

Acquirer-Target Social Ties and Merger Outcomes^{*}

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Abstract

This paper investigates the effect of social ties between acquirers and targets on merger performance. Using data on educational background and past employment, we construct a measure of the extent of cross-firm social connection between directors and senior executives at the acquiring and the target firms. We find that between-firm social ties have a significantly negative effect on the abnormal returns to the acquirer and to the combined entity upon merger announcement. Moreover, acquirer-target social ties significantly increase the likelihood that the target firm's CEO and a larger fraction of the target firm's pre-acquisition board of directors remain on the board of the combined firm after the merger. This also holds true at the level of individual target directors. An individual target director is more likely to be retained on the post-merger board if that target director has more social connections to the acquirer's directors and senior executives. In addition, we find that acquirer CEOs are more likely to receive bonuses and are more richly compensated for completing mergers with targets that are highly connected to the acquiring firms, that acquisitions are more likely to occur between two firms that are well-connected to each other through social ties, and that such acquisitions are more likely to subsequently be divested for performance-related reasons. Taken together, our results suggest that social ties between the acquirer and the target lead to poorer decision-making and lower value creation for shareholders overall.

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1. Introduction

Boards of directors and top corporate executives occupy a rich and complex network of social ties. These ties may take many forms, including alumni networks from educational institutions, connections through employment activity, or other activities such as clubs or charitable organizations. There is considerable evidence that social networks can influence decision-making processes or economic outcomes in a variety of settings, and a small but emerging literature considers the corporate finance implications of these connections in particular. This literature, however, has largely focused on *within*-firm ties such as social connections between board members or between the CEO and the board of directors of the same firm. Relatively little is known about the role of *cross*-firm social connections in driving corporate decisions.

In this paper, we investigate the impact of social ties between the senior executives and directors of the acquiring and the target firms on merger outcomes, focusing on ties across the two merging firms. We examine cross-firm social connections in the context of mergers and acquisitions because these are important events in the lives of firms that may potentially have sizable impacts on shareholder wealth and require complex decision-making on the part of the board of directors and top managers from both firms involved. The interactive nature of the negotiation and decision-making processes makes mergers corporate events in which cross-firm social ties are likely to be especially relevant. Understanding whether and how such connections between the acquirer and the target impact decision-making and ultimately affect merger outcomes and shareholder value is, therefore, of particular importance.

One hypothesis is that extensive social ties across merging firms will foster an enhanced flow of information, leading to better decision-making. Under this view, connections lower the costs of gathering information, providing a means of efficient information exchange. For example, Cohen, Frazzini, and Malloy (2008) find that information is dispersed via educational

networks between mutual fund managers and corporate boards. Gompers and Xuan (2008) and Cai and Sevilir (2010) show that a common link such as a common venture capital investor or a common board member between the acquirer and the target helps reduce information asymmetry. Ingram and Roberts (2000) show that competing hotels have larger revenue per room when they share social ties, an effect at least partially credited to exchange of information. Under this hypothesis, social ties will improve merger performance.

An alternative hypothesis is that extensive social ties between an acquirer and a target will lead to less successful mergers due to flawed decision-making based on weaker critical analysis, a lowering of standards, or missed opportunities. There are a number of sources for this kind of flawed decision-making in the presence of social ties. First, social ties may lead to a heightened sense of trust. The principle of homophily implies that people are more likely to interact and be influenced by those who are similar to them (the “birds of a feather” concept well-known in sociology; see, for example, McPherson, Smith-Lovin, and Cook, 2001). Decision-makers may be more comfortable with one another and shift from a purely exchange-based mode of interaction to one based more on norms of trust. Social ties may then lead to more favorable interpretations of events and others’ actions (Uzzi, 1996). In the merger context, the existence of considerable social connections across top decision-makers at acquirers and targets may lead firms to lower due diligence standards or overestimate the resulting synergistic gains and make firms more inclined to forego better opportunities outside the network.

Second, significant empirical evidence now exists documenting a familiarity bias under which individuals prefer status quo choices and familiar goods or people.¹ In financial markets, for example, investors display a home bias in domestic as well as international investing (Coval and Moskowitz, 1999; French and Poterba, 1991), and their preferences depend on the firm’s distance, language, and culture (Grinblatt and Keloharju, 2001). Many individuals also invest large amounts of their discretionary pension fund contributions in their own company stock

¹ See, for example, Samuelson and Zeckhauser (1988), Zajonc (1968), and Saegert, Swap, and Zajonc (1973).

(Benartzi, 2001; Meulbroek, 2005). It has also been found that firms tend to cross-list their stocks in countries where investors are more familiar with them (Sarkissian and Schill, 2004). In the context of corporate mergers, this familiarity bias may manifest itself in a tendency towards inefficient deal-making with firms with which top managers and directors have social ties, with insufficient regard for whether the merger makes sense strategically and intrinsically or whether a better candidate firm exists outside the network.

Another source of flawed decision-making that could lead social ties to have a negative impact on merger outcomes is social conformity and groupthink. The social psychology literature demonstrates that individuals in group settings tend to conform to social norms; this is true even when the social consensus is clearly incorrect (Asch, 1951). Groupthink refers to a type of thinking in a cohesive group when critical analysis is dominated by a desire for unanimity, and groupthink behaviors are thought to be more likely to occur when the group is more homogeneous in terms of attitudes, approaches, or ideologies. Social ties based on educational and employment backgrounds provide a measure of the sort of homogeneity that is conducive to groupthink and poor decision-making. Defects in decision-making in cohesive groups often include consideration of only a limited range of options, failure to reexamine any options initially rejected, foregoing opportunities to consult with experts outside the group, ignoring information that does not support the favored policy, and insufficiently considering disadvantages of the favored decision (Janis, 1982). In the merger setting, these flaws in decision-making by socially connected acquiring and target firms could again translate to failure to consider other potential merger candidates, and overestimation of the synergistic gains as well as lowering of due diligence standards for the favored deal. Cross-firm social ties in the merger context are thus predicted to lead to weaker merger performance.

We test these hypotheses by estimating the relationship between merger announcement returns and the extent of social ties between the top managers and directors of the two merging firms. We focus on educational institutions as well as employment history as the basis of the

social networks that we use in our analyses. We use information on both undergraduate and post-graduate educational institutions attended to form our measures. Educational institutions can be expected to form an effective basis for social ties for a variety of reasons, as discussed in Cohen, Frazzini, and Malloy (2008). Facilitated by alumni associations, college sports, and donation programs, the relationships formed during undergraduate or post-graduate programs often last well beyond the graduation date. Individuals from a common educational institution may also have other common interests or backgrounds that will strengthen the ties formed there or foster later relationships. These educational ties can also be expected to be fairly exogenous. In addition to academic institutions, we use individuals' past employment history as a basis for our network measure, since strong relationships may be formed through work environments, and these relationships may also be more recent.

Using a sample of 539 mergers between publicly-traded U.S. firms between 1999 and 2007, we find that acquirers' announcement returns associated with a merger tend to be lower in the presence of many social connections. This is consistent with the view that social ties destroy value in merger decisions, but it could also be explained by social ties inducing a larger transfer from the acquirer to the target. Upon examining the relationship between target announcement returns and social ties, we find no significant relationship that would indicate that targets are overpaid based on social networks. We then consider the acquirer and target weighted average announcement return for the combined entity and confirm that the overall effect of social ties is significantly negative, both statistically and economically. A one standard deviation increase in the extent of social connection between the two firms reduces the three-day cumulative abnormal returns to the combined entity by 0.6 to 0.9 percentage points, a reduction of more than 50 percent given the mean three-day CAR of one percent for the combined firm in the sample. This supports the view that the negative impact of social networks outweighs whatever positive information-based effects might be present.

One might hypothesize that the effect of social ties would be mitigated or disappear in well-governed firms or in firms in which decision-makers' incentives are well-aligned with shareholders. We use the Governance Index (G-index) of Gompers, Ishii, and Metrick (2003) to test the effect of governance structure, but we find no significant effect. In announcement return regressions including an interaction between the G-index and our social ties measure, the coefficient on the interaction term is insignificantly different from zero. We also examine the impact of acquirer CEO stock ownership, and we find that this does appear to matter. The effect of social ties remains negative, but acquirer CEO ownership reduces the effect significantly. CEO stock ownership thus appears to help align incentives with shareholders in this context.

In order to better understand these short-run performance results, we consider additional evidence on characteristics of the mergers and mechanisms through which the valuation effect may operate. We first investigate whether social connections between the acquirer and the target affect an important aspect of decision-making in the merged firm, that is, the retention of the target firm's CEO or directors. Our results indicate that the degree of social connection between the acquirer and the target significantly increases the likelihood that the target firm's CEO and a larger fraction of the target firm's pre-acquisition board of directors remain on the board of the combined firm after the merger. This also holds true at the level of individual target directors. An individual target director is more likely to be retained on the post-merger board the more connections he or she has to the acquirer's top managers and directors. Inefficient retention of the CEO or other top managers and directors on the basis of social connections may be one source of value destruction in mergers between highly socially connected firms.

Next, we show that acquirer CEOs are more likely to receive bonuses and are more richly compensated for completing transactions with target firms that are highly socially connected to the acquiring firms. We also find that acquisitions are more likely to occur between two firms that are well-connected to each other through social ties. Moreover, these acquisitions are subsequently more likely to be divested, particularly for performance-related reasons, indicating

that these transactions are recognized ex post as bad decisions. Taken together, our results suggest that social connections between the acquirer and the target have a negative impact on merger outcomes. Acquirer-target social ties can lead to poorer decision-making and lower value creation for shareholders as a whole. The negative effects of social connection between decision-makers at the acquiring and the target firms may be one important potential source of value destruction in many merger transactions.

This paper builds on and contributes to two main strands of literature. First, it is related to an emerging literature on the role and influence of social ties and networks in financial contexts.² A number of papers have investigated the impact of connections within the board of directors or between the CEO and the board of directors of the same firm. Hwang and Kim (2009) measure social ties between the CEO and directors at Fortune 100 firms and document that social ties have an effect on how directors monitor and discipline CEOs based on compensation and turnover. Schmidt (2008) examines social ties between the CEO and outside directors and finds evidence consistent with the notion that the effect of social ties depends on a trade-off between monitoring needs and information-gathering needs. Fracassi and Tate (2008) find that connections between the CEO and directors lead to weak board monitoring and lower market valuations. Our approach is different in that we focus not on within-firm connections, but rather on cross-firm connections. We will measure social networks based on boards of directors as well as top executives.

In addition to the literature on social networks, this paper is also related to the mergers and acquisitions literature. Prior research has evaluated the success and value consequences of mergers by studying the change in firm value at the time of the announcement of the acquisition,

² For example, the impact of social networks has been investigated in a variety of financial contexts including the stock market participation decision (Brown, Ivkovic, Smith, and Weisbenner, 2008), CEO pay (Hallock, 1997; Barnea and Guedj, 2006), corporate investment (Fracassi, 2008), allocations in equity issues (Cornelli and Goldreich, 2001), private equity transactions (Stuart and Yim, 2010), venture capital performance (Hochberg, Ljungqvist, and Lu, 2007), and mutual fund performance and trading behaviors (Cohen, Frazzini, and Malloy, 2008; Hong, Kubik, and Stein, 2005; Kuhnen, 2009).

the long-run stock returns to the acquirer, and the post-merger firm operating performance.³ The vast majority of this work focuses on deal characteristics or (*within-*)firm characteristics in explaining merger outcomes, such as method of payment (e.g., Travlos, 1987), *Q* (e.g., Servaes, 1991), leverage (e.g., Maloney, McCormick, Mitchell, 1993), cash (e.g., Harford, 1999), size (e.g., Moeller, Schlingemann, and Stulz, 2004), and organizational structure (e.g., Maksimovic and Phillips, 2008).

What has been less explored in the literature is the relationship *between* the acquirer and the target and its effect on merger outcomes. Morck, Shleifer, and Vishny (1990) investigate the relationship between the acquirer-target industry relatedness and the acquisition success and show that diversifying acquisitions have lower abnormal returns. Hoberg and Phillips (2010) examine the asset complementarities between the acquirer and target and find that acquirers buying targets similar to themselves experience higher future profitability. Gompers and Xuan (2008) study the role of common venture capital investors in alleviating the asymmetric information between the public acquirers and private venture capital-backed targets. Ahern and Harford (2010) focus on the industry links in the form of supplier-customer relationships between merging firms. To the best of our knowledge, our paper is the first study that examines the direct link between decision-makers at the acquiring and the target firms and its implications for merger outcomes.

The remainder of this paper is organized as follows. Section 2 discusses the data and the construction of the variables. Sections 3 and 4 establish the main results, focusing on the announcement period abnormal returns, the target board and CEO retention, the acquirer CEO compensation, the probability of acquisition, and the probability of subsequent divestiture. Section 5 concludes.

³ See, for example, Jensen and Ruback (1983), Healy, Palepu, and Ruback (1992), Andrade, Mitchell, and Stafford (2001), and Moeller, Schlingemann, and Stulz (2004, 2005), among many others.

2. Data

A. Sample and Variable Construction

The data used in this paper is generated from several different datasets. We first identify mergers and acquisitions with announcement dates between 1999 and 2007 using the Securities Data Company's (SDC) U.S. Mergers and Acquisitions database. We require that both the acquirer and target be publicly traded in the U.S., since we will examine announcement returns associated with both the acquirer and the target. We also require that the acquisition be completed and that 100 percent of the target be acquired after the transaction. We obtain relevant data from SDC including the acquisition announcement date, the value of the transaction, and the percentage of stock and cash used to pay for the acquisition. We then use Factiva news searches and the company annual reports to fill in any missing values by hand and correct any inaccurate information reported by SDC when possible. We merge our sample of acquirers and targets with Compustat to get financial data, with CRSP to get returns data, with ExecuComp to get CEO ownership data, and with the RiskMetrics (formerly IRR) data to identify governance characteristics.

The data on social connections is derived from files purchased from BoardEx of Management Diagnostics Limited. This data contains extensive biographical information on corporate directors and top executives including educational degrees, employment history, and other professional and social activities from 1999 to 2007.⁴ Firms and directors are endowed with codes in the data to enable links to be drawn between individuals in the database based on these biographical details. However, since BoardEx collects and codes the biographical information from various public sources including news releases and individual resumes, the

⁴ Although BoardEx coverage starts in 1999, the data in 1999 is highly incomplete.

same firm frequently gets several different codes as its name can be referenced with slight variations in different sources. For example, McKinsey & Co. is given a company ID of 104667 while McKinsey & Co. Inc. is coded as a different company with ID 1001337. We therefore hand-cleaned the data by manually going through each firm reference to correct mistakes in the BoardEx files and make sure that the same firm is assigned the same code. We also hand-coded educational institutions in order to draw links based on academic background as well. Data from BoardEx is merged by hand with our sample of mergers and acquisitions using company name and stock symbol.

We construct our measure of social ties by focusing on the educational background and employment history of the board members and senior executives. As a first cut, we identify two individuals (executives or directors) as sharing an educational tie if they both obtained degrees from the same academic institution. These could be either undergraduate or graduate degrees. For example, two executives or directors who both attended Brown University would be classified as sharing a connection. Similarly, we identify two individuals as sharing a past employment tie if they both worked at the same company in the past. Overall, we define two people as being socially connected if they share any of the ties defined above.⁵

Our proxy for social connection between an acquirer and a target is then defined in the following manner. For each acquisition, we define a matrix consisting of all the directors and top executives of the two companies. Each element of the matrix is a pair of individuals composed of one member from the acquirer and one member from the target. The total number of elements in the matrix therefore represents the total number of such pairs and equals the total number of directors and executives of the acquirer times the total number of directors and executives of the target. We count the total number of connected pairs and divide by the total number of pairs to form Average Connection. Average Connection therefore captures the extent

⁵ Considering other forms of social ties including shared membership in clubs, charitable organizations, etc. does not change the results. We exclude these ties since the reporting is noisier and more random in the BoardEx data.

to which the decision-makers of the acquirer and the target are connected socially. For instance, an Average Connection of 10 percent between an acquirer with a 10-person board/management team and a target with an 8-person board/management team indicates that out of a total of 80 (10 x 8) pairs of individuals between the two firms, eight pairs are connected based on education and employment ties. For us to compute this connectedness measure and for an acquisition to be retained in our final sample, both the acquirer and the target must have coverage in the BoardEx files.

B. Descriptive Statistics

Our final sample consists of 539 acquisitions in which both the acquirer and the target are U.S. public companies between 1999 and 2007. Table 1 shows the number of acquisitions by year. We report the numbers for the full sample first, followed by subsamples based on the Average Connection between the acquirer and the target. High Social Connection indicates that the Average Connection between the acquirer and the target is above the sample median, and Low Social Connection indicates that this Average Connection is below the sample median. While acquisitions in 1999 represent only three percent of the sample, the transactions are roughly evenly distributed in the early 2000s and then become concentrated in the last three years of the sample.⁶ This pattern reflects the breadth and quality of the data coverage by BoardEx, which starts with only partial coverage in 1999 and becomes more comprehensive over time. The pattern of observations across years is similar across the subsamples of high and low levels of social connection, which are in turn similar to the sample as a whole. It does not appear that there are major shifts in our measure of social connection in the mergers within our sample period.

⁶ Eliminating data from 1999 from the analysis does not alter our results.

Table 2 reports the number of acquisitions in our sample by the industry of the acquirer, defined using the twelve Fama-French industry categories.⁷ The three industries most frequently represented in our sample are Finance, Business Equipment (which includes computers, software, and electronic equipment), and Healthcare. Subsamples based on whether the Average Connection between the acquirer and the target is below or above the sample median indicate that acquisitions in most industries are fairly evenly divided between high and low levels of social connection, but certain industries involve more highly connected acquirers and targets than others. For example, the majority of acquisitions in the Healthcare industry see high social connections between the acquiring firm and the target firm. In our analysis, we include year fixed effects and industry fixed effects to control for potential systematic time effects and industry differences.

We present sample summary statistics in Table 3. The Average Connection between the acquirer and the target is approximately eleven percent for the full sample. Compared to acquirers with a lower degree of social connection with the targets, acquirers that are more connected with the targets on average are similar in assets and cash flow as a percentage of assets, but have a higher Q and a lower debt-to-assets ratio.⁸ The deal characteristics indicate that acquirers that are more connected with the targets engage in larger transactions in absolute value than acquirers that are less connected with the targets, but as a percentage of the acquirer market capitalization, the relative deal size is similar for both groups. The deals are also equally likely to be in related industries.⁹ Focusing on the method of payment, we see that deals in

⁷ See Ken French's website at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html for the definition of the twelve Fama-French industry categories.

⁸ Cash flow is operating income before depreciation (Compustat Industrial Annual Item 13). Q is defined as the book value of assets (Item 6) plus the market value of equity (end-of-year price, Item 199, times end-of-year shares outstanding, Item 25) minus book equity all over assets. Book equity is defined as total assets less total liabilities (Item 181) and preferred stock (Item 10) plus deferred taxes (Item 35) and convertible debt (Item 79). Debt is defined as the sum of long-term debt (Item 9) and debt in current liabilities (Item 34).

⁹ A deal is classified as related if the target and the acquirer have the same two-digit SIC code. Defining relatedness using four-digit SIC codes does not alter the results.

which the acquirer and the target are more connected are more likely to be 100 percent financed with equity compared to deals in which the acquirer and the target have less social connection. These summary statistics suggest that acquisitions with different degrees of social connection between the acquirer and the target vary on some dimensions, and we will control for these differences in our regression analysis.

3. Announcement Period Abnormal Returns

In this section, we study the market's reaction to the acquisition announcement, examining the impact of social ties between the acquirer and the target on the abnormal returns around the announcement period. We calculate the announcement period abnormal returns following the standard estimation methodology for event studies with daily returns as in Brown and Warner (1985). We use trading days -200 through -20 relative to the event date as the estimation period for each transaction in the sample. Over this estimation period, the company daily returns are regressed on the value-weighted returns on the market portfolio. We require that a stock have at least 30 non-missing daily returns in days -200 through -20 in order to be included in the estimation. The difference between the actual daily return and the market model predicted daily return using the estimated factor loadings from the regression results is the daily abnormal return. We cumulate the daily abnormal returns over the event window, and use the cumulative abnormal returns (CARs) as the measure of abnormal performance upon announcement of the acquisition.

A. Univariate Analysis

Table 4 tabulates the cumulative abnormal returns (CARs) upon acquisition announcement for the full sample, followed by a breakout based on the extent of social ties

between the acquirer and the target. We report the CARs for the acquiring firm, the target firm, as well as the combined entity over the three-day event window (one day before the announcement to one day after the announcement $[-1, +1]$), the five-day event window $[-2, +2]$, and the seven-day event window $[-3, +3]$.

The acquirer's stock on average reacts negatively to the acquisition announcement for the full sample. This negative reaction, however, is much more severe for the acquisitions in which the acquirer and the target share extensive social ties. Acquirers with a high Average Connection with their targets (High Social Connection) experience a negative abnormal return of almost three percent over the three-day period around the acquisition announcement, a negative reaction almost three times as large in magnitude as that for the acquirers with lower Average Connection (Low Social Connection). This difference in CARs is significant at the 1% level, and the effect remains similar across different event windows. The Wilcoxon rank-sum test confirms that the distributions of the CARs for the acquirers with different extent of social connection with the targets are statistically different. These results suggest that cross-firm social ties are associated with a loss of value to the acquirer's shareholders upon the merger announcement.

We next examine the target's stock reaction around the announcement. An acquirer's lower announcement period return in the presence of extensive social ties might just result from its overpaying the target more than an acquirer without social connections would. If this is the case, one would expect a target with higher social connection to the acquirer to have higher CARs around the merger announcement. Table 4 indicates that, consistent with prior research, targets on average enjoy a highly positive and significant abnormal return of approximately 20 percent around the acquisition announcement. However, the CARs are not higher for targets with high social connection with their acquirers. If anything, they are slightly lower across all event windows, although the difference is not statistically significant. Acquirers that have extensive social ties with their targets, therefore, do not seem to overpay relative to those acquirers without such ties. Acquisitions in which the acquirer and the target are highly socially

connected appear to destroy value rather than merely transfer wealth from the acquirer's shareholders to the target's shareholders.

To fully assess the relationship of social ties and the value consequence of acquisitions, we then study the announcement returns for the combined entity. Following the methods used by Bradley, Desai, and Kim (1988) and Kaplan and Weisbach (1992), we calculate the combined abnormal returns to acquirer and target shareholders as the market value weighted average of the CARs for the acquirer and the target, using as weights the market value of equity of each firm four trading days before the acquisition announcement. The combined change in value of both the acquirer and the target measures the total economic impact of the acquisition for shareholders overall (Kaplan, 2006).

Consistent with Andrade, Mitchell, and Stafford (2001), we find that the combined announcement returns are significantly positive for the full sample, indicating that the acquisitions create value on average from the perspective of all shareholders. On closer examination, however, the value creation comes almost entirely from acquisitions in which the extent of social connection is low. In acquisitions in which the acquirer and the target are highly connected socially, the shareholders of both firms as a combined entity do not gain value; the average combined CARs are not significantly different from zero. On the other hand, when the social connection between the acquirer and the target is low, the combined values of the acquirer and the target rise by 1.6 to 1.9 percent of the total initial value of the acquirer and the target, an increase significantly different from zero and significantly higher than that in the acquisitions with high social connections. This evidence suggests that social ties between the acquirer and the target are associated with lower value creation for shareholders overall.

B. Regression Analysis

In this section, we explore the relationship between social connection and announcement returns using multivariate OLS regressions, which allow us to control for deal characteristics and firm characteristics that might affect the stock market's reaction to the acquisition announcement. We examine returns for the acquirer, the target, and the combined entity in turn.

Table 5 focuses on acquirer returns. The dependent variable is the three-day cumulative abnormal returns (CAR[-1, +1]) for the acquirer. Our key independent variable, Average Connection, is a continuous variable defined in Section 2 that measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target. In Column 1, we include as the only independent variable Average Connection based on all ties, and in Column 2, we add standard controls for the size, Q , leverage, and cash flow of the acquirer, the relative size of the acquisition, whether the acquisition is financed 100 percent with equity, and whether the acquirer and the target are in related industries. The coefficient on Average Connection is negative and significant at the 1% level. A one standard deviation increase in Average Connection between the acquirer and the target (13.0%) decreases the three-day CAR by 1.0 to 1.3 percentage points.

In Columns 3 and 4, we calculate Average Connection based on educational ties only. In Column 3, an acquirer-target pair of directors/executives is considered socially connected if the pair went to the same educational institution (e.g., University of Chicago). In Column 4, an acquirer-target pair of directors/executives is considered socially connected if the pair went to the same educational institution and likely received the same degree (e.g., University of Chicago Graduate School of Business). Average connection between the acquirer and the target based on educational ties is negatively associated with acquirer returns, especially when the connected pair attended the same program at the same school. Similarly, we calculate Average Connection

in Column 5 based on past employment ties only. The coefficient on Average Connection remains significantly negative.

In Column 6, we account for the strength of the connection between pairs of individuals. We recompute the Average Connection variable to measure the percentage of strongly connected pairs across the directors and top executives of the acquirer and the target, where a strong connection is defined as one where the pair of individuals shares two or more social ties based on educational institutions and past jobs. These strong social ties might have an even greater effect since a pair with a strong social tie is more likely to have a significant personal connection. Indeed, using this measure as the key explanatory variable in Column 6, we see that the coefficient is significantly negative, with a larger absolute magnitude.

In Column 7, we redefine Average Connection using acquirer CEO ties only. For each director and executive of the target, we examine whether he or she is socially connected with the acquirer's CEO based on education and past employment ties. We then calculate Average Connection as the percentage of the target's directors and executives that are socially connected with the acquirer's CEO.¹⁰ Average Connection based on acquirer CEO ties is again negatively related to acquirer CAR. A one standard deviation increase in average CEO connection is associated with a decrease of 0.8 percentage point in acquirer CAR, significant at the 1% level.

In Columns 8 and 9, we address a potential selection effect. One might be concerned that individuals from certain institutions and employers might be more likely to be well-connected and connections that appear frequently in the data (e.g., educational ties based on Harvard University) might be associated with particular types of managers who tend to engage in certain types of merger behavior. Such a selection effect could imply that the results are driven by managerial types rather than by social connections. Note, however, that to at least partially explain our results, this selection story requires that graduation from a frequently-appearing

¹⁰ Average Connection based on acquirer CEO ties has a mean of 12.8 percent and a standard deviation of 21.3 percent.

institution such as Harvard is associated with a tendency towards value-destroying acquisitions. Nevertheless, it is useful to address this issue since the top institutions contribute a substantial number of connections. The five educational institutions contributing the largest number of ties are Harvard University, Stanford University, the University of Pennsylvania, the University of Michigan, and Columbia University, and combined, these five institutions contribute almost 54 percent of the educational ties. We recompute our Average Connection measure once where we include only educational institutions amongst the top five and once where we include only educational institutions outside the top five, and we include these as the primary explanatory variables of interest in Columns 8 and 9, respectively. In both specifications, the coefficients are negative and significant, alleviating concerns that selection based on managerial types associated with particular schools is the main driver of the results.¹¹

Finally, adding year fixed effects (Column 10), along with industry fixed effects (Column 11), to the original Average Connection regression with all the control variables does not affect the results; the coefficients on Average connection remain negative, highly significant statistically and economically, suggesting that social connection between the acquirer and the target has a negative value impact on shareholders of the acquirer, all else equal.

Target returns are examined in Table 6. The dependent variable is the three-day cumulative abnormal returns (CAR[-1, +1]) for the target. Average Connection, the independent variable of interest, measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target based on all ties. The negative and significant coefficient on Average Connection in Column 1 indicates that more social ties between the acquirer and the target lead to lower announcement returns for the target as well. When we add to the regression year and industry fixed effects as well as controls for the size, Q , leverage, and

¹¹ While there is substantial concentration among educational institutions, there is relatively less concentration in the contributions of particular employers to our social ties measure. Combined, the top five employers contribute 13.8 percent of the jobs ties, for an average of 2.8 percent per top-five employer. Dropping the top five employers yields qualitatively similar results.

cash flow of the target, the relative size of the acquisition, whether the acquisition is financed 100 percent with equity, and whether the acquirer and the target are in related industries, the coefficient on Average Connection is no longer significant. The social connection between the acquirer and the target does not seem to influence the target's stock reaction to the acquisition announcement. Thus, the acquirers with higher social connection with the targets do not appear to be overpaying relative to the acquirers without such connections.¹²

We examine the announcement returns for the acquirer and the target as a combined entity in Table 7. The dependent variable is the combined abnormal returns to acquirer and target shareholders computed as the market value weighted average of the CARs for the acquirer and the target over the three-day event window around announcement. In Column 1, we include Average Connection as the only independent variable, and we add controls in Column 2 for the size, Q , leverage, and cash flow of the combined entity¹³, the relative size of the acquisition, whether the acquisition is financed 100 percent with equity, and whether the acquirer and the target are in related industries. Column 3 includes year fixed effects, and Column 4 adds industry fixed effects as well. Across all specifications, Average Connection is consistently negative and significant at the 10% level or better. A one-standard-deviation (13%) increase in Average Connection reduces the abnormal returns to the combined entity by 0.6 to 0.9 percentage points, a reduction of more than 50 percent given the mean three-day CAR of one percent for the combined entity.

Overall, our findings from the regression analysis corroborate the univariate results. The negative effect of between-firm social connections on announcement returns cannot be explained away by firm and deal characteristics. From the perspective of the acquirer's shareholders, the

¹² We also examine the transaction multiples for the target such as enterprise value to EBITDA and equity value to earnings and confirm that there is no robust relationship between social connections and the extent of overpayment.

¹³ Q (leverage, cash flow) of the combined firm is calculated as the asset weighted average of Q (leverage, cash flow) of the acquirer and Q (leverage, cash flow) of the target.

market reacts less favorably to acquisitions in the presence of more social ties between the two firms involved in the transaction. The target's shareholders, on the other hand, do not receive more gains from the acquisition if the target is more socially connected to the acquirers. The value loss to the acquirer's shareholders is not a mere transfer of wealth to the target's shareholders; social connection between the acquirer and the target results in a reduced gain to the combined value of the two firms from the acquisition. The negative effect of social connections is significant both statistically and economically.

C. The Effect of Governance and Acquirer CEO Ownership

In this section, we investigate two mechanisms that might help mitigate the negative effect of social ties on announcement returns. The first is corporate governance structure, which we measure using the Gompers, Ishii, and Metrick (2003) G-index. The second is acquirer CEO ownership, which we define as the number of shares owned by the acquirer CEO divided by the total number of firm shares outstanding. Stronger shareholder rights, as measured by the G-index, may reduce the ability of managers to make suboptimal merger decisions while higher CEO ownership may help by aligning the incentives of important decision-makers with those of shareholders. Either of these mechanisms could thus alleviate the negative impact of social connections.

We examine how the relationship between social connections and merger returns is affected by governance structure and acquirer CEO ownership in Table 8. We focus on the three-day CAR for the acquirer as the dependent variable, since our previous results indicate that the presence of social ties primarily affects the acquirer's shareholders. In addition to the key independent variable of interest, Average Connection, we add in Columns 1 and 2 the acquirer's G-index and its interaction with Average Connection, and in Columns 3 and 4 the acquirer CEO ownership and its interaction with Average Connection. In Columns 5 and 6, we add both G-

index and ownership at the same time with their respective interactions with Average Connection. For each set of regressions, we include the standard control variables first, and then add year and industry fixed effects. Stronger shareholder rights (lower G-index) do not appear to limit the role of social connection on acquirer returns in our sample. The coefficient on the interaction between the G-index and Average Connection is insignificantly different from zero. CEO ownership, on the other hand, has a significant impact. For example, based on the estimates in Column 5, when the acquirer CEO ownership moves from zero to five percent, the effect of social ties on acquirer returns is almost halved.¹⁴ This suggests that the provision of adequate incentives can potentially help overcome the negative effect of social connections.

4. Further Empirical Evidence on Social Ties

In order to better understand the short-run performance results, we now consider further empirical evidence on the characteristics of the mergers and some mechanisms through which the valuation effect may be working. We first consider an important aspect of decision-making in the merged firm: the retention of key personnel from the target and how this relates to social ties. Next, we investigate the relationship between social ties and the remuneration awarded to the acquirer CEO for completing the merger deal. We then analyze how the extent of social connectedness between an acquirer and a target relates to the probability of an acquisition occurring. Finally, we analyze the relationship between social connections and the post-merger performance of the firm, focusing on the likelihood of the subsequent divestment of the acquired assets.

¹⁴ Note that for a large enough level of acquirer CEO ownership, the effect of Average Connection turns positive. However, acquirer CEO ownership tends to be fairly low in our sample with a median close to zero and a mean of 1.3 percent.

A. Target Board and Target CEO Retention

One avenue through which social connections could potentially have a significant impact on merger performance is personnel decisions regarding high-level managers and directors. The existing literature has found mixed results on the link between the market's response to a merger announcement and retention of top management from the target. For example, Martin and McConnell (1991) find no relationship in either bidder or target abnormal returns, and Barger, Schlingemann, Stulz, and Zutter (2009) also find no evidence that retention of the target CEO affects target returns in mergers involving public bidders. Matsusaka (1993) finds a positive relationship between bidder abnormal returns and the retention of top target management, while Wulf (2004) finds lower returns to shareholders of targets acquired in mergers-of-equals deals when there is shared governance after the merger.

We would expect a setting in which acquirers and targets at merging firms share strong social connections to be one where retention of the target CEO or other top managers or directors is less likely to be driven by motives of pure value-maximization.¹⁵ We thus investigate whether social connections between the acquirer and the target affect the likelihood that members of the target firm's board of directors and the target firm's CEO remain on the board of the combined company post-acquisition as a way of shedding additional light on the announcement return evidence. We consider overall target board retention, target CEO retention, and retention of individual target board members.

For each acquisition in our sample, we check the last annual reports and proxy statements filed by the acquirer and by the target before the acquisition announcement as well as the first annual report and proxy statement filed by the acquirer after the merger completion to determine

¹⁵ Note that target directors have significant incentives to be retained. Harford (2003) shows that target directors' loss of a board seat upon completion of a merger tends to have a negative financial impact and is difficult to replace.

board membership pre- and post-acquisition. We then start by constructing three measures for target board and target CEO retention: the number of the target's pre-acquisition board of directors who remain on the board of the combined company post-acquisition as a percentage of the combined company's post-acquisition board size, the number of the target's pre-acquisition board of directors who remain on the board of the combined company as a percentage of the target's pre-acquisition board size, and a dummy variable indicating whether the target's CEO remains on the board of the combined company post-acquisition.

Table 9 reports the results of OLS regressions with one of these three retention measures as the dependent variable and the average connection between the acquirer and the target as the key independent variable. Across all measures and specifications, the degree of social connection between the acquirer and the target is significantly positively correlated with target board and target CEO retention after the merger, and the effect remains strong after we include controls for target size, Q , leverage, profitability, relative transaction value, transaction method of payment and relatedness of the deal as well as year and industry fixed effects. The target firm's CEO and a larger fraction of the target firm's pre-acquisition board of directors are more likely to remain on the board of the combined firm post-acquisition if the acquiring and the target firms are highly socially connected. Target firm size, both in absolute terms and relative to the acquirer, as well as the industry relatedness of the two firms, also increases the likelihood of target board and target CEO retention.

Next, we examine the relationship between social ties and retention at the level of the individual target board member. We compute each target individual director's connection as the percentage of directors on the acquirer's board to which the individual target director is socially connected. Table 10 presents the results of logit regressions modeling the probability of an individual target director being retained on the board of the combined firm post-merger with standard errors clustered by merger deal. Each unit of observation is an individual director of the target firm prior to the merger. The dependent variable is an indicator variable that equals one

when the target director remains on the post-merger board, and the key independent variable is the individual director's connection.

In Columns 1 through 3 of Table 10, we see that the extent of an individual target director's social connection to the acquirer's board has a significantly positive effect on the probability that this director remains on the post-merger board. The coefficient remains significant at the one-percent level after we include the firm-level and deal-level controls as well as year and industry fixed effects. In Column 4, in addition to the control variables and year and industry fixed effects, we also include the average connection between the acquiring and the target firms as an explanatory variable. Consistent with the results in Table 9, the coefficient on Average Connection is positive and highly significant, but more interestingly, the positive coefficient on individual director's connection remains significant at the five-percent level. This indicates that the overall connections between the acquiring and the target firms at the deal level increase an individual target director's probability of retention, but even after accounting for this effect, an individual target director's own connections to the acquirer significantly increase his or her probability of remaining on the board. In other words, it is precisely those individual target directors who are the most connected to the acquirer that are retained on the post-merger board of the combined firm.

Overall, our results suggest that the extent of social ties between the acquirer and the target is an important determinant of target CEO and target board retention in an acquisition. Inefficient retention of the CEO or other top managers and directors on the basis of social connections may be one source of value destruction in mergers between highly socially connected firms.

B. Acquirer CEO Bonus Upon Merger Completion

Next, we examine the relationship between social connections and the remuneration awarded to the acquirer CEO for completing the merger deal. If acquirer CEO compensation partially reflects the board's inclination to complete a deal with a highly socially connected target, then we might expect to see a positive association between our measure of social connections and CEO compensation related to the merger deal. Grinstein and Hribar (2004) find that CEO compensation provided for completion of a merger deal is almost always in the form of a cash bonus, and we therefore focus on bonuses awarded to the acquirer CEO in the year of completion of the merger.¹⁶ We collect data on acquirer CEO bonuses in the year of completion of the merger deal from ExecuComp and acquirer proxy statements including the amount of the bonus and the reason for awarding the bonus.¹⁷ We first examine whether the degree of social connection between the acquirer and the target affects the size of the bonus the acquirer CEO receives upon merger completion. We then investigate whether acquirer CEOs are more likely to be explicitly rewarded for completing transactions with target firms that are highly socially connected to the acquiring firms.

Table 11 reports results of these analyses, with Average Connection as the primary independent variable of interest. Columns 1 to 3 present estimates from OLS regressions where the dependent variable is the bonus (in millions of dollars) awarded to the acquirer CEO in the year of merger completion. Consistent with Grinstein and Hribar (2004), we find that acquirer CEO bonuses are significantly positively related to firm size, profitability, and the relative size of the acquisition. Controlling for these factors and other firm- and deal-level characteristics as well as year and industry fixed effects, we see a positive and significant relationship between

¹⁶ Grinstein and Hribar (2004) document that the remuneration awarded to the acquirer CEO for completing the merger deal is in the form of cash bonus in 97 percent of the cases and that in more than 90 percent of these cases, no other form of compensation related to the deal is provided to the CEO.

¹⁷ Firms are required by the SEC to disclose and discuss the measures on which the CEO bonus is based in the proxy statements.

average acquirer-target connection and the bonuses awarded to the acquirer CEO upon completion of the merger deal.

In Columns 4 to 6, we present estimates from logit regressions where the dependent variable is a dummy variable that equals one if the completion of the deal is cited as a reason in the proxy statement for awarding the bonus to the acquirer CEO. Similar to the results on the size of the bonus, we find that an acquirer CEO is significantly more likely to be explicitly rewarded for completing a deal with a target firm that is highly socially connected to the acquiring firm. Together, these results illustrate that, despite the negative market reaction to the merger announcement, CEOs of acquiring firms that have strong social connections to the targets are rewarded for completion of the deals. These CEOs are thus more incentivized to engage in merger transactions with targets with which acquirer-target social connections are strong, regardless of whether these mergers make sense strategically or intrinsically.

C. Probability of Acquisition

In addition to their effect on acquirer CEO compensation and the retention of top management post-merger, the presence of social ties between directors and executives of an acquirer and a target may have an impact on the probability of a merger occurring in the first place. Indeed, we may expect such an effect given the evidence above about acquirer CEO incentives. Thus, we examine whether an acquisition is more likely to occur between two firms that have a high degree of social connection. The first row of Table 12 reports the average connection between the acquirers and the targets in our sample, which measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target. This measure of 10.60 percent represents the average degree of social connection between the acquirers and the targets we observe in our sample.

For each acquisition in our sample, we then pair the sample acquirer with a random firm drawn from the sample target's industry in the year of the acquisition. We repeat the procedure 500 times and report the average connection calculated for these simulated pairings in Row 2. Similarly, Row 3 of Table 12 reports the average connection between random acquirers and sample targets, which we construct by pairing each sample target with a random firm drawn from the sample acquirer's industry in the year of the acquisition and repeating the procedure 500 times; Row 4 reports the average connection between random acquirers and random targets, which we construct by drawing one random firm from the acquirer's industry and one random firm from the target's industry in the year of the acquisition for each acquisition in our sample, and repeating the procedure 500 times. Rows 2, 3, and 4 can be thought of as the expected average connection between a potential acquirer and a potential target if the pairing of the two firms occurs randomly. The results in Table 12 suggest that the observed degree of social connection between actual acquirers and targets is more than twice as high as what one would expect from randomly pairing up potential acquirers with potential targets. In other words, acquisitions are more likely to take place between two firms that are well-connected to each other through social ties.

This result is consistent with the notion that considerable social connections may potentially result in a lowering of due diligence standards or an inclination to forego opportunities outside of the social network, and it is consistent with the evidence above that social ties are associated with higher acquirer CEO bonuses in the year of merger completion. The fact that mergers are more likely to take place in the presence of social connections could also be explained by the hypothesis that social connections mitigate informational asymmetries by enhancing the flow of information. However, this is inconsistent with the announcement return results showing that rather than improving merger performance, social ties lower value creation in mergers. Next, we turn to post-acquisition performance for further evidence.

D. Post-Merger Performance

If social ties lead an acquirer and a target to be more likely to merge together despite negative valuation effects, then we might expect these acquisitions to be associated with worse post-merger performance. In this section, we investigate whether and how social connections between the acquirer and the target at the time of the acquisition are linked to acquisition success by studying the operating performance of the merged firm as well as the likelihood of the subsequent divestment of the acquired assets.

We first examine changes in the operation and performance measures of the merged firm one year after the acquisition, compared to the asset-weighted averages of similar measures in the acquirer and the target one year before the acquisitions. Studies in the existing literature using accounting-based measures to evaluate merger success yield mixed results.¹⁸ The lack of clear-cut findings is likely due to the possibility that accounting data are too noisy to isolate the effects of mergers, especially when saddled with complications associated with acquisitions such as restatements, write-downs, special depreciation or amortization, and merger costs (Kaplan, 2006). We find that higher social connections between the acquirer and the target at the time of the acquisition are associated with a slightly bigger drop in return on assets (raw or industry-adjusted). In addition, compared to those involved in low-connection transactions, firms that have undertaken high-connection acquisitions experience a larger decrease in Q and a smaller reduction in the total number of employees. These differences, however, are quite noisy and are not statistically significant.

An alternative and arguably cleaner and more direct way to evaluate merger success is to follow acquisitions in time and see whether they are divested subsequently (Ravenscraft and

¹⁸ See, for example, Healy, Palepu, and Ruback (1992), Kaplan and Weisbach (1992), and Maksimovic and Phillips (2001), among other. Kaplan (2006) provides an overview.

Scherer, 1987; Porter, 1987), and in particular, whether the divested acquisitions are considered failures from an *ex post* perspective (Kaplan and Weisbach, 1992). For each acquirer in our sample, we obtain from SDC a list of all the divestitures it has conducted since the completion of the acquisition. We then determine whether each divestiture is related to the assets acquired in the merger by examining the company annual reports and filings and using Factiva news searches. For divested acquisitions, we classify them as unsuccessful if the stated reason for the divestiture is unsatisfactory performance or if the divestiture reports a loss on sale of the assets.¹⁹

In Table 13, we use logit regressions to examine the effect of social connections between the acquirer and the target at the time of the acquisition on the likelihood of a subsequent divestiture of the acquired assets. The dependent variable in Columns 1 to 3 is a dummy variable that takes the value of one if the acquisition has been divested by the acquirer and zero otherwise. The dependent variable in Columns 4 to 6 is a dummy variable that takes the value of one if the acquisition has been divested by the acquirer and the divestiture reports a loss on the sale or is performance-related. The coefficient estimates on Average Connection indicate that social ties between the acquirer and the target are an important determinant of the probability that the acquisition will be subsequently divested and the probability that the divested acquisition is considered a failure. In other words, acquisitions that are considered unsuccessful *ex post* are significantly more likely to have occurred between firms with higher social connections.

Thus, while firms are more likely to merge together in the presence of strong social connections, the fact that they are also more likely to subsequently divest the acquisition for performance-related reasons may indicate that the merger was recognized *ex post* as a bad decision.

¹⁹ The reason for the divestiture is considered performance-related if, for example, the acquisition is reported to have been unprofitable or a mistake. Other, non-performance-related reasons for divesting assets include antitrust, change in corporate strategy, good price, and financing-related, as defined in Kaplan and Weisbach (1992).

5. Conclusion

Social ties have been demonstrated to have an impact on a variety of types of economic activity, and there is a small but growing literature addressing the corporate finance implications of social ties. This paper contributes to a part of that literature that has received relatively less attention: the effect of social connections across rather than within firms. We investigate the impact of social ties on merger performance, focusing on cross-firm ties between directors and senior executives of the acquirer and target. Using data on educational background and past employment, we measure the extent of social connections between the acquirer and target based on the percentage of socially connected pairs, where each pair consists of one individual from the acquirer and one individual from the target.

Using a sample of 539 mergers between 1999 and 2007, we find that more extensive social connections between an acquirer and a target have a negative impact on short-run merger performance. We find that acquirer announcement returns are significantly lower in the presence of social ties. A one-standard deviation increase in the extent of connection decreases the three-day cumulative abnormal return associated with the acquisition announcement by about one percentage point. These results are confirmed in both univariate comparisons and regressions controlling for a variety of firm and deal characteristics. The acquirer announcement return effect does not appear to be explained purely by transfers to the target, since we find no robust evidence of a significant relationship between social ties and target announcement returns. Indeed, the effect of social ties on the acquirer and target weighted average announcement return is found to be significantly negative. In further results, we find that acquirer CEO stock ownership mitigates the negative impact of social ties on announcement returns.

Moreover, our results indicate that acquirer-target social ties significantly increase the likelihood that the target firm's CEO and a larger fraction of the target firm's pre-acquisition board of directors remain on the board of the combined firm after the merger. An individual

target director's connections to the acquirer's directors and senior executives also increase the probability that that target director is retained on the post-merger board. Our results also show that social connections between the target and acquirer significantly increase the acquirer CEO's bonus awarded for completion of the merger deal. We further find that acquisitions are more likely to occur between two firms that are well-connected to each other through social ties and that these acquisitions are subsequently more likely to be divested for performance-related reasons.

This paper demonstrates the impact of cross-firm social ties in the context of one particularly important type of corporate decision, mergers and acquisitions. Mergers also represent a type of corporate event in which connections across firms are likely to be especially relevant because of the interactive nature of the negotiation and decision-making process involved. Overall, the evidence in the paper suggests that social ties between the acquirer and the target are associated with lower value creation for shareholders as a whole, and is consistent with the view that the negative effects of social networks on decision-making in mergers outweigh any positive information-based effects that might be present.

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Table 1
Number of Acquisitions by Year

This table indicates by year the number of acquisitions in our sample. The acquirers and the targets are U.S. public companies. Numbers for the full sample are presented first, followed by a breakout based on the degree of social connection between the acquirer and the target. High Social Connection indicates that the average connection between the acquirer and the target is above sample median. Low Social Connection indicates that the average connection between the acquirer and the target is below sample median.

Year	Full Sample		High Social Connection		Low Social Connection	
	#	%	#	%	#	%
1999	15	2.8%	11	4.1%	4	1.5%
2000	34	6.3%	24	8.9%	10	3.7%
2001	49	9.1%	31	11.5%	18	6.7%
2002	35	6.5%	18	6.7%	17	6.3%
2003	44	8.2%	29	10.7%	15	5.6%
2004	57	10.6%	25	9.3%	32	11.9%
2005	81	15.0%	43	15.9%	38	14.1%
2006	109	20.2%	42	15.6%	67	24.9%
2007	115	21.3%	47	17.4%	68	25.3%
Total	539	100%	270	100%	269	100%

Table 2**Number of Acquisitions by Industry of Acquirer**

This table indicates by industry the number of acquisitions in our sample. Industries are defined by the Fama-French 12-industry categories, and acquisitions are assigned to one of the 12 industry categories based on the SIC code of the acquirer. The acquirers and the targets are U.S. public companies. Numbers for the full sample are presented first, followed by a breakout based on the degree of social connection between the acquirer and the target. High Social Connection indicates that the average connection between the acquirer and the target is above sample median. Low Social Connection indicates that the average connection between the acquirer and the target is below sample median.

Fama-French Industry	Full Sample		High Social Connection		Low Social Connection	
	#	%	#	%	#	%
Consumer nondurables	15	2.8%	8	3.0%	7	2.6%
Consumer durables	4	0.7%	1	0.4%	3	1.1%
Manufacturing	37	6.9%	13	4.8%	24	8.9%
Oil, gas and coal	32	5.9%	17	6.3%	15	5.6%
Chemical products	7	1.3%	3	1.1%	4	1.5%
Business equipment	126	23.4%	71	26.3%	55	20.4%
Telephone and television	23	4.3%	13	4.8%	10	3.7%
Utilities	11	2.0%	6	2.2%	5	1.9%
Wholesale and retail	37	6.9%	16	5.9%	21	7.8%
Healthcare	70	13.0%	57	21.1%	13	4.8%
Finance	135	25.0%	47	17.4%	88	32.7%
Other	42	7.8%	18	6.7%	24	8.9%
Total	539	100.0%	270	100.0%	269	100.0%

Table 3
Summary Statistics

This table presents summary statistics for the acquisitions in our sample, where the acquirers and the targets are U.S. public companies. Numbers for the full sample are presented first, followed by a breakout based on the degree of social connection between the acquirer and the target measured by average connection. Average connection calculates the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. High Social Connection indicates that the average connection between the acquirer and the target is above sample median. Low Social Connection indicates that the average connection between the acquirer and the target is below sample median. Q is defined as the book value of assets (Compustat Industrial Annual Item 6) plus the market value of equity (end-of-year price, Item 199, times end-of-year shares outstanding, Item 25) minus book equity all over assets. Book equity is defined as total assets less total liabilities (Item 181) and preferred stock (Item 10) plus deferred taxes (Item 35) and convertible debt (Item 79). Debt is defined as the sum of long-term debt (Item 9) and debt in current liabilities (Item 34). Cash flow is operating income before depreciation (Item 13). Relative transaction value is calculated as transaction value divided by acquirer market capitalization. A deal is classified as related if the target and the acquirer have the same two-digit SIC code. A pure stock (cash) deal implies that the acquisition is paid for 100 percent with stock (cash). Asterisks denote statistically significant differences between the two sub-samples at the 1% (***) , 5% (**), or 10% (*) level.

	Full Sample		High Social Connection		Low Social Connection	
	Mean	s.d.	Mean	s.d.	Mean	s.d.
Acquirer Characteristics						
Assets (\$ millions)	38,627.33	138,519.00	40,968.96	157,563.70	36,276.94	116,570.10
Q	2.11	1.65	2.41	2.02	1.81 ***	1.09
Debt/Assets	0.21	0.18	0.20	0.17	0.23 **	0.18
Cash flow/Assets	0.11	0.13	0.11	0.15	0.10	0.11
Average connection	10.6%	0.13	18.0%	0.15	3.2% ***	0.02
Deal Characteristics						
Transaction value (\$ millions)	3,509.52	8,903.47	4,788.63	11,338.42	2,230.41 ***	5,195.66
Relative transaction value	0.41	0.51	0.44	0.54	0.38	0.47
Related deals	71.9%	0.45	69.7%	0.46	74.2%	0.44
Pure cash deals	31.7%	0.47	30.7%	0.46	32.7%	0.47
Pure stock deals	23.9%	0.43	29.6%	0.46	18.2% ***	0.39
Number of Observations	539		270		269	

Table 4**Cumulative Abnormal Returns Around Acquisition Announcement**

This table presents the cumulative abnormal returns (CARs) upon acquisition announcement for the acquiring firms, the target firms, and the combined firms. We report CARs over the three-day event window $([-1, +1])$, the five-day event window $([-2, +2])$, and the seven-day event window $([-3, +3])$. Numbers for the full sample are presented first, followed by a breakout based on the degree of social connection between the acquirer and the target measured by average connection. Average connection calculates the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. High Social Connection indicates that the average connection between the acquirer and the target is above sample median. Low Social Connection indicates that the average connection between the acquirer and the target is below sample median. The CAR for the combined firm is calculated as the market value weighted average of the CAR for the acquirer and the CAR for the target. Asterisks denote statistical significance at the 1% (***) , 5% (**), or 10% (*) level.

CARs	Full Sample		High Social Connection		Low Social Connection		Difference between Low and High	
	Mean	s.d.	Mean	s.d.	Mean	s.d.	t-value (t-test)	z-value (Wilcoxon test)
Acquirer								
$[-1, +1]$	-1.97%	0.069	-2.92%	0.072	-1.01%	0.064	3.24 ***	2.45 **
$[-2, +2]$	-1.92%	0.071	-2.96%	0.074	-0.88%	0.066	3.43 ***	2.82 ***
$[-3, +3]$	-2.20%	0.077	-3.42%	0.085	-0.98%	0.066	3.73 ***	2.80 ***
# of obs.	539		270		269			
Target								
$[-1, +1]$	20.06%	0.188	19.97%	0.194	20.15%	0.182	0.11	0.66
$[-2, +2]$	20.63%	0.187	20.42%	0.194	20.85%	0.180	0.26	0.68
$[-3, +3]$	20.92%	0.191	20.66%	0.199	21.19%	0.183	0.31	0.82
# of obs.	519		263		256			
Combined								
$[-1, +1]$	1.04%	0.063	0.45%	0.063	1.64%	0.062	2.17 **	2.02 **
$[-2, +2]$	1.15%	0.065	0.42%	0.067	1.90%	0.062	2.61 ***	2.12 **
$[-3, +3]$	0.94%	0.072	0.09%	0.078	1.83%	0.064	2.78 ***	2.22 **
# of obs.	519		263		256			

Table 5

Regressions for Acquirer Cumulative Abnormal Returns

This table reports results of OLS regressions for acquirer cumulative abnormal returns. The dependent variable is the cumulative abnormal return over the three-day event window (CAR[-1, +1]) for the acquirer. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target. Social connection is defined based on all ties across all the directors and top executives of the acquirer and the target in Columns 1, 2, 10, and 11; based on educational ties across all the directors and top executives of the acquirer and the target in Columns 3 and 4; based on past employment ties across all the directors and top executives of the acquirer and the target in Column 5; based on strong ties across all the directors and top executives of the acquirer and the target in Column 6 where a strongly connected pair is defined as a pair of individuals sharing two or more social ties; based on all ties between the CEO of the acquirer and the directors and top executives of the target in Column 7; and based on all ties across all the directors and top executives of the acquirer and the target calculated using only the top five well-connected education institutions in Column 8 and using only the non-top five educational institutions in Column 9. Control variables include the size, Q , leverage, and cash flow of the acquirer, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	CAR[-1, +1]										
	All Ties	All Ties	Educational Ties	Educational Ties	Employment Ties	Strong Ties	CEO Ties	Top 5 Schools Only	Top 5 Schools Excluded	All Ties	All Ties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Average connection	-0.097*** [0.025]	-0.078*** [0.025]	-0.173** [0.074]	-0.265*** [0.102]	-0.063** [0.025]	-0.287** [0.128]	-0.036*** [0.014]	-0.073*** [0.024]	-0.069*** [0.025]	-0.064** [0.026]	-0.064** [0.026]
Acquirer log assets		-0.003 [0.002]	-0.002 [0.002]	-0.003 [0.002]	-0.003 [0.002]	-0.003 [0.002]	-0.002 [0.002]	-0.002 [0.002]	-0.003 [0.002]	-0.002 [0.002]	-0.002 [0.002]
Acquirer Q		-0.007*** [0.002]	-0.008*** [0.002]	-0.008*** [0.002]	-0.008*** [0.002]	-0.007*** [0.002]	-0.008*** [0.002]	-0.007*** [0.002]	-0.008*** [0.002]	-0.007*** [0.002]	-0.007*** [0.002]
Acquirer debt/assets		0.030* [0.017]	0.029* [0.017]	0.030* [0.017]	0.030* [0.017]	0.032* [0.018]	0.029 [0.018]	0.030* [0.017]	0.030* [0.017]	0.031* [0.018]	0.014 [0.019]
Acquirer cash flow/assets		0.054 [0.037]	0.056 [0.037]	0.056 [0.037]	0.053 [0.037]	0.054 [0.037]	0.057 [0.037]	0.054 [0.037]	0.053 [0.037]	0.054 [0.035]	0.050 [0.037]
Relative transaction value		-0.011 [0.011]	-0.014 [0.011]	-0.014 [0.011]	-0.012 [0.011]	-0.012 [0.011]	-0.013 [0.011]	-0.011 [0.011]	-0.011 [0.011]	-0.008 [0.011]	-0.012 [0.010]
Pure stock deal?		-0.018** [0.008]	-0.018** [0.008]	-0.018** [0.008]	-0.019** [0.008]	-0.017** [0.008]	-0.019** [0.008]	-0.018** [0.008]	-0.019** [0.008]	-0.014 [0.008]	-0.012 [0.008]
Related deal?		-0.004 [0.007]	-0.004 [0.007]	-0.003 [0.007]	-0.003 [0.007]	-0.003 [0.007]	-0.002 [0.007]	-0.004 [0.007]	-0.003 [0.007]	-0.003 [0.007]	-0.003 [0.007]
Year fixed effects	No	No	No	No	No	No	No	No	No	Yes	Yes
Industry fixed effects	No	No	No	No	No	No	No	No	No	No	Yes
Number of observations	539	505	505	505	505	505	497	505	505	505	505
R-squared	0.03	0.10	0.09	0.10	0.09	0.10	0.09	0.10	0.10	0.12	0.17

Table 6
Regressions for Target Cumulative Abnormal Returns

This table reports results of OLS regressions for target cumulative abnormal returns. The dependent variable is the cumulative abnormal return over the three-day event window (CAR[-1, +1]) for the target. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the size, Q , leverage, and cash flow of the target, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	CAR[-1, +1]			
	(1)	(2)	(3)	(4)
Average connection	-0.114* [0.058]	-0.007 [0.066]	0.015 [0.071]	0.050 [0.073]
Target log assets		-0.026*** [0.005]	-0.025*** [0.005]	-0.026*** [0.005]
Target Q		-0.017*** [0.006]	-0.016*** [0.006]	-0.021*** [0.007]
Target debt/assets		-0.046 [0.052]	-0.047 [0.054]	-0.048 [0.055]
Target cash flow/assets		0.028 [0.071]	0.024 [0.074]	0.064 [0.076]
Relative transaction value		-0.051*** [0.016]	-0.051*** [0.017]	-0.053*** [0.016]
Pure stock deal?		-0.058*** [0.018]	-0.054*** [0.018]	-0.053*** [0.018]
Related deal?		0.024 [0.018]	0.022 [0.018]	0.032* [0.018]
Year fixed effects	No	No	Yes	Yes
Industry fixed effects	No	No	No	Yes
Number of observations	519	479	479	479
R-squared	0.01	0.13	0.15	0.21

Table 7**Regressions for Combined Cumulative Abnormal Returns**

This table reports results of OLS regressions for combined cumulative abnormal returns. The dependent variable is the cumulative abnormal return over the three-day event window (CAR[-1, +1]) for the combined firm, calculated as the market value weighted average of the CAR for the acquirer and the CAR for the target. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the total size, Q , leverage, and cash flow of the combined firm, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Q (leverage, cash flow) of the combined firm is calculated as the asset weighted average of Q (leverage, cash flow) of the acquirer and Q (leverage, cash flow) of the target. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	CAR[-1, +1]			
	(1)	(2)	(3)	(4)
Average connection	-0.053*** [0.020]	-0.073*** [0.023]	-0.050* [0.025]	-0.045* [0.026]
Log total assets		-0.005*** [0.002]	-0.004*** [0.002]	-0.004*** [0.002]
Q		-0.005*** [0.002]	-0.005*** [0.002]	-0.005** [0.002]
Debt/assets		0.023 [0.020]	0.026 [0.019]	0.018 [0.021]
Cash flow/assets		0.039 [0.033]	0.035 [0.031]	0.031 [0.033]
Relative transaction value		0.026*** [0.009]	0.027*** [0.009]	0.025*** [0.009]
Pure stock deal?		-0.023*** [0.007]	-0.019** [0.008]	-0.018** [0.008]
Related deal?		3.0E-05 [0.006]	0.001 [0.006]	0.002 [0.007]
Year fixed effects	No	No	Yes	Yes
Industry fixed effects	No	No	No	Yes
Number of observations	519	464	464	464
R-squared	0.01	0.15	0.17	0.21

Table 8

The Effect of Governance and Acquirer CEO Ownership

This table reports results of OLS regressions for acquirer cumulative abnormal returns. The dependent variable is the cumulative abnormal return over the three-day event window (CAR[-1, +1]) for the acquirer. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the acquirer G-index and the acquirer CEO ownership as well as the size, Q , leverage, and cash flow of the acquirer, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. G-index is constructed following Gompers, Ishii, and Metrick (2003). CEO ownership is calculated as the number of shares owned by the CEO divided by the total number of shares outstanding. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***) , 5% (**), or 10% (*) level.

Independent Variables	CAR[-1, +1]					
	(1)	(2)	(3)	(4)	(5)	(6)
Average connection	-0.202 [0.150]	-0.138 [0.135]	-0.079* [0.045]	-0.084* [0.049]	-0.238* [0.140]	-0.169 [0.136]
Average connection * Acquirer G-index	0.015 [0.015]	0.007 [0.013]			0.016 [0.013]	0.009 [0.012]
Acquirer G-index	-0.002 [0.002]	-0.001 [0.002]			-0.002 [0.002]	-0.001 [0.002]
Average connection * Acquirer CEO ownership			2.040* [1.142]	1.428 [1.028]	2.061** [1.027]	1.458 [0.993]
Acquirer CEO ownership			-0.267* [0.161]	-0.179 [0.151]	-0.267* [0.142]	-0.183 [0.144]
Acquirer log assets	-1.2E-04 [0.002]	-1.1E-04 [0.002]	-2.6E-05 [0.002]	-2.2E-04 [0.002]	1.6E-05 [0.002]	-1.3E-04 [0.002]
Acquirer Q	-0.003 [0.002]	-0.003 [0.002]	-0.003 [0.002]	-0.003 [0.002]	-0.003 [0.002]	-0.003 [0.003]
Acquirer debt/assets	0.037** [0.017]	0.020 [0.020]	0.031* [0.019]	0.015 [0.021]	0.034* [0.018]	0.017 [0.021]
Acquirer cash flow/assets	0.042 [0.048]	0.031 [0.053]	0.048 [0.050]	0.037 [0.054]	0.047 [0.050]	0.035 [0.054]
Relative transaction value	-0.033*** [0.011]	-0.031*** [0.011]	-0.034*** [0.011]	-0.033*** [0.011]	-0.034*** [0.011]	-0.033*** [0.011]
Pure stock deal?	-0.026*** [0.009]	-0.023** [0.009]	-0.026*** [0.008]	-0.023** [0.009]	-0.026*** [0.008]	-0.023** [0.009]
Related deal?	-0.004 [0.007]	-0.007 [0.007]	-0.005 [0.007]	-0.007 [0.007]	-0.005 [0.007]	-0.007 [0.008]
Year fixed effects	No	Yes	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes	No	Yes
Number of observations	317	317	317	317	317	317
R-squared	0.15	0.22	0.16	0.23	0.17	0.23

Table 9
Target Board and Target CEO Retention

This table reports results of OLS regressions for target board and target CEO retention. The dependent variable in Columns 1 through 3 is the number of the target's pre-acquisition board of directors who remain on the board of the combined company post-acquisition as a percentage of the combined company's post-acquisition board size. The dependent variable in Columns 4 through 6 is the number of the target's pre-acquisition board of directors who remain on the board of the combined company as a percentage of the target's pre-acquisition board size. The dependent variable in Columns 7 through 9 is a dummy variable that equals one if the target's CEO remains on the board of the combined company post-acquisition and zero otherwise. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the size, Q , leverage, and cash flow of the target, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	Target Board Retention			Target Board Retention			Target CEO Retention		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Average connection	0.295*** [0.057]	0.188*** [0.046]	0.193*** [0.049]	0.343*** [0.063]	0.215*** [0.051]	0.234*** [0.055]	0.482*** [0.169]	0.333** [0.166]	0.288* [0.173]
Target log assets		0.009** [0.003]	0.009** [0.004]		0.011*** [0.004]	0.008 [0.005]		0.022* [0.012]	0.015 [0.015]
Target Q		-0.002 [0.003]	-0.001 [0.003]		-0.004 [0.004]	-0.001 [0.004]		-0.002 [0.015]	0.016 [0.016]
Target debt/assets		-0.033* [0.020]	-0.039* [0.023]		-0.060** [0.026]	-0.062** [0.028]		-0.044 [0.081]	-0.004 [0.091]
Target cash flow/assets		-0.023 [0.019]	-0.019 [0.022]		-0.03 [0.024]	-0.018 [0.026]		-0.057 [0.073]	-0.058 [0.084]
Relative transaction value		0.091*** [0.016]	0.090*** [0.015]		0.116*** [0.021]	0.120*** [0.021]		0.125*** [0.043]	0.142*** [0.046]
Pure stock deal?		0.087*** [0.013]	0.085*** [0.013]		0.104*** [0.018]	0.098*** [0.018]		0.172*** [0.049]	0.148*** [0.050]
Related deal?		0.021** [0.009]	0.020** [0.009]		0.036*** [0.011]	0.030*** [0.011]		0.062* [0.036]	0.043 [0.036]
Year fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
Industry fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
Number of observations	503	458	458	503	458	458	503	458	458
R-squared	0.10	0.42	0.45	0.08	0.39	0.42	0.02	0.12	0.17

Table 10**Individual Target Director Retention**

This table reports results of logit regressions for the probability of an individual director of the target firm being retained on the board of the combined firm post-merger. The dependent variable is a dummy variable that takes the value of one if the individual director of the target firm remains on the board of the combined firm post-merger and zero otherwise. Individual director's connection measures the percentage of the acquirer's board of directors to which the individual target director is socially connected. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the size, Q , leverage, and cash flow of the target, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Marginal effects are reported. Robust standard errors clustered by deal are in brackets. Asterisks denote statistical significance at the 1% (***) , 5% (**), or 10% (*) level.

Individual Target Director Retention				
Independent Variables	(1)	(2)	(3)	(4)
Individual director's connection	0.244*** [0.037]	0.135*** [0.027]	0.108*** [0.028]	0.056** [0.026]
Average connection				0.133*** [0.052]
Target log assets		0.007** [0.003]	0.003 [0.003]	0.004 [0.003]
Target Q		0.001 [0.003]	0.003 [0.003]	0.003 [0.003]
Target debt/assets		-0.018 [0.029]	-0.018 [0.030]	-0.013 [0.031]
Target cash flow/assets		-0.044 [0.029]	-0.043 [0.027]	-0.045* [0.027]
Relative transaction value		0.070*** [0.012]	0.075*** [0.010]	0.073*** [0.010]
Pure stock deal?		0.133*** [0.023]	0.107*** [0.020]	0.100*** [0.020]
Related deal?		0.065*** [0.012]	0.049*** [0.010]	0.050*** [0.010]
Year fixed effects	No	No	Yes	Yes
Industry fixed effects	No	No	Yes	Yes
Number of observations	3524	3240	3240	3240
R-squared	0.03	0.19	0.22	0.22

Table 11
Acquirer CEO Bonus

This table reports results of regressions for acquirer CEO bonus in the year of the deal. Columns 1 to 3 present estimates from OLS regressions where the dependent variable is the bonus (in millions of dollars) awarded to the acquirer CEO in the year of merger completion. Columns 4 to 6 present estimates from logit regressions (with marginal effects reported) where the dependent variable is a dummy variable that equals one if the completion of the deal is cited as a reason in the proxy statement for awarding the bonus to the acquirer CEO. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the size, Q , leverage, and cash flow of the acquirer, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	Acquirer CEO Bonus			Bonus for Merger?		
	(1)	(2)	(3)	(4)	(5)	(6)
Average connection	3.719** [1.459]	3.215*** [1.241]	1.923* [1.116]	0.720*** [0.251]	0.574** [0.247]	0.542** [0.233]
Acquirer log assets		0.427*** [0.080]	0.427*** [0.079]		0.040*** [0.012]	0.041*** [0.014]
Acquirer Q		0.055 [0.045]	0.045 [0.053]		0.021 [0.015]	0.017 [0.018]
Acquirer debt/assets		0.696 [0.576]	0.486 [0.659]		0.029 [0.133]	0.015 [0.147]
Acquirer cash flow/assets		1.928** [0.879]	2.021* [1.151]		0.285 [0.282]	0.231 [0.325]
Relative transaction value		0.489* [0.264]	0.460* [0.250]		0.122*** [0.044]	0.105** [0.044]
Pure stock deal?		0.656* [0.339]	0.422 [0.340]		0.010 [0.058]	0.012 [0.062]
Related deal?		-0.256 [0.216]	-0.350 [0.274]		0.019 [0.047]	0.009 [0.055]
Year fixed effects	No	No	Yes	No	No	Yes
Industry fixed effects	No	No	Yes	No	No	Yes
Number of observations	413	392	392	413	392	389
R-squared	0.04	0.18	0.28	0.04	0.07	0.12

Table 12

Probability of Acquisition and Social Ties

This table examines whether an acquisition is more likely to occur between two firms that have a high degree of social connection between them. The first row reports the average connection between the acquirers and the targets in our sample, which measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Row 2 reports the average connection between sample acquirers and random targets, which we construct by pairing each sample acquirer with a random firm drawn from the sample target's industry in the year of the acquisition and repeating the procedure 500 times. Row 3 reports the average connection between random acquirers and sample targets, which we construct by pairing each sample target with a random firm drawn from the sample acquirer's industry in the year of the acquisition and repeating the procedure 500 times. Row 4 reports the average connection between random acquirers and random targets, which we construct by drawing one random firm from the acquirer's industry and one random firm from the target's industry in the year of the acquisition for each acquisition in our sample, and repeating the procedure 500 times. Asterisks denote statistical significance at the 1% (***) , 5% (**), or 10% (*) level.

		Mean	Difference from (1)
Average connection between acquirers and targets in the sample	(1)	10.60%	
Average connection between			
Sample acquirers and random targets	(2)	4.63%	***
Random acquirers and sample targets	(3)	3.94%	***
Random acquirers and random targets	(4)	4.08%	***

Table 13
Probability of Subsequent Divestiture

This table reports results of logit regressions for the probability of divesting an acquisition. The dependent variable in Columns 1 to 3 is a dummy variable that takes the value of one if the acquisition has been divested by the acquirer and zero otherwise. The dependent variable in Columns 4 to 6 is a dummy variable that takes the value of one if the acquisition has been divested by the acquirer and the divestiture reports a loss on the sale or is performance-related. Average connection measures the percentage of socially connected pairs across the directors and top executives of the acquirer and the target, where each pair consists of one member from the acquirer and one member from the target and social connection is defined based on all ties across all the directors and top executives of the acquirer and the target. Control variables include the total size, Q , leverage, and cash flow of the combined firm, the relative size of the acquisition, a dummy variable indicating whether the transaction is financed 100 percent with stock, and a dummy variable indicating whether the acquirer and the target are in related industries. Q (leverage, cash flow) of the combined firm is calculated as the asset weighted average of Q (leverage, cash flow) of the acquirer and Q (leverage, cash flow) of the target. Marginal effects are reported. Robust standard errors are in brackets. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Independent Variables	Acquisition Divested?			Acquisition Divested and Unsuccessful?		
	(1)	(2)	(3)	(4)	(5)	(6)
Average connection	0.277*** [0.103]	0.352*** [0.132]	0.284** [0.113]	0.107*** [0.039]	0.134*** [0.037]	0.070*** [0.022]
Log total assets		0.035*** [0.009]	0.035*** [0.010]		-0.005 [0.003]	-0.001 [0.002]
Q		-0.006 [0.013]	0.004 [0.013]		-0.003 [0.005]	3.5E-04 [0.002]
Debt/assets		0.099 [0.105]	0.057 [0.098]		0.083* [0.043]	0.030 [0.020]
Cash flow/assets		0.277 [0.237]	0.130 [0.232]		-0.021 [0.077]	-0.032 [0.032]
Relative transaction value		0.030 [0.031]	0.022 [0.034]		-0.062*** [0.021]	-0.025*** [0.009]
Pure stock deal?		0.059 [0.044]	0.037 [0.039]		-0.017 [0.014]	-0.007 [0.006]
Related deal?		-0.027 [0.037]	-0.019 [0.037]		0.012 [0.014]	0.006 [0.006]
Year fixed effects	No	No	Yes	No	No	Yes
Industry fixed effects	No	No	Yes	No	No	Yes
Number of observations	539	472	472	539	472	472
R-squared	0.02	0.08	0.16	0.03	0.11	0.22