

Protective governance choices and the value of acquisition activity*

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Abstract: Protective governance structure is often viewed as costly to minority shareholders who bear the costs of opportunism by entrenched managers. A less common view is that protective governance structure encourages value-enhancing initiative, allowing risk-averse managers to pursue projects they would otherwise forgo. To assess these views we examine the acquisition decisions of S&P 500 firms between 1994 and 2005 and document two entrenching dimensions of governance: founding family presence and larger boards with more inside directors. We find that family firms destroy value when they acquire, consistent with an agency cost explanation for acquisitions. In contrast, firms with large boards and more insiders are more likely to acquire and to create value when they do acquire. These results are consistent with benefits to managerial initiative when managers are insulated from discipline. Finally, we find no systematic evidence that shareholder right limiting provisions either facilitate managerial entrenchment or lead to wealth losses through acquisition activity.

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1. Introduction

Many publicly traded corporations are characterized by governance structures that provide managers protection from the disciplining forces of outside agents. Some are written into the corporate charter to limit the voting rights of minority shareholders, such as dual class share structures, cumulative voting for directors, and supermajority voting for merger approval. Others are costly for managers to implement, such as holding more shares than owned by would-be acquirers. Still others are more subtle, such as arranging the board of directors to favor management. Whether these and other measures are merited is the subject of frequent discussions among academics, market commentators, and policy makers, and is the focus of this paper.

A popular view of protective governance suggests costly consequences to minority shareholders, and it is easy to understand why: entrenched managers have increased scope for opportunistic behavior. They can direct firm resources with self-interested intentions and less regard for how their actions affect the wealth of other shareholders. Private jets, corporate retreats, and lavish expense accounts are common examples of managerial indulgences subsidized by shareholders. So are excessive compensation packages. Perhaps even more costly, however, are the investment policies and other strategic decisions affecting firm productivity.

There is evidence that markets and regulators recognize these potential consequences. The 1980's saw the New York Stock Exchange (NYSE) and its competitors struggle with how to treat listed companies seeking to adopt dual class share structures – whether to allow them or not.¹ This issue surfaced more recently in Europe. In October 2005, as part of a continued effort to integrate governance standards, the European Union Internal Market Commission announced a plan to implement one-share-one-vote principal across member states. The call for board independence from management provides

¹ The proposed listing of General Motors class “E” tracking stock on the NYSE in 1984 started a debate that was not resolved until 1994, when the three major U.S. exchanges agreed to allow listings, but with restrictions consistent with the previously proposed (in 1987, but overturned in 1990 by the U.S. Court of Appeals) SEC rule 19c4.

another example of pressure for governance reform. In the U.S., two activist investors, CalPERS and TIAA-CREF, have policy statements advocating director independence, while both the NYSE and Nasdaq now require a majority of independent directors.²

There is also evidence that markets are becoming more structured in quantifying these potential governance risks. The emergence of fee-based governance rating services provides institutional investors and other market participants with firm-specific governance ratings to help them identify portfolio risk related to firm governance choices. Unsurprisingly, inputs to their proprietary models rely heavily on the perceived contributions of entrenching governance measures.³

Much of this effort is likely driven by the recent indictment against protective governance structures in research linking firm performance to shareholder right limiting provisions. Gompers et al. (2003) refer to the most egregious adopters of such provisions as “dictator” firms, and document poor performance relative to their “democratic” counterparts – those with the fewest provisions. Bebchuk et al. (2004) find similar results for an entrenchment index based on a smaller set of provisions. Inclusion of these governance indices, or their components, is now ubiquitous in the corporate finance literature.

But not all views of protective governance are deleterious in nature. For example, Burkart et al. (1997) predict increased initiative among insulated managers, consistent with Williamson’s (1985) suggestion that firm-specific human capital requires governance protection to mitigate the threat of shareholder expropriation of managers. DeAngelo and DeAngelo (1985) expound this view, arguing that increasing the control of managers beyond their economic interests can reduce underinvestment by removing their fear of mistaken replacement by misinformed investors.

Some suggest that Hewlett Packard CEO Carly Fiorina suffered this fate (Harris, 2006). Hewlett Packard’s stock price gained 6.9% upon her firing – an action largely attributed to her presiding over the

² Rules 4350(c) and 303A for Nasdaq and NYSE, respectively.

³ For instance, The Corporate Library rates companies on an A (best) through F (worst) scale based on the varying degrees of governance risk. Board composition and takeover defenses comprise half of the four main governance components used. A competing service, Risk Metrics, identifies 65 criteria to form its proprietary corporate governance quotient (CGQ), of which 20 are based on corporate charter and other anti-takeover provisions.

Compaq merger in 2002. Yet, her initiative positioned Hewlett Packard as the world's number one PC maker, a place that it maintained five years on, and with stock returns outperforming Dell, IBM, and the Standard and Poor's IT index during that period.

One interpretation of this outcome is that her firing was a mistake. Had Fiorina not made the acquisition, her tenure might have been longer, but with less fortune for Hewlett Packard shareholders. Entrenching governance could protect against this misplaced discipline, a result of what we term shareholder limited competency, promoting value-enhancing initiative by management. This general precept may help explain why the European Commission recently announced the end of its one-share-one-vote initiative, after two years of effort, citing its inability to make an economic case for such a reform (Financial Times, October 04, 2007).

These divergent views on the merit of protective governance structures motivate the central thesis for this paper. In particular, our objective is to assess how protective governance choices trade off the benefits of managerial initiative against the risk of opportunism. We consider three dimensions of governance: board composition, ownership structure, and shareholder rights. In the first part of our analysis, we identify which governance measures are entrenching by examining their relation with takeover likelihood. We define entrenching governance as that associated with lower takeover likelihood, all else being equal. As we will show, our results corroborate and extend the recent findings of Bates et al. (2008) who study the entrenching characteristics of shareholder rights in a similar manner.

The second part of our analysis identifies the level and value of managerial initiative associated with these same governance measures. Our proxy for managerial initiative is the rate at which firms engage in acquisition activity. We use acquisition events since they represent significant managerial decisions whose details are observable and consequences measurable. The market announcement returns from these decisions assess the value of this initiative to shareholders.

By considering these two aspects of acquisition activity – the likelihood of acquiring and being acquired – there is increased precision in interpreting protective governance effects relative to studies that measure only the wealth consequences of these choices. That is, we assess the wealth effects of protective

governance in conjunction with its effect on managerial entrenchment and initiative. Moreover, our analysis mitigates the risk of spurious conclusions on the effects of individual protective governance measures by considering a broad range of governance dimensions. Indeed, when we simultaneously consider all measures in a multivariate framework, we reach different conclusions from our univariate analysis. This illustrates the danger of considering only a single protective governance measure when a firm's choice of governance structure is the result of concurrently weighing the merits of several mechanisms (e.g., Agrawal and Knoeber, 1996; Gillan et al., 2006).

Our findings yield several novel results. First, we find entrenching characteristics at both family firms and firms with larger boards and a greater number of inside directors, but with differential wealth effects. Family firms are 52% less likely to be the target of a successful takeover relative to non-family firms and make relatively poor investment decisions; we document an average reduction of -0.74% (\$143 million) in firm value for each acquisition made. The magnitude of the wealth loss is largest when the CEO is the founder. In contrast, we find increasing value to acquisitions made by firms with larger boards and more inside directors: a one standard deviation increase in board size (the number of inside directors) is associated with a 15% (14%) reduction in takeover likelihood relative to the unconditional likelihood, but a \$62 million (\$76 million) increase in shareholder value at the time of announcement. These firms are also more likely to make an acquisition, which is consistent with benefits from increased managerial initiative when there is a reduced takeover threat. Hence, our results are inconsistent with the view that smaller and more independent boards are necessarily better (e.g., Jensen, 1993).

Our family firm results are puzzling from the perspective of recent studies that document higher firm value and better operating performance at family firms (Anderson and Reeb, 2003a), particularly when founder-run (Villalonga and Amit, 2006). One possible explanation is that our results are unique to acquisition behavior and consistent with the costs of pursuing diversify acquisitions (e.g., Morck et al., 1990) to lessen family-specific portfolio risk. Although we document that family firm's pursue diversifying acquisitions at the same rate as non-family firms, given that they are generally more focused firms to begin with (Anderson and Reeb, 2003b), the marginal effects of their actions may be worse for

shareholder value.

In contrast to the family firm and board results, we are unable to find any systematic evidence that shareholder right limiting provisions facilitate managerial entrenchment, or lead to wealth losses through acquisition activity. Using the Gompers et al. (2003) governance index (henceforth G), we find a positive relation between high G firms and the likelihood of being the target of a successful takeover. This is opposite the prediction that shareholder right limiting provisions are anti-takeover measures that facilitate managerial entrenchment, but corroborates the recent findings of Bates et al. (2008). Furthermore, we find no systematic relation between G and bidder returns, a finding in contrast to the negative and statistically significant relation reported by Masulis et al. (2007). That is, their result is not found among the set of S&P 500 firms in this study.

Among our other findings, we fail to find a relation between managerial ownership and entrenchment. However, firms with high inside ownership are significantly less likely to acquire relative to firms with less concentrated ownership. Moreover, when they do acquire, they are particularly less likely to use equity as a means of payment, symptomatic of an aversion to diluting control rights (e.g., Amihud et al., 1990; Martin, 1996). Regardless, although high inside ownership limits managerial initiative with respect to investing through acquisitions, there is no wealth consequence.

We also show that higher levels of aggregate ownership by outside blockholders are associated with increasing likelihood of a sample firm being the target of a successful takeover. Combined with the finding that takeovers are more likely for poorly performing firms, this implies active monitoring by controlling outside shareholders, who facilitate control changes when incumbent management underperforms (e.g., Shleifer and Vishny, 1986). Even so, their presence is unrelated to the value of managerial initiative through acquisition activity.

We suggest that our results are consistent with a transactions cost view that governance and the decision to acquire are jointly determined as the endogenous outcome of the firm's wealth maximizing process. This view holds that if governance structure could change costlessly, all firms would organize optimally such that the observed variation would not affect the value of acquisition activity. Indeed, all of

our governance measures demonstrate relevance in at least one dimension of acquisition activity, but only two have shareholder wealth effects. Moreover, the magnitude of the documented wealth effects – for family firms and large boards or more inside directors – are within reasonable bounds of what the adjustment costs of optimizing might be. With an average holding of more than \$2 billion, family owners are well entrenched and not easily replaced for the sake of improved acquisition activity. Similarly, the costs associated with increasing board size or adding more inside directors are implicitly high given the inconsistency of such actions with current best practices endorsed by activist investors, regulation, and exchange rules. From this perspective, we suggest that our board structure findings may be further evidence of the costly market frictions of a one-size-fits-all governance approach (Linck et al., 2007; Coles et al., 2007).

2. Hypotheses development and empirical design

To assess the merit of protective governance structure, our focus is twofold. First, using takeover likelihood, we identify the entrenching dimensions of governance structure. From this analysis, we corroborate and dispel common views on protective governance choices. Second, we assess how these same governance choices relate to the value of managerial initiative. Two assumptions underlie their potential value consequences: managerial opportunism and shareholder limited competency. According to the first, managers pursue self-interested behavior at a cost to outside shareholders. According to the second, risk-averse managers use their newfound protection to pursue value-enhancing projects that they would otherwise forgo.

The concept of managerial opportunism is well recognized and its presence is generally accepted. The same may not be true for shareholder limited competency. Although its presence is often implied, it occupies less space in discussions of corporate governance. In this paper, we apply a definition of shareholder limited competency consistent with Herbert Simon's (1961) phrase "bounded rationality," as behavior that is "intendedly rational, but only limitedly so." This does not imply that investors are irrational. Rather, it implies that they are unable to perfectly interpret managerial actions or predict their

consequences.⁴ Thus, shareholders can rationally execute poor decisions based on imperfect information.

Preventing this outcome through protective governance offers potential benefits to shareholders. For example, if managers fear that outside shareholders will misinterpret value-enhancing decisions, resulting in discipline, then they may pursue less risky but less profitable investment opportunities. Hence, protecting managers against misinformed replacement could mitigate costly underinvestment (e.g., DeAngelo and DeAngelo, 1985).

Considered together, managerial opportunism and shareholder limited competency are behaviors whose costs respond in opposite measure to protective governance choices. It is from this perspective that we study the influence of protective governance on managerial discretion; its presence increases the scope of both managerial opportunism and value-enhancing initiative. Which of these two effects dominates, and under what conditions, are the empirical questions that we address.

2.1. Entrenchment hypotheses

We consider three entrenchment-enabling dimensions of governance (board composition, ownership structure, and shareholder rights) and outline four entrenchment hypotheses. For each hypothesis, we discuss the potential for managerial entrenchment and provide perspectives on shareholder wealth effects.

Hypothesis 1: *Entrenchment through larger boards with less director independence*

By design, board structure is one of the most powerful governing mechanisms available to shareholders. Directors hire, monitor, and, if necessary, replace the firm's managers. In theory, this process offers an alternative to costly external market discipline. In practice, however, it is a common view that boards are captured by the corporate office, particularly since managers have significant influence over the board selection process. For example, Shivdasani and Yermack (1999) find that when

⁴ The role of limited competency is often characterized within an incomplete contracting environment (Hart, 1995), whereby governance structures offer a way to economize on the trade-off between potential opportunism and a shareholder's inability to foresee and contract on future states of the world. Williamson (1985 p. 30; 1988) more generally describes the role of limited competency in governance design, and the need for governance structures that allow resolution of potential opportunism from unanticipated disturbances, such as, we suggest, what to do in the event of a takeover attempt.

the CEO is involved, fewer independent directors are appointed. The market reactions to these appointments are significantly negative. Similar market reactions to director affiliation are documented by Rosenstein and Wyatt (1990 & 1997) and Byrd and Hickman (1992).

There are similar fears for large boards. Lipton and Lorsch (1992) and Jensen (1993) suggest that large boards facilitate director free-riding and other coordination difficulties resulting in less effective monitoring of management. The well-documented decrease in Q for firms with larger boards (Yermack, 1996; Eisenberg et al., 1998) supports this view.

Taken together, this evidence is consistent with the view that larger, less independent boards facilitate costly managerial entrenchment. However, this view is not universal, particularly if increasing board independence restricts valuable information flow between managers and directors. For example, Harris and Raviv (2008) show how insider-controlled boards better exploit insider information, while Adams and Ferreira (2007) suggest that insiders at firms with management-friendly boards are in a better position to receive valuable advice. Coles et al. (2007) find empirical support; they show increasing firm value with more inside directors for R&D intensive firms. They also show increasing value among firms with larger boards when their business activity is large in scope, diversified across industries, or relies more on debt financing. Hence, if insider-controlled or large boards are entrenching, then these findings are consistent with protective governance benefits for complex firms that are more susceptible to the limited competency of shareholders.

Hypothesis 2: *Entrenchment through founding family control*

Recent evidence suggests that family firms are common among large, publicly traded firms and that they are an effective organizational form. For example, Anderson and Reeb (2003a) report that over one-third of S&P500 firms between 1992 and 1997 have continued founding family ownership, and that these firms have higher operating performance and firm value than non-family firms. 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.⁵ That family firms exhibit greater performance and value characteristics than non-family firms introduces incentives such as legacy, reputation, or monitoring across generations. Thus, the family’s human capital can be valuable to outside shareholders. This view is generally consistent with the theoretical prediction of Panunzi et al. (2003) that family ownership can substitute for investor protection.

However, the benefits of family ownership may come at a cost: founding families have incentive to protect their human capital since transferring it elsewhere could prove difficult. From one perspective, families are captured by the firms that they founded. For example, the Ford, Hilton, Wrigley, and Coors families, whose firms are included in this analysis, would leave their name and reputation behind if ever forced to relinquish control. This threat may explain why many family firms retain significant share ownership, and why three of the four aforementioned families adopted dual class share structures. So although it is shown that family firms have superior operating performance and firm value, they may be reluctant to pursue value-enhancing control changes should their performance decline.⁶

Hypothesis 3: *Entrenchment through higher inside (or lower outside blockholder) ownership*

Owning more shares than would-be acquirers is indisputably the most effective (and costly) entrenchment method. Fifty percent ownership ensures control, but even substantially smaller stakes can have effective control given the discoordination problems of atomistic shareholders. However, entrenchment through ownership also has the effect of increasing the alignment of managerial interests with the interests of other shareholders (Jensen and Meckling, 1976): when managers own more of the firm, they derive less relative value from non shareholder-maximizing behavior.

While increased managerial ownership may improve incentive alignment, it can be costly to

⁵ Using alternative family firm definitions, Miller et al. (2007) find that the highest value family firms are lone founder firms. This includes firms where no other member of the family is involved other than the founder, regardless of the founder’s executive position.

⁶ Anecdotally, this is consistent with the recent failed bid for Yahoo Inc. by Microsoft Corporation. Some suggest that Yahoo founder Jerry Yang rejected a 62% share price premium offered by Microsoft to maintain his founder status (see Jenkins, 2008). Yang claimed that Yahoo was worth more. The market disagreed: Yahoo share value fell 14% upon announcement of Microsoft’s withdrawal.

managers if their personal portfolio is undiversified. Leland and Pyle (1977) suggest that the resulting idiosyncratic risk will increase managerial initiative, but it also provides incentive for managers to diversify their portfolio through corporate actions, such as acquisitions, which may offer little benefit to the portfolios of outside shareholders (Morck et al., 1990). Alternatively, if managerial ownership is sufficiently large, it is possible that they will forgo valuable investment activity if it dilutes their control or increases the likelihood of their replacement (e.g., Amihud et al., 1990).

Large ownership stakes could also curtail entrenchment when in the hands of outside shareholders. The presence of outside blockholders is not uncommon among public corporations, and their economic ownership better justifies monitoring effort relative to dispersed owners. In general, controlling outside shareholders are viewed as agents of other outside owners, able to minimize poor managerial discretion if their control is sufficient to influence an ownership change (Shleifer and Vishny, 1986).⁷

Hypothesis 4: *Entrenchment through shareholder right limiting provisions*

Our last hypothesis derives from empirical evidence that suggests opportunistic managers protect their private interests through shareholder right limiting provisions. In particular, Gompers et al. (2003) use a governance index (G) based on the number of shareholder right limiting provisions at the firm, and they document an association between poor performance and increased acquisition frequency for firms with the weakest shareholder rights. Among their hypotheses, they offer that managers use increased scope for undisciplined discretion to stave off empire collapse through inefficient investment activities. Consistent with this notion, Masulis et al. (2007) find that bidder returns are significantly lower for firms with weaker shareholder rights.

This hypothesis presumes that weak shareholder rights increase the moral hazard costs of managerial discretion by facilitating their entrenchment. However, recent empirical evidence questions this

⁷ For example, activist investor Carl Icahn used his 14% stake in BEA Systems Inc to force its management to relent to an acquisition bid by Oracle, one that it had previously rejected. Specifically, after BEA systems rejected Oracle's bid in October of 2007, Carl Icahn received permission to review BEA Systems internal books after accusing its management of seeking to protect itself (WSJ, November 6, 2007), and the deal was ultimately consummated in January of 2008.

presumption. Bates et al. (2008) find no evidence of costly entrenchment from managerial self-dealing or reduced likelihood of deal completion in change-of-control bids in which the target firm has a classified board - one of a small number of provisions that drive the relation between firm performance and shareholder rights (Bebchuk et al., 2004). Moreover, Bauguess et al. (2007) find that firms adopting dual class structures – one of the most effective anti-takeover devices available – are acquired more frequently and at higher premiums relative to their peers.

2.2. Hypotheses testing

We discriminate among these hypotheses using three econometric specifications. First, to assess the level of managerial entrenchment associated with each governance measure, we estimate their effects using a probit model that assess the likelihood that a firm is acquired in a given year. When a coefficient estimate is significantly negative, the corresponding governance measure is associated with managerial entrenchment. Second, to assess the level of managerial initiative, we use a probit model to estimate how each governance measure is related to the likelihood that a firm acquires in given year. Finally, to assess the consequences of governance choices, we estimate their relation with bidder returns.

We also control for potential selection bias resulting from relations between governance and acquisition likelihood by using a two-stage correction procedure. Moreover, we account for other factors known to influence the value of acquisition activity, such as deal characteristics. This adjustment mitigates the risk of spurious conclusions resulting from omitted considerations.

We draw our main conclusions from the combined analysis of the three empirical considerations. Table 1 describes the framework for our hypotheses testing and previews the results.

3. Data description

To test our hypotheses, 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 through 2005, resulting in 4,754 firm-years.⁸ Since proxy statements are not available in all years, we have complete governance data for 4,652 firm-years. Once we merge this data with Compustat and CRSP, we are left with 4,266 firm-years. For G , we fill missing year observations with the most recent data until updated, and consider the individual components of G in a similar manner.

We determine a firm's acquisition behavior using Thomson Financial's SDC Mergers and Acquisition database, including all completed takeovers from 1994 to 2005 of public, private, and subsidiary targets in which the acquirer owns less than 50% of the target before the acquisition and 100% afterwards. SDC's target deal value must be 1% or more of the acquirer's equity value in the month prior to the acquisition, resulting in 1,411 acquisitions by 498 firms (Table 2). The mean rate of acquisitions – the percent of sample firms acquiring in any year – is 23%, with a high of 29.3% in 1999 and a low of 16.1% in 2002. With the exception of the slightly higher (lower) acquisition rates before (after) the “market bubble” period, there is little variation in the annual acquisition rate. This consistency mitigates the risk of *ex post* selection bias if, for example, bad bidders make good targets (Mitchell and Lehn, 1990) and they disproportionately leave the sample over time.⁹ Table 2 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 as targets, with acquisitions the dominant reason for removal from the sample – only 21 firms leave the sample for reasons other than becoming a target.

3.1. *Measuring governance*

We characterize each firm's ownership structure using proxy statements (Securities and Exchange

⁸ We are unable to find governance data for Royal Dutch Petroleum and Unilever N.V., both are foreign 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.

⁹ Since we do not replace firms as they exit the sample, the sample becomes less random over time. If firms systematically leave because of the merit of their acquisition activity, then the later years might disproportionately include less frequent and better bidders than the population. This would bias our results.

Commission (SEC) definitive 14A federal filings) 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. We obtain director information from the "election of directors" section of the proxy statement, and in determining board size assume both that nominees are elected and departures duly executed. We correct these assumptions using the data from the subsequent year's proxy statement. We classify inside owners as current and former officers of the firm, their family, all members of the founding family, and any other director with a non-director related employment contract (i.e. providing legal or consulting services for a fee).¹⁰

For each firm we determine whether a manager or director is a founder or a member of the founding family. We classify single entrepreneurs/founders as family owners when no other family members are in management or hold significant ownership interest, e.g., Bill Gates is the founding family of Microsoft Corp. Similar to Villalonga and Amit (2006), we consider founders of predecessor firms as the founder of the sample firm only if the person has the largest ownership position. When possible we determine family relationships using the same proxy statements from which we collect ownership data. However, federal filings are frequently insufficient, particularly when family names change across generations or through marriage, or when families are no longer managers 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 we establish the family relationship, we record whether the CEO is a founding family member 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 office of CEO).

¹⁰ This definition pools "grey" directors with management, as it defines grey as those directors with specific financial incentive outside their directorship that might alter their objectivity. We do not, however, consider less formal (non-pecuniary) relationships such as director interlocks and product market relations (i.e. customers and suppliers), although these could similarly affect director objectivity.

We also record the aggregate ownership by outside blockholders in each year, including shareholdings in excess of 5% (the SEC reporting requirement threshold) of an outstanding share class. Bauguess et al. (in press) show that these blockholdings are often incorrectly classified as inside ownership when they are affiliated with a board seat, and that not correcting for this can lead to incorrect interpretations of ownership effects in takeover activity. Hence, we verify that each beneficial owner is unrelated to a firm insider by checking the affiliations listed in the director's biography. If a relationship between any of the firm's inside directors or founding family members and the beneficial owner is found, it is reclassified as insider ownership.

Throughout the analysis, we define shareholdings as all direct common stock holdings and options exercisable within 60 days, excluding preferred stock. 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. If 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.

3.2. Summary statistics

Table 3 summarizes firm characteristics for all firm years. The mean firm in our sample has a market value of \$19.3 billion, a dividend yield of 2.0%, and capital expenditures of 5.6% of its total assets. The mean board has 11.5 directors and 22.6% (2.6/11.5) of these are insiders. Consistent with other studies that analyze large U.S. corporations, we find that 29.1% of firms in our sample have recognizable founding family ownership.¹¹ In approximately 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.

¹¹ Anderson and Reeb (2003a) 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.

The mean inside ownership is 5.7% compared to a median of 1.9%. The skewness in this distribution is a result of relatively high levels of inside ownership by family firms, 17.8% on average, compared to 3.7% for non-family firms (not reported in the table). Average aggregate ownership by all outside blockholders is 12.7%, and is 17.7% when at least one blockholder is present. The mean ownership by active blockholders is 1.1%, or 14.8% when present. Since we analyze predominantly large firms, the average wealth represented by inside owners is profound, equaling \$1.1 billion. The mean inside ownership stake of family firms is \$2.3 billion compared to \$538 million at non-family firms.

The mean deal size is \$1.96 billion, representing an average relative size of 13.8%. The average three-day cumulative abnormal announcement returns are -0.2%. The returns are 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 (e.g., Moeller et al., 2004).

Table 4 reports the correlation among our key governance measures. 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 percent of insiders on the board (0.50). Among some of the other high correlations, large firms (measured by total assets) tend to have large boards (0.51), while G has a negative correlation (-0.21) with inside ownership, which suggests a substitutive effect.

4. Empirical results

4.1. Managerial entrenchment: probability of being acquired

In this section, we investigate whether governance choices facilitate managerial entrenchment by estimating the likelihood that a firm is acquired in a given year. We use these estimates to detect the presence of entrenching behavior.

From our original 498 firms, 162 become the target of a successful takeover. Table 5 reports the coefficient estimates from probit regressions in which the dependent variable is one in the year when a sample firm is acquired, and is zero otherwise; this is a multi-period model similar to that used in the

bankruptcy literature (see Shumway, 2001). We include year fixed effects to control for the macro economic factors that might be responsible for the changes in acquisition likelihood evident from Table 2.

Several governance measures are relevant. Family firms and firms with less independent boards are less likely to be acquired, while larger outside blockholdings and higher G are associated with an increased likelihood of being acquired. These effects remain statistically significant when considered simultaneously (Model 5), while larger boards also become statistically significant.

With the view that entrenching characteristics are harmful to shareholder value, one conclusion is that small and independent boards are preferred. According to this same view, the findings that family firms are entrenching, and high G firms are associated with increased takeover likelihood, are inconsistent with the benefits of family firm ownership and costs of shareholder right limiting provisions.

The results in Table 5 also show that large blockholders are associated with more frequent control changes. This 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. The finding of a significant relation between prior year net losses – an indicator of poor performance – and takeover likelihood corroborates this view. Interestingly, there is a negative relation between inside ownership and takeover likelihood when considered independent of other governance characteristics (p-value of 0.120), but becomes positive, though insignificant, once we consider family firm ownership. Moreover, when we restrict the sample to non-family firms (unreported), the coefficient on inside ownership is positive and statistically significant at the 1% level. Hence, the presence of the founding family, not the percent of inside ownership, is the dominant entrenching ownership dimension.

To quantify the impact of entrenching behavior, Model 6 reports the marginal effect of governance on takeover likelihood. A one standard deviation increase in board size or independence from the mean is associated with a 0.41% reduction in takeover likelihood. This translates to a 14% reduction in takeover likelihood relative to the unconditional likelihood (3.00%). Similarly, family firms are 52% less likely to be acquired relative to non-family firms.

The model specifications in Table 5 control for performance and other factors suspected of influencing takeover likelihood. In particular, if discipline is a motive for takeover, then poorly performing firms, or firms with low valuation, should be more likely to be acquired. As a result, we include an indicator variable for whether there was a prior year net loss, Tobin's Q (Q), level of free cash flow, and dividend yield. We also include prior year capital expenditures, leverage, and firm size (prior year total assets). Finally, we include an indicator variable equal to one if the firm makes at least three acquisitions within the prior five years to control for the possibility that there is a relation between a firm's acquisition propensity and its takeover likelihood (i.e. Mitchell and Lehn, 1990). The presence of a net loss in the prior calendar year is the only control variable that is consistently statistically significant; it is positive in all models. This result suggests a prominent role for external market discipline among poor performing firms, regardless of governance considerations.

4.2. Managerial initiative: probability of acquiring

We measure the effect of governance on managerial initiative using a probit regression that models the likelihood of a firm making an acquisition during the calendar year. The dependent variable is one when a firm makes at least one acquisition during the year and is zero otherwise. To control for the potential lack of independence between observations (e.g., mergers clustered in time as a result of technological or industry shocks (Mitchell and Mulherin, 1996; Harford, 2005)), each model reports standard errors controlling for both industry and year clustering according to Thompson (2006).¹²

The results in Table 6 show that many governance measures have a statistically significant relation with acquisition propensity. Wealth effects aside, these results suggest that governance structure is influential in the acquisition decision. Considering the governance measures independently (Models 1 through 4), there is increased managerial initiative among firms with larger boards, lower inside ownership, and weaker shareholder rights (higher G). Furthermore, family firms are less likely to acquire.

¹² Persistence in both acquisition activity and our governance measures may result in a lack of independence between observations that could inappropriately inflate reported statistical significance (Peterson, in press).

When we consider governance effects simultaneously (Model 5), only larger boards and lower inside ownership are statistically significant; both family firm status and G are no longer significant, although the signs on the coefficients remain. Hence, family firms are less likely to acquire only to the extent that they have substantial ownership in the firm, a result consistent with the view that ownership dilution from acquiring is costly (Travlos, 1987; Amihud et al., 1997).¹³ These results are robust when we consider surviving firms only (Model 6). We include this specification to control for the likelihood that acquisition behavior is concentrated among acquirers that are eventually acquired themselves (e.g., Mitchell and Lehn, 1990).

We also control for other factors known or suspected of influencing the acquisition decision. We include proxies for the scope of managerial discretion (free cash flow and prior year capital expenditures), product market discipline (prior year net loss), and firm size (prior year total assets). We also include Q , which is considered a measure of growth opportunities, but also serves to proxy for misvalued equity (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004). For our analysis, knowing the proper interpretation of Q is less important than controlling for how it might affect acquisition propensity. We also include the commercial rate spread, a macro economic fixed effect within each year cluster, using responses from the Federal Reserve Senior Loan Officer survey. This variable, motivated by Harford 2005, could be viewed as a sophisticated time fixed effect. We use contemporaneous measures of free cash flow and Q , since their timing is relevant to the acquisition decision, and lag all others.¹⁴

Among the control variables, we find a negative relation between acquisition likelihood and capital expenditures, suggesting a substitutive effect. We also find that higher free cash flow and lower Q are associated with higher acquisition propensity, consistent with an agency cost view of acquisitions (e.g., Harford, 1999; Lang et al., 1991). We find no significant relation between acquisition propensity and rate

¹³ To corroborate this and mitigate the possible misinterpretation due to colinearity between family firm status and inside ownership, we split the sample according to family status (unreported). The coefficient on inside ownership is negative a significant for family firms, but near zero and statistically insignificant for non-family firms.

¹⁴ Free cash flow and Q remain statistically significant at the 1% and 10% levels, respectively, when lagged one year. However, we use contemporaneous values since we find that this creates the most significant selection bias in subsequent bidder return analysis, and thus is a worst-case scenario.

spreads, suggesting that this set of acquirers do not require increased capital market liquidity.

In the last column in Table 6, we report the marginal effects of the estimates from Model 5 – determined by a one standard deviation change above the mean value of the independent variable. These results show that, in general, economic considerations tend to have a more substantial effect on acquisition propensity than how firms organize their governance structure. Among the governance measures considered, board size is associated with the largest marginal effect, a 2.9% increased likelihood of acquiring, more than 10% of the unconditional probability of acquiring (23%).

4.3. Bidder returns – univariate evidence

To assess the merit of protective governance, we combine our prior results with the magnitude of bidder returns. In Table 7, we report mean and median bidder returns disaggregated by tercile ranks for each governance measure. There are statistically significant differences in bidder returns between the high and low terciles for four governance measures: board size, inside ownership, outside blockholder ownership, and *G*.

Large boards have significantly lower bidder returns than smaller boards. The mean (median) return for large boards is -0.53% (-0.41%) compared to 0.04% (0.33%) for small boards, significant at the 0.10 (0.01) level. That firms with large boards are more likely to acquire, and less likely to be acquired, suggests that large boards facilitate costly entrenchment.

In contrast to large boards, firms with more inside ownership have higher bidder returns. The mean (median) return for firms with high inside ownership is 0.26% (0.12%) versus -0.67% (-0.51%) for firms with low inside ownership. Both differences are significant at the 0.01 level. Thus, our evidence shows that high ownership firms are less likely to acquire, but when they do, it is beneficial to outside shareholders. These results are consistent with an underinvestment problem from the perspective that optimal investment should result in no significant relations.

With respect to outside ownership, the results in Table 7 reveal that firms with more ownership by outside blockholders have higher bidder returns. Since these firms are also more likely to be acquired,

these results are consistent with increased benefits from monitoring.

Finally, bidder returns are *increasing* in *G*: the lowest *G* tercile has a mean (median) bidder return of -0.44% (-0.46%) compared to 0.25% (0.1%) for the highest *G* tercile, both differences are significant at the 5% level. This result is opposite the findings in Masulis et al. (2007), that high *G* firms have lower bidder returns. They analyze 1,268 acquisitions from 1990 to 2003 covered by the Investor Responsibility Resource Center. Since the acquirers we consider are drawn from largest set of firms in their sample, the difference in our results suggests a size bias. Nevertheless, our results relating to shareholder rights are puzzling. Firms with fewer shareholder rights show some evidence of increased acquisition propensity, consistent with arguments of empire building, but they are also more likely to be acquired, and have higher bidder returns relative to firms with more shareholder rights. Hence, we provide no evidence that managers have insulation from external discipline.

4.4. Bidder returns – multivariate evidence

The univariate analysis on the relation between bidder returns and governance choices does not control for either competing governance effects or firm and deal characteristics known to affect bidder returns. For instance, both means of payment and target firm public status are predictors of bidder returns: public deals and deals using equity generate lower bidder returns on average (Fuller et al., 2002). There may also be a relation between the method of payment or the target's public status and firm governance. For example, firms with concentrated ownership may be reluctant to use equity as a method of payment (Amihud et al., 1990). Indeed, Table 7 confirms this conjecture. Family firms and firms with concentrated ownership are associated with both fewer public deals and deals paid for using equity. In contrast, large boards increasingly pursue public targets and deals paid for with equity.

To control for these potentially competing effects, Table 8 reports multivariate analysis using ordinary least square (OLS) regressions of bidder returns, and a Heckman (1979) two-stage procedure

that conditions bidder returns on the likelihood that a firm acquires.¹⁵ Each model includes firm characteristics that are known from prior literature to explain bidder returns, including method of payment (Travlos, 1987), public status (Fuller et al., 2002), size and whether the bidder and target are in the same industry (Moeller et al., 2004), and relative deal size (Jarrell and Poulsen, 1989). The estimated effects for each of these factors are consistent with the prior literature.

When we consider governance dimensions independently (Models 1 through 4), only board size is significant; larger boards are associated with increasing bidder returns. We attribute this finding, which is opposite to the univariate result, to the fact that large boards are more likely to choose public targets and equity payment. These deal characteristics are both negative and statistically significant in the regressions, and once controlled for, reveal the large board effect. Hence, large boards lessen the negative impact of public acquisitions, and acquisitions using equity as a means of payment.

When we consider governance measures simultaneously (Model 5), the family-firm indicator variable becomes negative and statistically significant. Family firms are associated with a -0.74% (\$143 million) lower announcement return compared to non-family firms, on average. The significance of this variable is predominantly a result of including inside ownership. Unsurprisingly, the positive coefficient on inside ownership increases substantially once we account for family firm status, but it is not statistically significant (p-value of 0.22).

Model 6 controls for potential selection bias in the interpretation of bidder returns. Since not all firms choose to invest through acquisitions, a potential selection bias exists when conditioning the merit of investing activity on only those that do. This bias might be particularly relevant in our analysis since we have shown that governance is a predictor of sample inclusion (i.e. the likelihood of acquiring). Even among acquiring firms, interpretation of returns rely on the market's expectation that a bid will be made. To account for these potential biases, we consider a Heckman (1979) two-stage procedure that conditions bidder returns on the likelihood that a firm acquires. Our approach is similar to Edelen and Kadlec's

¹⁵ All independent variables are *ex ante* measures, with included governance measures recorded from the last available proxy or 10-K filing prior to the acquisition.

(2005) treatment of withdrawn IPOs in their analysis of IPO price revisions; instead, we consider the effects of acquisition abstention on the returns to acquiring firms. We calculate a non-selection hazard (inverse mills ratio) from the first stage probit regression that determines acquisition likelihood, specified according to Model 5 in Table 5, and include it in the second stage OLS regression (Model 6). To avoid identification in the second stage based solely on the non-linearity of the inverse mills ratio determined by sharing the same factors across both stages, we include the level of capital expenditures (see Model 6 of Table 5) as an instrument in the first stage. The relevance capital expenditure as an instrument is supported by its inability to explain bidder returns (regression not reported) while otherwise highly correlated with acquisition likelihood.

The governance estimates from the two-stage procedure are not materially different from the OLS regression results, and the coefficient for the inverse mills ratio (Λ) is not statistically significant (p-value of 0.19).¹⁶ Both family firms status and board size maintain statistical significance, and no other governance measures have qualitative changes. These basic results hold when we control for industry fixed effects using the Fama-French 17 industry definition (Model 7).¹⁷

4.5. Isolating the effects managerial opportunism and limited competency

We further examine the effects of governance on bidder returns by isolating acquisition events according to the perceived severity of the contracting relation between managers and shareholders. Since there is both theory and evidence that managerial opportunism is more severe at firms with excess free cash flow (e.g., Jensen, 1986; Harford, 1999), we analyze separately those firms that are either above or below a size and industry adjusted value of free cash flow. We also separate firms into high and low levels of stock price volatility. High volatility should be indicative of greater uncertainty about future prospects, increasing both the scope of managerial opportunism and the likelihood of limited competency

¹⁶ The inverse mills ratio is based on firm-year observations in the first stage. Since a single firm may have many acquisitions in the same year, we use repeated values of the inverse mills in the second stage when this occurs. Our results are unchanged if we average the returns to acquirers with more than one acquisition in the same year. This results in 941 unique firm years with at least one acquisition and 3,268 censored years.

¹⁷ Our industry definitions are from Ken French's website: <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/>

among contracting agents – managers face greater uncertainty in decision-making and outside shareholders have more difficulty interpreting the merit of managerial actions.

Models 1 and 2 of Table 9 report the OLS regression results for low and high free cash flow firms respectively. The low (high) free cash flow model considers acquisitions by firms with reported free cash flow less than (equal or greater than) the median free cash flow of the 10 nearest firms in market capitalization within the same Fama-French 48 industry. Following Moeller et al. (2007), we use the volatility of lagged returns as a proxy for information asymmetry. Models 3 and 4 represent the upper and lower set of acquisition events ranked by the standard deviation of lag one-year returns respectively.

This analysis yields several clarifying results. First, increasing board size offers the greatest benefits (higher bidder returns) at firms with low free cash flow and high uncertainty. Hence, there is benefit to protective governance when uncertainty over managerial actions is high. That large boards are unrelated to bidder returns at high free cash flow firms mitigates concerns of opportunistic behavior. Moreover, increasing bidder returns at low free cash flow firms is consistent with an advising role for boards (i.e. Coles et al., 2007) when management has fewer financial resources.

Second, and in contrast to the board structure results, the costs associated with acquisitions by family firms are most severe when there is high free cash flow and high information asymmetry. This result is consistent with an agency cost explanation for acquisition activity; the cost is highest when families have greater resources at their discretion and their actions are harder to observe. In the high volatility environment the average loss relative to non-family firms is particularly large, -1.26%, or \$243 million, all else equal.

To understand better why family firms are poor acquirers, we perform (but do not report) a similar analysis to Table 9, disaggregating events by whether the acquirer and target are in the same industry. The family firm effect is strongest for diversifying acquisitions; the average loss is -0.94%, significant at the 0.10 level, while same-industry acquisitions are not different from zero. Although family firms are no more likely to pursue a diversifying acquisition relative to non-family firms, Anderson and Reeb (2003b) provide evidence that family firms are less diversified to begin with. Hence, it is plausible that the

marginal effect of a diversifying acquisition at a family firm confers greater costs to shareholders.

Third, increasing inside ownership is most beneficial when a firm has high free cash flow, while increasing outside blockholder ownership offers greater improvement in bidder returns in a high volatility environment. Hence, there is evidence of increased incentive alignment in an opportunistic environment when insiders have higher ownership, and monitoring benefits from large outside shareholders when managerial actions are hard to observe. One puzzling result, however, is a negative and significant relation with increasing outside blockholder ownership when there is little asymmetric information at the firm.

Finally, Table 9 reveals higher returns to acquirers in a high free cash flow – potentially opportunistic – environment when there are fewer shareholder rights, and the opposite in a low free cash flow environment. This result suggests benefits to allowing increased managerial discretion when the firm is doing well, manifest through increased protection from external market discipline. However, allowing the same discretion when the firm is doing poorly is costly. Hence, shareholder right limiting provisions have the effect of intensifying both the good and bad aspects of increased managerial discretion.

4.6. Alternative model specifications

To clarify how the various dimensions of governance contribute to acquisition activity, we consider alternative model specifications in Table 10. In Panel A, we define board size as the number of insiders and outsiders as opposed to board size and fraction of insiders. This specification isolates the independent contributions of each type of director on the board. In Panel B, we decompose the family-firm indicator variable into three components: founder is CEO, a descendent of the founder is CEO, and a non-family member is CEO. Finally, in Panel C, we consider the individual effects of seven shareholder-right-limiting provisions, six of which are from the entrenchment index of Bebchuk et al. (2004). The results in Table 10 report only those coefficients associated with the alternative governance specifications and otherwise include the identical model specifications outlined in earlier analysis – we describe any deviations from the prior analysis in the Table header.

Panel A reveals that the number of inside directors drives the large board results. More insiders are associated with increased likelihood of acquiring, reduced takeover likelihood, and positive bidder returns. This result is consistent with the benefits of protecting firm-specific human capital.

In Panel B, the consequences of family ownership are delineated across a founding family's decision to control the corporate office: there is reduced acquisition propensity and increased entrenchment among family firms in which either the founder or a descendent holds the CEO position, while shareholder wealth reduction is most significant among the family firms with an externally hired CEO. Founder CEO's have the largest estimated wealth reduction upon the acquisition announcement, but the coefficient is not statistically significant (p-value of 0.19). In general, the family firm results remain broadly consistent with an agency cost explanation for acquisition activity.

Finally, Panel C shows that only two of the seven shareholder rights have a significant relation with acquisition activity. First, golden parachutes are associated with both an increase in acquisition propensity (p-value 0.13) and takeover likelihood (p-value < 0.01), suggesting that they facilitate control changes in general, and are associated with negative bidder returns (p-value 0.15). This provides weak evidence that golden parachutes facilitate managerial control changes at the expense of inefficient investment activity. Second, supermajority voting to approve a merger is associated with reduced takeover likelihood, but is without wealth consequence.

5. Conclusion

Our study of the value and likelihood of acquisition activity among large U.S. corporations yields three main empirical findings. First, we document behavior consistent with agency problems at family firms. They are deeply entrenched – 52% less likely to be acquired relative to non-family firms – and their acquisitions are associated with lower shareholder value, particularly when the scope for managerial opportunism is high.

Second, firms with larger boards and boards with more inside directors are more likely to acquire and less likely to be acquired than other firms. This behavior is associated with positive wealth effects,

consistent with value-enhancing initiative among entrenched managers. These positive wealth effects are particularly strong when shareholders have increased scope for limited competency.

Finally, we find no systematic evidence that shareholder right limiting provisions facilitate managerial entrenchment, or lead to wealth losses through acquisition activity. With only one exception – golden parachutes – we do not find that individual shareholder right limiting provisions systematically contribute to an agency cost or limited competency explanation for acquisitions.

That we demonstrate both positive and negative wealth effects to protective governance is consistent with a transactions costs view of governance, and inconsistent with a one-size-fits-all governance doctrine. The cost of correcting inefficient activity at family firms is high: the average holding by a family firm in our sample is over \$2 billion, and they are not easily replaced for the sake of improved acquisition activity. In contrast, we suggest that the documented benefits of large boards and more inside directors might be the result of the current one-size fits all policy. There has been great pressure on firms during our sample period to move toward independent boards with fewer insiders, and the institutional costs that firms face from deviating from current best practices and exchange rules could well exceed the benefits realized from improved acquisition activity.

More generally, that we observe significant relations between our remaining governance measures (e.g., ownership structure and shareholder right limiting provisions) and the propensity of acquisition activity, but not shareholder value, warns of a potential danger in further restricting governance choices. If governance rules are imposed on firms that limit this variation, resulting frictions may actually make these governance measures matter, but not necessarily with the intended consequences.

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Table 1. Findings on how governance relates to the likelihood and value of acquisition activity

This table provides a summary of our main findings. The columns *Target* and *Acquirer* report the sign of coefficient estimates from Probit regressions of the likelihood that a sample firm acquires (*Acquirer*) or is acquired (*Target*) in a given year. The column *OLS* reports the sign of coefficient estimates from ordinary least squares regressions of three day bidder returns, while the column *Two-stage* reports the signs of ordinary least squares estimates corrected for selection bias by accounting for the non-selection hazard calculated from the first stage estimates of acquisition likelihood. The plus (minus) sign denotes a positive (negative) coefficient estimate that is statistically significant at the 10% level or higher. We report the general findings and their interpretations next to the signed estimates.

	Likelihood		Bidder returns		General findings
	Target	Acquirer	OLS	Two-stage	
<i>Board composition</i>					
Board size	-	+	+	+	Benefits to protective governance through large boards with more insiders, mitigating shareholder limited competency
Number of insiders	-	+	+	+	
Percent insiders	-	0	0	0	
<i>Ownership structure</i>					
Family firm	-	0	-	-	Agency costs explanation for family firm acquisitions; underinvestment at firms with concentrated inside ownership; monitoring by outside blockholders
Inside ownership	0	-	0	0	
Outside block ownership	+	0	0	0	
<i>Shareholder rights</i>					
<i>G</i>	+	0	0	0	Controlling for other governance, shareholder rights do not facilitate opportunistic behavior

Table 2. Acquisition behavior by year

This table reports the yearly acquisition activity of firms in the S&P 500 as of year-end 1994. The second column presents the number of firms in the sample. The two columns under *Acquiring sample firms* show the number (N) and percentage (%) of sample firms that make at least one acquisition of greater than 1% of their market value during the calendar year. The two columns under *Acquired sample firms* show the number (N) and percentage (%) of sample firms that drop from the sample as a result of being the target of a successful acquisition. The last column is the total number of acquisitions made by firms represented in the second column during the calendar year.

Year	Number of sample firms	Acquiring sample firms		Acquired sample firms		Number of acquisitions
		N	%	N	%	
1994	498	115	23.1	7	1.4	168
1995	489	103	21.1	18	3.7	135
1996	468	110	23.5	16	3.4	136
1997	450	115	25.6	17	3.8	158
1998	433	119	27.5	34	7.9	166
1999	396	116	29.3	26	6.6	154
2000	368	84	22.8	16	4.3	101
2001	348	79	22.7	7	2.0	97
2002	335	54	16.1	6	1.8	68
2003	327	60	18.3	1	0.3	69
2004	327	66	20.2	4	1.2	76
2005	315	71	22.5	10	3.2	83
Total	4,754	1,092	23.0	162	32.5	1,411

Table 3. 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. *Total assets* is the dollar value of total assets reported from Compustat. *Q* is the firm's market value of assets 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 zero otherwise. *Board size* is the aggregate number of directors on the board at the time of the annual meeting. *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. *Fraction of family firms* is the sum of the firm-years in which 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; this number is then scaled by the total number of firm-years. *Inside ownership* is the percentage of all ownership by officers, managers, their relatives, members of the founding family if present, and by all other directors with pecuniary contracts with the firm outside their directorship. *Outside block ownership* is the percentage ownership of all beneficial (5%) owners unaffiliated with the firm's inside owners. *G* is the governance index of Gompers, Ishii, and Metrick (2003). *Deal value* is the price paid for the target as recorded by SDC. *Relative size* is *deal value* scaled by *market value of equity*. *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	p25	Median	p75
<i>Firm characteristics</i>					
Market value of equity (\$ millions)	4266	19,320	2,777	6,876	17,199
Total assets (\$ millions)	4266	29,120	2,924	7,649	21,035
<i>Q</i>	4266	1.915	1.182	1.523	2.150
Free cash flow	4266	0.109	0.064	0.104	0.147
Leverage	4266	0.201	0.101	0.191	0.289
Capital expenditures	4266	0.056	0.027	0.047	0.074
Dividend yield	4266	0.020	0.008	0.018	0.028
Net loss	4266	0.109	0.000	0.000	0.000
<i>Governance measures</i>					
Board size	4266	11.5	10.0	11.0	13.0
Inside directors	4266	2.6	1.0	2.0	3.0
Fraction of family firms	4266	0.291	0.000	0.000	1.000
Inside ownership	4266	0.057	0.009	0.019	0.044
Outside block ownership	4266	0.127	0.000	0.106	0.200
Outside block ownership when present	3069	0.177	0.087	0.155	0.235
<i>G</i>	4266	10.21	9.00	10.00	12.00
<i>Acquisition characteristics</i>					
Deal value (\$ millions)	1249	1,958	143	340	1,125
Relative size	1249	0.138	0.021	0.046	0.128
Bidder CAR (-1,1) – all deals	1249	-0.002	-0.022	-0.001	0.020
Bidder CAR (-1,1) – public deals	477	-0.014	-0.040	-0.009	0.015
Bidder CAR (-1,1) – private deals	226	0.005	-0.015	0.003	0.023
Bidder CAR (-1,1) – subsidiary deals	546	0.006	-0.016	0.002	0.022

Table 4. Correlation of governance variables

This table presents the pair wise correlations between governance measures. *Family firm* is a binary variable equal to one if 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. *Log total assets* is the natural log of the firm's total assets from Compustat. All other variable definitions are contained in previous tables.

	Board size	Percent insiders	Family firm	Inside ownership	Outside block ownership	G	Leverage	Dividend yield	Free cash flow	Q	Log total assets
Board size	1.00										
Percent insiders	-0.06	1.00									
Family firm	-0.07	0.54	1.00								
Inside ownership	-0.05	0.50	0.62	1.00							
Outside block ownership	-0.23	-0.14	-0.06	-0.10	1.00						
G	0.02	-0.18	-0.11	-0.21	0.14	1.00					
Leverage	0.02	-0.12	-0.08	-0.07	0.11	0.15	1.00				
Dividend yield	0.19	-0.08	-0.11	-0.10	-0.21	0.02	0.12	1.00			
Free cash flow	-0.14	0.13	0.08	0.11	-0.12	-0.03	-0.19	-0.17	1.00		
Q	-0.09	0.11	0.07	0.09	-0.15	-0.09	-0.24	-0.22	0.69	1.00	
Log total assets	0.51	-0.20	-0.21	-0.24	-0.28	-0.14	0.05	0.17	-0.28	-0.13	1.00

Table 5. Probit regressions modeling the likelihood of being acquired

Models 1 through 5 report probit regressions in which the dependent variable is one in the year that a firm is acquired and zero otherwise. *Serial acquirer* is a binary variable equal to one if the firm made at least three acquisitions within the prior five years. All other variable definitions are contained in previous tables. Year dummies are included, but not reported, in each regression. Column 6 reports the marginal effect (change in probability) of a one standard deviation increase from mean value of the independent variable using the model in Model 5. Firm clustered standard errors are in parentheses and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	1	2	3	4	5	6
Board size	-0.028 (0.019)				-0.032* (0.019)	-0.41%
Percent insiders	-1.246*** (0.326)				-0.672* (0.404)	-0.41%
Family firm		-0.383*** (0.103)			-0.328** (0.146)	-1.56%
Inside ownership			-0.862 (0.560)		0.850 (0.665)	0.40%
Outside block ownership			1.033*** (0.340)		0.979*** (0.349)	0.57%
<i>G</i>				0.034** (0.016)	0.029* (0.017)	0.35%
Serial acquirer	-0.108 (0.107)	-0.128 (0.107)	-0.125 (0.106)	-0.130 (0.108)	-0.126 (0.108)	-0.24%
<i>Q</i>	-0.047 (0.054)	-0.050 (0.055)	-0.039 (0.054)	-0.050 (0.056)	-0.030 (0.054)	-0.17%
Free cash flow	-1.336 (0.957)	-1.463 (0.972)	-1.117 (0.923)	-1.503 (0.973)	-1.244 (0.957)	-0.39%
Dividend yield	-2.158 (2.476)	-2.824 (2.542)	-1.008 (2.150)	-2.508 (2.511)	-1.083 (1.997)	-0.10%
Net loss	0.348*** (0.120)	0.344*** (0.121)	0.322*** (0.121)	0.356*** (0.121)	0.318*** (0.121)	0.47%
Capital expenditures	-0.325 (0.994)	-0.248 (0.993)	-0.315 (0.951)	-0.136 (0.984)	-0.099 (0.972)	-0.02%
Log of total assets	0.026 (0.034)	-0.010 (0.030)	0.028 (0.032)	0.020 (0.031)	0.064* (0.038)	0.45%
Leverage	-0.200 (0.333)	-0.213 (0.339)	-0.253 (0.331)	-0.293 (0.333)	-0.327 (0.342)	-0.21%
Constant	-1.605*** (0.389)	-1.795*** (0.362)	-2.371*** (0.413)	-2.486*** (0.433)	-2.463*** (0.534)	
Observations	4266	4266	4266	4266	4266	
Pseudo R-sq	0.092	0.091	0.090	0.083	0.105	

Table 6. Probit regressions modeling the probability of making an acquisition

This table presents probit regressions in which the dependent variable is one when the firm makes an acquisition during the firm year and zero otherwise. Models 1 through 5 consider all firm years, Model 6 considers only firms that survive the entire sample period. *Increasing spread* is the commercial rate spread found in responses from the Federal Reserve Senior Loan Officer report. Lagged measures are denoted with a *t-1* subscript. All other variable definitions are contained in previous tables. Column 7 reports the marginal effect of a one standard deviation increase from mean value (or change from zero to one) of the independent variable using Model 5. Fama French 49 industry and time (double) clustered standard errors are in parentheses and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	1	2	3	4	5	6	7
Board size	0.036** (0.016)				0.036** (0.014)	0.038*** (0.013)	2.90%
Percent insiders	-0.461 (0.293)				0.057 (0.311)	0.082 (0.307)	0.22%
Family firm		-0.187*** (0.066)			-0.082 (0.072)	-0.085 (0.074)	-2.45%
Inside ownership			-1.189*** (0.392)		-0.933** (0.437)	-0.699* (0.362)	-2.73%
Outside block ownership			-0.128 (0.191)		-0.108 (0.174)	0.017 (0.205)	-0.39%
<i>G</i>				0.033** (0.015)	0.021 (0.014)	0.023 (0.014)	1.62%
Leverage $_{t-1}$	-0.546 (0.334)	-0.552 (0.353)	-0.525 (0.348)	-0.596 (0.368)	-0.578* (0.333)	-0.478 (0.294)	-2.31%
Dividend yield $_{t-1}$	-1.925 (1.952)	-1.549 (1.920)	-1.799 (1.940)	-1.240 (1.984)	-2.600 (2.038)	-3.258 (2.458)	-1.45%
Free cash flow	3.474*** (0.758)	3.410*** (0.770)	3.433*** (0.769)	3.411*** (0.773)	3.391*** (0.731)	3.551*** (0.791)	6.70%
<i>Q</i>	-0.175*** (0.038)	-0.176*** (0.036)	-0.177*** (0.037)	-0.169*** (0.037)	-0.172*** (0.038)	-0.156*** (0.040)	-6.11%
Capital expenditures $_{t-1}$	-3.055*** (0.969)	-3.050*** (0.914)	-3.249*** (0.945)	-3.018*** (0.970)	-3.098*** (0.988)	-2.865*** (1.036)	-4.09%
Net loss $_{t-1}$	-0.362*** (0.080)	-0.385*** (0.072)	-0.392*** (0.077)	-0.381*** (0.071)	-0.369*** (0.075)	-0.387*** (0.084)	-3.53%
Log of total assets $_{t-1}$	0.033 (0.030)	0.062* (0.035)	0.051 (0.037)	0.084** (0.035)	0.026 (0.030)	0.013 (0.032)	1.11%
Increasing spread	0.083 (0.097)	0.072 (0.101)	0.080 (0.102)	0.064 (0.102)	0.091 (0.093)	0.098 (0.090)	0.96%
Constant	-1.023*** (0.294)	-0.918*** (0.313)	-0.788** (0.347)	-1.521*** (0.359)	-1.181*** (0.376)	-1.298*** (0.449)	
Observations	4266	4266	4266	4266	4266	3421	
Pseudo R-sq	0.034	0.033	0.034	0.033	0.040	0.049	

Table 7. Univariate analysis of bidder returns and deal type

This table presents a univariate analysis of bidder returns and deal characteristics disaggregated by terciles of selected governance measures. In some cases, the discrete nature of governance measures results in unequal weighting (different N) between terciles. The tercile mean is the mean value of the selected governance measure within each tercile. The column *Public target* reports the percent of deals in which the target firm was publicly traded. The column *Stock deal* denotes acquisitions with stock included in the means of payment. The column *Same industry* reports the percentage of acquisitions that share the same two-digit SIC. A p-value denoting statistical significance between tercile 1 and tercile 3 is reported using a difference in means, medians, or proportion test.

	Tercile mean	N	Bidder CAR (-1,1)		Public target	Stock deal	Same industry
			Mean	Median			
<i>Board structure</i>							
Board size tercile = 1 (smallest)	9.5	577	0.04%	0.33%	34.1%	23.1%	43.0%
Board size tercile = 3 (largest)	16.5	338	-0.53%	-0.41%	45.3%	38.8%	39.3%
p-value (3 – 1)			0.073	0.005	0.000	0.000	0.282
Percent insiders tercile = 1	11.5%	456	-0.28%	-0.21%	41.0%	29.8%	45.2%
Percent insiders tercile = 3	37.4%	345	-0.07%	0.21%	37.7%	28.1%	42.3%
p-value (3 – 1)			0.536	0.303	0.340	0.598	0.420
<i>Ownership structure</i>							
Non-family firm	0%	963	-0.22%	-0.04%	40.7%	30.1%	42.8%
Family firm	100%	286	-0.17%	-0.20%	29.7%	23.8%	46.2%
p-value (3 – 1)			0.879	0.349	0.001	0.039	0.315
Inside ownership tercile = 1	0.6%	418	-0.67%	-0.51%	47.1%	35.2%	41.9%
Inside ownership tercile = 3	10.3%	416	0.26%	0.12%	26.7%	21.4%	44.7%
p-value (3 – 1)			0.004	0.003	0.000	0.000	0.407
Outside block ownership tercile = 1	0.5%	418	-0.61%	-0.49%	44.3%	35.9%	38.5%
Outside block ownership tercile = 3	25.4%	416	0.09%	0.15%	35.3%	23.3%	41.3%
p-value (3 – 1)			0.032	0.022	0.009	0.000	0.404
<i>Shareholder rights</i>							
G tercile = 1	7.4	434	-0.44%	-0.46%	43.5%	33.9%	38.0%
G tercile = 3	13.0	457	0.25%	0.10%	31.1%	22.5%	49.0%
p-value (3 – 1)			0.026	0.014	0.000	0.000	0.001

Table 8. Bidder announcement return regressions

This table presents results from ordinary least squares (OLS) and two-stage regressions of abnormal announcement returns to all successful bids. Models 1 through 5 use standard OLS methodology with all independent variables measured prior to the announcement date. Models 6 and 7 include the non-selection hazard estimated from the first stage regression of acquisition likelihood from Model 5 of Table 6. *Lambda* is the coefficient estimate of the non-selection hazard (inverse mills ratio). *Prior year return* is the firm's prior year or panel year raw return. All other variable definitions are contained in previous tables. Year dummies are included in each regression. Industry dummies constructed using Ken French's 17 industry portfolios are included in Model 7 only. Heteroskedasticity adjusted standard errors are in parentheses. Statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

- continued on next page -

- Table 8 continued -

	1	2	3	4	5	6	7
Board size	0.087** (0.043)				0.090** (0.044)	0.133** (0.054)	0.128** (0.055)
Percent insiders	0.759 (1.255)				1.829 (1.477)	1.929 (1.471)	1.795 (1.503)
Family firm		-0.350 (0.312)			-0.740* (0.388)	-0.887** (0.397)	-0.873** (0.397)
Inside ownership			0.146 (1.822)		1.221 (2.126)	0.305 (2.267)	-1.547 (2.462)
Outside block ownership			0.284 (1.451)		0.433 (1.454)	0.224 (1.447)	-0.655 (1.513)
<i>G</i>				0.009 (0.050)	-0.005 (0.053)	0.013 (0.053)	0.016 (0.056)
Prior year return	1.355* (0.705)	1.295* (0.708)	1.326* (0.720)	1.333* (0.707)	1.299* (0.720)	1.315* (0.717)	1.336* (0.717)
Same industry	0.149 (0.255)	0.151 (0.256)	0.150 (0.258)	0.142 (0.255)	0.177 (0.258)	0.187 (0.257)	0.183 (0.261)
Stock deal	-0.842** (0.346)	-0.793** (0.347)	-0.794** (0.345)	-0.796** (0.347)	-0.820** (0.347)	-0.874** (0.351)	-0.838** (0.354)
Public target	-1.048*** (0.308)	-1.052*** (0.307)	-1.034*** (0.307)	-1.034*** (0.307)	-1.071*** (0.308)	-1.043*** (0.308)	-1.078*** (0.308)
Relative size	-2.361*** (0.822)	-2.449*** (0.826)	-2.441*** (0.825)	-2.438*** (0.825)	-2.399*** (0.821)	-2.355*** (0.824)	-2.340*** (0.811)
Leverage	1.396 (1.210)	1.098 (1.177)	1.102 (1.190)	1.087 (1.161)	1.507 (1.194)	0.694 (1.417)	0.971 (1.583)
Dividend yield	-8.890 (11.468)	-6.409 (11.374)	-4.955 (11.943)	-5.629 (11.258)	-9.129 (12.218)	-8.826 (12.220)	-0.005 (13.303)
Free cash flow	-2.666 (3.109)	-2.930 (3.118)	-2.799 (3.142)	-2.821 (3.138)	-2.862 (3.183)	-1.554 (3.203)	-1.096 (3.365)
<i>Q</i>	-0.175 (0.155)	-0.164 (0.154)	-0.160 (0.156)	-0.163 (0.154)	-0.175 (0.156)	-0.243 (0.166)	-0.301* (0.176)
Log of total assets	-0.432*** (0.123)	-0.357*** (0.120)	-0.330*** (0.128)	-0.334*** (0.122)	-0.438*** (0.145)	-0.451*** (0.146)	-0.471*** (0.161)
Constant	3.935*** (1.505)	4.559*** (1.454)	4.137** (1.642)	4.141** (1.696)	3.842* (2.058)	1.875 (2.325)	1.114 (2.397)
Lambda						1.262 (0.952)	1.481 (0.976)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies							Yes
Observations	1249	1249	1249	1249	1249	1249	1249
Adj. R-squared	0.078	0.076	0.075	0.075	0.077	0.078	0.087

Table 9. Bidder announcement return regressions by level of free cash flow and volatility

This table presents results from OLS regressions of abnormal announcement returns to all successful bids disaggregated by low and high levels of free cash flow (Models 1 and 2 respectively) and low and high levels of stock price volatility (Models 3 and 4 respectively). A firm's free cash flow is considered low (high) if it is lower than (greater than or equal to) the median value of the 10 nearest firms in the same Fama-French 48 industry. Stock price volatility is considered low (high) if it is below (above) the average volatility of the sample. Included variables that are omitted from the table are prior year return, same industry, stock deal, public target, relative size, leverage, dividend yield, free cash flow (Models 1 and 2 only), Q , and log of total assets. All variable definitions are contained in previous tables. Year dummies are included in each regression. In the columns labeled $F(\text{test})$, a the p-value from a Chow test measuring the statistical difference between the individual coefficients estimates from the high and low groups is reported. Heteroskedasticity adjusted standard errors are in parentheses. Statistical significance is denoted *** , ** , * for 1%, 5%, and 10% respectively.

	1		2		F(test)	3		4		F(test)
	Free cash flow					Stock price volatility				
	Low	High	Low	High		Low	High	Low	High	
Board size	0.209*** (0.076)	0.044 (0.060)	0.082	0.047 (0.043)	0.159* (0.093)	0.243				
Percent insiders	1.902 (2.066)	1.190 (2.205)	0.835	0.112 (1.755)	3.450 (2.390)	0.218				
Family firm	-0.601 (0.572)	-0.927* (0.548)	0.658	0.000 (0.472)	-1.258** (0.585)	0.095				
Inside ownership	-2.023 (2.705)	4.899 (3.087)	0.091	0.113 (2.776)	1.506 (3.402)	0.698				
Outside block ownership	2.284 (2.221)	-1.157 (1.929)	0.265	-2.783** (1.310)	3.292 (2.532)	0.019				
G	-0.131* (0.079)	0.118* (0.070)	0.023	-0.005 (0.053)	-0.016 (0.087)	0.915				
Observations	577	672		623	623					
Adj R-squared	0.082	0.063		0.064	0.092					

Table 10. Alternative specifications for previous tables

This table reports the coefficient estimates for alternative model specifications of board structure (Panel A), founding family/CEO relationship (Panel B), and shareholder rights (Panel C). We report only selected coefficients. Model 1 uses the Probit model specification from Model 5 of Table 5, in which the dependent variable is one in a year that a sample firm acquires at least one firm, and zero otherwise. Model 2 uses the Probit model specification from Model 5 of Table 6, in which the dependent variable is one in the year that a sample firm is acquired, and zero otherwise. Model 3 reports OLS estimates using model 5 of Table 8. Model 4 reports estimates from the second stage of the two-stage procedure of bidder returns where the first stage is the model specification from Model 1 of this Table. *Inside (outside) directors* is the number of inside (outside) directors. *CEO is founder* or *CEO is descendant* is a binary variable equal to one if the CEO is either the founder or a descendant of the founder, and zero otherwise. *CEO is hired by founding family* is a binary variable equal to one if the CEO of a family firm is unrelated to the founding family, and zero otherwise. For Panel C, *G* is omitted and seven shareholder right limiting provisions are included, with binary variables equal to one when that provision is present, and zero otherwise. Included, but not reported, is *Net G*, which is *G* less one for each of the six shareholder right provision present (excluding dual class, which is not a component of *G*). Standard errors, calculated according to prior analysis, are in parentheses, and statistical significance is denoted ***, **, * for 1%, 5%, and 10% respectively.

	1	2	3	4
	Probit	Probit	OLS	Two-stage
	(Target=1)	(Acquirer=1)	CAR (-1,1)	CAR (-1,1)
<i>Panel A: Board size and fraction of inside directors</i>				
Inside directors	-0.070** (0.035)	0.042** (0.019)	0.258** (0.107)	0.303*** (0.111)
Outside directors	-0.022 (0.019)	0.048** (0.020)	0.048 (0.046)	0.089 (0.056)
<i>Panel B: CEO/founding family relationship</i>				
CEO is founder	-0.850** (0.378)	-0.110* (0.066)	-1.075 (0.834)	-1.159 (0.842)
CEO is descendent	-0.320 (0.231)	-0.271*** (0.102)	0.293 (0.507)	0.154 (0.501)
CEO is hired by founding family	-0.231 (0.154)	-0.037 (0.085)	-0.910** (0.426)	-1.074** (0.429)
<i>Panel C: Shareholder rights</i>				
Dual class	0.337 (0.224)	-0.071 (0.108)	-0.254 (0.472)	-0.271 (0.475)
Golden parachutes	0.307*** (0.097)	0.060 (0.040)	-0.424 (0.292)	-0.372 (0.295)
Poison pill	0.081 (0.104)	0.015 (0.064)	-0.373 (0.326)	-0.362 (0.326)
Classified board	-0.035 (0.094)	0.007 (0.052)	0.208 (0.320)	0.235 (0.319)
Supermajority voting	-0.244** (0.123)	0.052 (0.047)	0.164 (0.327)	0.181 (0.330)
Limit ability to amend bylaws	0.144 (0.118)	0.083 (0.057)	0.223 (0.375)	0.205 (0.372)
Limit ability to amend charter	-0.305 (0.284)	-0.157 (0.126)	-0.840 (0.766)	-0.793 (0.758)