Corporate Governance Structure and the Value of Acquisition Activity [*]

by

Scott Bauguess[†] and Mike Stegemoller[‡]

[†] Texas Tech University, Rawls College of Business, Lubbock, TX 79409, phone: 806.742.1789, fax: 806.742.3197, email: scott.w.bauguess@ttu.edu
[‡] Texas Tech University, Rawls College of Business, Lubbock, TX 79409, phone: 806.742.3338, fax: 806.742.3197, email: mike.stegemoller@ttu.edu

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Abstract

We track the acquisition activity of S&P 500 firms between 1994 and 2005 and assess the effect of governance structure on (1) the likelihood of acquiring, (2) the value of the acquisitions made, and (3) the likelihood of becoming a target. Jointly considering these three dimensions of takeovers, we fail to find support for the classical agency cost explanation for acquisitions. Rather, there is evidence that acquiring firms organize their governance structure to maximize the value of their investing activity. Larger boards, more inside directors, and more outside directors are all associated with increasing shareholder value, consistent with the benefits of directors with firm specific knowledge and the need for advising. Family firms and firms with high levels of inside ownership are less likely to acquire, and when they do, are associated with lower shareholder value, inconsistent with the merit to increased shareholder alignment or family owned firms. Finally, we find no evidence of managerial entrenchment leading to wealth losses among either high G firms or select components of the G index.

This paper examines the empirical relation between a firm's choice of governance structure and the value of its acquisition activity. That a relation should exist is core to the agency perspective of the firm, whereby mangers are given to self-interested pursuits when their actions are insufficiently monitored or are without commensurate consequence to their own welfare (e.g. Jensen and Meckling, 1976). Firm acquisitions are often viewed as one such pursuit, motivated by empire building (e.g. Jensen, 1986), hubris (Roll, 1986), and other questionable managerial objectives such as firm diversification (Morck, Shleifer, and Vishny, 1990). This view is supported in no small part by the absence of recognizable benefits for a large proportion of acquisition events, and suggests a prominent role for corporate governance as a monitoring mechanism that mitigates the cost of poor managerial discretion.

But not all acquisitions are deleterious in nature. A number of theories explain how acquisitions can result from sound economic incentives, i.e., the endogenous response to the firm's value maximization process. Potential benefits to vertical integration (e.g. Klein, Crawford, and Alchian, 1976), the resolution of asymmetric information in financing (Myers and Majluf, 1984), industry shocks (Mitchell and Mulherin, 1996), misvalued equity (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004) are some of the non-agency based motivations for acquiring. Absent managerial self-interest, governance structure may still be relevant. For example, the advising role of directors could be valuable (Coles, Daniel, and Naveen, 2006), or governing mechanisms that protect managerial human capital (from replacement) can increase managerial initiative and mitigate costs associated with underinvestment (DeAngelo and DeAngelo, 1985; Burkart, Gromb, and Panunzi, 1997).[1]

It is also possible that a firm's choice of governance structure is unrelated to the value of acquisition activity. As Shleifer and Vishny (1997) adroitly point out, most advanced financial markets have solved the corporate governance problem at least well enough to ensure large capital flow, even if it is unclear exactly how. Given that there are many governing dimensions to consider, the marginal effects of any one may be irrelevant, and even if a particular effect is relevant, it may be the result of omitting consideration

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[1] Underinvestment can also be viewed as an agency cost, but is not a classical consideration of agency driven acquisitions.

of the others. At the extreme, it may also be that the firm's chosen governance structure (not just the decision to acquire) is an endogenous response to the value-maximizing process of the firm (e.g. Demsetz, 1983), particularly if governance can adjust without material cost. Hence, there can be a relation between governance structure and the firm's decision to acquire, but without a causal wealth consequence.

In this study, we consider the alternative perspectives on the merit of a firm's governance structure by measuring both the value and likelihood of a firm's acquisition activity while simultaneously considering several aspects of firm governance, including board composition, ownership structure, shareholder rights, and the firm's cash flow commitments. These distinct governance dimensions are frequently regarded as avenues for influencing firm behavior and value, but whose tradeoffs are rarely considered in a simultaneous setting. From this perspective, our experimental design mitigates the likelihood of spurious conclusions about a single governance dimension if firm choices are the endogenous result of weighing the merits of several dimensions.

Like many studies before this one, we use acquirer abnormal announcement returns (henceforth bidder returns) as our measure of value. However, unlike any other study that we know of, we condition the bidder return analysis on the likelihood of a firm making an acquisition. Using a panel data approach, we model the probability that a firm makes an acquisition in a given year and use the results to control for the potential selection bias in analyzing bidder returns when non-acquiring firms are otherwise not considered. We also model the probability that a sample firm will be acquired itself to assess the presence of managerial entrenchment, a clarifying factor used in the interpretation of the other results. Simultaneously considering these three aspects of takeovers with several dimensions of a firm's governance structure provides a unique perspective on the influence of a firm's governance structure on firm value.

Our sample includes all firms that comprise the 1994 Standard and Poor's (S&P) 500 index for the 12 year period ending in 2005. This widely recognized group of firms represents the most able among potential acquirers, accounting for 1,411 large acquisitions worth more than 3.5 trillion dollars during this

period. Although we consider only a fraction of the publicly traded firms listed in the U.S., acquisitions by this set of firms account for over 56% of the aggregate deal value of all acquisitions reported by SDC Mergers and Acquisition database over the same period. Over 75% of the firms in our sample make at least one large acquisition (where the target is at least 1% of the acquirer's market value of equity), while 23% of firms make at least one acquisition (on average) in any given year.

Our empirical findings reveal a significant relation between a firm's choice of governance structure and each of the three aspects of acquisition activity we consider: acquisition likelihood, shareholder wealth, and likelihood of becoming a target. Contrary to conventional wisdom, the results of measured governance effects do not support the classical agency cost explanation for acquisitions. Although we document increased acquisition activity among firms with high free cash flow, low growth opportunities, and governance structures conventionally viewed as "weak", consistent with much of the prior literature, the corresponding wealth consequences and measured levels of managerial entrenchment are inconsistent with theories of empire building, self-dealing, hubris, or other poor managerial objectives. Rather, there is evidence that acquiring firms organize their governance structure to maximize the value of their investing activity. This perspective offers several insights into the role of firm governance choices, revealing benefits to governance practices conventionally assumed costly, and costs to governance practices conventionally assumed to add value.

For example, our analysis of board structure shows that firms with more outside directors are more likely to acquire, and controlling for this self-selection, are associated with positive and significant wealth effects, consistent with firm advising needs (Coles, Daniel, and Naveen, 2006). The marginal contribution to shareholder wealth of a firm one standard deviation above the mean number of outside directors to a firm one standard deviation below is 0.37% or $75 million for the average firm in our sample. We find a greater impact when there are more inside directors, with a marginal wealth effect of a similar change of 0.80% or $163 million on average. Moreover, controlling for firm performance, this wealth effect is associated with a 35% reduction in likelihood of the firm being acquired relative to the unconditional likelihood, suggesting benefits to protecting managerial interests and the value of their knowledge.

Viewed differently, our results are consistent with increasing gains to acquisitions for larger boards, but with no wealth consequence for the proportion of director type. Hence, our findings do not necessarily support policies that suggest outside director independence, a result that is largely consistent with the predictions of Harris and Raviv (2006).

The effects of ownership structure also reveal statistically significant relations with the likelihood and value of investing activity. Family owned firms and firms with increased levels of inside ownership are significantly less likely to make an acquisition, and when they do, it is to the detriment of shareholder value. Conditioned on the likelihood of acquiring, family firm acquisitions are associated with -0.71% or $143 million average reduction in firm value compared to non-family firms. The effect is strongest when the CEO is also the founder, resulting in a -1.47% or $298 million average reduction.[2] Given that family firms are 47% less likely to be acquired relative to the unconditional likelihood, these results suggest deleterious consequences to family entrenchment, inconsistent with the positive attributes of family ownership demonstrated using alternative measures of firm value (Anderson and Reeb, 2003; Villalonga and Amit, 2006).[3] Although increased levels of managerial ownership mirror the pattern of results from family firms – measures that are highly correlated – the effects of family firm status dominate ownership level in a simultaneous setting.

Other controlling ownership is also relevant. An increase in passive ownership by large outside blockholders (without board representation) is associated with a shareholder wealth loss to acquisitions, with a marginal effect of -0.68% (-$138 million). This result is puzzling from the agency cost perspective whereby large outside shareholder are better able to absorb the costs and benefit from monitoring activities, but is otherwise consistent with passive ownership blocks enabling managerial entrenchment (Barclay, Holderness, and Sheehan, 2007). Further, we find that increasing passive ownership is associated with increasing likelihood of the firm being acquired, as is outside director ownership,

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[2] We calculate economic impact using coefficient estimates from the second stage of a Heckman procedure corrected for the first stage selection bias.

[3] Villalonga and Amit (2006) find positive benefits to family firms only when the founder is CEO. Our results are not influenced by the CEO status at family firms.

consistent with Shleifer and Vishny's (1986) prediction of large outside shareholders' willingness to enact a control change when they are otherwise unable to influence performance.

Finally, we do not find evidence that shareholder right limiting provisions influence the value of investment activity that are consistent with theories of empire building or protection. Although we find that acquiring firms are associated with weaker shareholder rights, consistent with Gompers, Ishii, and Metrick (2003), using their governance index, henceforth G, we find no evidence that weak shareholder rights deter being a target. Neither do we find a relation between G and bidder shareholder wealth loss, inconsistent with the recent findings of Masulis, Wang, and Xie (2006). If anything, we find weak evidence of wealth gains and increased likelihood of takeover for higher G firms, consistent with benefits to protecting managerial human capital. We find similar results when we consider individual components of G – those components that Bebchuk, Ferrell, and Cohen (2004) suggest are most likely associated with managerial entrenchment.

In sum, we do not find support consistent with the classical agency cost explanation for acquisitions, whereby managers misappropriate the economic resources of the firm for self-interested pursuit. Once the merit of acquisitions made are conditioned on acquisition likelihood, and the level of managerial entrenchment assessed through the likelihood that acquirers are acquired themselves, our evidence suggests that acquiring firms organize their governance structure to maximize the value of their investing activity.

I. Considered dimensions of governance structure

Our analysis considers measures of governance structure drawn from the following areas: (1) shareholder rights, (2) board structure, (3) ownership structure, and (4) firm cash flow commitments. In this section, we describe the details of each and give rationale for their inclusion in this analysis. We recognize that our choice of measures may not be viewed as complete given the large set of alternative considerations (e.g. see Gillan, 2006), and we leave it to future research to decide on the cost of these omissions.

A. Shareholder rights

The role of shareholder rights in corporate governance has gained recent favor in the finance literature. That outside shareholders and potential suitors can be deterred through legal fictions of the firm is not new, but Gompers, Ishii, and Metrick (2003) renewed their consideration with recent findings using a governance index (*G*) based on the number of shareholder right limiting provision at the firm.[4] In particular, they report an association between poor performance and increased acquisition frequency among firms with the weakest shareholder rights – dictatorship firms. Among their hypotheses, they offer that managers use increased scope for undisciplined discretion to stave off empire collapse through inefficient investment activities. Masulis, Wang, and Xie (2006) corroborate this view, finding that bidder returns are significantly lower for these firms relative to those with stronger shareholder rights.

The general presumption of these findings is that weak shareholder rights increase the moral hazard costs of managerial discretion by facilitating their entrenchment. By limiting external market discipline, managers, on average, destroy shareholder value. However, recent empirical evidence questions whether shareholder rights actually facilitate entrenchment. Bates, Becher, and Lemmon (2007) find no evidence of entrenchment or managerial self-dealing in change-of-control bids where the target has a classified board, purportedly one of a small number of provisions that drive the relation between firm performance and shareholder rights (Bebchuk, Cohen, and Ferrell, 2004). Moreover, Bauguess, Slovin, and Sushka (2007) find that firms adopting dual class structures – arguably one of the most effective anti-takeover devices available – are acquired more frequently and at higher premiums than their single class peers.

That managers are not less likely to be replaced at firms with weak shareholder rights is disconcerting to the managerial entrenchment story, but is not inconsistent with managerial incentive arguments. For instance, Burkart, Gromb, and Panunzi (1997) provide theory to show increased initiative among insulated managers, consistent with Williamson's (1985) suggestion that firm specific human capital requires governance protection to mitigate the threat of shareholders expropriating managers.

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[4] *G* is based on 24 charter provisions tracked by the Investor Responsibility Research Center. A firm receives a point for each provision in place. Dictators have at least 14 provisions; democracies have no more than five provisions.

DeAngelo and DeAngelo (1985) expound this view by arguing that increasing the control of managers beyond their economic interests can reduce underinvestment by removing their fear of mistaken replacement by misinformed investors.

We address whether shareholder right limiting provisions facilitate managerial entrenchment to the detriment or benefit of outside shareholders, if either, by including *G* and selected components of *G* in our econometric analysis.

B. Board structure

Board structure by design should be one of the most powerful governing mechanisms available to the firm's investors. Shareholders vote in proportion to their economic interest to elect directors to monitor their investment. As part of their duties, directors hire the firm's mangers, monitor their activities, and if necessary, replace them. In theory, this process offers an alternative to costly external market discipline. In practice, however, it is common to view boards as captured by the corporate office, with membership sponsored in large part by the agents they monitor. This perspective suggests an alternative view, that board structure facilitates managerial entrenchment. This concern is evident among shareholder activist groups such as Calpers and TIAA-CREF, both of whom issue corporate governance policy statements that advocate independence of directors from management among other purported good practices. There is also evidence that financial markets agree: Rosenstein and Wyatt (1990, 1997) document positive (negative) wealth effects upon the addition of outside (inside) directors to the board.[5] Byrd and Hickman (1992) find that independent outside directors are associated with higher bidder returns, albeit with some non-linearity in the relation such that too many independent directors are detrimental. It is therefore not surprising that as a remedy to the rise in turn-of-the-century corporate scandals, both the New York Stock Exchange and NASDAQ enacted changes that require a majority of independent directors.[6]

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[5] Rosenstein and Wyatt (1997) find a positive return to the addition of an insider when their level of ownership is high, which could be a symptom of firm specific human capital needs and thus consistent with Harris and Raviv (2006) and Coles, Daniel, and Naveen (2006).
[6] Rules 4350(c) and 303A for NASDAQ and NYSE respectively.

Despite these strong views on board independence, the academic literature offers little guidance on the optimal proportion of director type. The same is not the case for board size, where there is a well-documented decrease in Q for firms with larger boards (Yermack, 1996; and Eisenberg, Sundgren, and Wells, 1998). Some view this as evidence of coordination difficulties or free-riding when there are many board members, resulting in less effective monitoring (Lipton and Lorsch, 1992; Jensen, 1993). The implication is that smaller boards are better. However, Harris and Raviv (2006) suggest that the observed negative relation between board size and profitability is spuriously determined through common exogenous factors that otherwise determine both board size and profitability. Coles, Daniel, and Naveen (2006) support this view, finding increased firm value among firms with larger boards when their business activity is large in scope, diversified across industry, or relies more on debt financing, characteristics consistent with advising needs. They also find that firm value increases with additional inside directors when the firm specific knowledge of insiders is important, consistent with the predictions of Harris and Raviv (2006) who suggest that insider control may better exploit their information.

It may also be the case that board optimality – size and composition – is time-varying and endogenously determined according to firm performance. For example, Hermalin and Weisbach (1998) model this optimality based on the CEO's relative bargaining power with outside board members, allowing increased insider control during good times but increased independence when firm performance otherwise falls. From this perspective, gains from "exogenously imposed independence" offset increased latitude in the selection process when insiders hold the bargaining power. This prediction could explain the general ambiguity (or absence) of empirical findings on board structure.

To evaluate these alternative perspectives in the context of this study, our model specification include both the number of inside directors and number of outside directors sitting on the board during the firm year. Considering these measures separately captures their unique contribution to firm behavior. However, we also consider (but do not report in the Tables) the aggregate board size and fraction of outside directors as an alternative specification.

C. Ownership structure

Ownership structure is arguably the essence of the firm's organizational form, and the role of residual claimants is a common element to theories explaining internal organization. In particular, the agency literature highlights the problem of separating firm ownership from control, which lends to a moral hazard problem among managers with insufficient economic incentive to act on behalf of their benefactors. Although potential conflicts are well recognized, exact predictions on how the conflicts affect firm value are not. For example, higher levels of inside ownership improve incentive alignment with outside shareholders (Jensen and Meckling, 1976), but can also facilitate managerial entrenchment to the detriment of shareholders if private benefits of control become more valuable than the benefits from share ownership (Morck, Shleifer, and Vishny, 1988). We can similarly view large outside shareholders whose presence is not uncommon among public corporations. Their economic ownership better justifies monitoring effort than dispersed owners, but their incentives do not necessarily better align with other owners than do managers. Nonetheless, controlling outside shareholders are generally viewed as agents for the interest of other outside owners, able to minimize perquisite consumption, shirking, or other poor managerial actions if their control is sufficient to influence an ownership change (Shleifer and Vishny, 1986).

Distinguishing which elements of ownership theory that are best observed among public firms is difficult. The empirical literature has not done well in supporting causal statements of ownership structure and firm value for at least two reasons. First, the endogeneity concerns of reverse causality are particularly relevant since investors have incentive to increase their ownership in well-performing firms. Himmelberg, Hubbard, and Palia (1999) illustrate this point. Controlling for endogeneity, they show how a statistically significant relation between firm value and ownership structure disappears. Second, a common practice in empirical studies is to consider ownership by "all officers and directors" as a measure of inside (or managerial) ownership, presumably since it is well characterized in the firm's proxy statement. However, not all directors are insiders. Including different owner-firm affiliations within the

same measure dilutes the power of any test that seeks to differentiate the two. Therefore, we disaggregate according to director affiliation by considering inside director ownership separate from outside director ownership, and by classifying all large blockholders unaffiliated with either the firm or a director seat into a third category.

We also consider an additional dimension of firm ownership structure: the presence of a founding family. Founding family ownership among large publicly traded firms in the U.S. is surprisingly common, and recent evidence suggests that family run firms can be an effective organizational form. For example, Anderson and Reeb (2003) report that over one-third of S&P500 firms between 1992 and 1997 are owned in part by the founding family. Moreover, they find that these family firms have superior operating performance and higher levels of firm value. Villalonga and Amit (2006) find similar results among Fortune 500 firms but clarify that family management and generation matter – CEO founders create value while CEO descendants destroy value.

That family firms exhibit greater performance and value characteristics than non-family firms introduces the merit of alternative managerial incentives such as legacy and reputation, or an additional source of monitoring across family generations. Thus, the value of the family's human capital to outside shareholders may be greater than the costs otherwise attributed to large inside shareholders. This view is generally consistent with the theoretical prediction of Panunzi, Burkart, and Shleifer (2003) that family ownership can substitute for investor protection. In this context, family ownership and control are additional proxies for more effective governance. For this study, we consider whether the founding family has ownership in the firm, and if so, whether a family member holds executive office.

D. Cash flow commitments

The final dimension of governance that we consider is monitoring through the firm's cash flow commitments. Financing policies have the potential to limit the scope of managerial discretion, such as committing mangers to payout profits through dividends (Easterbrook, 1984) or service debt contracts that stipulate covenants allowing creditor discipline when not met (Jensen and Meckling, 1976). These

commitments are likely most beneficial at firms with high free cash flow when the moral hazard risk of managerial discretion is most severe (Jensen, 1986). For instance, Smith and Kim (1994) find that acquisition gains are greatest when cash flow commitments result, a product of combining high free cash flow firms with those that are financial slack poor. Acquiring firms with high free cash flow have otherwise been shown to destroy shareholder value (Lang, Stulz, and Walkling, 1991; Harford, 1999). However, Stulz (1990) shows how forced repatriation of investor capital may be costly if alternative uses would otherwise earn a higher return, a problem of underinvestment. We consider this tradeoff in this study by including both the level of debt and observed payout policy in all model specifications that include alternative measures of firm governance.

II. Data and Methodology

A. Sample construction

We construct a 12 year unbalanced panel of sample firms starting with those comprising the S&P 500 index as of year-end 1994 and ending with the same set of firms that remain publicly traded at year-end 2005. We collect operating performance, governance, and acquisition characteristics for each year that our initial set of sample firms remains publicly traded. Beginning in 1994, we are able to collect governance data for 498 firms, of which 315 survive as publicly traded entities though 2005, resulting in 4,754 firm-years.[7] Since proxy statements are not available in all years, we have complete governance data for 4,652 firm-years, which is further reduced to 4,193 firm-years once merged with Compustat and CRSP data. We include shareholder rights data using *G*, filling missing year observations with the most recent data until updated. We consider the individual components of *G* in a similar manner.

We determine the acquisition behavior for each firm using Thomson Financial's SDC Mergers and Acquisition database, including all completed foreign and domestic takeovers from 1994 to 2005 of

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[7] We are unable to find governance data in any year for Royal Dutch Petroleum and Unilever N.V., both foreign (cross-listed) firms. Surviving firms are those defined by an unchanged CRSP permanent company number. We do not drop firms from the sample when they are subsequently dropped from the S&P 500 index.

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public, private, and subsidiary targets in which the acquirer owns less than 50% of the target before the acquisition and 100% afterwards. We include transactions where SDC's target deal value is 1% or more of the acquirer's equity value in the month prior to the acquisition, resulting in 1,411 acquisitions by our initial set of 498 firms (Table I). The rate of acquisitions – the percent of sample firms acquiring in any given year – is 23% on average, with a high of 29.3% in 1999 and a low of 16.1% in 2002. With exception of the slightly higher (lower) acquisition rates before (after) the market "bubble" period, there is little variation in the overall acquisition rate across the 12-year period. This consistency suggests that acquisition behavior has little, if any, influence on the likelihood of a firm remaining in the sample. In contrast, there is substantial variation in the means of payment, with equity (cash) used far less (more) frequently subsequent to 1999. Overall, all-cash is the predominant payment method, used for more than 60% of acquisitions. Table I also shows that 32.5% of sample firms are ultimately acquired themselves, with higher acquisition rates prior to 2000. Hence, firms in our sample are not absent from the takeover market, with acquisitions the dominant method of removal from the sample – only 21 firms leave the sample for reasons other than becoming a target.

B. Measuring governance

We characterize each firm's ownership structure using proxy statements (Securities and Exchange Commission (SEC) definitive 14A federal filing) obtained from either EDGAR or Lexis-Nexis, updating this information annually. In particular, we collect the shareholdings of all directors and senior officers of the firm and consider their aggregate ownership as well as more detailed classifications according to each owner's affiliation with the firm.[8] We classify inside owners as officers of the firm and their family. Outside directors are those appointed to the board by financial intermediaries and corporations, and directors with no explicit employment contract with the firm. Hence, we consider a director providing legal or consulting services to the firm for a pecuniary wage an insider regardless of

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[8] We obtain director information from the "election of directors" section of the proxy statement, and in determining board size assume that all nominees are subsequently elected and announced departures duly executed. We correct the errors in these assumptions when we use the subsequent year's proxy statement to update the board composition.

title, whereas the CEO's golfing partner is an outside director if no pecuniary relation with the firm beyond board service is established. We recognize that these "grey" board members might have unique contributions beyond an inside or outside designation, but we do not consider these potential effects.

In our classification of ownership, we isolate the founding family or original entrepreneur when present. In particular, for each firm we determine whether a manager or director is a founder of the firm or a member of the founding family.[9] Similar to Villalonga and Amit (2006), we consider founders of predecessor firms as the founder of the sample firm only if the person is the founder with the largest ownership position. When possible we determine family relationships using the same proxy statements from which we collect ownership data, but federal filings are frequently insufficient, particularly when family names change across generations or through marriage, or when families no longer participate in the management of the firm. In these instances, or when there is an individual shareholder, shareholder group, trust, or foundation with a significant but unexplained ownership position, we search the firm's website, LexisNexis, and Google using combinations of the words "founder", "family", the firm's name, and the beneficial owner's name. Once the family relationship is established, we record whether the CEO is a member of the founding family and the number of family members (or designees) on the board. We also note when the founding family hires an outside CEO (i.e., when family directors are present but no family member holds the position of CEO).

Since not all ownership positions require a board seat or employment contract with the firm to influence firm decision-making, we also record beneficial ownership by non-directors when their holdings exceed 5% (the SEC reporting requirement threshold) of an outstanding share class. We designate these as non-director block owners, who are primarily passive financial institutions, but also include unaffiliated individuals and corporations. We verify that each of these beneficial owners is passive (no related board seat or firm affiliation) by checking the various affiliations listed in the biography for each director. If any of the firm's directors have an employment relationship with the

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[9] We classify single entrepreneurs/founders as family owners even when no other family members are in management or hold a significant ownership interest in the firm. For example, Bill Gates is the founding family of Microsoft Corporation.

beneficial owner, then we classify this ownership as outside director ownership.

Throughout our analysis, we define shareholdings as all direct common stock holdings and options exercisable within 60 days, excluding preferred stock.[10] When a firm has more than one equity share class, we record the level of aggregate ownership by combining the ownership in all share classes weighted by the number of outstanding shares in each class. Among the sample firms, 26 have a dual class share structure and nine have a tracking stock for at least one year during the analysis period.

III. Results

A. Sample firm characteristics

Table II summarizes the firm characteristics, including governance and acquisition details, for all firm years. The mean firm in our sample has a market value of $20.4 billion (adjusted to 2005 dollars), a dividend yield of 2.0%, and capital expenditures of 5.6% of its total assets. The mean board size is 11.5 directors, of which approximately 75% are outsiders. Consistent with other studies that analyze large U.S. corporations, nearly one-third (29.3%) have recognizable ownership by the founding family.[11] In approximately one-half of family firms (14.1% of the total sample), the CEO is a member of the founding family (not reported in the table). The mean value of G is 10.2.

The mean ownership by all officers and directors is 7.1% compared to a median of 2.4%. The implied skewness in this distribution is a result of relatively high levels of officer and director ownership by family firms, 17.8% on average, compared to 3.7% for non-family firms (not reported in the table). The mean ownership by non-director (passive) blockholders of the firm is 11.6%. Since we analyze predominantly large firms, the wealth represented by officers and directors is profound. The mean value of this ownership is $1.2 billion, of which $945 million is attributed to inside owners. The mean inside

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[10] We correct for double counting of shares resulting from ownership via voting trusts, partnership, and sharing agreements. These ownership arrangements are often assigned to multiple individuals, where each individual reports full beneficial ownership.

[11] Anderson and Reeb (2003) find that 35% of S&P500 firms between 1992 and 1999 are family owned, while Villalonga and Amit (2006) report 37% for Fortune 500 firms over a similar period. The higher presence of family firms in their studies relative to this study is explained by their exclusion of financial services firms and utilities.

ownership stake of family owned firms is $2.3 billion, while it is $538 million at non-family firms. Hence, ownership stake has potentially significant economic ramifications on the decision making of managers and family owners.

The mean deal size is $1.96 billion, representing 13.8% of the acquirer's relative size, on average. The three-day cumulative abnormal announcement returns are near zero (-0.2%) for the 1,251 acquisitions included in the final panel of data, more negative for public deals (-1.4%) and slightly positive for private and subsidiary deals (0.5% and 0.6% respectively). Hence, our results are generally consistent with previous studies.

In Table III, we consider the correlation among our key governance measures. It is possible that certain measures are correlated if there are tradeoffs in a firm's selection of the optimal governance structure that result in complementary or substitutive relations among the choices (for e.g. Cremers and Nair, 2005, and Gillan, Hartzell, and Starks, 2006). Not surprisingly, there is a strong positive correlation between the level of inside ownership and both firms with founding family ownership (0.62) and the number of inside directors (0.45). Among some of the other high correlations, large firms (measured by sales) tend to have more outside directors (0.39), consistent with advising needs, while shareholder rights (*G*) has a negative correlation (-0.19) with inside ownership, suggesting a substitutive effect.

B. Predicting acquirers

The first stage of our analysis uses probit regressions to estimate how the components of corporate governance affect the likelihood of a firm making an acquisition. The dependent variable is one when a firm makes an acquisition in a calendar year and zero otherwise. Each model includes indicator variables for year and 48-industry classification (see Fama and French, 1997) to control for time and industry fixed effects that our measures of governance and firm characteristics do not otherwise capture.[12] For example, if mergers occur in waves due to economic and technological shocks (Mitchell and Mulherin, 1996;

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[12] The fixed effects are treated unconditionally (as nuisance parameters) whereby each effect is estimated separately in the model, but otherwise unreported.

Harford, 2005), then including industry and time fixed effects to control for these omitted factors should mitigate the possibility that model estimates are spuriously correlated (through the residual) with acquisition likelihood.[13] Inclusion of fixed effects also reduces the bias in OLS standard errors that result from treating panel observations as independent across panel dimensions (an assumption of no serial correlation). Biases could still be present if the fixed effects are non-constant. To assess this potential bias (and necessary treatment) we follow Petersen (2007) and compare White corrected standard errors from our generalized model specifications that include time and industry fixed effects to the clustered standard errors within each panel dimension: industry, time, and firm. We show in the Appendix that standard errors are most frequently understated within the time dimension, suggesting that the time effect decays across firm and industry (consistent with merger wave behavior) and rationalizing the use of White standard errors corrected for within-year clustering for all model specifications.

Table IV reports the isolated effects of board structure (Model 1), ownership (Model 2), family firm status (Model 3), shareholder rights (Model 4), and all the effects simultaneously (Model 5). Model 6 provides an estimate of the percent difference in acquisition likelihood between a firm one standard deviation above the mean value of the independent variable compared to one standard deviation below. Governance through cash flow commitments (prior year dividend yield and leverage) is included in all model specifications. To isolate the contributions of governance structure on the decision to acquire, each model includes control variables for other factors known or suspected to influence the decision. These include proxies for the scope of managerial discretion (free cash flow and capital expenditures), product market discipline (prior year net loss), and firm size (prior year sales). We also include Tobin's Q (Q) which is frequently considered in the acquisition literature as a measure of a firm's growth opportunities, but also serves to proxy for misvalued equity in the context of merger waves (e.g. Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004). Knowing which interpretation of Q is more appropriate is

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[13] This inclusion does not rule out the potential for other unobservable variables related to the firm since we are unable to include unconditional firm fixed effects (results in perfect identification of non acquiring firms, dropping them from the analysis). It also does not exclude the possibility that the governance–acquisition likelihood relation is otherwise simultaneously determined (i.e. there is a permanently unobserved variable).

less important than controlling for how it might affect acquisition propensity. We also include the commercial rate spread using responses from the Federal Reserve Senior Loan Officer (SLO) survey since sufficient capital market liquidity may be required for the commencement of a wave (Harford, 2005).[14] We use contemporaneous measures of free cash flow, Q, and capital expenditures since their timing is relevant in the decision to acquire. We lag all other variables.

The results from the first four models of Table IV show a statistically significant relation between the likelihood of a firm acquiring and each dimension of governance. Increased acquisition propensity is associated with lower inside ownership, non-family firms, weaker shareholder rights (higher G), and fewer cash flow commitments (leverage and dividend yield), consistent with commonly held views of weaker corporate governance. Acquisition propensity also increases with lower Q and higher free cash flow, with respective coefficient estimates statistically significant in all model specifications. There is also a positive relation between the level of outside directors and acquisition propensity, although interpretation of this result could be either better monitoring or more discoordination (larger board).[15]

When we consider governance measures simultaneously (Model 5), family firm status is no longer significant at conventional levels (p-value 0.144) and neither is inside ownership (p-value 0.151). This loss of significance is not surprising given the high level of correlation between these measures. Among the governance measures, the number of outside directors is associated with the largest marginal effect, a 5.12% increased likelihood of acquiring, nearly one quarter of the unconditional probability of acquiring (22.6%). However, economic considerations have the greatest marginal impact, with Q and free cash flow both greater than 10%, and firm cash flow commits each near 5%.

From one perspective – that acquisitions on average do no contribute to shareholder wealth – these collective results are consistent with the agency cost explanation for acquisitions (Jensen, 1986).

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[14] Harford (2005) uses the spread between the average commercial and industrial loan rate and the fed funds rate as a proxy for the tightening and easing of commercial lending since survey data is unavailable for his entire analysis period. We do not have this constraint, and therefore use the reported survey data for each year in our analysis.
[15] The view of discoordination is supported when we alternatively specify Model 1 as total number of directors and fraction of outside directors; the coefficient estimate of board size is positive and significant while the faction of outsiders is not statistically significant.

However, these results do not consider the merit of acquisitions made, so there is risk in interpreting the results in such a way. Furthermore, we find no relation between either beneficial ownership by passive (non-director) blockholders or outside director ownership and acquisition propensity, both of which are commonly viewed as effective monitoring devices and likely candidates to mitigate agency conflicts if present. The following section considers the wealth effects from bidder returns conditioned on these results to clarify the interpretation of the role of governance and the merit for the agency cost explanation for acquisitions.

Among the other firm characteristics considered, higher capital expenditures are associated with lower acquisition propensity, suggesting a substitutive effect with acquisitions. We also find that acquisition propensity increases with increasing rate spreads, a counterintuitive result if acquisition activity requires increased capital market liquidity (lower rate spreads). One interpretation is that the large (S&P 500) firms have the capacity for counter cyclical investment due to their cash flow capacity.

C. Bidder returns

Table V uses regression analysis of bidder returns to assess the contribution of governance structure on the efficiency of investment activity. Since not all firms choose to invest through publicly observed acquisitions for which market reactions are readily measured, a potential selection bias exists when conditioning analysis on only those that do. To account for this, we use a Heckman two-stage procedure. We calculate a non-selection hazard (inverse mills ratio) in the first stage using the commensurate probit regression from Table IV that determines acquisition likelihood, i.e., likelihood of non-random selection into the bidder returns analysis. The inverse mills ratio is included in the second stage ordinary least square (OLS) regressions reported in Table V. This approach is similar to Edelen and Kadlec's (2005) treatment of withdrawn IPOs in the analysis of IPO price revisions, where we instead consider the effects of acquisition abstention on the bidder returns of acquiring firms. That the coefficient estimates reported for the inverse mills ratio (Lambda) are statistically significant verifies the presence of a selection bias from a firm's choice to acquire, which is not entirely surprising given the significant relations between

governance and acquisition likelihood reported in Table IV.[16] This suggests that generalizing the merit of governance structure using bidder returns is inappropriate without accounting for non-random selection into the analysis.

All model specifications in Table V use the bidding firm's three-day (days -1 to +1) cumulative abnormal announcement return as the dependent variable, but since the first stage model of acquisition likelihood uses panel years, the second stage must accommodate, i.e., some firms acquire more than once within the same calendar year. When this occurs, we average returns within the same firm year weighted by deal value. This results in 936 acquisition events and 3,203 censored firm years during which no qualifying acquisitions occur. To control for deal characteristics that are known from prior literature to explain bidder returns, we include method of payment (Travlos, 1987), public status (Fuller, Netter, and Stegemoller, 2002), size and whether the bidder and target are within the same industry (Moeller, Schlingemann, and Stulz, 2004), and relative size of the deal (Jarrell and Poulsen, 1989). The estimated effects for each of these factors are consistent with the prior literature. Each model also includes indicator variables for year and Fama-French 48-industry classification to control for time and industry fixed effects, and White corrected standard errors.

Considering the isolated governance effects in Models 1 through 4, shareholder wealth increases when there are more outside directors on the board, but is decreasing for family firms, higher levels of inside ownership, and ownership by passive outside blockholders. All of these effects are significant at the 10% level or better. When all governance effects are simultaneously considered in Model 5, statistical significance is lost at conventional levels for inside ownership (p-value 0.179), while the positive coefficient estimate for inside directors becomes statistically significant (p-value 0.013). Hence, once we control for highly correlated family status and inside ownership, our results suggest that additional inside

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[16] To avoid identification in the second stage OLS regression based solely on the non-linearity of the inverse mills ratio determined by sharing the same set of factors, two instruments are included in the first stage that explain the likelihood that a firm acquires (level of capital expenditures and the commercial loan rate spread), but otherwise offer no explanatory power for bidder returns.

directors enhance the value of investing activity.[17]

These results in conjunction with acquisition likelihood from Table IV suggest that acquiring firms benefit from more outside directors, consistent with advising needs, as well as insider knowledge. In unreported regressions that consider board structure by size and fraction of outsiders, only the former effect is statistically significant, with larger boards associated with a higher value of investing activity. This result is consistent with Harris and Raviv's (2006) prediction that outside controlled boards do not necessarily increase value since there are potential benefits from the presence of both insiders and outsiders.

These results also suggest that if higher levels of inside ownership facilitate incentive alignment with outside shareholders, or if family firms are better governed, then benefits are not manifest through acquisition activity. Family firms and firms with higher levels of inside ownership are less likely to acquire, and when they do, they destroy shareholder value. Moreover, there is similar evidence for passive blockholdings, which is commonly associated with monitoring benefits to outside shareholders.

Among other governance measures considered, we find no evidence of a relation between shareholder rights and bidder returns, inconsistent with the findings of Masulis, Wang, and Xie (2006). So, although high G firms are more likely to acquire, there are no adverse wealth effects that suggest empire building or protection when considering shareholder rights in aggregate. Neither do we find that cash flow commitments of the firm matter even though they are associated with lower acquisition likelihood. We do find, however, that high Q firms are associated with significantly lower bidder returns while high free cash flows are irrelevant, inconsistent with the agency cost explanation for acquisitions. Rather, low Q firms are more likely to acquire, particularly when they have excess free cash flow, and these are precisely the firms that should be acquiring since they are associated with significantly higher bidder returns.

To assess the robustness of these results we consider alternative treatments of bidder returns and

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[17] When we disaggregate the number of inside directors by family and non-family insiders, the latter effect is positive and significant at the 5 percent level without inclusion of inside ownership (unreported in the Table).

regression methodology in Table VI. Considering all governance measures simultaneously, Model 1 uses standard OLS regression methodology for all 1,251 acquisition events without regard to panel year, calculating all independent variables prior to the announcement date. Models 2 and 3 use average bidder returns over panel years value-weighted by deal value, and compare estimates uncorrected for selection bias using standard OLS (Model 2) to estimates using the Heckman procedure (Model 3). Models 4 and 5 repeat the analysis using equal-weighted average bidder returns.

The general interpretation of Table V is supported by the various specifications in Table VI, with additional evidence on the effects of failing to control for selection bias. Standard event study methodology for bidder returns (Model 1) finds similar results for inside directors and family firm ownership as the Heckman corrected model from Table V (and Model 3 from this Table), but failing to control for increased acquisition propensity by firms with more outside directors results in a statistically insignificant coefficient on the number of outside directors. Furthermore, controlling for reduced likelihood of a family firm making an acquisition increases the magnitude of the negative shareholder wealth effect and statistical significance. There is no material change in results when returns are equal-weighted by deal value rather than value-weighted, with the exception of reduced significance on the coefficient of non-director block ownership, suggesting a size effect. We attribute other minor differences in coefficient estimates between Models 1 and OLS estimates from Models 2 and 4 to differences in governance measured within panel years versus using the last available data prior to the acquisition. If we lag the panel year governance data, our results in Models 2 and 4 do not materially change.

D. Predicting targets

In this section, we address the issue of whether the choice of governance structure facilitates managerial entrenchment, estimated by the likelihood that a sample firm is acquired in a given year. Prior results show a relation between the firm's choice of governance structure and both the likelihood and value of acquisition activity. Estimating the level of entrenchment associated to each governance measure adds to the interpretation of these results.

Of the original sample of 498 firms in 1994, 162 subsequently become the target of a successful takeover. Using the same panel of data from the analysis that modeled the probability that a firm acquires (Table IV), Table VII reports the coefficient estimates from probit regressions where the dependent variable is one in the year when a sample firm is acquired, and is zero otherwise. To separate the entrenchment effects due to governance from takeover likelihood related to performance or other factors, model specifications include many of the same control variables from prior analysis, including the level of free cash flow, growth opportunities (Q), and a dummy variable for prior year net loss. Models 1 through 4 consider the components of governance separately; Model 5 considers governance effects simultaneously; Model 6 provides an estimate of the percent difference in takeover likelihood between a firm one standard deviation above the mean value of the independent variable compared to one standard deviation below. Each model includes year and industry fixed effects, and clustered standard errors by firm to control for non-independence of firm observations.

The results show a decrease in takeover likelihood with more inside directors and family firm status. If these coefficient estimates reflect managerial entrenchment, then these results combined with the bidder wealth effects suggest net benefits to protecting managerial interest by assigning a greater number of insiders to the board, but just the opposite for family firms. In contrast, increased ownership by outside directors and non-director blockholders are associated with increased takeover likelihood. Interestingly, although the coefficient estimate for inside ownership is not statistically significant, its sign becomes positive once the number of inside directors and family ownership is simultaneously considered, illustrating the danger of omitting variables. The inside ownership result is inconsistent with the prediction that an increase in ownership reduces takeover likelihood (Stulz, 1988), but the outside ownership result is broadly consistent with Shleifer and Vishny (1986) who predict that outside owners use influence through ownership to either improve operational efficiency or, if they fail, help facilitate a takeover by an alternative management team. Since prior evidence suggests that passive ownership is associated with decreasing bidder returns, the latter part of the Shleifer and Vishny (1990) prediction seems particularly tractable.

We find no evidence that limiting shareholder rights (high G) reduces takeover likelihood. To the contrary, the coefficient on G is positive albeit insignificant (p-value 0.312), a finding that is inconsistent with the notion that limiting shareholder rights insulates managers from discipline, a precondition to empire building stories. To further test the empire building hypothesis, each model specification includes a dummy variable for whether the firm made at least three acquisitions within the prior five years to assess whether the decision to acquire influences the likelihood of being acquired. If there is a relation between acquisition propensity and empire building among firms with entrenched management, then a negative coefficient on this variable should result. Although the signs are consistently negative, none is near statistical significance. We consider, but do not report, alternate specifications that lengthen the period to 10 years and change the threshold of the number of acquisitions, all without statistical significance.

Among other control variables considered in this analysis, only three are statistically significant. Consistent with the notion that large firms have a limited set of potential acquirers, the size of the target has a negative and significant relation with the likelihood of being a target in all model specifications. The presence of a net loss is positive and significant in all model specifications, suggesting a prominent role for external market discipline among poor performing firms. Finally, increased rate spreads are associated with a lower takeover likelihood, consistent with the acquisition becoming more costly to a potential suitor.

The last column of Table VII reports the marginal effects of a change in the likelihood of takeover within a calendar year between a firm that is one standard deviation above the mean value of the independent variable and a firm that is one standard deviation below. From our governance estimates, family owned firms and the number of inside directors offer the largest differences, -1.4% and -1.04% respectively. In contrast, ownership by insiders, outside directors, and non-director blockholders is associated with 0.76%, 0.53%, and 0.96% increases respectively. Perhaps small by absolute measure, these levels are quite large relative to the unconditional likelihood of a firm being acquired (2.99%). Thus, in relative terms, the inside director result decreases the likelihood of an acquisition by almost 50%,

whereas the non-director blockholder result increases it by about 30%.

E. A more detailed analysis of shareholder rights

In this section, we examine more closely the effects of shareholder rights on managerial entrenchment, acquisition propensity, and shareholder wealth. Our prior evidence shows that weaker shareholder rights (higher *G*) are associated with increased acquisition propensity, but there is otherwise no evidence that weaker shareholder rights afford management protection from market discipline or result in shareholder wealth loss. Hence, our findings do not support the conclusion that managers use anti-takeover provisions to build (or stave off collapse of) value-destroying empires, as is suggested by Gompers, Ishii, and Metrick (2003) and Masulis, Wang, and Xie (2006).

It is possible that the inconsistency between these results is due to our measurement of shareholder rights, as the entire set of 24 governance provisions from *G*. If only a subset of these measures are relevant from an anti-takeover perspective, or if only the extreme firms (i.e., corporate democracies or dictatorships) matter then use of *G* may dilute their effect in our analysis. To assess this, Table VIII considers the effects of the democracy and dictatorship classifications by Gompers, Ishii, and Metrick (2003) as well as the individual effects of the six shareholder-right-limiting provisions from the entrenchment index of Bebchuk, Cohen, and Ferrell (2004). This index includes four provisions that provide a constitutional limit on the voting power of outside shareholders, including the limited ability to amend bylaws, classified (staggered) boards, and super majority voting requirements for amendments to the corporate charter or merger approval. The index also includes two measures commonly associated with protection against hostile takeovers: poison pills and golden parachutes. We also consider whether the firm has a dual-class share structure, a governance mechanism that is often viewed as one of the most effective anti-takeover devices.

This analysis uses the same regression methodology as before, but we report only the coefficient estimate for each shareholder right provision taken from 27 separate multivariate regressions. Model 1 reports estimates on the probability of making an acquisition using Model 5 of Table IV, Model 2 reports

estimates of the second stage of the Heckman selection model using Model 5 of Table V, and Model 3 reports the estimates on the likelihood of being acquired using Model 5 from Table VII. One is subtracted from G when the considered shareholder right estimate is a component of G.

In general, we find little evidence that the individual shareholder right limiting provisions inhibit a firm from being acquired or encourage inefficient investment activity. Consistent with prior results, dictatorship firms are associated with higher acquisition likelihood, but do not otherwise have a shareholder wealth consequence or result in a diminished likelihood in the firm being acquired. Of the six shareholder-right measures considered, only two appear to be of material consequence; neither is consistent with an empire building story. When a firm requires super majority approval for a merger, there is mild evidence of an associated decrease in likelihood that the firm is acquired with a negative but marginally insignificant coefficient estimate (p-value of 0.113). Super majority approval is also associated with increased acquisition activity, but the shareholder wealth effects have a positive and significant coefficient estimate. Therefore, if super majority approval increases acquisition propensity by facilitating managerial entrenchment, it does so with properly aligned managerial incentives.

Golden parachutes, in contrast, are associated with decreasing shareholder value. When present, firms are significantly more likely to acquire, but they are also significantly more likely to be acquired themselves. Hence, golden parachutes appear to facilitate an overall increase in corporate control activity to the detriment of bidding firm shareholders. There is also mild (albeit statistically insignificant) evidence that poison pills are associated with shareholder wealth loss (p-value 0.128), but similar to golden parachutes, the evidence also suggests (mildly) that poison pills are associated with increased likelihood of being acquired (p-value 0.156). Of the other measures considered, it is interesting to note that dual class firms are associated with an increased likelihood of being acquired, consistent with Bauguess, Slovin, and Sushka (2007).

F. The significance of CEO characteristics on the acquisition decision

In this section, we consider how CEO characteristics affect the likelihood and value of a firm's

acquisition activity. In particular, the role of a CEO in the acquisition decision may extend beyond managerial self-dealing if hubris affects his decisions (Roll, 1986). Thus, a CEO without empire building ambitions or a desire to consume private benefits may still pursue inefficient investment opportunities if he overestimates his own ability or otherwise fails to rationally price opportunities. There may be a relation between this likelihood and tenure or age. There is also concern of comprise in the effectiveness of board structure when the CEO serves as the chair (CEO duality), a potentially entrenching position. We also consider whether the wealth destroying characteristics of family firm acquisitions are related to the CEO's affiliation with the family, as either a founder, descendent, or unrelated party.

The results of this analysis are in Table IX using the same methodology of Table VIII. Controlling for other governance measures, CEOs of family firms are unconditionally associated with reduced likelihood of acquiring and being acquired, and shareholder wealth reduction when acquisitions are made. So not only do family firms exhibit entrenching characteristics unassociated with better governance, inconsistent with significantly higher performance reported for family firms by Anderson and Reeb (2003), our evidence also suggests that there is no merit in founder CEO's as suggested by Villalonga and Amit's (2006).

Other than family status, no other CEO characteristic considered in Table IX is associated with a significant change in acquisition likelihood or value. These results are consistent with the findings of Avery, Chevalier, and Schaefer (1998) who report the absence of any firm specific benefits to acquiring firm CEOs for a sample of Fortune 500 firms – an equivalent set of firms to this study albeit from an earlier period. Hence, we find no evidence that the individual characteristics of the CEO (other than founding family status) matter.

IV. Conclusion

This study addresses the role of governance structure on the likelihood and value of acquisition activity among S&P 500 firms between 1994 and 2005. We consider the effects of ownership structure, board of director composition, founding family involvement, and level of shareholder rights. Our main

findings are that: (1) the number of outside directors is increasing in both the probability that a firm will acquire and the wealth effects associated with an acquisition, consistent with the benefits to outside directors as advisors, (2) a larger number of inside directors is associated a lower likelihood of the firm becoming a target, but with higher bidder returns, consistent with the benefits to protecting managerial human capital, (3) family owned firms (and to a lesser degree, firms with high inside ownership) reduce the likelihood of both making and becoming the target of an acquisition, and are associated with lower bidder returns, and (4) shareholder rights positively influence a firm's propensity to acquire, but have no significant influence on acquirer wealth effects, nor are they associated with a lower probability of being acquired.

Our results are largely inconsistent with an agency cost explanation for acquisition activity, although we show how such an interpretation can be drawn with (1) the assumption that acquisitions are bad, on average, and (2) otherwise considering only the likelihood of firms making an acquisition. Acquisition propensity is associated with conventional views of "weak" governance, high levels of managerial discretion, and low firm growth opportunities. However, once we jointly consider bidder returns and the likelihood of being acquired, theories of empire building, empire protection, and managerial hubris are discounted. Rather, there is evidence that acquiring firms organize their governance structure to maximize the value of their investing activity.

References

Anderson, Ron and David Reeb, 2003. Founding-family ownership and firm performance: evidence from the S&P 500. Journal of Finance 58, 1301-1327.

Barclay, Michael, Clifford Holderness, and Dennis Sheehan, 2007, Private placements and managerial entrenchment. Journal of Corporate Finance, forthcoming.

Bates, Tom, David Becher, and Mike Lemmon, 2007, Board classification and managerial entrenchment: evidence from the market for corporate control. Journal of Financial Economics, forthcoming.

Bauguess, Scott, Myron Slovin, and Marie Sushka, 2007, Agency conflicts, underinvestment, and recontracting shareholder rights at closely held firms. Working paper, Texas Tech University.

Bebchuk, Lucian, Alma Cohen, and Allen Ferrell, 2004, What matters in corporate governance?, Working paper, Harvard University.

Burkart, Mike, Dennis Gromb, and Fausto Panunzi, 1997, Large shareholders, monitoring, and the value of the firm, Quarterly Journal of Economics 112, 693-728.

Byrd, John and Kent Hickman, 1992. Do outside directors monitor managers? Journal of Financial Economics 32, 195-221.

Coles, Jeffrey, Naveen Daniel, and Lalitha Naveen, 2005. Boards: Does one size fit all? Journal of Financial Economics, forthcoming.

Cremers, Martjin and Vinay Nair, 2005. Governance mechanisms and equity prices. Journal of Finance 60, 2859-2894.

DeAngelo, Harry and Linda DeAngelo, 1985, Managerial ownership of voting rights: A study of public corporations with dual classes of common stock. Journal of Financial Economics 14, 33-69.

Demsetz, Harold, 1983, The structure of ownership and the theory of the firm, Journal of Law and Economics 26, 375-390.

Easterbrook, Frank, 1984. Two agency-cost explanations of dividends. American Economic Review 74, 650-659.

Edelen, Roger, and Gregory Kadlec, 2005. Issuer surplus and the partial adjustment of IPO prices to public information. Journal of Financial Economics 77, 347-374.

Eisenberg, T., S. Sundgren, and M. Wells, 1998. Larger board size and decreasing firm value in small firms. Journal of Financial Economics 48, 35-54

Fama, Eugene, and Ken French, 1997. Industry costs of equity. Journal of Financial Economics 43, 153-193.

Fuller, Kathleen, Jeffry Netter, and Mike Stegemoller, 2002. What do returns to acquiring firms tell us? Evidence from returns to firms that make many acquisitions. Journal of Finance 57, 1763-1793.

Gillan, Stuart, 2006, Recent developments in corporate governance: An overview. Journal of Corporate Finance 12, 381-402.

Gillan, Stuart, Jay Hartzell, and Laura Starks, 2006, Tradeoffs in corporate governance: Evidence from board structures and charter provisions. Working paper, University of Texas.

Gompers, Paul, Joy Ishii, and Andrew Metrick, 2003. Corporate governance and equity prices. Quarterly Journal of Economics 118, 107-155.

Harford, Jarrad, 1999. Corporate cash reserves and acquisitions. Journal of Finance 54, 1969-1997.

Harford, Jarrad, 2005. What drives merger waves? Journal of Financial Economics 77, 529-560.

Harris, Milton, and Artur Raviv, 2006. A theory of board control and size. Review of Financial Studies, forthcoming.

Hermalin, Benjamin and Michael Weisbach, 1998. Endogenously chosen boards of directors and their monitoring of the CEO. American Economic Review 88, 96-118.

Himmelberg, Charles, Glenn Hubbard, and Darius Palia, 1999. Understanding the determinants of managerial ownership and the link between ownership and performance. Journal of Financial Economics 53, 353-384.

Jarrell, Gregg. and Annette Poulsen. 1989, The returns to acquiring firms in tender offers: evidence from three decades. Financial Management 18, 12 – 19.

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

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

Jensen, Michael and William Meckling, 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360.

Klein, Benjamin, Robert Crawford, and Armen Alchian, 1976. Vertical integration, appropriable rents, and the competitive contracting process. Journal of Law and Economics 21, 297-326.

Lang, Larry, Rene Stulz, and Ralph Walkling, 1991. A test of the free cash flow hypothesis: the case of bidder returns. Journal of Financial Economics 29, 315-335.

Lipton, Martin and Jay Lorsch, 1992. A modest proposal for improved corporate governance, Business Lawyer 48, 59-77.

Masulis, Ronald W., Cong Wang, and Fei Xie, 2006. Corporate governance and acquirer returns. Journal of Finance, forthcoming.

Mitchell, Mark and Harold Mulherin, 1996. The impact of industry shocks on takeover and restructuring activity. Journal of Financial Economics 41, 193-229.

Moeller, Sara, Frederik Schlingemann, and Rene Stulz, 2004. Firm size and the gains from acquisitions. Journal of Financial Economics 73, 201-228.

Morck, Randall, Andrei Shleifer, and Robert Vishny, 1988. Management ownership and market valuation: An empirical analysis. Journal of Financial Economics 20, 293-315.

Morck, Randall, Andrei Shleifer, and Robert Vishny, 1990. Do managerial objectives drive bad acquisitions? Journal of Finance 45, 31-48.

Myers, Stewart and N. Majluf, 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187-221.

Panunzi, Fausto, Mike Burkart, and Andrei Shleifer, 2003. Family firms. Journal of Finance 58, 2173–2201.

Petersen, Mitchell, 2007. Estimating standard errors in finance panel data sets: Comparing approaches. Working paper, Northwestern University.

Rhodes-Kropf, Matthew, S. Viswanathan, 2004. Market valuation and merger waves. Journal of Finance 59, 2685-2718.

Roll, Richard, 1986. The hubris hypothesis of corporate takeovers. Journal of Business 59, 197-216.

Rosenstein, S. and J. Wyatt, 1990. Outside directors, board independence and shareholder wealth. Journal of Financial Economics 26, 175-191.

Rosenstein, S. and J. Wyatt, 1997. Inside directors, board effectiveness, and shareholder wealth. Journal of Financial Economics 44, 229-250.

Shleifer, Andrei and Robert Vishny, 1986. Large shareholders and corporate control. Journal of Political Economy 94, 461-488.

Shleifer, Andrei and Robert Vishny, 1997. A survey of corporate governance. Journal of Finance 52, 737-783.

Shleifer, Andre and Robert Vishny, 2003. Stock market driven acquisitions. Journal of Financial Economics 70, 295-311.

Smith, Richard and Joo-Hyun Kim, 1994. The combined effects of free cash flow and financial slack on bidder and target stock returns. Journal of Business 67, 281-310.

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

Stulz, Rene, 1990. Managerial discretion and optimal financing policies, Journal of Financial Economics 26, 3-27.

Travlos, N., 1987, Corporate takeover bids, methods of payment, and bidding firms' stock returns. Journal of Finance 42, 943-963.

Villalonga, Belen and Raphael Amit, 2006. How do family ownership, control and management affect firm value? Journal of Financial Economics 80, 385-417.

Williamson, Oliver, 1985, The economic institutions of capitalism: Firms, markets, relational contracting (The Free Press, New York).

Yermack, David, 1996. Higher market valuation of companies with a small board of directors. Journal of Financial Economics 40, 185-213.

Table I: Acquisition behavior by year

This table reports the number of firms and level of acquisition activity for each year of the panel. *Acquiring sample firms* are those that make at least one acquisition of greater than 1% of their market value during the sample year. *Acquired sample firms* are those that drop from the sample as a result of being the target of a successful acquisition. *Stock* represents all equity payment; *cash* represents all cash payment; *mix* is any combination of the two.

Year	Number of sample firms	Acquiring sample firms		Acquired sample firms		Number of acquisitions	Method of payment		
		N	%	N	%		Stock %	Cash %	Mix %
1994	498	115	23.1	7	1.4	168	17.3	69.0	13.7
1995	489	103	21.1	18	3.7	135	25.9	55.6	18.5
1996	468	110	23.5	16	3.4	136	18.4	58.1	23.5
1997	450	115	25.6	17	3.8	158	24.7	55.7	19.6
1998	433	119	27.5	34	7.9	166	24.1	51.2	24.7
1999	396	116	29.3	26	6.6	154	22.7	49.4	27.9
2000	368	84	22.8	16	4.3	101	12.9	54.5	32.7
2001	348	79	22.7	7	2.0	97	10.3	66.0	23.7
2002	335	54	16.1	6	1.8	68	7.4	73.5	19.1
2003	327	60	18.3	1	0.3	69	10.1	72.5	17.4
2004	327	66	20.2	4	1.2	76	7.9	69.7	22.4
2005	315	71	22.5	10	3.2	83	4.8	67.5	27.7
Total	4,754	1,092	23.0	162	32.5	1,411	17.6	60.0	22.4

Table II: Descriptive statistics of sample firms

This table presents firm characteristics and governance variables. *Market value of equity* is the product of shares outstanding and share price from Compustat. *Sales* is the dollar volume of sales from Compustat. *Q* is the market value scaled by the book value of assets. Market value of assets is the book value of assets minus the book value of equity plus *market value of equity*. *Free cash flow* is operating income before depreciation minus interest expense, income taxes, and dividends; this number is scaled by prior-year assets. *Leverage* is long term debt scaled by total assets minus the same ratio from the ten closest size- and industry-matched firms. *Capital expenditures* is capital expenditures scaled by total assets. *Dividend yield* is the dividend per share scaled by the price per share. *Net loss* is one if net income is negative and is zero otherwise. *Number of directors* is the number of board of directors. *Number of inside directors* is the number of directors that are managers and their relatives, members of the founding family, and other directors with a non-director employment contract. *Number of outside directors* are all directors not classified as inside. *All Officer and director ownership* is the percentage of all ownership by senior officers and their relatives, by all other inside directors, and by the founding family. *Outside director ownership* is the aggregate ownership by outside directors, including ownership represented by the director but not directly owned (i.e. if a corporation designates a director, then the amount of corporate ownership is included). *Non-director block ownership* is the percentage ownership of all beneficial owners unaffiliated with the firm and without board representation. *Family firm* is an indicator variable equal to one if ownership by any member of the founding family is observed in the firm's proxy statement, either through a directorship or ownership position meeting the 5% reporting threshold. *G* is the governance index of Gompers, Ishii, and Metrick (2003). *Bidder CAR* is the bidder's cumulative abnormal announcement return (firm return minus the CRSP value-weighted index) from day -1 to day +1; *public, private,* and *subsidiary* denote the target public status. Dollars are adjusted to 2005 by the CPI.

	N	Mean	Min	p25	Median	p75	Max
Firm characteristics							
Market value of equity ($ millions)	4,193	20,398	18	2,812	6,964	17,375	598,423
Sales ($ millions)	4,193	13,803	240	2,980	6,484	14,317	328,213
Q	4,193	1.922	0.874	1.187	1.526	2.154	7.881
Free cash flow	4,193	0.110	-0.030	0.064	0.104	0.148	0.339
Leverage	4,193	0.201	0.000	0.101	0.191	0.287	0.882
Capital expenditures	4,193	0.056	0.000	0.028	0.047	0.074	0.528
Dividend yield	4,193	0.020	0.000	0.008	0.018	0.028	0.698
Net loss	4,193	0.108	0.000	0.000	0.000	0.000	1.000
Governance measures							
Number directors	4,193	11.5	5	10	11	13	29
Number inside directors	4,193	2.6	0	1	2	3	11
Number outside directors	4,193	8.9	0	7	9	10	26
All officer and director ownership	4,193	0.071	0.000	0.011	0.024	0.066	0.705
Inside ownership	4,193	0.057	0.000	0.009	0.019	0.045	0.615
Outside director ownership	4,193	0.014	0.000	0.000	0.001	0.004	0.668
Non-director block ownership	4,193	0.116	0.000	0.000	0.088	0.187	0.719
Family firm	4,193	0.293	0	0	0	1	1
G	4,193	10.2	2	8	10	12	16
Acquisition characteristics							
Deal value ($ millions)	1,251	1,959	4	143	340	1,132	89,168
Relative size	1,251	0.138	0.010	0.021	0.046	0.128	2.850
Bidder CAR (-1,1) – all deals	1,251	-0.002	-0.261	-0.022	-0.001	0.020	0.272
Bidder CAR (-1,1) – public deals	478	-0.014	-0.261	-0.040	-0.009	0.015	0.176
Bidder CAR (-1,1) – private deals	227	0.005	-0.175	-0.015	0.003	0.023	0.220
Bidder CAR (-1,1) – subsidiary deals	546	0.006	-0.175	-0.016	0.002	0.022	0.272

Table III: Correlation of governance variables

This table presents the pair wise correlations between governance measures. *Inside ownership* is the percentage aggregate ownership by the firm's managers and their family, all members of the founding family, and non-managing directors that otherwise have an employment contract with the firm (e.g. lawyers, consultants). All other variable definitions are contained in previous tables.

	Number of inside directors	Number of outside directors	Inside ownership	Outside director ownership	Non-director ownership	Family firm	G	Leverage	Dividend yield	Net loss	Log of sales
Number of inside directors	1.00										
Number of outside directors	-0.22	1.00									
Inside ownership	0.45	-0.31	1.00								
Outside director ownership	-0.04	0.04	-0.02	1.00							
Non-director block ownership	-0.19	-0.16	-0.08	-0.09	1.00						
Family firm	0.48	-0.36	0.62	-0.04	-0.03	1.00					
G	-0.14	0.11	-0.19	-0.07	0.17	-0.10	1.00				
Leverage	-0.08	0.07	-0.06	0.01	0.09	-0.07	0.11	1.00			
Dividend yield	-0.01	0.20	-0.10	-0.07	-0.17	-0.11	0.04	0.10	1.00		
Net loss	-0.06	-0.09	-0.02	0.02	0.15	-0.01	0.05	0.16	-0.04	1.00	
Log of sales	0.07	0.39	-0.14	-0.06	-0.28	-0.14	-0.16	0.05	0.08	-0.10	1.00

Table IV: Probit regressions modeling the probability of making an acquisition

This table presents probit regressions where the dependent variable is one when the firm makes an acquisition during the firm year and is zero otherwise. *Log of sales* is the natural logarithm of sales. Year dummies and industry dummies constructed using Ken French's 10 industry portfolios are included, but not reported, in each regression. *Increasing spread* is the commercial rate spread found in responses from the Federal Reserve Senior Loan Officer report. All other variable definitions are contained in previous tables. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Number of inside directors	-0.010 [0.574]				0.016 [0.420]	1.47%
Number of outside directors	0.048*** [0.000]				0.037*** [0.000]	5.61%
Inside ownership		-1.059*** [0.000]			-0.547 [0.151]	-3.15%
Outside director ownership		0.087 [0.869]			0.023 [0.966]	0.07%
Non director block ownership		-0.028 [0.904]			-0.015 [0.949]	-0.10%
Family owned firm			-0.204*** [0.000]		-0.108 [0.144]	-3.15%
G				0.033*** [0.005]	0.022** [0.050]	3.31%
Leverage $_{t-1}$	3.669*** [0.000]	3.634*** [0.000]	3.577*** [0.000]	3.585*** [0.000]	3.603*** [0.000]	13.88%
Dividend yield $_{t-1}$	-0.180*** [0.000]	-0.182*** [0.000]	-0.183*** [0.000]	-0.182*** [0.000]	-0.175*** [0.000]	-12.17%
Free cash flow	-3.392** [0.029]	-3.394** [0.029]	-3.319** [0.030]	-3.262** [0.033]	-3.374** [0.029]	-8.55%
Q	-0.446** [0.048]	-0.423* [0.058]	-0.425** [0.049]	-0.467* [0.053]	-0.537** [0.034]	-4.15%
Capital expenditures	-3.457* [0.072]	-3.134* [0.084]	-3.093* [0.098]	-3.447* [0.074]	-3.853** [0.050]	-4.18%
Net loss $_{t-1}$	-0.406*** [0.000]	-0.419*** [0.000]	-0.417*** [0.000]	-0.410*** [0.000]	-0.402*** [0.000]	-7.49%
Log of sales $_{t-1}$	0.012 [0.658]	0.038 [0.216]	0.042 [0.127]	0.066** [0.015]	0.015 [0.596]	1.04%
Increasing spread	0.001* [0.071]	0.001** [0.028]	0.000* [0.084]	0.000 [0.164]	0.001** [0.010]	1.23%
Constant	-6.460*** [0.000]	-6.038*** [0.000]	-6.031*** [0.000]	-6.779*** [0.000]	-6.530*** [0.000]	
Observations	4193	4193	4193	4193	4193	
Psuedo R^2	0.074	0.074	0.073	0.072	0.077	

Table V: Bidder announcement return regressions

This table presents results from the second stage of a Heckman two-step procedure of abnormal announcement returns to all successful bids. The first stage in each model specification is corresponding model specification from Table IV. *Prior year return* is the firm's prior year or panel year raw return. *Relative size* is the aggregate deal value of the acquisitions over the panel year divided by the market value of the acquirer. *All-stock* denotes using stock only as a means of payment for at least one acquisition during the panel year. *Public* target status indicates that at least on target was public during the panel year. *Same industry* indicates that at least one acquisition shares the same Fama-French 48 industry code during the panel year. *Lambda* is the coefficient estimate of inverse mills ratio from the first stage. All other variable definitions are contained in previous tables. The number of observations included and censored is in the final row. Year dummies and industry dummies constructed using Ken French's 10 industry portfolios are included, but not reported, in each regression. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

- Table V continued -

	(1)	(2)	(3)	(4)	(5)
Number inside directors	0.163 [0.126]				0.302** [0.013]
Number outside directors	0.185** [0.020]				0.139* [0.074]
Inside ownership		-4.903* [0.053]			-3.844 [0.179]
Outside director ownership		4.045 [0.241]			3.317 [0.345]
Non-director block ownership		-3.390** [0.031]			-2.960* [0.062]
Family firm			-0.965** [0.027]		-0.864* [0.083]
G				0.074 [0.308]	0.058 [0.419]
Leverage	0.985 [0.519]	0.774 [0.614]	0.316 [0.837]	0.595 [0.698]	0.585 [0.707]
Dividend yield	-18.434 [0.172]	-16.272 [0.231]	-14.414 [0.285]	-15.709 [0.245]	-20.130 [0.140]
Free cash flow	0.023 [0.995]	-0.073 [0.984]	-0.497 [0.890]	-0.246 [0.946]	0.229 [0.949]
Q	-0.442** [0.049]	-0.494** [0.030]	-0.414* [0.065]	-0.425* [0.059]	-0.507** [0.026]
Prior year return	1.149** [0.022]	1.258** [0.012]	1.157** [0.021]	1.154** [0.022]	1.264** [0.012]
Relative size	-2.478*** [0.000]	-2.468*** [0.000]	-2.546*** [0.000]	-2.543*** [0.000]	-2.438*** [0.000]
All-stock	-0.696** [0.043]	-0.645* [0.060]	-0.655* [0.057]	-0.673* [0.051]	-0.658* [0.055]
Public	-1.070*** [0.002]	-1.098*** [0.001]	-1.072*** [0.002]	-1.028*** [0.002]	-1.146*** [0.001]
Same industry	-0.010 [0.973]	-0.012 [0.970]	0.000 [1.000]	-0.009 [0.978]	-0.010 [0.974]
Log of sales	-0.532*** [0.003]	-0.502*** [0.006]	-0.381** [0.026]	-0.322* [0.067]	-0.638*** [0.001]
Constant	0.745 [0.876]	1.326 [0.794]	2.936 [0.535]	0.471 [0.925]	2.467 [0.626]
Lambda	1.915* [0.059]	1.943* [0.055]	2.018** [0.049]	1.990* [0.053]	2.184** [0.034]
Observations	936	936	936	936	936
Censored	3,203	3,203	3,203	3,203	3,203

Table VI: Bidder announcement return regressions, comparing OLS to Heckman

This table presents results from Ordinary least squares (OLS) regressions and the Heckman two-step using full maximum likelihood of abnormal announcement returns to all successful bids. Model 1, uses standard OLS event study methodology with all independent variables measured prior to the announcement date. Model 2 is an OLS regression of bidder abnormal announcement returns averaged over the panel year weighted by deal value, where each panel year is a unique observation when at least one bid is made. Model 3 uses the same panel year returns as Model 2 in the second stage of a Heckman, where the first stage is Model 5 from Table IV. *Prior year return* is the firm's prior year or panel year raw return. *Relative size* is the deal value of the acquisition divided by the average market value of the acquirer one month prior to announcement, or the aggregate of deals over the panel year. *All-stock* denotes acquisitions paid for using stock only as a means of payment, or that at least one such deal was completed in the calendar year. *Public* target status indicates that the target firm was publicly traded at the time of announcement, or that at least on target was public during the panel year. *Same industry* indicates that acquisitions share the same Fama-French 48 industry code, or that at least one shares the same code during the panel year. *Lambda* is the coefficient estimate of inverse mills ratio from the first stage. All other variable definitions are contained in previous tables. The number of observations included and censored is in the final row. Year dummies and industry dummies constructed using Ken French's 10 industry portfolios are included, but not reported, in each regression. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

- continued on next page -

- Table VI continued -

	(1)	(2)	(3)	(4)	(5)
		Value-weighted CARs		Equal-weighted CARs	
	OLS	OLS	Heckman	OLS	Heckman
Number inside directors	0.196[*]	0.243[**]	0.302[**]	0.292[**]	0.375[***]
	[0.077]	[0.045]	[0.013]	[0.045]	[0.008]
Number outside directors	0.030	0.079	0.139[*]	0.114	0.196[**]
	[0.602]	[0.241]	[0.074]	[0.157]	[0.031]
Inside ownership	0.453	-2.561	-3.844	-2.126	-3.925
	[0.857]	[0.344]	[0.179]	[0.484]	[0.236]
Outside director ownership	5.291	4.082	3.317	5.177	4.37
	[0.295]	[0.443]	[0.345]	[0.353]	[0.282]
Non-director block ownership	-1.061	-2.765[*]	-2.960[*]	-2.165	-2.428
	[0.478]	[0.089]	[0.062]	[0.246]	[0.186]
Family firm	-0.723[*]	-0.603	-0.864[*]	-0.739	-1.088[*]
	[0.077]	[0.152]	[0.083]	[0.181]	[0.059]
G	0.011	0.013	0.058	0.009	0.069
	[0.851]	[0.836]	[0.419]	[0.903]	[0.404]
Leverage	1.485	1.182	0.585	1.624	0.83
	[0.326]	[0.481]	[0.707]	[0.418]	[0.643]
Dividend yield	-7.286	-20.021	-20.130	-18.552	-18.724
	[0.574]	[0.275]	[0.140]	[0.349]	[0.233]
Free cash flow	-0.906	-1.857	0.229	-2.584	0.347
	[0.790]	[0.637]	[0.949]	[0.536]	[0.933]
Q	-0.331[*]	-0.430	-0.507[**]	-0.484	-0.592[**]
	[0.056]	[0.124]	[0.026]	[0.122]	[0.024]
Prior year return	1.465[**]	1.231[*]	1.264[**]	1.478[*]	1.522[***]
	[0.046]	[0.056]	[0.012]	[0.058]	[0.008]
Relative size	-2.392[***]	-2.612[***]	-2.438[***]	-2.904[***]	-2.661[***]
	[0.005]	[0.002]	[0.000]	[0.002]	[0.000]
All-stock	-0.379	-0.583[*]	-0.658[*]	-0.427	-0.531
	[0.394]	[0.075]	[0.055]	[0.261]	[0.176]
Public	-1.361[***]	-1.169[***]	-1.146[***]	-1.520[***]	-1.489[***]
	[0.000]	[0.001]	[0.001]	[0.000]	[0.000]
Same industry	0.124	-0.031	-0.010	0.193	0.221
	[0.657]	[0.922]	[0.974]	[0.598]	[0.528]
Log of sales	-0.454[**]	-0.605[**]	-0.638[***]	-0.735[***]	-0.778[***]
	[0.019]	[0.012]	[0.001]	[0.004]	[0.001]
Constant	3.942[*]	5.550[**]	2.467	5.341[*]	-1.416
	[0.063]	[0.034]	[0.626]	[0.060]	[0.816]
Lambda			2.184[**]		2.995[**]
			[0.034]		[0.012]
Observations	1,251	936	936	936	936
Censored			3,203		3,203
Adjusted R^2	0.089	0.110		0.101	

Table VII: Probit regressions modeling the probability of being acquired

This table presents logistic regressions where the dependent variable is one in the year that a firm is acquired and is zero otherwise. To be included in the regression, the acquired firm must have data for every independent variable at least two years prior to the year of the acquisition. *3 acquisitions in last 5 years* is a dummy variable for whether the firm made at least three acquisitions within the prior five years. All other variable definitions are contained in previous tables. The number of observations is in the final row. Year dummies and industry dummies constructed using Ken French's 10 industry portfolios are included, but not reported, in each regression. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Number of inside directors	-0.111***				-0.077**	-1.04%
	[0.000]				[0.033]	
Number of outside directors	0.002				-0.008	-0.18%
	[0.921]				[0.675]	
Inside ownership		-0.733			0.894	0.76%
		[0.213]			[0.175]	
Outside director ownership		1.172*			1.210*	0.53%
		[0.088]			[0.067]	
Non director block ownership		1.057***			0.953**	0.96%
		[0.007]			[0.017]	
Family owned firm			-0.367***		-0.323**	-1.40%
			[0.000]		[0.024]	
G				0.024	0.019	0.42%
				[0.170]	[0.312]	
Leverage	0.229	0.093	0.201	0.102	0.129	0.15%
	[0.521]	[0.800]	[0.575]	[0.778]	[0.727]	
Dividend yield	-3.209	-2.002	-3.623	-3.627	-2.178	-0.35%
	[0.326]	[0.515]	[0.251]	[0.258]	[0.479]	
3 acquisitions in last 5 years	-0.037	-0.031	-0.058	-0.03	-0.059	
	[0.667]	[0.716]	[0.493]	[0.724]	[0.488]	
Free cash flow	-1.086	-1.045	-1.135	-1.154	-1.196	-0.68%
	[0.270]	[0.287]	[0.263]	[0.252]	[0.232]	
Q	0.002	0.012	-0.002	-0.006	0.021	0.22%
	[0.973]	[0.836]	[0.976]	[0.912]	[0.702]	
Net loss	0.320**	0.281**	0.311**	0.321**	0.283**	0.78%
	[0.013]	[0.032]	[0.017]	[0.014]	[0.030]	
Capital expenditures	0.607	0.597	0.627	0.790	0.690	0.26%
	[0.528]	[0.529]	[0.518]	[0.405]	[0.470]	
Log of sales	-0.172***	-0.156***	-0.200***	-0.173***	-0.142***	-1.43%
	[0.000]	[0.000]	[0.000]	[0.000]	[0.005]	
Increasing spread	-0.007**	-0.006**	-0.006**	-0.006**	-0.007**	-2.13%
	[0.013]	[0.022]	[0.027]	[0.026]	[0.013]	
Constant	-0.497	-1.003**	-0.398	-0.961**	-1.069**	
	[0.200]	[0.019]	[0.306]	[0.029]	[0.039]	
Observations	4,190	4,190	4,190	4,190	4,190	
Pseudo R^2	0.135	0.134	0.135	0.126	0.146	

Table VIII: The effects of shareholder rights on acquisition propensity and bidder returns

This table reports the coefficient estimates of shareholder right limiting provisions from 27 separate multivariate regressions. For each of the 27 model specifications, only the coefficient estimate for the listed shareholder right provision is reported. Column 1 reports estimates using model 5 from Table IV, where the dependent variable is one in a year that a sample firm acquires another firm, and zero otherwise. Column 2 reports estimates from the second stage of the Heckman two-stage procedure of bidder returns using Model 5 from Table VI, where the first stage is the model specification from Column 1 of this Table. Column 3 reports estimates using Model 5 from Table VII, where the dependent variable is one in a year that a sample firm is acquired, and zero otherwise. *Dual class* is an indicator variable equal to one when the firm has more than one class of common stock, and is zero otherwise. *Democracy* is a binary variable equal to one if the value of *G* is 5 or below and is zero otherwise. *Dictatorship* is a binary variable equal to one if the value of *G* is 14 or above and is zero otherwise. The shareholder right limiting provisions are indicator variables equal to one when that provision is present at the firm, and are zero otherwise. One is subtracted from *G* when the variable of interest is a shareholder right provision otherwise included in *G,* and *G* is omitted when Democracy or Dictatorship is considered. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	(1)	(2)	(3)
Coefficient estimates for	Probability of making an acquisition	Heckman two step on bidder returns	Probability of being a takeover target
Dual class	-0.054	0.254	0.461**
	[0.658]	[0.814]	[0.021]
Democracy	0.098	-0.169	0.091
	[0.394]	[0.842]	[0.803]
Dictatorship	0.117*	0.292	-0.001
	[0.068]	[0.570]	[0.996]
Limited ability to amend charter	-0.108	0.452	-0.239
	[0.399]	[0.588]	[0.302]
Limited ability to amend bylaws	0.049	0.344	0.086
	[0.484]	[0.407]	[0.561]
Supermajority to approve merger	0.104**	0.706*	-0.097
	[0.023]	[0.068]	[0.113]
Classified board	0.027	-0.017	-0.080
	[0.663]	[0.962]	[0.345]
Poison pill	0.040	-0.549	0.143
	[0.574]	[0.128]	[0.156]
Golden parachutes	0.134***	-0.669*	0.234**
	[0.001]	[0.052]	[0.014]

Table IX: The effects CEO characteristics on acquisition propensity and bidder returns

This table reports the coefficient estimates of CEO characteristics from separate multivariate regressions. For each model specification, only the coefficient estimate for the CEO characteristic is reported with exception of family CEO decomposition. One model returns the coefficient estimates for all three values of the family status of the CEO (founder, descendent, or hired). Column 1 reports estimates using model 5 from Table IV, where the dependent variable is one in a year that a sample firm acquires another firm, and zero otherwise. Column 2 reports estimates from the second stage of the Heckman two-stage procedure of bidder returns using Model 5 from Table V, where the first stage is the model specification from Column 1 of this Table. Column 3 reports estimates using Model 5 from Table VII, where the dependent variable is one in a year that a sample firm is acquired, and zero otherwise. The family firm dummy is omitted when family status of the CEO (founder, descendent or hired) is considered. *CEO duality* is an indicator variable equal to one when the CEO is also the chairman of the board, and is zero otherwise. *CEO age* is reported in years as of the time of the proxy filing. *CEO tenure* is the number of years that the CEO has held that position. *CEO is founder* or *CEO is descendant* is an indicator variable equal to one if the CEO is either the founder, or a descendant of the founder, of the firm, and is zero otherwise. *CEO is hired by founding family* is an indicator variable equal to one if the CEO of a family firm is unrelated to the founding family, and is zero otherwise. *CEO ownership* is the percentage aggregate ownership by the CEO. *P*-values are in brackets and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

Coefficient estimates for	(1) Probability of making an acquisition	(2) Heckman two step on bidder returns	(3) Probability of being a takeover target
CEO duality	0.030	0.273	-0.016
	[0.537]	[0.524]	[0.906]
CEO age	-0.001	-0.005	-0.003
	[0.684]	[0.822]	[0.536]
CEO tenure	-0.001	-0.005	-0.010
	[0.704]	[0.839]	[0.160]
CEO ownership	0.467	0.428	0.232
	[0.425]	[0.937]	[0.813]
CEO is founder	-0.210**	-1.473*	-0.890***
	[0.046]	[0.073]	[0.010]
CEO is descendent	-0.370***	-0.378	-0.286
	[0.000]	[0.671]	[0.110]
CEO is hired by founding family	-0.142**	-1.013**	-0.254**
	[0.024]	[0.037]	[0.038]

Appendix: Analysis of clustered versus White corrected standard errors

Following Petersen (2007) we assess the bias in OLS residuals by comparing White corrected standard errors to clustered standard errors in which we define clusters by three dimensions of our panel data set: firms, time, and industry. The concern is that there is serial correlation among the OLS residuals and independent variables within a cluster that biases down the model standard errors by treating panel observations as independent when they are not. The result of this downward bias could be the observation of statistical significance when there should otherwise not be. Model fixed effects (i.e. inclusion of firm, industry, and time indicator variables) can correct for these biases within a cluster by removing the correlation between independent variables (treating the cluster as the omitted variable), but only when the true fixed effect does not decay across any of the clustering dimensions. For example, if mergers occur within an industry clustered across time due to an economic shock or technological change (see for e.g. Mitchell and Mulherin, 1996 or Harford, 2005), then an industry fixed effect is insufficient to control for potential biases in standard errors since the industry effect changes with time.

To illustrate the OLS biases in our model specifications, we report the standard errors using various corrections to our generalized model specified in Table IV. In particular, the first two columns report the coefficient estimates and White corrected standard errors for Model 5 of Table IV, including unconditional fixed effects for year and Fama and French (1997) 48 industry. Unconditional firm fixed effects are not possible due to perfect identification of the dependent variable for non acquiring firms. The following three columns report the clustered standard errors for the same model specification, in which a cluster is defined by industry, year, and firm respectively. The last three columns report the percent difference between the White standard errors and those for each cluster, with the number in bold type when the White standard error is biased downwards by more than 20%.

The results show that statistical significance is inflated the most (standard errors are the most frequently under reported) when time clustering is not controlled for. This is consistent with economic shocks or changes in regulation that occur within a time dimension (panel year) affecting certain firms and industries more so than others. That standard errors controlled for industry clustering are not nearly as inflated further suggests that these shocks decay slowly over time (such that industry dummies capture the serial correlation), consistent with the notion that merger waves span more than just a single year. Given these results, we control for time rather than industry clustering in our regression models, allowing industry dummies to capture the latter effect

	Model coefficient	White standard error	Clustered standard errors			Difference from White corrected standard error		
			Industry	Year	Firm	Industry	Year	Firm
Number of inside directors	0.016	-0.019	-0.02	-0.024	-0.019	5.3%	**26.3%**	0.0%
Number of outside directors	0.037	-0.012	-0.01	-0.013	-0.014	-16.7%	8.3%	16.7%
Inside ownership	-0.547	-0.362	-0.381	-0.437	-0.388	5.2%	**20.7%**	7.2%
Outside director ownership	0.023	-0.506	-0.53	-0.449	-0.471	4.7%	-11.3%	-6.9%
Non-director block ownership	-0.015	-0.236	-0.234	-0.303	-0.275	-0.8%	**28.4%**	16.5%
Family firm	-0.108	-0.072	-0.074	-0.089	-0.089	2.8%	**23.6%**	**23.6%**
G	0.022	-0.01	-0.011	-0.011	-0.012	10.0%	10.0%	**20.0%**
Q	-0.175	-0.034	-0.029	-0.046	-0.04	-14.7%	**35.3%**	17.6%
Free cash flow	3.603	-0.59	-0.694	-0.653	-0.633	17.6%	10.7%	7.3%
Capital expenditures	-3.374	-0.859	-1.55	-1.312	-0.968	**80.4%**	**52.7%**	12.7%
Leverage	-0.537	-0.219	-0.254	-0.296	-0.231	16.0%	**35.2%**	5.5%
Dividend yield	-3.853	-1.426	-1.962	-1.467	-1.706	**37.6%**	2.9%	19.6%
Net loss	-0.402	-0.084	-0.061	-0.089	-0.086	-27.4%	6.0%	2.4%
Log of sales	0.015	-0.027	-0.029	-0.037	-0.032	7.4%	**37.0%**	18.5%
Spread increase	0.001	-0.001	0	-0.001	-0.001	-100.0%	0.0%	0.0%
Constant	-6.53	-0.609	-0.646	-0.447	-0.383	6.1%	-26.6%	-37.1%