear. Table 7 column 1 adds CEO fixed effects to the baseline specification, and the resulting coefficient on age is negative and insignificant. However, I note that identification of tenure and age effects in this specification come from movement of CEOs across firms—of which there is very little in the sample. Only 165 of 4,852 CEOs in my sample appear in more than one firm, and as a result, the within-CEO correlation of age and tenure is 0.95. I address this multicollinearity problem in two ways. In column 2, I turn age into tercile dummy variables, Mid Age and Old (relative to omitted Young) CEOs, so that tenure is no longer multicollinear with measures of age. The point estimates are negative and are increasing in magnitude across the terciles, although they are not significant. In column 3, motivated by earlier findings that tenure is primarily relevant for the acquisition propensity of relatively untenured CEOs, I restrict the sample to the set of long-tenured CEOs (those with 5 or more years of tenure) and drop tenure as a control. The result is a negative, but insignificant, point estimate.

Columns 4 and 5 restrict the sample to CEOs who have had a long career, for whom an age effect, if one exists, should be easier to identify. I consider only CEOs whose age at hiring was in the lowest tercile of CEO ages at hiring (22-45). Column 4 shows that the magnitudes of coefficients on the Mid Age and Old CEO dummy variables increase and become marginally significant. The size of the effect is meaningful: relative to earlier in his career, a CEO’s individual acquisition propensity declines by almost 3 percentage points, or ~20% of the baseline likelihood. Column 5 further restricts the sample to CEOs who have 5 or more years of tenure, and drops the tenure control. Again the coefficient on age becomes more negative, although it is not significant. Despite limitations of the data, I interpret these

results as evidence that acquisition propensity declines for individual CEOs from earlier to later in their in their career.

This analysis demonstrates that the two leading alternate explanations, selection on age and the causal effect of a CEO characteristic correlated with age, are not consistent with the evidence. Thus I conclude that the empirical relationship I demonstrate likely captures a causal effect of CEO age on acquisition activity.

6 Effect of Governance

I argue that CEO age is a source of varying incentives to pursue acquisitions and present evidence that these incentives have causal consequences for firm acquisition policy. In particular, I find that the effect of age on acquisitions is not driven by firm selection—firms do not appear to actively hire CEOs primarily on their acquisition propensity. This raises questions about whether boards are able to manage CEO incentives in other ways. If boards do not hire CEOs based on desired acquisition policy, then it is likely that firms end up with CEOs whose desires for an acquisition are not aligned with the needs of the firm. I thus examine the effect of governance on the age-acquisition relationship.

6.1 Effect of governance on the age-acquisition relationship

Table 8 examines the effect of governance on the propensity of younger CEOs to do acquisitions. I interact measures of “Weak Governance,” which I interpret as boards’ inability to restrain the CEO, with measures of CEO age. Under the view that younger CEOs have greater incentives to do acquisitions, I expect that the effect of age should be stronger in firms with weaker governance. In such firms, CEO incentives more readily translate into policy with only modest board intervention.

In columns 1 and 2 “Weak Governance” equals one if the firm has above-median values of the Gompers, Ishii, and Metrick (GIM) governance index. Column 1 interacts Weak

Governance with a linear CEO age, and the interaction term is negative. Consistent with the agency interpretation of the age effect, the effect is more negative in firms with weaker governance. Although the interaction term is not significant, the F-test shows that the effect of age is robustly different from zero in the sample of firms with weak governance.

The findings in column 1 indicate that weak governance is associated with higher acquisition activity in younger CEOs relative to older CEOs. This can result from increases in young CEO acquisition activity or decreases in old CEO activity. This latter possibility is consistent with short benefit horizons that disincline older CEOs from undertaking effort-costly acquisitions. However, it is not consistent with the common idea that all CEOs would pursue acquisitions if given the opportunity. To examine whether governance has different effects at opposite ends of the age spectrum, column 2 interacts Weak Governance with age in terciles, Mid Age and Old Age. The positive and significant coefficient on Weak Governance says that acquisition activity among Young CEOs, the omitted group, is higher when governance is weak. In contrast, the negative coefficient on the Old Age * Weak Governance interaction suggests that older CEOs actually decrease acquisition activity when governance is weak. These findings suggest that the effect of age is stronger in poorly governed firms, but in a way that allows young CEOs to increase acquisition activity but old CEOs to decrease acquisition activity.

I examine this further with another proxy for weak governance. An alternative notion of weak governance is that powerful CEOs get their own way. Hence, columns 3 and 4 consider Weak Governance equal to one if the CEO has above-median tenure, since tenured CEOs are influential (within the firm more generally but in particular over the board). The negative interaction term in column 3 shows that CEO tenure exacerbates the age effect: younger CEOs are much more likely to pursue acquisitions if they are also more tenured. The positive coefficient on Weak Governance in column 4 affirms this. However, the negative coefficient on Old Age * Weak Governance in column 4 also shows that older CEOs are significantly *less* likely to pursue acquisitions when they are more influential, and presumably more able to

do what they like. This suggests that older CEOs do inefficiently too *few* acquisitions if left to their own, countering the notion that all CEOs have empire-building preferences which they would express if unchecked by governance. However, these findings can be understood in terms of the limited benefit horizons of older CEOs, which reduce the desirability of undertaking effort-costly acquisitions.

6.2 Announcement day returns

I present evidence that weak governance exacerbates the effect of age-related incentives on acquisition activity. In order to address whether these incentives affect acquisition quality, in Table 9 I examine the announcement day returns of acquisitions announced by young CEOs. Observations are at the deal-level, and I consider only deals that exceed 5% of the firm’s market capitalization. Announcement day returns are the 3-day cumulative returns surrounding the announcement date. Young CEO is a binary variable capturing age effects. Column 1 includes controls for firm-level characteristics; column 2 adds controls for deal characteristics that have been associated with announcement day return effects (deal size, cash-only financing, focusing mergers, and governance (Masulis, Wang, and Xie, 2007)); and column 3 interacts the Young dummy with the poor governance measure (dummy variable that equals one for firms with above-median GIM index). Overall I find weak evidence that younger CEOs do worse acquisitions and that poor governance exacerbates this.

I further explore the acquisition activity of young CEOs. Column 4 shows that younger CEOs are much less likely to complete announced deals; and column 5 shows that deals announced, then withdrawn, by young CEOs have significantly worse returns than completed deals. If the fact that deals that are eventually withdrawn have worse announcement day returns than completed deals seems unsurprising, I note that the this is not the case for deals announced by older CEOs (as given by a negative, but insignificant “Completed deal” coefficient). I interpret these results as suggesting that young CEOs are more likely to opportunistically announce poor-quality acquisitions, which they are subsequently unable to

close.

I examine this interpretation further by splitting the sample into “Strong Governance” and “Weak Governance” firms in columns 6 and 7, respectively. I find that the results in column 5 are driven by the well-governed firms: the differential in announcement day returns between withdrawn and completed deals is significant and sizeable only among well-governed firms. This supports the interpretation that young CEOs may be driven by agency-related reasons to pursue poor quality deals, but that governance can effectively check a CEO’s influence and prevent the completion of especially poor announced deals.

7 Estimating benefits and risks of acquisitions

I demonstrate that younger CEOs do more acquisitions and present evidence that this relationship is causal in nature. In addition, I describe two channels for why acquisition propensity could vary over a CEO’s lifetime: Incentives that vary with the career horizon and Characteristics that vary with age. Here I quantify the importance of the Incentives channel and examine the compensation benefits of acquisitions. In contrast to stories of changing biases or preferences, I can estimate the value of compensation benefits and demonstrate that financial incentives to pursue acquisitions decline with age.

I also examine the risk of turnover associated with acquisitions. This is also a potential consequence of acquisition activity that can plausibly influence CEO incentives to pursue acquisitions *ex ante*. This too I can examine, quantify, and most relevantly for this study, assess the extent to which it might *differentially* influence the incentives of young versus older CEO to pursue acquisitions.

7.1 Compensation benefits post-acquisition

In Table 10 I examine the compensation awarded to CEOs following acquisition activity. I estimate using OLS

$$\% \Delta Comp_{ijt} = \beta_0 Acq_{ijt} + \beta_1 Acq_{ijt-1} + \beta_2 Acq_{ijt-2} + \dots + \beta_r Acq_{ijt-r} + X_{ijt} \delta + \epsilon_{ijt}$$

where $\% \Delta Comp_{ijt}$ is the percent change in the total compensation of CEO j of firm i from year $t - 1$ to t . The Acq are indicator variables for contemporaneous and lagged acquisition activity. Acq_{ijt-r} equals one if CEO j of firm i completed an acquisition exceeding 5% of the firm market capitalization in year $t - r$. X_{ijt} is a matrix of controls for CEO and firm characteristics. Errors ϵ_{ijt} are assumed to be independent across but not within firms.

In this specification, β_0 represents the contemporaneous effect on compensation of a 5% Acquisition. I interpret β_1 as the effect on compensation today of a 5% Acquisition one year ago; or equivalently, the effect on compensation tomorrow of doing a 5% Acquisition today. β_2 to β_r can be interpreted similarly. Therefore, I take $\beta_0 + \beta_1 + \beta_2 + \dots + \beta_r$ to be the *cumulative* compensation effect of a 5% Acquisition.

Column 1 in Table 10 shows that a 5% Acquisition raises CEO compensation by 14.3% in the contemporaneous year. In column 2 the coefficient on $Acq[t-1]$ shows that acquisition activity in the prior year is associated with a 3.8% increase in the current year's compensation; this effect is on top of the contemporaneous compensation effect of 14.0% captured by the coefficient on $Acq[t]$. Therefore I interpret the sum of 14.0% and 3.8% as the cumulative 2-period effect of acquisition activity on compensation. Columns 3 and 4 include additional lags of acquisition activity, $Acq[t-2]$ and $Acq[t-3]$. The number of observations falls with the inclusion of additional lags, since this effectively conditions on CEO survival 2 and 3 years after the acquisition. The positive coefficients on the lagged variables show that even acquisitions 2 and 3 years in the past are associated with positive effects on current compensation. Adding all the coefficients in column 4 shows that the cumulative effect of acquisitions on

compensation growth exceeds 25% 3 years after the acquisition.

However, it is difficult to claim that these coefficients reflect the causal effect of acquisitions on compensation growth. The concern is that firms that acquire also have higher baseline compensation growth rates; in effect, the acquisition indicators may be correlated with other determinants of compensation growth. Although ideally I want to be able to control for firm-specific compensation growth rates, addition of firm fixed effects here would not be appropriate. I am interested in whether acquisitions generate large changes in compensation; therefore, estimation using de-meaned variables would remove precisely the change in compensation I am looking to detect.

Instead, in column 5, in addition to contemporaneous controls X_{ijt} , I include lagged controls X_{ijt-1} , X_{ijt-2} , and X_{ijt-3} for CEO and firm characteristics. These are characteristics which the baseline specification demonstrates are important for acquisition propensity (e.g., CEO age, CEO tenure, firm size, firm age, valuation, etc.), which may also explain compensation growth. The inclusion of these lagged controls attenuates the contemporaneous effect but the general pattern remains: acquisitions have a big contemporaneous effect on compensation, which subside in subsequent years. The concern about varying firm-specific compensation growth rates may explain different rates of compensation drift across firms in the years following an acquisition, but cannot rationalize away the $\sim 13\%$ jump in compensation in the year of the acquisition. Most importantly, the positive coefficients on lagged acquisition activity show that these gains *do not revert*; in other words the compensation gains made in the year of the acquisition are *permanent*.

Figure 1A plots the coefficients from column 5 to show the dynamic effect on compensation of acquisition activity. Figure 1B shows the cumulative effect on compensation (summation across coefficients on acquisition activity, up to the relevant lags). This shows that after a sizeable increase in compensation in the year of the acquisition, compensation continues to drift upward. The confidence bounds also affirm that these compensation gains are persistent; compensation in the years following an acquisition is significantly greater than

in the years prior.

Given the magnitude of the contemporaneous increase in compensation and the subsequent continuation in compensation growth, I offer a (conservative) estimate that CEOs who complete a 5% Acquisition experience compensation growth of $\sim 15\%$. Median compensation for CEOs in this sample is \$2.0 million. Therefore the median CEO experiences a compensation gain of \$300,000 from the acquisition, and enjoys this new higher level of compensation *every year thereafter*. Young CEOs may find the prospect of such an income stream quite compelling.

7.2 Turnover post-acquisition

In Table 11, I examine the risk of turnover associated with acquisitions. I estimate OLS regressions where the dependent variable Turnover equals one in the final year of a CEO's tenure (for a firm that remains operational, i.e., has not been delisted or acquired). I control for important determinants of CEO turnover such as CEO age, firm size, and contemporaneous and lagged measures of firm stock and accounting performance. Column 1 shows that age has a strong effect on turnover; since I am unable to separate forced from voluntary or natural turnover, turnover will increase with age for retirement-related reasons. In addition, larger firms experience more turnover, and as expected, turnover is associated with poor firm performance. To determine the effect of acquisition activity on turnover, I include a dummy variable "Prior acquisitions [t-3,t-1]" that equals one if the current CEO completed a "5% Acquisition" in the prior 3 years.¹⁷ I allow for a multi-year window as the success of an acquisition may not be evident for several years. Column 1 shows that acquisition activity is associated with *lower* turnover, which runs contrary to the notion that acquisitions are risky. This may reflect entrenching benefits of acquisitions (Shleifer and Vishny, 1989); or may be an endogenous result driven by a high quality or an already-entrenched CEO. Columns 2 and 3 separately consider Young and Old CEO samples (lowest and highest age

¹⁷This has the effect of conditioning the sample on CEOs with 3 or more years of tenure.

terciles, respectively), and they show that most of the negative association between age and turnover comes from the Old CEO sample. Turnover of young CEOs appears insensitive to acquisition activity whereas old CEOs experience lower turnover; one interpretation is that acquisitions incline boards to retain old CEOs who they would otherwise let go.

However it is also possible that this reflects differences in acquisition quality pursued by young versus old CEOs. Thus in column 4 I control for the quality of the 5% Acquisitions completed in the prior 3 years by assigning their announcement day returns to return terciles (Low, Middle, High).¹⁸ These tercile assignments compare the turnover of CEOs who have completed acquisitions of varying quality, relative to the baseline group of CEOs having no prior 3-year acquisition activity. Column 4 shows that higher quality acquisitions are associated with lower turnover; however, it is interesting to note that poor quality acquisitions do not seem to *raise* turnover.¹⁹ This result again suggests at the endogeneity of acquisition activity. Columns 5 and 6 show that this relationship is only evident among Old CEOs: turnover of young CEOs appears insensitive to acquisition quality.

Although I am hesitant to make strong causal inferences from these findings, I make two observations. First, there is no discernible empirical effect that acquisitions increase risk of CEO turnover. This provides some assurance that the compensation benefits of acquisitions are not offset by concerns over termination risk; CEOs will still find acquisitions attractive on purely financial grounds. Second, the turnover of young CEOs seems less affected by acquisitions than that of old CEOs. These findings diminish the concern that boards are more likely to fire young CEOs in response to acquisitions; such risks likely do not play a role in counteracting young CEOs' incentives to pursue acquisitions.

¹⁸For CEOs who have more than one 5% Acquisition, I weight the announcement day return by the value of the deal.

¹⁹Lehn and Zhao (2006) interpret their findings that turnover post-acquisition is decreasing in acquirer announcement day returns as evidence that “bad bidders are fired”; however they only examine turnover in the sample of acquiring firms and hence cannot compare acquiring firm CEO turnover to that of non-acquiring CEOs.

8 Conclusion

This paper demonstrates that the age of the CEO is an important determinant of firm acquisition activity: a CEO who is 20 years older is 30% less likely to announce an acquisition. I show that acquisitions are associated with large, permanent increases in CEO compensation, and argue that this relationship gives rise to declining incentives to pursue acquisitions over a CEO's career horizon.

This paper takes a new look at an old idea in corporate finance, CEO agency problems, and attends to the possibility that agency problems can vary across individuals. By recognizing CEOs as long-lived agents, I am able to draw on the tradeoffs between immediate costs and future stream of benefits as a source of variation in incentives across CEOs. These incentives can be mapped to a simple, observable characteristic: CEO age. I show that this heterogeneity of characteristics and incentives across CEOs has economically meaningful effects on corporate policies.

This paper then establishes a world where CEO heterogeneity matters, in which it matters *who* the board selects into the role of CEO. This further complicates directors' jobs. Boards are responsible for hiring, advising, monitoring, and compensating the CEO (Lorsch and MacIver, 1989; Lorsch and Carter, 2004). Thus, ideally, boards should have a firm grasp of the needs of the firm, as well as the incentives and abilities of the CEO to carry out value-maximizing policies. However, this very complexity raises doubts about whether boards can adequately perform their duties. For example, Khurana (2002) describes the CEO search process as one fraught with media influence, third party interests, and backroom dealings, from which the best candidate is unlikely to emerge. Bebchuk and Fried (2003) argue that CEOs have hijacked the compensation process, so that directors and "objective" intermediaries (e.g., compensation consultants) are beholden to them instead of shareholders. These works depict boards as powerless bystanders in the face of CEO incentives.

However, this paper demonstrates the relevance of governance. I find that governance restrains the propensity of young CEOs to pursue too many acquisitions, and moreover,

effectively prevents the completion of bad acquisitions announced by young CEOs. Thus this paper highlights the importance of the board's ability to check the CEO's influence ex post, especially since the best candidate for the job is unlikely to have the right incentives under all circumstances. Overall, this paper shows that CEO incentives matter, and that boards play an important role in mediating the influence of these incentives on corporate policy.

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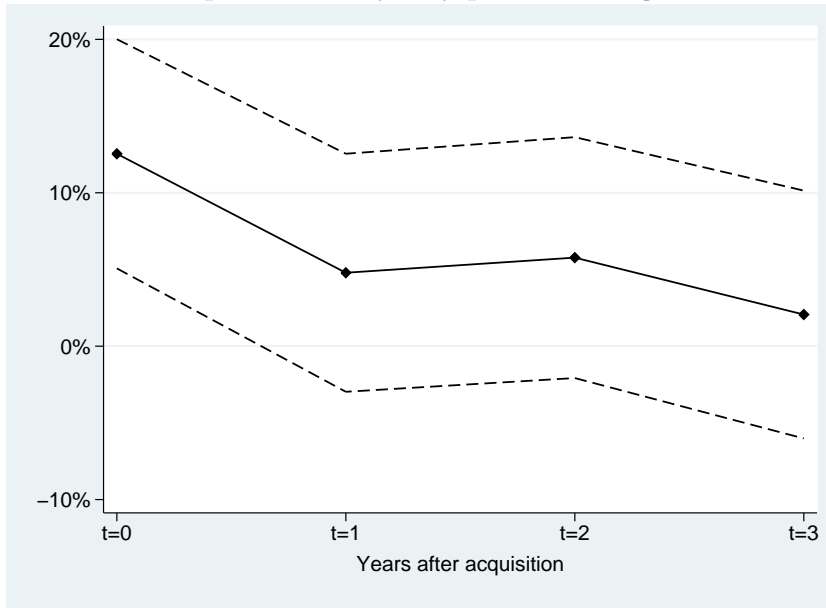
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Figure 1
CEO Compensation Post-Acquisition

These figures show dynamic and cumulative effects of acquisition activity on CEO compensation, as estimated by the regression in Table 10 column 5. An “acquisition” is an acquisition that exceeds 5% of acquirer market capitalization. The y-axis in the figures is the CEO’s yearly percent change in total compensation (relative to the prior year). Figure A plots the coefficients from the regression and shows the dynamic effect an acquisition has on compensation 0,1, 2, and 3 years after the event. Figure B adds successive coefficients from the regression and plots the cumulative effect of the acquisition on compensation. Dotted lines indicate a 95% confidence band.

A. Dynamic effect of acquisitions on yearly percent change in CEO compensation



B. Cumulative effect of acquisitions on yearly percent change in CEO compensation

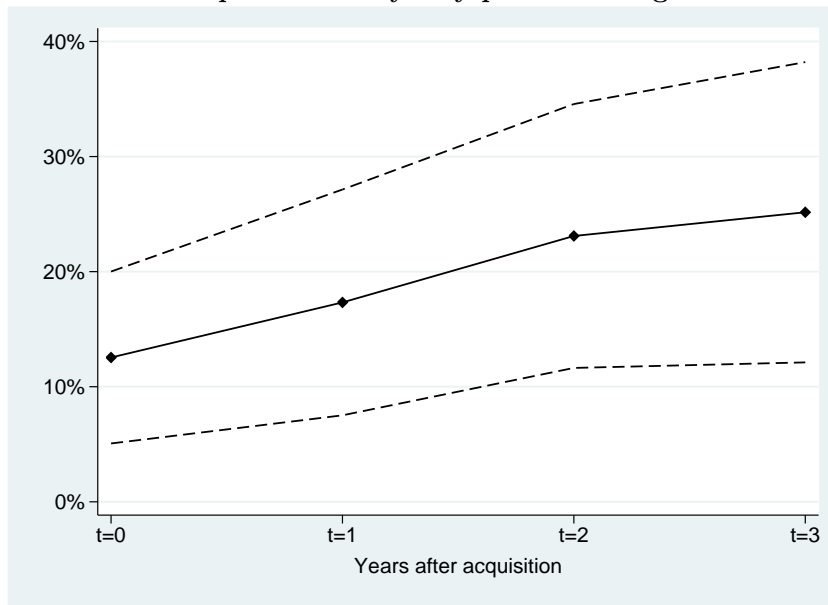


Table 1
Sample Summary Statistics

This table reports characteristics of the sample, based on S&P 1500 firms in 1992-2007. Observations are at the firm-CEO-year level. In Panel A Deal value is the total deal value of acquisitions announced by the CEO in the firm-year. Relative deal value is the deal value normalized by the beginning of year market capitalization. 5% Acquisition is a binary variable that equals one if the CEO announces an acquisition whose deal value exceeds 5% of the beginning of year market capitalization. In Panel B Assets is book value of assets. Market capitalization is the market value of the outstanding equity. Total capitalization is book assets plus market value of equity less book value of equity. Firm age is the current year less the firm's first year of record in Compustat. Market to book is the market value of assets (total capitalization) divided by book value of assets. Prior year returns are cumulative monthly returns from the prior year. Cash flow is EBITDA less interest, taxes, and dividends. Tenure is the number of years the CEO has held the CEO title at the current firm. Total compensation is the CEO's total direct compensation (TDC1 from Execucomp). Sample summary statistics of firm and CEO characteristics are shown for the full sample and for the sample of acquiring firms only (observations with 5% Acquisition=1). *, **, *** denote that the difference in mean or median for characteristics in the full sample versus the acquiring firm subsample is significant at 10%, 5%, 1%, respectively. Panel C shows pairwise correlations between select variables.

Panel A. Acquisition characteristics

	N	Mean	Median	Std Dev
Deal value (\$MM)	28,549	223	0	2,278
Deal value >0	6,687	954	110	4,632
Relative deal value (%)	28,549	0.06	0.00	0.35
Relative deal value >0	6,687	0.26	0.08	0.68
5% Acquisition (0/1)	28,549	0.14	0.00	0.35

Panel B. Firm and CEO characteristics

	Full Sample				Acquiring Firms Only			
	N	Mean	Median	Std Dev	N	Mean	Median	Std Dev
Assets (\$MM)	28,549	9,542	1,017	51,950	3,943	8,081	874	45,134
Market capitalization (\$MM)	28,549	5,443	987	19,671	3,943	4,279	901	16,318
Total capitalization (\$MM)	28,549	13,224	1,789	59,469	3,943	10,943	1,572	51,806
Market to book	28,451	2.17	1.51	2.26	3,936	2.26	1.52	2.98
Prior year returns	28,444	0.23	0.12	0.73	3,931	0.33	0.19	0.82
Cash flow / Total cap	28,426	0.04	0.04	0.05	3,928	0.04	0.04	0.05
Firm age	28,549	23.19	18.00	15.93	3,943	20.05	14.00	15.14
CEO age	28,549	55.1	55.0	7.6	3,943	54.2	54.0	7.5
CEO tenure	28,549	7.0	5.0	7.4	3,943	7.1	5.0	6.6
Total compensation (\$'000)	25,550	4,211	1,969	10,463	3,471	5,251	2,192	15,853

Panel C. Correlation of variables

	5% Acq	Log (assets)	MB	Prior yr returns	Cash flow	Firm age	CEO tenure	CEO age
5% Acquisition (0/1)	1.00							
Log (assets)	-0.03	1.00						
Market to book	0.02	-0.25	1.00					
Prior year returns	0.05	-0.11	0.36	1.00				
Cash flow / Total cap	0.01	0.05	-0.12	-0.01	1.00			
Firm age	-0.08	0.48	-0.20	-0.10	0.08	1.00		
CEO tenure	0.00	-0.06	0.01	0.03	0.05	-0.06	1.00	
CEO age	-0.05	0.19	-0.13	-0.05	0.07	0.23	0.42	1.00

Table 2
CEO Age and Acquisition Propensity

This table reports results of OLS regressions where the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm's beginning of year market cap. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. The "Age Group" covariates are dummy variables that equal one if the CEO's age falls in the indicated age range. These groups represent 6 equal-sized groupings in the population (sextiles). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)
Age Group II (49-52)	-0.009 (0.008)	-0.004 (0.008)	-0.003 (0.008)	-0.004 (0.008)
Age Group III (53-55)	-0.020** (0.008)	-0.013 (0.008)	-0.012 (0.008)	-0.014* (0.008)
Age Group IV (56-59)	-0.031*** (0.008)	-0.021** (0.008)	-0.019** (0.008)	-0.019** (0.008)
Age Group V (60-62)	-0.039*** (0.008)	-0.026*** (0.009)	-0.025*** (0.009)	-0.024*** (0.009)
Age Group VI (63-92)	-0.048*** (0.009)	-0.041*** (0.010)	-0.040*** (0.010)	-0.040*** (0.010)
CEO Tenure		0.001* (0.000)	0.001* (0.000)	0.001** (0.000)
Log (assets)		0.003 (0.002)	-0.002 (0.002)	-0.001 (0.002)
Market to book		-0.002* (0.001)	-0.002 (0.001)	-0.002 (0.001)
Prior year returns		0.024*** (0.004)	0.023*** (0.004)	0.023*** (0.004)
Cash flow		0.100** (0.044)	0.124*** (0.045)	0.123*** (0.047)
Firm age		-0.002*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Fixed effects	None	None	Ind, Year	Ind*Year
Observations	28549	28349	28349	28349
Adj R2	0.00	0.01	0.03	0.04

Table 3
CEO Age and Acquisition Propensity, Alternative Dependent Variables

This table reports regression results of various measures of acquisition activity on CEO age and other covariates. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. The “Age Group” covariates are dummy variables that equal one if the CEO’s age falls in the indicated age range. These groups represent 6 equal-sized groupings in the population (sextiles). (1)-(4) use OLS regressions. In (1) the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 10% of the firm’s beginning of year market capitalization. In (2) the dependent variable equals one if the firm announces an acquisition of any size. In (3) the dependent variable equals one if the firm announces an acquisition whose deal value does not exceed 5% of the firm’s beginning of year market capitalization. In (4) the dependent variable equals one if the firm announces an acquisition whose deal value exceeds \$50M. (5) estimates a logistic regression, and the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm’s beginning of year market capitalization. (6) estimates a Tobit regression and the dependent variable is the deal value normalized by the firm’s market capitalization. Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Acq (>10%MV) OLS (1)	Acq (all) OLS (2)	Acq (<5% MV) OLS (3)	Acq (>\$50M) OLS (4)	Acq (>5%MV) Logit (5)	Deal Value/ MV Tobit (6)
Age Group II (49-52)	-0.001 (0.007)	-0.003 (0.011)	0.001 (0.008)	-0.006 (0.008)	0.972 (0.061)	-0.027 (0.023)
Age Group III (53-55)	-0.004 (0.007)	0.001 (0.012)	0.015 (0.009)	-0.006 (0.009)	0.891* (0.061)	-0.037 (0.025)
Age Group IV (56-59)	-0.015** (0.007)	-0.010 (0.012)	0.009 (0.010)	-0.018** (0.009)	0.858** (0.060)	-0.064** (0.027)
Age Group V (60-62)	-0.017** (0.007)	-0.016 (0.013)	0.008 (0.010)	-0.032*** (0.009)	0.814*** (0.062)	-0.110*** (0.029)
Age Group VI (63-92)	-0.027*** (0.008)	-0.052*** (0.015)	-0.012 (0.012)	-0.043*** (0.010)	0.699*** (0.064)	-0.158*** (0.035)
CEO Tenure	0.000 (0.000)	0.002*** (0.001)	0.001** (0.001)	0.001** (0.000)	1.008** (0.004)	0.003** (0.001)
Log (assets)	-0.003 (0.002)	0.046*** (0.003)	0.047*** (0.003)	0.048*** (0.002)	0.987 (0.018)	0.055*** (0.013)
Market to book	-0.002* (0.001)	0.011*** (0.002)	0.013*** (0.002)	0.014*** (0.002)	0.986 (0.011)	0.008** (0.003)
Prior year returns	0.016*** (0.003)	0.039*** (0.005)	0.016*** (0.004)	0.025*** (0.004)	1.169*** (0.033)	0.071*** (0.013)
Cash flow	0.056 (0.039)	0.349*** (0.064)	0.226*** (0.048)	0.117*** (0.036)	3.428** (1.715)	0.189 (0.189)
Firm age	-0.001*** (0.000)	-0.001*** (0.000)	-0.000 (0.000)	-0.001*** (0.000)	0.989*** (0.002)	-0.005*** (0.001)
Fixed effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Observations	28349	28349	28349	28349	27285	28349
Adj / Pseudo R2	0.03	0.07	0.06	0.08	0.07	0.03

Table 5
Propensity Score Analysis

Panel A compares the covariate means for the Young=1 and Young=0 samples, where Young=1 if the CEO's age falls in the lowest age tercile (27-52). Panel A1 is unweighted (the original sample), and Panel A2 is weighted using inverse propensity scores, trimmed at propensity score values of [0.1,0.9]. Panel B shows unweighted and weighted regression results. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. In (1) the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm's beginning of year market cap. This is the unweighted baseline regression, which uses the binary variable "Young" as the measure of CEO age. (2) shows the regression whose fitted values constitute the propensity score (the "first stage"). (3) shows the baseline regression results after weighting by the inverse propensity score. Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A. Distribution of covariates in firms with Young=1 and Young=0 CEOs

	1. Unweighted				2. Weighted			
	Young=1	Young=0	Diff	t-stat	Young=1	Young=0	Diff	t-stat
CEO Tenure	4.63	8.38	-3.75	42.39	5.57	5.47	0.10	1.19
Log (assets)	6.55	7.37	-0.82	36.27	6.98	6.96	0.02	0.64
Market to book	2.49	2.00	0.49	-17.72	2.18	2.19	-0.01	0.19
Prior year returns	0.27	0.21	0.06	-6.83	0.24	0.24	0.00	0.17
Cash flow	0.04	0.04	-0.01	9.19	0.04	0.04	0.00	0.76
Firm age	18.54	25.86	-7.32	38.31	22.23	22.16	0.07	0.28

Panel B. Regressions after weighting with inverse propensity score

	Acq Unweighted OLS (1)	Young 1st stage Logit (2)	Acq Weighted OLS (3)
Young CEO	0.020*** (0.006)		0.024*** (0.006)
CEO Tenure	0.000 (0.000)	-0.112*** (0.006)	0.003*** (0.001)
Log (assets)	-0.001 (0.002)	-0.190*** (0.023)	-0.001 (0.002)
Market to book	-0.002 (0.001)	0.031** (0.013)	-0.003 (0.002)
Prior year returns	0.023*** (0.004)	0.027 (0.022)	0.024*** (0.005)
Cash flow	0.124*** (0.047)	-0.357 (0.405)	0.136*** (0.046)
Firm age	-0.001*** (0.000)	-0.019*** (0.003)	-0.001*** (0.000)
Fixed effects	Ind*Year	Ind*Year	Ind*Year
Observations	28349	28129	25544
Adj / Pseudo R2	0.04	0.14	0.05

Table 6
Within-Firm Results

This table reports results of OLS regressions where the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm's beginning of year market cap. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. (1) includes all observations. (2)-(3) include only observations where the CEO has 5 or more years of tenure. All columns also include controls for Log(assets), Market to book, Prior year returns, Cash flow, and Firm age (as defined in Table 1). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	All obs (1)	≥5yrs tenure (2)	≥5yrs tenure (3)
CEO Age	-0.001** (0.001)	-0.002 (0.001)	-0.003*** (0.001)
CEO Tenure	0.001 (0.001)	-0.001 (0.001)	
Controls	Yes	Yes	Yes
Fixed effects	Year, Firm	Year, Firm	Year, Firm
Observations	28349	14730	14730
Adj R2	0.12	0.14	0.14

Table 7
Fixed CEO Characteristics

This table reports results of OLS regressions where the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm’s beginning of year market cap. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. CEO age is either displayed as a continuous “CEO Age” or as binary variables “Mid Age CEO” and “Old CEO” that equal one if the CEO’s age falls in the middle age tercile, 53-59, or highest age tercile, 60-92, respectively. (1)-(2) include all observations. (3) only includes observations where the CEO has 5 or more years of tenure. (4) only includes observations where the CEO was a “Young hire”—that is, CEOs whose age at hiring falls in the lowest tercile of all CEO ages at hiring (22-45). (5) only includes observations where the CEO was a “Young hire” and has 5 or more years of tenure. All columns also include controls for Log(assets), Market to book, Prior year returns, Cash flow, and Firm age (as defined in Table 1). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

	All obs	All obs	≥5 yrs tenure	Young hires only	Young hires only, ≥5 yrs tenure
	(1)	(2)	(3)	(4)	(5)
CEO Age	0.003 (0.003)		-0.003 (0.005)		-0.006 (0.006)
Mid Age CEO		-0.005 (0.010)		-0.028* (0.016)	
Old CEO		-0.010 (0.015)		-0.028 (0.026)	
CEO Tenure	0.001 (0.003)	0.001 (0.003)		0.001 (0.004)	
Controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	Year, CEO	Year, CEO	Year, CEO	Year, CEO	Year, CEO
Observations	28349	28349	14730	10283	7307
Adj R2	0.11	0.11	0.13	0.15	0.15

Table 8
Effect of Governance on the Age-Acquisition Relationship

This table reports results of OLS regressions where the dependent variable equals one if the firm announces an acquisition whose deal value exceeds 5% of the firm's beginning of year market cap. Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. CEO age is either displayed as a continuous "CEO Age" or binary variables "Mid Age CEO" and "Old Age CEO" that equal one if the CEO's age falls in the middle age tercile, 53-59, or highest age tercile, 60-92, respectively. In (1)-(2) "Weak Governance"=1 if the firm has above-median Gompers, Ishii, Metrick (GIM) governance measure. In (3)-(4) "Weak Governance"=1 if the CEO has above-median tenure. All columns also include controls for Log(assets), Market to book, Prior year returns, Cash flow, and Firm age (as defined in Table 1). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	High GIM Index		High CEO Tenure	
	(1)	(2)	(3)	(4)
CEO Age	-0.0010*		-0.0012***	
	(0.0006)		(0.0004)	
Age * Weak Governance	-0.0006		-0.0013**	
	(0.0007)		(0.0007)	
Mid Age CEO		-0.0018		-0.0079
		(0.0099)		(0.0068)
Old Age CEO		-0.0146		-0.0208***
		(0.0104)		(0.0075)
Weak Governance	0.0562	0.0275***	0.0940**	0.0359***
	(0.0421)	(0.0100)	(0.0377)	(0.0095)
Mid Age * Weak Governance		-0.0062		-0.0215*
		(0.0129)		(0.0119)
Old Age * Weak Governance		-0.0108		-0.0243**
		(0.0132)		(0.0122)
Controls	Yes	Yes	Yes	Yes
Fixed effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Observations	19324	19324	28217	28217
Adj R2	0.03	0.03	0.04	0.04
p-value of F-test:				
H ₀ : Age+Age*Weak=0	0.009		0.000	

Table 9
Announcement Day Returns and Withdrawn Deals

This table reports results of OLS regressions where the dependent variables are characteristics of acquisition deals announced by S&P 1500 firms in 1992-2007. Observations are at the deal level, and include only deals whose value exceeds 5% of the firm's market capitalization. In (1)-(3) and (5)-(7) the dependent variable is the 3-day cumulative return (in percentage points) surrounding the announcement day [-1,1]. In (4) the dependent variable equals one if the announced deal has been completed. "Completed deal" equals one if the announced deal was completed; "High GIM" equals one if the firm has above-median values of the Gompers, Ishii, Metrick governance index; "Deal value / MV" is a measure of the deal size (normalized by firm market capitalization); "Cash bid" equals one if the deal was financed with only cash; and "Same industry" equals one if the target and acquirer belong to the same Fama-French 48 industry. In (6) and (7) the sample is split into "Strong Governance" and "Weak governance" firms using the median value of the Gompers, Ishii, Metrick governance index. All columns also include controls for CEO Tenure, Log(assets), Market to book, Prior year returns, Cash flow, and Firm age (as defined in Table 1). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Annnc day return All deals (1)	Annnc day return All deals (2)	Annnc day return All deals (3)	Completed deal All deals (4)	Annnc day return All deals (5)	Annnc day return Strong Governance (6)	Annnc day return Weak Governance (7)
Young CEO	0.006 (0.062)	-0.046 (0.084)	-0.031 (0.117)	-0.039*** (0.014)	-0.419* (0.233)	-0.836** (0.356)	-0.290 (0.382)
* Completed deal					0.417* (0.247)	0.861** (0.372)	0.239 (0.398)
* High GIM			-0.030 (0.167)				
Completed deal					-0.114 (0.158)	-0.322 (0.249)	0.094 (0.228)
High GIM		-0.130 (0.079)	-0.119 (0.094)	0.012 (0.013)	-0.130 (0.079)	0.000 (0.000)	0.000 (0.000)
Deal value / MV		-0.286*** (0.090)	-0.287*** (0.090)	-0.080*** (0.020)	-0.281*** (0.090)	-0.144 (0.155)	-0.366*** (0.123)
Cash bid		0.391*** (0.080)	0.391*** (0.080)	0.017 (0.014)	0.391*** (0.080)	0.665*** (0.139)	0.200 (0.128)
Same industry		0.118 (0.089)	0.118 (0.089)	0.038** (0.016)	0.109 (0.088)	-0.180 (0.149)	0.263* (0.136)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Observations	4729	2697	2697	2697	2697	1376	1321
Adj R2	0.04	0.08	0.08	0.10	0.08	0.04	0.13

Table 10
Acquisition Activity and CEO Compensation

This table reports results of OLS regressions where the dependent variable is the yearly percent change in total compensation (from t-1 to t) of CEOs of S&P 1500 firms in 1992-2007. The “Acq” covariates are binary variables that equal one if the current CEO completed an acquisition exceeding 5% of the firm market cap in the current year, or the prior 1, 2, or 3 years. (1)-(4) include only contemporaneous controls for firm characteristics; (5) also includes firm controls for the current year and up to the prior 3 years. All columns also include controls for CEO Age, CEO Tenure, Log(assets), Market to book, Prior year returns, Cash flow, and Firm age (as defined in Table 1). Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)	(5)
Acq [t]	0.143*** (0.032)	0.140*** (0.033)	0.120*** (0.035)	0.140*** (0.038)	0.127*** (0.038)
Acq [t-1]		0.038 (0.031)	0.044 (0.034)	0.033 (0.038)	0.046 (0.040)
Acq [t-2]			0.069* (0.037)	0.056 (0.040)	0.062 (0.041)
Acq [t-3]				0.040 (0.040)	0.019 (0.041)
Controls, Contemporaneous	Yes	Yes	Yes	Yes	Yes
Controls, Lagged	No	No	No	No	Yes
Fixed effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Observations	20321	20321	16652	13244	13025
Adj R2	0.03	0.03	0.03	0.03	0.03

Table 11
Acquisition Activity and CEO Turnover

This table reports results of OLS regressions where the dependent variable equals one in the final year of a CEO's tenure (and the firm is still operational, i.e., has not been delisted or acquired). Observations are at the firm-CEO-year level, and include S&P 1500 firms in 1992-2007. "Prior stock return" is the firm's cumulative monthly return in the prior 1, 2, or 3 years. "Prior ROA" is the firm's ROA in the prior 1, 2, or 3 years. In (1)-(3) "Prior acquisitions [t-3,t-1]" is a dummy variable that equals 1 if the current CEO completed an acquisition that exceeds 5% of the firm's market cap ("5% Acquisition") in the prior 3 years. In (4)-(6) "Prior acquisitions [t-3,t-1], Low return tercile" is a binary variable that equals one if the 5% Acquisition in the prior 3 years has announcement day returns that fall in the lowest tercile of such returns (announcement day returns are weighted by deal value if there is more than one 5% Acquisition in the prior 3 years); "Prior acquisitions [t-3,t-1], Middle return tercile" and "Prior acquisitions [t-3,t-1], High return tercile" are defined respectively. The omitted group consists of firms having no prior 3-year acquisition activity. Columns (2) and (5) include only Young CEOs and columns (3) and (6) include only Old CEOs, where Young and Old correspond to Terciles 1 and 3 of the CEO age distribution. Standard errors clustered at the firm level are shown in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

	All	Young	Old	All	Young	Old
	(1)	CEOs only	CEOs only	(4)	CEOs only	CEOs only
	(1)	(2)	(3)	(4)	(5)	(6)
CEO age	0.006*** (0.000)	-0.002 (0.001)	0.008*** (0.001)	0.006*** (0.000)	-0.002 (0.001)	0.008*** (0.001)
Log (assets)	0.013*** (0.002)	0.008** (0.003)	0.025*** (0.003)	0.013*** (0.002)	0.008** (0.003)	0.025*** (0.003)
Prior stock return [t-1]	-0.025*** (0.004)	-0.030*** (0.005)	-0.020*** (0.007)	-0.026*** (0.004)	-0.030*** (0.005)	-0.020*** (0.007)
Prior stock return [t-2]	-0.004 (0.003)	-0.002 (0.005)	-0.005 (0.006)	-0.004 (0.003)	-0.002 (0.005)	-0.005 (0.006)
Prior stock return [t-3]	-0.002 (0.004)	-0.001 (0.007)	-0.011** (0.006)	-0.002 (0.004)	-0.002 (0.007)	-0.011* (0.006)
Prior ROA [t-1]	-0.094*** (0.030)	-0.134*** (0.038)	-0.030 (0.040)	-0.095*** (0.030)	-0.133*** (0.038)	-0.029 (0.040)
Prior ROA [t-2]	-0.008 (0.022)	0.016 (0.025)	-0.024 (0.038)	-0.008 (0.022)	0.016 (0.025)	-0.021 (0.038)
Prior ROA [t-3]	0.004 (0.016)	0.035* (0.018)	-0.008 (0.040)	0.005 (0.016)	0.035* (0.018)	-0.008 (0.040)
Prior acquisitions [t-3,t-1]	-0.014** (0.006)	-0.002 (0.009)	-0.024** (0.011)			
Prior acquisitions [t-3,t-1], Low return tercile				-0.012 (0.009)	-0.001 (0.016)	-0.014 (0.018)
Prior acquisitions [t-3,t-1], Middle return tercile				-0.010 (0.009)	-0.004 (0.014)	-0.022 (0.017)
Prior acquisitions [t-3,t-1], High return tercile				-0.026*** (0.009)	0.008 (0.014)	-0.060*** (0.017)
Fixed effects	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year	Ind*Year
Observations	14822	4070	6101	14822	4070	6101
Adj R2	0.04	0.01	0.03	0.04	0.01	0.03