

CEO Preferences and Acquisitions

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PRELIMINARY

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ABSTRACT

This paper finds strong evidence that target CEOs' retirement preferences affect the incidence, the pricing, and the outcomes of takeover bids. Mergers frequently force target CEOs to retire early, and the CEO's private merger costs are the forgone benefits of staying employed until the expected retirement date. Using age as an instrument for CEOs' personal merger costs, we find strong evidence that target CEOs' preferences affect merger patterns. The likelihood of receiving a takeover bid increases sharply when a target CEO reaches the common retirement age of 65, from 4% per year for CEOs below the retirement age to 5.5% for the retirement-age group, a 37.5% increase in the odds ratio of receiving a bid. Moreover, observed takeover premiums and target announcement returns are significantly lower when target CEOs are older than 65, further indicating that retirement-age CEOs are more willing to accept takeover offers. These results suggest that the retirement preferences of target CEOs have first-order effects on both bidder and target behavior.

1 Introduction

From 1990 to 2009, almost 8,000 public U.S. firms with a market capitalization in excess of \$5.4 trillion were acquired. In the median transaction, target shareholders received a premium of 36% over the pre-announcement share price, implying a total value increase of about \$1.5 trillion. These magnitudes suggest that the U.S. takeover market has great potential to create or destroy shareholder value. Our paper provides evidence that the career concerns and retirement preferences of target firms' CEOs have first-order effects on takeover decisions, leading to outcomes that are unlikely to be in the target shareholders' best interest.

The target firm's CEO is one of the most important actors in the takeover market. As the target's top executive, the CEO plays a key role in his firm's decisions leading up to a bid (e.g., a decision to seek out a buyer, or initiate merger talks), and once a bid is made, the CEO leads his firm's response and its negotiations with buyers. Given this unique role, it is interesting to note that target CEOs' career concerns and retirement preferences are likely to be at odds with target shareholders' objectives: target CEOs typically lose their jobs during or shortly after a takeover, and in only a handful of cases does the departing CEO find a similar position in a public firm. This suggests that mergers can represent serious setbacks to target CEOs' careers.¹ In many cases, mergers force target CEOs into early retirement, ending their CEO careers entirely. Though most CEO compensation contracts recognize these costs – they include provisions for golden parachutes or special bonuses conditional on mergers – it is unclear to what extent they succeed at eliminating the inherent incentive problem.

In this paper, we test whether target CEOs' retirement preferences affect the incidence, the pricing, and the outcomes of takeover bids. Under the assumption that mergers force target CEOs to retire early, the CEOs' private merger costs are the forgone benefits of staying employed until the expected retirement date. Though retirement plans differ across individuals, research in labor economics shows that a disproportional fraction of workers retires at the age of 65 (we observe the same phenomenon for CEOs). This age-65 effect cannot be fully explained by monetary incentives, including social security benefits and Medicare, which suggests behavioral explanations related to customs or social norms. If

¹ For example, Walkling and Long (1984), Martin and McConnell (1991), Agrawal and Walkling (1994), and Hartzell, Ofek, and Yermack (2004) show that target CEOs exhibit unusually high turnover rates and poor career prospects following mergers.

CEOs similarly favor 65 as retirement age, this preference should be reflected in their private merger costs, and – provided that these costs affect merger decisions – in the observed merger patterns. Specifically, depending on the exact nature of CEOs’ preferences, we should observe an increase in merger activity as CEOs approach 65, or a discrete jump in this activity at the age-65 threshold (we derive these predictions in Section 2).

We find strong evidence that target CEOs’ retirement preferences affect merger patterns. The likelihood of receiving a takeover bid increases sharply when the target CEO completes age 65. Controlling for CEO and firm characteristics, the implied probability that a firm receives a takeover bid is close to 4% per year for CEOs below the retirement age (in age groups 61-65, 56-60, 51-55 , and ≤ 50), but it increases to 5.5% for the “retirement-age” group (above 65). This corresponds to a 37.5% increase in the odds ratio of receiving a bid, and the effect is statistically significant at the 1% level. Interestingly, we find no evidence that the likelihood of a bid increases gradually as the target CEO approaches retirement age, so the effect appears discretely at the age of 65. The effect is similar whether all bids or only successful bids are included, and it remains economically large and significant even when CEO age is included separately as a control in the regression. These bid frequency results suggest that bidders are more likely to approach targets with retirement-age CEOs, possibly due to these CEOs’ weaker expected resistance against takeovers.

To understand the mechanism behind the high bid frequency for firms with retirement-age CEOs, we next examine the effects of CEO age on target shareholders’ gains from acquisitions. We expect that a target CEO’s attitude towards a merger bid is influenced by both his private costs and by the expected impact of the merger on target shareholder value. CEOs pay attention to shareholder wealth because they themselves hold equity in their firms and because they face pressure from boards. Thus, if retirement-age CEOs face lower private costs, then they will not only allow more mergers to go through (as we document), but the incremental deals should also generate lower shareholder gains than the marginal deal in the below retirement-age sample.

Consistent with this prediction, observed takeover premiums and target announcement returns are significantly lower when target CEOs are above age 65. Controlling for firm, CEO, and deal characteristics, the takeover premium measured from two months before the bid announcement to the final offer price is 10 percentage points lower when the target CEO is older than 65. This effect is both statistically significant and economically large. We find

no difference in the pre-announcement stock price run-ups between the two samples, though we cannot rule out the possibility that some of the difference in takeover premiums is driven by differences in investors' expectations about the likelihood that a firm will receive a bid. Interestingly, acquirer announcement returns are on average zero in both the above-65 and the below-65 samples, suggesting that the bargaining power in merger negotiations remains with the target firm regardless of the retirement-age status of its CEO.

Finally, the discrete increase in the likelihood of receiving a bid at age 65 is not limited to full-takeover bids. We discover a similar pattern for acquisitions of partial stakes, which are purchases of less than 50% of the target's equity. Some of these transactions are likely to be a direct consequence of the more active takeover market in the retirement-age sample. For example, investors may purchase target shares in anticipation of a takeover bid, or potential future acquirers may accumulate toeholds to reduce acquisition costs. Consistent with the first motive, we find that most partial acquisitions in the retirement-age sample are open-market purchases by passive investors, likely betting that the target share price will rise due to a takeover bid. We discuss additional motives for partial acquisitions in Section 5.

This paper merges two strands of literature: the literature on managerial career concerns, and the literature on agency conflicts in mergers and acquisitions. With regard to managers' career concerns, Holmström (1982) and Gibbons and Murphy (1992) argue that incentives worsen as managers approach retirement and care less about their long-term career prospects. In the same vein, Dechow and Sloan (1991) provide evidence that older managers focus excessively on actions with short-term gains. Our results offer a very different view of managers' career concerns: they suggest that a shorter horizon can *improve* corporate decisions. Assuming that CEOs are generally too reluctant to sell their firms, an approaching retirement reduces excessive resistance to takeover bids. An alternative interpretation of our findings is that CEOs of retirement age are too eager to give up control – a possibility that we cannot rule out. However, evidence in prior studies speaks against this explanation. For example, Mikkelsen and Partch (1989) and Song and Walkling (1993) show that target CEOs with larger equity stakes are less likely to receive takeover bids, suggesting that powerful CEOs, left to their own devices, are reluctant to sell their firms.

More generally, our results suggest that CEOs' personal preferences have first-order effects on the allocation of corporate control. The theory literature regularly assumes that managers enjoy private benefits of control, and that managers' personal preferences, be they

for larger firms or for a quiet life, determine their decisions to buy or sell firms. However, direct evidence on the role of managers' preferences in M&A is rare, mostly because managers' preferences are difficult to observe. Instead, several studies examine correlations between target managers' (equity) incentives and mergers, with mixed results.² Mikkelsen and Partch (1989) and Song and Walkling (1993) show that the probability of receiving a takeover bid is negatively related to target managers' equity holdings, while Ambrose and Megginson (1992) and Morck, Shleifer, and Vishny (1988) find inconsistent results.³ Stulz, Walkling, and Song (1990) and Song and Walkling (1993) document a positive correlation between target managers' equity ownership and takeover premiums, while Walkling and Long (1984), Morck et al. (1988), and Cotter and Zenner (1994) show that managers with larger equity stakes are less likely to resist takeover bids. Finally, Barger, Schlingemann, Stulz, and Zutter (2010) examine the relation between takeover premiums and the retention of target CEOs by the merged firm. Their results suggest that target CEOs do not trade lower takeover premiums for continued employment at the merged firm. Barger et al. also note that CEOs close to retirement negotiate lower takeover premiums, consistent with our results.

While the correlations between target CEO incentives and mergers documented in prior studies are interesting, interpreting them as causal is difficult. Both CEO equity holdings and offers of post-merger employment are endogenous and correlated with prior performance, CEO quality, CEO power, and other unobservables that are themselves likely to affect merger patterns. In comparison, using the presence of a retirement-age CEO as instrument for low career costs is attractive as it is not the result of immediate choices by the parties negotiating the merger deal, and as it is less likely to be correlated with other determinants of bid frequencies and merger premiums. Moreover, the fact that we observe a sharp change in merger patterns at age 65 strongly suggests an effect of CEO preferences. Any other determinants of mergers that are correlated with CEO age are unlikely to change discretely at the retirement-age threshold.

It is interesting to note that the large effects of CEO age on mergers obtain despite the (likely countervailing) effects of golden parachutes. If career concerns cause younger CEOs

² An even larger literature examines the effects of *bidder* CEO incentives and preferences on mergers. See, for example, Morck, Shleifer, and Vishny (1990), Grinstein and Hribar (2004), Harford and Li (2007), and Yim (2010).

³ Specifically, Ambrose and Megginson find no relation between bid frequency and target CEO ownership, while Morck et al. find a positive relation in a sample of friendly acquisitions.

to be excessively reluctant to sell their firms, then corporate boards should mitigate this problem through explicit incentives. Golden parachutes and other incentive payments tied to a successful sale of the firm can compensate CEOs for the loss of future income (and loss of other benefits) associated with being acquired. The size of the optimal golden parachute should decline as the CEO reaches retirement age, in parallel to the CEOs' declining reluctance to sell the firm.

Empirically, Hartzell et al. (2004) examine the use of golden parachutes and special bonuses as a compensation for merger-related career costs. They find that special bonuses and golden parachutes for target CEOs are positively correlated with CEOs' prior excess compensation, and negatively correlated with the probability that the target CEO becomes an executive of the merged firm. Two recent papers by Bebchuk, Cohen, and Wang (2010) and Fich, Tran, and Walkling (2010) investigate the impact of golden parachutes on merger frequencies and premiums and find evidence that these payments reduce target CEOs' resistance against takeover bids. However, our results suggest that these contractual arrangements are insufficient to eliminate the effect of CEOs' retirement preferences on merger outcomes, at least in our sample. If boards managed to set the size of the golden parachutes equal to each CEO's loss of future benefits from being acquired, then we should see no effect of CEO age on mergers, contrary to what we find in the data.

The remainder of the paper is organized as follows. We develop the hypotheses in Section 2. In Section 3, we describe the data and sample construction, while Section 4 presents the main empirical results. Section 5 shows additional evidence using data on partial acquisitions, and Section 6 concludes.

2 The age-65 effect and private merger costs

Labor economists have studied retirement decisions for decades and have developed a number of models that predict the retirement patterns of U.S. employees.⁴ One puzzling phenomenon is that most models under-predict the frequency of retirements at age 65. For example, in one of the firms studied by Lumsdaine, Stock, and Wise (1996), 48% of men working at 64 retire at 65. This compares to 21% of men working at 63 who retire at 64.⁵

⁴ See, for example, Hurd and Boskin (1981), Burtless (1986), Hausman and Wise (1985), Stock and Wise (1990a, 1990b), and the overview in Lumsdaine, Wise, and Stock (1990).

⁵ See also Phelan and Rust (1997) and Blau (1994).

Lumsdaine et al. test a number of potential explanations for this age-65 effect. They conclude that the magnitude of the spike cannot be explained by the provisions of Social Security, Medicare, or pension plans. They also argue that for a typical worker aged 64 the cost of retiring at 65 vs. the optimal age is quite high, so that “rule-of-thumb” behavior is unlikely to explain the data. They conclude: “We are inclined to attribute the unexplained high age-65 departure rates to an ‘age 65 retirement effect,’ that is, to the influence of custom or accepted practice.” Put differently, employees preferences for work vs. retirement seem to change discretely (or at least rapidly) at age 65.

In this paper, we exploit the age-65 effect to test whether CEOs’ personal preferences affect the likelihood and the outcomes of merger bids. Figure 1 shows that CEO turnovers spike at age 65, very similar to the pattern for rank-and-file employees. There are a number of possible reasons for why more CEOs retire at age 65. First, CEO preferences for work vs. leisure may change around age 65, similar to what the literature suggests for rank-and-file employees. This may be because CEOs have internalized customary retirement practices into their preferences. Alternatively, boards may put pressure on CEOs to retire, perhaps because they believe that CEO skills deteriorate with age, or because they try to improve the incentives of potential internal successors. If boards’ pressure increases sharply at age 65, then CEOs may experience a corresponding decline in their utility from employment at that threshold.

What are the implications of this concentration of CEO retirements at age 65 for acquisitions? A straightforward implication is that many 65-year old (or older) CEOs do not lose much by accepting a takeover bid. For younger CEOs, becoming the target of an acquisition usually implies an (involuntary) early retirement. Most target CEOs lose their jobs during or shortly after a takeover, and in only a handful of cases does the departing CEO find a new position in a public firm.⁶ For a CEO at or close to her expected retirement age, however, the cost of her firm being acquired should be small.

If CEOs are powerful enough to impose their personal preferences onto their firms’ policies, then acquirers should prefer target CEOs who are at or close to retirement, simply because such CEOs have less motivation to protect their own jobs. The exact effect of target

⁶ Walkling and Long (1984), Martin and McConnell (1991), Agrawal and Walkling (1994), and Hartzell, Ofek, and Yermack (2004) show that target CEOs exhibit unusually high turnover rates and poor career prospects following mergers.

CEO age on acquisition patterns around age 65 depends on why exactly CEOs retire at this age. If CEOs' preference for work over leisure gradually declines as they approach 65, then their willingness to sell their firm should gradually increase, and so should the frequency of acquisition bids. Similarly, if CEOs are concerned about the loss of future income due to an involuntary early retirement, then this concern should gradually diminish as they approach their planned retirement, again causing a gradual increase in acquisitions. However, if CEOs' have a strong preference to stay in office until age 65, or if CEOs' are pressured to retire starting at 65 even though they still prefer work over leisure, then we may observe an abrupt increase in takeover activity as CEOs reach the retirement threshold.

3 Data and descriptive statistics

3.1.1 Data sources

The acquisition data comes from the Securities Data Corporation's (SDC) U.S. Merger and Acquisition Database. To obtain information on target CEOs, we start with the Standard & Poor's ExecuComp database, which lists top executives in all S&P 500, S&P MidCap, and S&P SmallCap firms. We cross-check this information and collect data on CEO age by searching news articles in the Factiva database and the firms' proxy statements. For a subset of CEOs, the age data comes from Peters and Wagner (2009). This procedure results in a panel dataset with 4,600 CEOs and 20,208 CEO-years from 1992 through 2005, similar to that used in Jenter and Lewellen (2010). Finally, we obtain financial statement information from Compustat and stock return data from the Center for Research in Security Prices (CRSP).

3.1.2 Sample for the bid frequency analysis

The bid frequency regressions estimate the likelihood that a firm becomes an acquisition target (or is acquired) in a given fiscal year. To identify the acquisition years, we obtain a list of all bids for ExecuComp firms that have announcement dates during our sample period. We exclude share repurchases, privatizations, exchange offers, recapitalizations, cases in which the bidder already owns 50% or more of the target's equity, and bids with missing data on the amount of target equity sought. This procedure results in a list of 2,801 bids for 1,558 targets. Based on this list, we identify the firm-years in the CEO panel in which the firm becomes a

target of an acquisition bid.⁷ Our final panel has 16,476 CEO-years with complete data, 1,260 of which are classified as years in which the firm is a target. In a subset of 727 CEO-years the firm is a target of a full takeover bid, which we define as a bid for more than 90% of target equity.

3.1.3 Sample for the takeover premium analysis

The takeover premium analysis focuses on 840 bids for at least 90% of the target's equity for which SDC indicates that the transaction has been completed. After merging the sample with CRSP, Compustat, and CEO characteristics, we are left with 635 bids. To construct the bid announcement returns and takeover premiums, we identify announcement dates using a procedure similar to Betton, Eckbo, and Thorburn (2008). First, we identify bids that occur within six months prior to the final bid. We classify any control bids that occur within that time period as belonging to the same takeover contest as the final bid. A bid is as a control bid if the bidder owns less than 50% of the target's equity and seeks to own at least 50% of the target's equity. The announcement date used in the analyses is then the announcement date of the first control bid in each contest. In 95% of cases, there are no control bids preceding the final bid.

3.1.4 Descriptive statistics

Descriptive statistics for the 840 full takeover bids are in Table 1. The table distinguishes between bids received by CEOs above and below the age-65 retirement threshold. As predicted, the retirement-age sample exhibits lower average announcement returns and takeover premiums than other targets.⁸ For example, the takeover premium computed from trading day -42 before the announcement date to the final offer price is 30% for the retirement-age sample but 35% for other firms (the medians are 26% and 30%, respectively). Not surprisingly, retirement-age CEOs are on average older and have longer tenures. They are also more likely to be classified as founders. The firms in the retirement-age sample are,

⁷ For most years, the acquisition indicator is set to one if a firm receives a bid during that year (and to zero otherwise). However, if a fiscal year is the firm's final year on Compustat, the variable is set to one if the firm receives a bid during that year or within two years thereafter. This assures that we include cases in which the bid announcement occurs after the end of the firm's last reported fiscal year. Finally, we check for cases of CEO turnover after the firm exits Compustat, and we use the CEO in office at the time of the bid.

⁸ The takeover premiums are winsorized at the first and the 99th percentile to account for possible coding errors on SDC.

on average, smaller than other firms: the mean market value of equity is \$1.9 billion vs. \$4.1 billion for firms with younger CEOs (the medians are \$0.8 billion and \$1.0 billion). Finally, the retirement-age sample has a higher incidence of hostile takeovers (10% vs. 3%) and of cash-only acquisitions (42% vs. 31%).

4 Retirement age and takeovers

4.1 Bid frequencies

This section examines the effects of CEO age on the likelihood of receiving an acquisition bid. Using the panel dataset described in Section 3.1.2, we estimate a probit model with the dependent variable equal to one if the firm becomes the target of a bid in a given fiscal year. The left panel of Table 2 includes all takeover bids, including those for partial equity stakes. In the right panel, we include only full takeover bids, i.e. bids for at least 90% of the target's equity.⁹

The main variable of interest is the retirement-age dummy `RET_AGE`, which is equal to one if the CEO is older than 65 at the time of the bid. We refer to this group as the retirement-age sample.¹⁰ The main result in Table 2 is that, consistently across all regressions, the likelihood of receiving a bid increases significantly at age 65, and this effect appears to be discrete. For example, in the first column of Table 2, the likelihood of a bid increases from 7% to 12% per year going from the below-65 to the retirement-age sample, a 71% increase in the odds ratio. The effect is significant at the 1% level, and the effect is similar when we limit the analysis to successful bids (column 3). When only full takeover bids are considered (the right panel of Table 2), the bid probability increases from 4% to 6% p. a. for retirement-age CEOs (a 50% increase in the odds ratio). The p-values on the retirement-age dummy are 0.08 for all full takeover bids and 0.03 for successful bids.

The regressions control separately and linearly for CEO age, though age itself should be correlated with CEOs' private mergers costs. Specifically, merger costs should decline as CEOs approach retirement (independently of any additional age-65 effect), though this

⁹ We conduct a more detailed analysis of partial acquisitions in Section 5.

¹⁰ Including CEOs aged 65 in this group yields similar results; see the robustness tests in Section 4.4.

relation is likely to be confounded by correlated factors.¹¹ For example, young CEOs might have better career opportunities outside their firms, and consequently, view mergers as less costly. They may also lead younger and more dynamic firms and thus experience a more active takeover market. To allow for possible non-linearities in the age-bid-frequency relation, we next replace CEO age with dummy variables for CEOs in various five-year age groups. We leave out age group 56-60, which contains the median CEO age. This specification provides further support for a discrete retirement-age effect: the coefficient on RET_AGE is positive and significant in all regressions (columns 2, 4, 7, and 9 of Table 2). Successful takeover bids are 50-60% more likely for firms with retirement-age CEOs than for firms with CEOs aged 56-60 (in unreported regressions we find similar effects when retirement-age CEOs are benchmarked against the 61-65 group). Most of the remaining dummy variables are not statistically significant, suggesting no particular patterns in bid frequencies across age groups. Two exceptions are the negative coefficients on the AGE61-65 dummy in column 4 and on the AGE \leq 51 dummy in column 8. The first result is surprising and may suggest that CEOs close to age 65 wait until they reach retirement age before selling their firms.¹² The second result is consistent with higher private merger costs for the youngest CEOs, though it is not robust across specifications.

Turning to other control variables, the regressions show that bids are significantly less likely for CEOs with longer tenures, for older and for larger firms, and for firms that performed well in the past, based on both accounting returns and stock returns. There is also some evidence that founders are more likely to receive bids, though the result is not significant for successful bids or for full takeover bids.

4.2 *Announcement returns and takeover premiums*

We next examine the implications of CEOs' retirement preferences for acquisition announcement returns and premiums. We predict that a target CEO's attitude towards a bid is influenced by both her private merger costs and by the expected effect of the takeover on target shareholders. This implies that CEOs of retirement age, who we expect to have lower private merger costs, will *ceteris paribus* require less target shareholder value generation

¹¹ In unreported regressions, we find that when RET_AGE is excluded, the coefficient on CEO age is positive and significant, consistent with declining mergers costs. However, when RET_AGE is included, CEO age is either not significant or, in the first column, it is significantly negative.

¹² Alternatively, acquirers may wait until the CEO of the target firm reaches retirement age before launching a takeover attempt.

from a takeover proposal. The empirical implications are two-fold: First, CEOs of retirement age allow more mergers to go through, consistent with the evidence in the previous section. Second, these additional transactions should, on average, generate lower gains for target shareholders compared to other deals (see the top figure in Appendix 1 for an illustration). Hence, if CEOs' private merger costs decline sharply at age 65, then we expect to see lower average takeover premiums and announcement returns for the post-65 CEOs.

In Table 3, we focus on the 635 completed takeover deals in our sample (see the definition in Section 3). The dependent variables in the first four columns are bid announcement returns $RET(-3,1)$ and $RET(-42,1)$, defined as the cumulative industry-adjusted target stock returns from trading day -3 or -42 before to day +1 after the announcement date. We cumulate the returns from trading day -42 to account for any pre-announcement run-ups (see Schwert (1996), and Betton et al.). The dependent variable in the last two columns of Table 3 is the takeover premium, computed from the closing price on trading day -42 to the final offer and adjusted for the matched industry return during the same period. We use the 49 Fama-French equal-weighted industry returns for the industry adjustment.

All regressions in Table 3 show that targets with retirement-age CEOs have significantly lower announcement returns and takeover premiums than targets with younger CEOs. The effects are economically large. For example, column 3 implies that $RET(-42,1)$ is 10 percentage points lower for retirement-age CEOs than for younger CEOs (with a t-statistic of -2.3), controlling for CEO, firm, and deal characteristics. Similarly, the takeover premium measured from trading day -42 is 12 percentage points lower for the retirement-age sample, with a t-statistic of -2.0. There is no evidence that CEO age itself is associated with either takeover premiums or announcement returns. To match the bid frequency analysis in Table 2, we next replace CEO age by three dummy variables for CEOs in age groups 61-65, 51-55, and less than 51. Again, we leave out the median age group of 56-60. The coefficients on RET_AGE remain economically large and statistically significant, and none of the coefficients on the other age dummy variables are significant.

Fig. 2 illustrates the retirement-age effect by plotting the cumulative industry-adjusted returns around the announcement date for the retirement-age and the below-65 samples. The figure confirms that firms with retirement-age CEOs have higher announcement returns, though the difference is approximately half as large as the estimate from the multivariate tests

in Table 3. The pre-announcement price run-up is relatively small and starts after day -42, consistent with Betton et al., who examine a similar sample. Notably, the run-up is similar for the retirement-age and the below-65 samples, suggesting no significant difference in takeover rumors or information leakage leading up to the merger announcements. However, we cannot rule out that merger expectations formed in the more distant past differ between the two samples, and we provide a comparison of long-term pre-announcement returns in Section 4.4.3.

4.3 *Robustness tests*

We perform a number of robustness tests for both the bid frequency and the premium regressions. First, we use alternative measures of stock and option ownership, including measures of unvested stock, unvested options, and all stocks and options held by the CEO prior to the bid. Cai and Vijh (2007) provide evidence that CEOs with more illiquid holdings offer less resistance against acquisitions and accept lower takeover premiums. We find that in some specifications, the coefficients on the ownership variables are consistent with the illiquidity hypothesis, though the overall evidence is ambiguous. Including the alternative ownership measures has no impact on our main results: the coefficients on RET_AGE remain significant with the predicted sign in all specifications.

Next, we experiment with different definitions of “retirement age”. In the analyses so far, CEOs who are exactly 65 at fiscal year-end are not included in the retirement-age sample because we do not know whether these CEOs had reached age 65 at the time of a bid during the fiscal year (in most cases, we can only confirm that they turn 65 within one year of the bid). The inclusion of the 65-year-old CEOs has little impact on the bid frequency results in Table 2. The coefficients on RET_AGE remain positive and significant in all regressions. Similarly, there is little effect on the coefficient on RET_AGE in the announcement return regressions. In the premium regressions, the coefficients are negative and significant as long as the premium is measured from day -30 to the final offer, but are no longer significant when the premium is measured from day -42 to the final offer. Finally, we experiment with moving the retirement-age cutoff further to either 66 or 64. Most results become weaker as we move the threshold away from 65 in either direction, suggesting that the retirement-age effect is strongest at 65.

Finally, in the announcement return regressions, we measure announcement returns extending to 126 trading days after the bid with similar results. We also repeat the analysis using value-weighted rather than equal-weighted industries as benchmark. All coefficients on RET_AGE in Table 2 remain negative, and they are significant in the premium regressions and in two out of four announcement return regressions.

4.4 Alternative hypotheses

We have documented an increase in takeover activity and a decline in takeover premiums for target CEOs above age 65. The results support the hypothesis that target CEOs' retirement preferences affect takeover decisions. In this section, we consider other explanations for these results. The alternative explanations all posit that CEOs who stay in office beyond age 65 have different characteristics than those who retire earlier, or that their firms have different characteristics compared to firms with younger CEOs. In turn, these differences may be associated with higher bid frequencies and lower takeover premiums. We consider four specific selection effects below.

4.4.1 Firms with succession problems

CEOs who remain in office after reaching age 65 may do so because their firms have difficulties finding a successor. The bottom figure in Appendix 1 illustrates the implications of this succession problem hypothesis for takeover frequencies and premiums. The figure assumes that takeover decisions are value maximizing, and that the retirement age is chosen optimally from both the firm's and the CEO's perspective. The key friction are search costs associated with replacing a retiring CEO. Being acquired has the added benefit of reducing search costs by making the acquirer's pool of potential successors accessible to the target.

In the figure, takeovers occur as long as there is a positive benefit to target shareholders. This benefit could represent a reduction in CEO search costs or any other synergy captured by the target. The key assumption is that firms with higher search costs are more likely to retain their CEOs beyond the age of 65, and thus are over-represented in the retirement sample. As a consequence, the retirement sample exhibits a higher incidence of mergers, consistent with the results in Table 2. However, since the reduction in search costs creates additional value for the target, the average takeover premium is higher, not lower, for the post-65 CEOs. This is the opposite of what we find.

One important caveat in this analysis is that search costs might be correlated with other unobservable firm or CEO characteristics causing lower average premiums. For example, high-search-cost firms might be associated with higher investor expectations of takeover bids (and thus higher target share prices), lower other synergies with potential acquirers, or more bargaining power on the part of the acquirer. In unreported regressions, we find no significant difference in the pre-announcement run-ups or acquirer gains between the retirement-age and the below-65 samples, suggesting that these explanations do not drive the results.

4.4.2 Interim CEOs

Firms with leadership or performance problems may hire interim CEOs whose task it is to find a successor or to sell the firm. Anecdotally, interim CEOs are often retired CEOs from the same or some other firm, and, as a result, relatively old. Such interim CEOs might be responsible for the finding that acquisitions are more frequent in the retirement-age sample.

Two pieces of evidence speak against this explanation. First, the retirement-age sample is dominated by CEOs with long tenures. The median tenure is 11 years, compared to 5 years in the below-65 sample. Second, we have re-run all regressions excluding CEOs in their first or second year of tenure, and find that the coefficients on RET_AGE remain statistically significant in all bid frequency, announcement return, and takeover premium regressions shown in Tables 2 and 3.

4.4.3 Disciplinary takeovers

Firms with CEOs above age 65 may be more likely to suffer a disciplinary takeover, for at least two reasons. First, retirement-age CEOs might be (on average) more entrenched than other CEOs, making it difficult to fire them for bad performance, necessitating disciplinary takeovers. Second, the skills of some CEOs might deteriorate around age 65, making a change in leadership optimal. Such change may occur through either a retirement or, if needed, a disciplinary takeover. Both mechanisms can explain the higher frequency of takeover bids for firms with retirement-age CEOs.

To test these hypotheses, we compare the accounting and stock return performance for takeover targets in the retirement-age and the below-65 samples. Based on univariate tests, there is no evidence that CEOs in the retirement-age sample underperformed their benchmarks. For example, average monthly industry adjusted returns for the one, two, and

three years prior to the bid announcement are -0.2%, 0.5%, and 0.4% for the retirement-age sample, compared to -0.4%, -0.3%, and 0.1% for CEOs in the 61-65 age group. The results are similar for other age groups and for accounting returns in the year prior to the acquisition. Finally, we run a multivariate regression of long-term pre-announcement stock returns on RET_AGE and the other control variables used in Table 3. Depending on the specification, we find either no effect of RET_AGE on pre-bid performance, or we find that, in the long run, retirement-age CEOs performed slightly better than other CEOs. There is thus no evidence to suggest that retirement-age CEOs should face more frequent disciplinary takeovers.

4.4.4 Reverse causality

An expected takeover bid may motivate target CEOs to stay in office beyond age 65. If there are fixed costs associated with CEO turnover, or if an expected takeover has led to the departure of internal succession candidates, then a retirement-age CEO may decide to stay in office until the sale of the firm is completed. This hypothesis can explain why retirement-age CEOs are associated with a higher frequency of takeovers. However, it cannot explain why these takeovers earn lower premiums, and is therefore inconsistent with the data.

5 Retirement age and partial acquisitions

5.1 Frequency of partial acquisitions

In the previous section, we have shown that takeover bids are more frequent when the target CEO is above 65, and that this result holds when partial acquisitions are included. In this section, we explore partial acquisitions, i.e. deals in which the acquirer seeks to own less than 50% of the target's equity, in more detail. Our hypothesis is that retirement-age CEOs face lower private costs of being acquired and are therefore less likely to resist takeover bids. There are several reasons why the same mechanism could cause more frequent bids for partial equity stakes. First, a more active takeover market for firms with retirement-age CEOs could induce more toehold purchases by potential acquirers as well as more information-based position-taking by merger arbitrageurs. Second, activist investors may view an impending CEO change as an opportunity to influence the firm, making block ownership more valuable. For example, outgoing CEOs may be more receptive to policy changes that

strengthen corporate governance at the firm going forward, simply because they themselves would not be subject to the new regime.

To explore these ideas we proceed in two steps. First, we establish whether the frequency of partial acquisitions is indeed higher for retirement-age CEOs. Using data available on SDC, we then test what types of acquisitions are more (or less) frequent, which gives us some indication of the underlying motives for the deals. Second, we examine press reports for a subset of 37 partial acquisitions in the retirement-age sample for which we have complete SDC data. The purpose of this analysis is to better understand the reasons for the transactions as described by the acquirers and the financial press.

Table 4 shows descriptive statistics for the partial acquisitions. In the retirement-age sample, acquirers own on average 6.7% of the target's equity prior to the deal, and seek to own 13.1% after the transaction (compared to 3.4% and 10.7% for younger CEOs). Of the partial acquisitions in the retirement-age sample, 71% are open market purchases and 24% are negotiated block trades (the remaining deals are not classified). This compares to 59% and 35%, respectively, for firms with younger CEOs. Out of the 66 deals in the retirement-age sample, 16 are block purchases, and only 9 of those deals have offer prices available on SDC. Tentative evidence based on this small sample suggests that block premiums measured from day one after the announcement to the final offer price are higher in the retirement-age sample: the mean premium is 26% vs. 3% for younger CEOs, and the median is 7% vs. 0%. This pattern supports our conjecture that private benefits from block ownership may be higher in the retirement-age sample.¹³

Turning to the bid frequency regressions in Table 5, we find that partial acquisitions are significantly more likely for retirement-age CEOs, echoing the results for full acquisitions in Table 2. The likelihood of a partial acquisition in a fiscal year in which the CEO is older than 65 is 6.7%, compared to only 3.1% in other years. This difference is significant in all three bid size categories we consider (0-10%, 10-20%, and 20-50% of target equity), though it seems strongest for the largest bids. Interestingly, the retirement-age effect is present for both open market and negotiated block trades. Activist investors seeking to increase their voting power could use both types of acquisition strategies, though investors trading on information

¹³ See Barclay and Holderness (1989 and 1991) for a discussion of block premiums as measures of private benefits from control.

or acquiring toeholds are more likely to trade in the open market. The coefficients on the control variables in Table 5 are similar to those for full acquisitions in Table 2.

5.2 *What motivates partial acquisitions in the retirement-age sample?*

To gain more insight into the motives behind partial acquisitions in the retirement-age sample, we examine news articles about the transactions. We limit this analysis to 37 deals (out of a total of 66) for which we have all relevant variables, including the offer price from SDC. Searching all news sources available in the Factiva database, we find information about 31 out of the 37 deals. After reviewing the articles, we divide the transactions into three broad categories: (1) investment deals, in which the acquirer appears to be a financial investor (this group is further subdivided into passive and active deals); (2) synergistic deals, in which the acquirer is a firm active in the same or a related industry as the target firm; and finally (3) other deals that do not fit the previous categories. Out of the 31 deals for which we can find press reports 22 are investment deals, six are synergistic deals, and four are classified as “other”.¹⁴

Most investment deals in our sample (17 out of 22) appear passive, in the sense that we find no record of blockholder activism in the target firm. In a typical deal, a purchaser acquires the block in a series of open-market transactions. In many cases, the purchaser states that it has “no extraordinary plans for the company” and that the acquisition is for “investment purposes” only. Taking these statements at face value, passive deals seem to be bets on a rise in the target’s stock price. Such bets may be more common in the retirement-age sample because of anticipated takeover bids, or because of other value-enhancing changes expected at the time of CEO turnover. We cannot rule out, however, that in some cases the blockholder’s intentions to become active in the firm are not disclosed, so that deals we classify as passive are in fact active.

In a typical active deal, the acquirer announces plans to influence the policy of the target firm. Interestingly, in four out of the five active cases, there is an indication in the press that the target firm might (or should) be acquired. One example is a block acquisition of Helene Curtis Industries’ shares by Shamrock Holdings announced in May 1994. In connection with

¹⁴ The “other” deals are: (1) a private placement to a group of investors (all other purchases by “a group of investors” in our sample are open-market transactions); (2) a purchase of a company’s stock by its pension fund; (3) a full takeover misclassified by SDC as a partial acquisition; and (4) a partial acquisition of the target’s class B shares by a company that already has voting control of the target.

the deal, “Shamrock Holdings ... is asking Helene Curtis to consider a sale of the company or increase accountability of its board and management to its public shareholders.”¹⁵ In a different example, in October 1994 and September 1995, an investor group appears to be acquiring a toehold in Hilton Hotels Corp. A related press report states that “At age 66, Chairman and CEO Barron Hilton is widely viewed – rightly or wrongly – as open to a deal at the right price.”¹⁶ These examples are consistent with our prediction that firms with retirement-age CEOs are attractive takeover targets.

We classify six of the partial acquisitions as “synergistic”. In a typical deal of this type, the target and the acquirer come from the same or a related industry, and they announce plans to form a joint venture or a strategic alliance. For example, Corimon International Holdings states that the company initiates an alliance with the target firm, Growth Group Inc., “to achieve critical mass in the world paints industry”, and to gain “access to advanced technology and strengthen ... export potential”¹⁷. One article suggests that the Corimon deal is an example of a broader trend in which partial acquisitions replace the “mega-M&A deals of the 1980s” and offer companies a cheaper way to “gain access to new technology and markets”. To support its claim, the article points out that with a 26% stake, Corimon will be the largest shareholder in Growth and will thus be able to exercise control.

6 Conclusions

This paper explores the impact of target CEOs’ retirement preferences on the probability and the outcomes of takeover bids. Prior research shows that target CEOs’ careers suffer setbacks when their firms are acquired. If incentive pay does not fully compensate CEOs for their private costs, then firms’ takeover decisions are likely to be distorted. We examine this hypothesis using a novel test. We exploit the observation from labor economics that workers’ propensity to retire increases discretely at the age of 65. This effect cannot be explained by the provisions of social security, Medicare, or pension plans, and is often attributed to customs and social norms. In this paper, we derive implications of this age-65 effect for CEOs’ private merger costs, and indirectly, for predicted merger patterns.

¹⁵ Dow Jones Newswires, January 17, 1996.

¹⁶ Personal Investing Financial, September 20, 1994. “Takeover Talk Hits Hilton Hotels” by Tom Petruno.

¹⁷ Chemical Week, July 29, 1992. Corimon buys a stake in Grow Group and forms an alliance by Elizabeth S. Kiesche.

Consistent with the private merger costs hypothesis, we find that acquisition bids and takeovers are substantially more likely for CEOs above age 65, and that the effect appears to be discrete at this age threshold. We argue that this effect is a consequence of a discrete drop in private merger costs at age 65, caused by a preference shift that also underlies the age-65 retirement effect. Further consistent with an increased willingness to sell the firm once a CEO is beyond age 65, we find that takeover premiums and announcement returns are significantly lower for retirement-age CEOs. Overall, our findings suggest that CEOs' retirement preferences have a significant impact on firms' takeover decisions and, ultimately, on shareholder value.

Appendix 1: The effects of career costs and succession problems on mergers

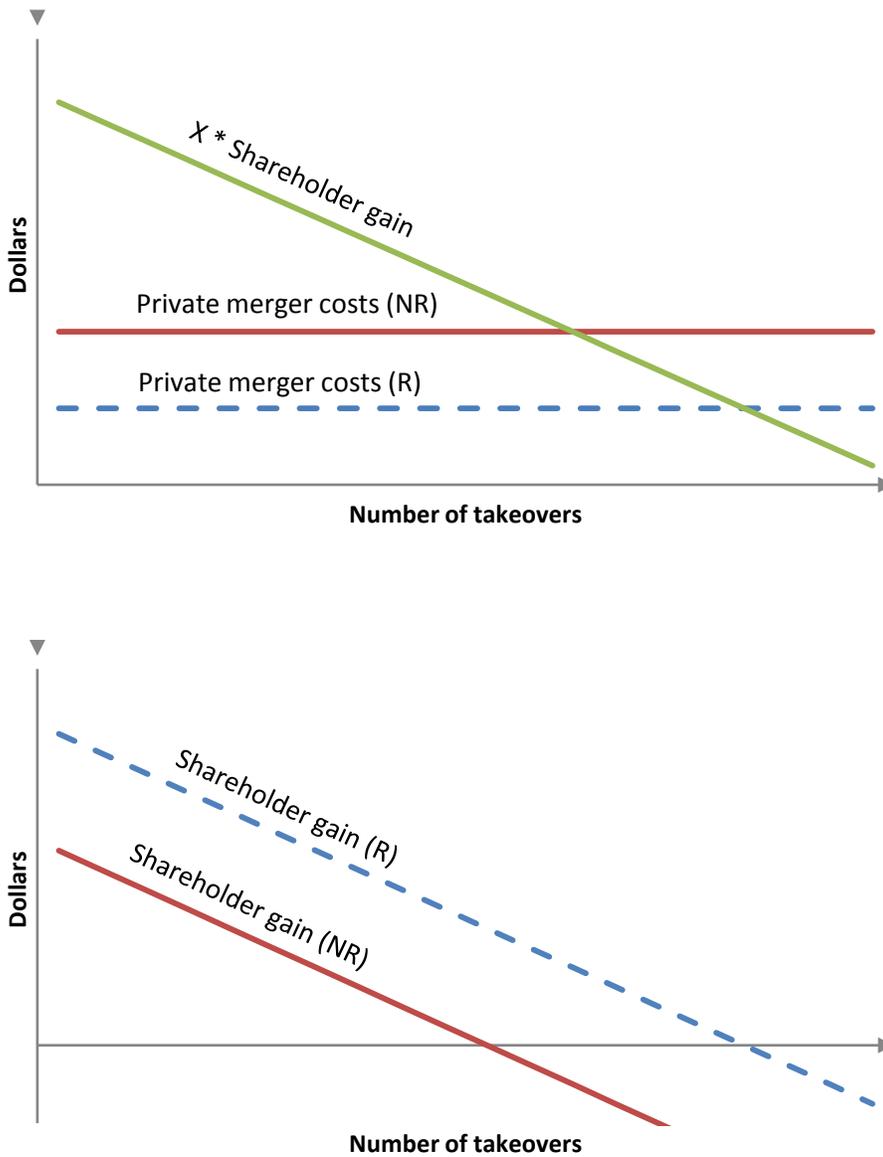


Fig. A: The effects of career costs and succession problems on mergers. The figures illustrate differences in merger patterns between the retirement-age sample (R) and the non-retirement-age sample (NR). In the top figure, merger decisions are made by target CEOs. A CEO's gain from a merger equals X * target shareholders' gain. In addition, the CEO incurs private merger costs (e.g. costs associated with losing a job). In the figure, private merger costs are lower in the R sample, leading to more frequent mergers and lower average shareholder gains. In the bottom figure, there are no agency problems within the target firm, so that merger decisions are determined by target shareholder gains (all synergies are captured by target shareholders). The R sample exhibits higher potential synergies because mergers have the additional benefit of lowering CEO search costs. This implies more frequent mergers and higher average shareholder gains.

7 References

Ambrose, Brent W., and William L. Megginson, 1992. The role of asset structure, ownership structure, and takeover defenses in determining acquisition likelihood. *Journal of Financial and Quantitative Analysis* 27, 575-589.

Agrawal, Anup, and Ralph Walkling, 1994, Executive careers and compensation surrounding takeover bids, *Journal of Finance* 49, 985-1014.

Barclay, Michael J., and Clifford G. Holderness, 1989, Private benefits from control of public corporations. *Journal of Financial Economics* 25, 371-395.

Barclay, Michael J., and Clifford G. Holderness, 1991. Negotiated block trades and corporate control. *Journal of Finance* 46, 861–878.

Bargeron, Leonce L., Frederik P. Schlingemann, René M. Stulz, and Chad J. Zutter, 2010, Are acquisition premiums lower because of target CEOs' conflicts of interest? Working paper, University of Pittsburgh, The Ohio State University, NBER and ECGI.

Bebchuk, Lucian, Alma Cohen, and Charles C. Y. Wang, 2010, Golden parachutes and the wealth of shareholders. Working paper, Harvard Law School and NBER, Tel-Aviv University, and Stanford University.

Betton, Sandra, Espen B. Eckbo, and Karin S. Thorburn, 2008, Markup pricing revisited. Working paper, Concordia University, Quebec and Tuck School of Business.

Blau, David M., 1994, Labor force dynamics of older men. *Econometrica* 62, 117-156.

Burtless, Gary, 1986, Social security, unanticipated benefit increases, and the timing of retirement. *Review of Economic Studies* 53, 781-805.

Cai, Jie, and Anand M. Vijh, 2007, Incentive effects of stock and options holdings of target and acquirer CEOs. *Journal of Finance* 62, 1891-1933.

Cotter, James, and Marc Zenner, 1994, How managerial wealth affects the tender offer process. *Journal of Financial Economics*, 35, 63-97.

Dechow, Patricia M., and Richard D. Sloan, 1991, Executive incentives and the horizon problem: an empirical investigation. *Journal of Accounting and Economics* 14, 51-89.

Fich, Eliezer M., Anh L. Tran, and Ralph A. Walkling, 2010, On the importance of golden parachutes. Working paper, Drexel University.

Gibbons and Murphy, 1992, Optimal incentive contracts in the presence of career concerns: theory and evidence, *Journal of Political Economy* 100, 468-505.

Grinstein, Yaniv, and Paul Hribar, 2004, CEO compensation and incentives – Evidence from M&A bonuses, *Journal of Financial Economics* 73, 119–143.

Hartzell, Jay, Eli Ofek, and David Yermack, 2004, What's in it for me? CEOs whose firms are acquired, *Review of Financial Studies* 17, 37-61.

Hausman, Jerry A., and David A. Wise. 1985, Social Security, Health Status, and Retirement in D. Wise (ed.) Pensions, Labor, and Individual Choice. Chicago: University of Chicago Press, pp. 159-191.

Holmström Bengt, 1982, Managerial incentive schemes—a dynamic perspective, in Essays in economics and management in honour of Lars Wahlbeck, Helsinki: Svenska Handelshögskolan.

Hurd, Michael and Michael Boskin, 1981, The effect of social security on retirement in the early 1970s. *Quarterly Journal of Economics* 46, 767-790.

Jensen, Michael C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323-329.

Jensen, Michael C., 1993, The modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance* 48, 831 – 880.

Li, Kai, and Jarrad Harford, 2007, Decoupling CEO wealth and firm performance: The case of acquiring CEOs, *Journal of Finance*, 62, 917-949

Lumsdaine, Robin L., James H. Stock, and David A. Wise, 1990, Efficient windows and labor force reduction, *Journal of Public Economics* 43, 131-159.

Lumsdaine, Robin L., James H. Stock, and David A. Wise, 1996, Why are retirement rates so high at age 65? in *Advances in Economics of Aging* (NBER) edited by David A. Wise.

Martin, Kenneth, and John McConnell, 1991, Corporate performance, corporate takeovers, and management turnover, *Journal of Finance* 46, 671-687.

Mikkelson, Wayne H., and Megan M. Partch, 1989, Managers' voting rights and corporate control, *Journal of Financial Economics* 25, 263-290.

Morck, Randall M., Andrei Shleifer, and Robert W. Vishny. 1988, Characteristics of targets of hostile and friendly takeovers, in: Alan J. Auerbach, *Corporate takeovers: Causes and consequences*, University of Chicago Press, Chicago, IL.

Phelan, Christopher and John P. Rust, 1997, How Social Security and Medicare affect retirement behavior in a world of incomplete markets. *Econometrica* 65, 781-831.

Randall Morck, Andrei Shleifer and Robert W. Vishny, 1990, Do managerial objectives drive bad acquisitions? *Journal of Finance* 55, 31-48

Schwert, William G., 1996, Markup pricing in mergers and acquisitions. *Journal of Financial Economics* 41, 153-192.

Song, Moon H., and Ralph A. Walkling, 1993. The impact of managerial ownership on acquisition attempts and target shareholder wealth. *Journal of Financial and Quantitative Analysis* 28, 439-457.

Stock, James H. and David A. Wise, 1990a, Pensions, the option value of work, and retirement. *Econometrica*, 58, 1151-1180.

Stock, James H. and David A. Wise, 1990b. The Pension inducement to retire: an option value analysis, in D. Wise (ed.) *Issues in the Economics of Aging*. Chicago: University of Chicago Press, 205-224.

Stulz, René M., Ralph A. Walkling, and Moon H. Song, 1990. The distribution of target ownership and the division of gains in successful takeovers. *Journal of Finance* 45, 817-833.

Stulz, René, 1988, Managerial control of voting rights: Financing policies and the market for corporate control, *Journal of Financial Economics* 20, 25-54.

Walkling, Ralph, and Michael Long, 1984, Agency theory, managerial welfare, and takeover bid resistance. *Rand Journal of Economics* 15, 54-68.

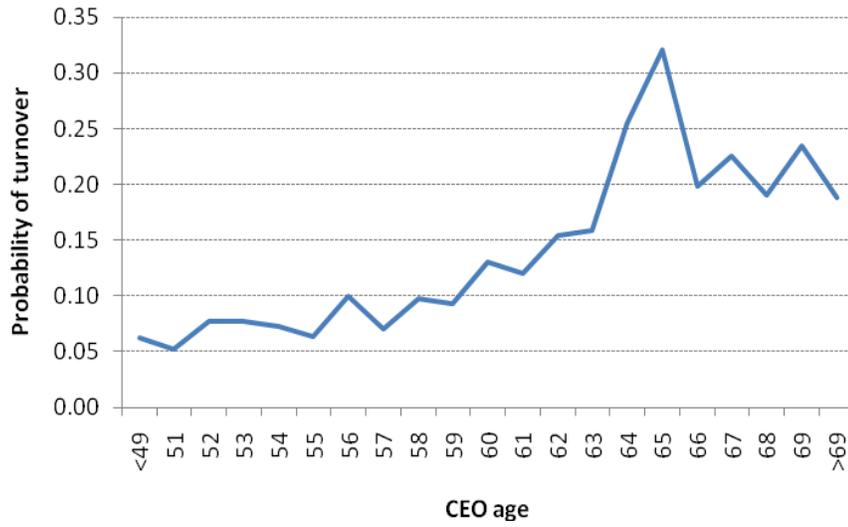


Fig. 1: Probability of CEO turnover as a function of CEO age. The figure shows the fraction of CEOs in office at age $t-1$ that leave office at age t . The sample consists of 4,600 CEOs and 20,208 CEO-years from 1992 through 2005.

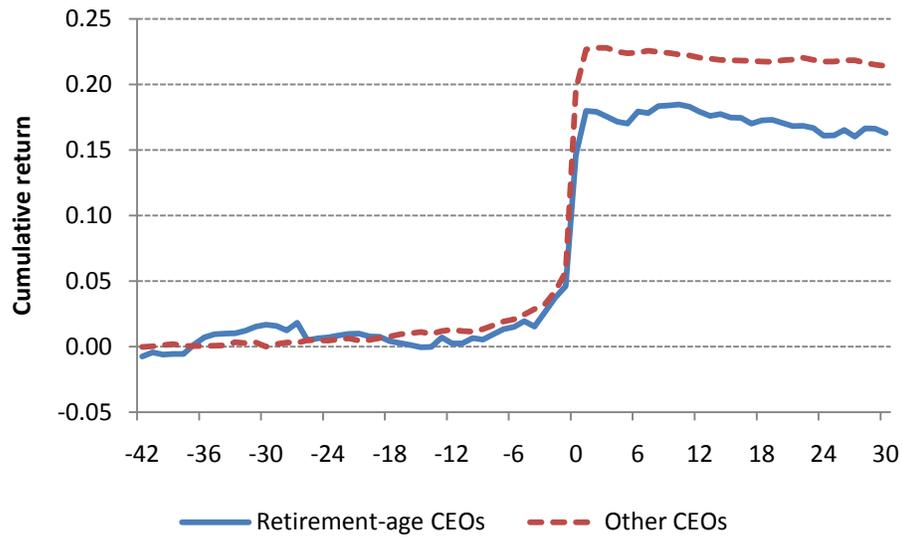


Fig. 2: Stock returns around merger announcements. The figure shows the cumulative industry-adjusted returns from day -42 before to day 30 after the merger announcement for 726 completed takeover bids for at least 90% of target equity from 1992 through 2005. The returns are computed separately for 59 target firms with retirement-age CEOs (i.e., CEOs that are older than 65 at the time of the bid) and 667 other target firms.

Table 1: Descriptive statistics for the takeover sample. The sample consists of 840 complete takeovers from 1992 through 2005. The retirement-age threshold is 65 years in the year of the bid announcement. Return (-x to 1) is the cumulative industry-adjusted daily return from day -x to day one after the announcement date. Premium (-42 to 1) is defined as (final offer price - closing price on day -42) / closing price on day -42, adjusted for the cumulative industry return over the same period. CEO AGE is the age of the target CEO in the announcement year. TENURE is the number of years from the date the CEO takes office to the announcement year. FOUNDER is a dummy variable set to one for CEOs that are in office before the firm's first year on Compustat. B/M, MVEQ, and ROA are the ratio of book value to market value of equity, the market value of equity (\$ Billions), and the return on assets of the target firm, respectively. These variables are measured in the last reported year prior to the takeover, or, for firms surviving the takeover on Compustat, for the year prior to the takeover announcement. CASH ONLY (STOCK) are dummy variables set to one if the SDC variable "consideration structure" is set to "cash only" ("shares"). HOSTILE (TENDER) is a dummy variable set to one if SDC classifies the bid as hostile (tender offer).

	Target CEOs above the retirement-age threshold						Other target CEOs					
	Mean	Median	Std	Min	Max	N	Mean	Median	Std	Min	Max	N
Return (-3 to 1)	0.16	0.13	0.18	-0.14	0.68	59	0.20	0.18	0.21	-0.56	1.44	667
Return (-42 to 1)	0.18	0.19	0.25	-0.65	0.71	59	0.23	0.21	0.25	-0.52	1.74	667
Premium (-42 to 1)	0.30	0.26	0.32	-0.34	0.97	57	0.35	0.30	0.31	-0.34	1.43	650
CEO age	69.37	68.00	3.75	66.00	81.00	62	54.17	55.00	6.16	30.00	65.00	706
Tenure	14.38	11.00	12.26	1.00	53.00	53	6.27	5.00	4.89	0.00	40.00	666
Founder	0.42	0.00	0.50	0.00	1.00	53	0.24	0.00	0.43	0.00	1.00	666
B/M	0.59	0.49	0.34	0.05	1.68	59	0.56	0.50	0.35	0.05	1.68	679
MVEQ	1.90	0.77	3.03	0.03	14.63	62	4.08	1.01	9.65	0.00	93.07	686
Firm age	21.65	17.00	12.49	2.00	50.00	62	20.80	15.00	15.21	1.00	54.00	706
ROA	0.05	0.04	0.08	-0.15	0.30	62	0.03	0.03	0.12	-0.64	0.32	705
Cash only	0.42	0.00	0.50	0.00	1.00	62	0.31	0.00	0.46	0.00	1.00	706
Stock	0.27	0.00	0.45	0.00	1.00	62	0.31	0.00	0.46	0.00	1.00	706
Hostile	0.10	0.00	0.30	0.00	1.00	62	0.03	0.00	0.17	0.00	1.00	706
Tender	0.19	0.00	0.40	0.00	1.00	62	0.19	0.00	0.39	0.00	1.00	706

Table 2: Probit model of bid frequencies. The sample consists of 16,476 CEO-years from 1992-2005. The model estimates the probability of a bid in a given fiscal year. All regressions exclude share repurchases, privatizations, exchange offers, recapitalizations, and cases in which the acquirer owns more than 50% of target shares prior to the bid announcement. In the left panel, all bids satisfying these conditions are included. In the right panel, only bids in which the acquirer seeks to own more than 90% of the target's shares are included. RET_AGE is a dummy variable equal to one if the target CEO is older than 65 in the announcement year. All other CEO characteristics are measured in the announcement year and are described in Table 1. RETURN is the average monthly industry-adjusted stock return from month -3 through -15 relative to the announcement month. ROA is the average ROA in years -1 through -3 relative to the announcement year. All other firm characteristics are measured in the year prior to the announcement year. P-values are in parentheses. Prob. at 0 (1) is the implied probability of a bid with RET_AGE = 0 (1).

Probability of:	All bids					Bids for more than 90% of the target's shares				
	Any bid		Successful bids		Success / Any	Any bid		Successful bids		Success / Any
Intercept	-0.63 (0.00)	-0.88 (0.00)	-0.60 (0.00)	-0.77 (0.00)	1.83 (0.00)	-1.58 (0.00)	-1.43 (0.00)	-1.60 (0.00)	-1.25 (0.00)	1.22 (0.02)
RET_AGE	0.32 (0.00)	0.26 (0.00)	0.33 (0.00)	0.27 (0.00)	0.21 (0.33)	0.15 (0.08)	0.16 (0.05)	0.20 (0.03)	0.22 (0.01)	0.42 (0.13)
CEO age	0.00 (0.08)		0.00 (0.26)		0.01 (0.31)	0.00 (0.43)		0.01 (0.11)		0.02 (0.05)
Age 61-65		-0.07 (0.20)		-0.10 (0.08)			-0.04 (0.48)		-0.10 (0.14)	
Age 51-55		0.03 (0.48)		0.04 (0.39)			0.00 (0.92)		-0.02 (0.76)	
Age < 51		0.05 (0.20)		0.02 (0.68)			-0.06 (0.26)		-0.14 (0.01)	
Tenure	-0.02 (0.00)	-0.02 (0.00)	-0.02 (0.00)	-0.01 (0.00)	0.00 (0.74)	-0.02 (0.00)	-0.02 (0.00)	-0.02 (0.00)	-0.02 (0.00)	-0.02 (0.08)
Founder	0.10 (0.03)	0.10 (0.04)	0.07 (0.18)	0.07 (0.20)	-0.22 (0.09)	0.04 (0.54)	0.03 (0.57)	0.04 (0.52)	0.04 (0.57)	-0.03 (0.85)
Ownership	-0.09 (0.73)	-0.08 (0.76)	-0.15 (0.57)	-0.14 (0.61)	-0.77 (0.31)	-0.30 (0.35)	-0.29 (0.36)	-0.63 (0.11)	-0.60 (0.12)	-2.13 (0.04)
Return	-2.22 (0.00)	-2.21 (0.00)	-2.07 (0.00)	-2.05 (0.00)	0.47 (0.67)	-2.31 (0.00)	-2.30 (0.00)	-2.18 (0.00)	-2.17 (0.00)	1.06 (0.47)
B/M	0.00 (1.00)	0.00 (1.00)	-0.06 (0.14)	-0.06 (0.14)	-0.31 (0.00)	0.00 (0.97)	0.00 (0.97)	-0.12 (0.04)	-0.12 (0.04)	-0.52 (0.00)
MVEQ	-0.04 (0.00)	-0.04 (0.00)	-0.07 (0.00)	-0.07 (0.00)	-0.14 (0.00)	0.00 (0.73)	0.00 (0.76)	-0.02 (0.13)	-0.02 (0.10)	-0.14 (0.00)
ROA	-0.61 (0.00)	-0.61 (0.00)	-0.63 (0.00)	-0.63 (0.00)	-0.08 (0.79)	-0.40 (0.00)	-0.40 (0.00)	-0.46 (0.00)	-0.47 (0.00)	-0.23 (0.59)
Firm_age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.25)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)	0.00 (0.72)
N nonevent	15,216	15,216	15,443	15,443	227	15,731	15,731	15,916	15,916	185
N event	1,260	1,260	1,023	1,023	1,023	727	727	535	535	535
Prob. at 0	0.07	0.07	0.06	0.06	0.82	0.04	0.04	0.03	0.03	0.74
Prob. at 1	0.12	0.11	0.10	0.09	0.87	0.06	0.06	0.05	0.05	0.86

Table 3: Takeover premium and announcement return regressions. The sample consists of 635 full takeover bids from 1992 to 2005. In the first four columns, the dependent variable is the cumulative industry-adjusted monthly return from day -t before to +1 after the announcement of the first control bid in the contest. In the last two columns, the dependent variable is the takeover premium measured from trading day -42 before the announcement of the first control bid in the contest to the final offer price. RET_AGE is a dummy variable equal to one if the target CEO is older than 65 in the announcement year. All other target CEO characteristics are measured in the announcement year. All target firm characteristics are measured in the fiscal year prior to the announcement year. See variables definitions in Table 1. T-statistics are in parentheses.

	Return (-3 to 1)		Return (-42 to 1)		Premium (-42 to final offer)	
Intercept	0.20 (2.28)	0.29 (4.85)	0.21 (2.01)	0.31 (4.24)	0.35 (2.63)	0.48 (4.94)
RET_AGE	-0.09 (-2.52)	-0.08 (-2.43)	-0.10 (-2.28)	-0.09 (-2.12)	-0.12 (-2.03)	-0.12 (-2.22)
CEO age	0.00 (1.08)		0.00 (0.95)		0.00 (0.74)	
Age 61-65		-0.02 (-0.80)		-0.02 (-0.66)		-0.04 (-0.88)
Age 51-55		-0.01 (-0.25)		0.01 (0.33)		-0.04 (-1.15)
Age < 51		-0.03 (-1.21)		-0.04 (-1.26)		-0.03 (-0.81)
Tenure	0.00 (2.03)	0.00 (2.14)	0.00 (2.29)	0.00 (2.33)	0.01 (2.82)	0.01 (2.99)
Founder	-0.02 (-0.64)	-0.02 (-0.68)	0.00 (-0.09)	0.00 (-0.12)	-0.02 (-0.61)	-0.02 (-0.67)
Ownership	-0.23 (-1.39)	-0.23 (-1.36)	-0.31 (-1.51)	-0.30 (-1.45)	-0.49 (-1.91)	-0.50 (-1.95)
B/M	-0.01 (-0.40)	-0.01 (-0.44)	0.04 (1.31)	0.04 (1.24)	0.08 (1.99)	0.08 (1.91)
MVEQ	-0.02 (-2.45)	-0.02 (-2.48)	-0.02 (-2.69)	-0.02 (-2.66)	-0.03 (-2.51)	-0.03 (-2.64)
ROA	-0.08 (-1.15)	-0.08 (-1.17)	-0.38 (-4.40)	-0.39 (-4.48)	-0.26 (-2.38)	-0.26 (-2.33)
Cash_only	0.04 (2.11)	0.04 (2.06)	0.07 (2.76)	0.07 (2.74)	0.04 (1.12)	0.03 (1.05)
Stock_only	-0.03 (-1.68)	-0.03 (-1.71)	-0.01 (-0.53)	-0.01 (-0.57)	0.01 (0.29)	0.01 (0.24)
Hostile	0.04 (1.08)	0.04 (1.07)	0.01 (0.17)	0.01 (0.15)	0.13 (2.07)	0.13 (2.08)
Tender	0.12 (5.22)	0.12 (5.22)	0.08 (2.98)	0.08 (3.00)	0.09 (2.69)	0.09 (2.67)
Adj. R ²	0.12	0.12	0.12	0.12	0.08	0.08
N	635	635	635	635	620	620

Table 4: Descriptive statistics for the partial acquisitions sample. The sample consists of partial acquisition bids from 1992 to 2005, defined as bids through which the acquirer seeks to own less than 50% of the target's shares outstanding. Cases in which the acquirer owns more than 50% of target's shares before the bid are excluded. SHARES OWNED PRE ANN., SOUGHT TO OWN, AND ACQUIRED by the bidder are measured in % of the target's shares outstanding. PREMIUM equals (offer price – closing price on day one) / closing price on day one. See Table 1 for the other variable definitions.

	Target CEOs above the retirement-age cutoff						Other target CEOs					
	Mean	Median	Std	Min	Max	N	Mean	Median	Std	Min	Max	N
<i>Panel A: All partial acquisition bids (acquirer seeks to own 0-50% of target shares)</i>												
Shares owned pre ann.	6.70	3.10	9.84	0.00	41.20	66	3.42	0.00	6.27	0.00	47.70	880
Shares sought to own	13.08	8.75	10.74	0.50	48.00	66	10.73	7.30	9.42	0.00	49.90	880
Shares acquired	5.23	3.61	5.70	0.08	26.05	57	6.89	4.66	8.18	0.01	49.90	764
Fraction completed	0.86	1.00	0.35	0.00	1.00	66	0.87	1.00	0.33	0.00	1.00	880
Block	0.24	0.00	0.43	0.00	1.00	66	0.35	0.00	0.48	0.00	1.00	880
Open market	0.71	1.00	0.46	0.00	1.00	66	0.59	1.00	0.49	0.00	1.00	880
Return (-3 to 1)	0.02	0.02	0.08	-0.25	0.27	64	0.05	0.02	0.12	-0.39	0.97	862
Premium (1 to offer)	0.10	0.04	0.24	-0.15	1.02	41	0.04	0.01	0.20	-0.48	1.02	544
CEO age	71.24	69.00	5.45	66.00	89.00	66	51.71	52.00	6.79	29.00	65.00	880
B/M	0.70	0.49	0.54	0.03	2.24	61	0.63	0.53	0.45	0.03	2.24	839
Log(MVEQ)	6.39	6.29	1.43	3.64	9.74	64	6.23	6.00	1.56	2.34	11.80	853
Log(Firm age)	3.02	3.30	0.85	0.00	3.95	65	2.32	2.30	1.10	0.00	3.99	858
ROA	0.04	0.04	0.09	-0.34	0.34	65	-0.01	0.03	0.21	-1.28	0.34	856
<i>Panel B: Partial acquisition bids classified as "block" acquisitions by SDC</i>												
Shares owned pre ann.	4.58	0.00	11.76	0.00	41.20	16	1.88	0.00	5.14	0.00	30.80	312
Shares sought to own	18.28	15.90	13.45	1.40	48.00	16	12.67	9.90	10.12	0.30	49.90	312
Shares acquired	12.42	15.08	7.98	1.01	26.05	11	11.10	8.10	9.54	0.01	49.90	236
Fraction completed	0.69	1.00	0.48	0.00	1.00	16	0.77	1.00	0.42	0.00	1.00	312
Return (-3 to 1)	0.06	0.05	0.09	-0.09	0.27	16	0.08	0.05	0.14	-0.25	0.60	306
Premium (1 to offer)	0.26	0.07	0.46	-0.09	1.02	9	0.03	0.00	0.25	-0.48	1.02	153
CEO age	71.63	70.00	4.79	67.00	82.00	16	50.77	51.00	6.67	29.00	65.00	312
B/M	0.59	0.50	0.31	0.08	1.42	15	0.58	0.47	0.45	0.03	2.24	294
Log(MVEQ)	6.39	5.92	1.87	3.64	9.74	16	6.29	5.99	1.65	2.72	11.80	300
Log(Firm age)	2.86	2.96	0.85	1.39	3.93	16	2.15	2.14	1.09	0.00	3.95	306
ROA	0.03	0.03	0.06	-0.09	0.14	16	-0.05	0.01	0.24	-1.28	0.34	306

Table 5: Probit model of partial acquisition bid frequencies. The model estimates the probability of a partial acquisition bid in a given fiscal year. A partial acquisition bid is defined as a bid through which the acquirer seeks to own less than 50% of the target's shares outstanding. The BLOCK and OPEN MARKET bid classifications are from SDC. The table shows regressions for different sub-samples of bids classified based on the fraction of target shares sought by the acquirer. See Table 3 for the other variable definitions. P-values are in parentheses. Prob. at 0 (1) is the implied probability of a bid with RET_AGE = 0 (1).

Bids to own:	Block and open market				Block		Open market		
	0 -50% of shares	20-50%	10-20%	0-10%	0-50%	0-50%	0-50%		
Intercept	-0.43 (0.01)	-1.07 (0.00)	-0.97 (0.00)	-1.20 (0.00)	-0.87 (0.00)	-0.55 (0.01)	-1.47 (0.00)	-1.04 (0.00)	-1.34 (0.00)
RET_AGE	0.37 (0.00)	0.22 (0.00)	0.64 (0.00)	0.35 (0.01)	0.18 (0.07)	0.36 (0.01)	0.14 (0.24)	0.26 (0.01)	0.21 (0.01)
CEO age	-0.01 (0.00)		-0.02 (0.00)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.00)		-0.01 (0.13)	
Age 61-65		0.04 (0.30)					0.08 (0.22)		0.07 (0.15)
Age 51-55		-0.02 (0.82)					0.15 (0.29)		-0.09 (0.49)
Age < 51		0.19 (0.04)					0.14 (0.30)		0.15 (0.16)
Tenure	-0.01 (0.00)	-0.02 (0.00)	-0.02 (0.03)	0.00 (0.45)	-0.01 (0.00)	-0.01 (0.02)	-0.02 (0.00)	-0.01 (0.00)	-0.01 (0.00)
Founder	0.18 (0.00)	0.19 (0.00)	-0.02 (0.82)	0.09 (0.33)	0.21 (0.00)	0.09 (0.24)	0.11 (0.17)	0.18 (0.00)	0.18 (0.00)
Return	-0.05 (0.00)	-0.05 (0.00)	-0.05 (0.04)	-0.10 (0.00)	-0.03 (0.07)	-0.09 (0.00)	-0.09 (0.00)	-0.01 (0.43)	-0.01 (0.42)
Div	0.05 (0.21)	0.05 (0.26)	-0.03 (0.74)	0.05 (0.49)	0.05 (0.26)	-0.09 (0.14)	-0.10 (0.11)	0.16 (0.00)	0.16 (0.00)
B/M	0.15 (0.00)	0.15 (0.00)	0.16 (0.03)	0.09 (0.19)	0.14 (0.00)	-0.04 (0.51)	-0.05 (0.47)	0.23 (0.00)	0.23 (0.00)
Size	-0.07 (0.00)	-0.07 (0.00)	-0.06 (0.02)	-0.02 (0.24)	-0.07 (0.00)	-0.02 (0.17)	-0.03 (0.11)	-0.10 (0.00)	-0.11 (0.00)
ROA	-0.84 (0.00)	-0.84 (0.00)	-0.57 (0.01)	-0.75 (0.00)	-0.76 (0.00)	-1.19 (0.00)	-1.19 (0.00)	-0.56 (0.00)	-0.57 (0.00)
Firm_age	0.00 (0.01)	0.00 (0.01)	-0.01 (0.04)	0.00 (0.09)	0.00 (0.12)	-0.01 (0.01)	-0.01 (0.00)	0.00 (0.19)	0.00 (0.17)
Prob. at 0	0.031	0.032	0.004	0.007	0.022	0.009	0.010	0.019	0.020
Prob. at 1	0.067	0.051	0.021	0.017	0.034	0.023	0.014	0.035	0.032