Board Connections and M&A Transactions *

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ABSTRACT

This paper examines M&A transactions between firms with current board connections and shows that such transactions generate better merger performance. We find that acquirers obtain significantly higher announcement returns in transactions between connected firms. This result is striking considering such deals involve larger acquirers, public targets, and are more likely to be diversifying acquisitions, three factors shown by earlier research to affect acquirer returns negatively. We also find that acquirers pay significantly lower takeover premiums in connected transactions, consistent with the view that board connections help acquirers avoid overpaying for target firms. In addition, financial advisory fees paid to investment banks are lower in connected acquisitions. Board connections are also positively related to the operating performance of the new firm and negatively related to the probability of forced CEO turnover, suggesting that connected transactions generate better performance in the long run. Finally, we present evidence that the existence of a board connection between two firms has a positive impact on the probability of a subsequent M&A transaction between them. Overall, our results are consistent with the hypotheses that board connections are related to higher quality M&A transactions and that they reduce the degree of asymmetric information between the acquirer and the target about the other's value.

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1. Introduction

This paper examines the role of current board connections between acquirer and target firms in M&A transactions and presents evidence that M&A deals between two firms with a board connection generate better performance. First, we find that acquirers obtain significantly higher announcement returns in such transactions. What makes this result striking is that transactions between connected firms generate higher acquirer announcement returns in spite of the fact that they involve larger acquirers, public targets, and are more likely to be diversifying acquisitions; all three features have been shown by earlier research to affect acquirer announcement returns negatively. Second, we find that post-merger performance is superior when the merging firms are connected.

We focus on two types of board connections between acquirers and targets. The first type is where the two firms share a common director before they undertake an M&A transaction and we refer to this type of connection as a "first-degree connection". The second type is where at least one director from the acquirer and one director from the target have been on the board of a third firm before the deal announcement. We refer to this type of connection as a "second-degree connection". We focus only on *current* board connections in that the acquirer and the target firm must have a connection through their boards at the time of the deal announcement. This is because current board connections are presumably more observable to shareholders and are more important for information sharing than past board connections.

There are several channels through which board connections between acquirer and target firms can affect the performance of a subsequent M&A deal between them. First, it is possible that a board connection prior to an M&A transaction increases the quality and the profitability of the deal. This is because having a board connection between two firms may increase each firm's knowledge and understanding of the other firm's operations, business and corporate culture. Hence, the deal may be expected to lead to a more successful integration of the two firms and realization of expected synergies. This hypothesis, referred to as *deal quality hypothesis*, implies that the presence of a board connection between the acquirer and the target should be positively related to the combined acquirer and target

announcement returns to the extent that these returns can be taken as a measure of value creation from the merger. This hypothesis also implies that the presence of a board connection should be positively related to the long-run operating performance of the new firm after the deal. A final implication is that this increased knowledge mitigates the need for advisory services of investment banks in initiating the transaction and identifying synergy sources. Hence, advisory fees paid to investment banks can be expected to be lower in the presence of a board connection. The predictions of the deal quality hypothesis should be stronger in first-degree connections than in second-degree connections since the positive effect of a board connection on the ability to get to know the other firm and to create synergies is presumably greater in first-degree connections.

The second hypothesis, referred to as *asymmetric information hypothesis*, concerns the asymmetric information between the acquirer and the target. It is possible that connected directors have greater access to inside information in both firms and they share their information with other executives and decision makers at each firm. If the existence of a board connection reduces the level of the asymmetric information between the two firms, the acquirer could be more able to assess the true value of the target firm and, hence, avoid overpaying for the target firm. The connected director's superior information about the target may provide him with a strong bargaining power in the negotiations. These arguments lead to the prediction that acquirer announcement returns should be higher in the existence of a board connection. Naturally, one can also expect that a board connection may increase target firm insiders' ability to assess the true value to the acquirer and to negotiate a better price from the perspective of target firm shareholders. We conjecture, however, that a board connection is more likely to help the acquirer in limiting the extent of overpayment for the target firm. There is overwhelming empirical evidence that acquirers overpay for targets and, as a result, experience negative announcement returns. Targets, on the other hand, extract most of the surplus created in the deal and enjoy sizeable announcement returns. Given this evidence, we expect that the existence of a board connection could limit the extent of overpayment for the target, and lead to a more even allocation of the surplus created from the deal between the acquirer and the target. Finally, similar to the deal quality hypothesis, the

asymmetric information hypothesis also predicts that advisory fees can be lower in connected transactions. There could be less need for investment banks in pricing such deals since acquirer and target firms may be more informed about the true value of each other and possible synergies from the deal. Given that this information advantage is likely to be greater in first-degree connections, this prediction should hold more strongly in the case of first-degree connections.

Although higher acquirer announcement returns observed in connected deals can be consistent with both the deal quality and asymmetric information hypotheses, these hypotheses differ in terms of the reason why acquirers obtain better returns. While the deal quality hypothesis suggests that connected deals are associated with greater value creation, the asymmetric information hypothesis suggests that a board connection increases acquirer's ability to avoid overpayment and to extract a greater portion from the value created by the deal. In other words, deal quality hypothesis concerns the value of surplus created from the deal whereas the information asymmetry hypothesis is related to the allocation of the surplus between the acquirer and the target.

An alternative hypothesis suggests that the presence of a board connection should be associated with lower quality M&A deals. Having a board connection between two firms may make it easier for executives and decision makers to develop personal relationships in social circles outside the firm, and to propose and implement deals with a personal agenda. Such personal relationships may also help executives undertake deals with private benefits such as an attractive job at the new firm or a golden parachute. Hence, this hypothesis, referred to as *agency cost hypothesis*, predicts that M&A transactions between connected firms should exhibit poor merger performance both at the announcement and in the long-run.

We empirically evaluate these hypotheses by studying announcement returns, takeover premiums, financial advisory fees paid to investment banks, long-run operating performance of the new firm as well as forced CEO turnover after deal completion. We find that board connections are positively related to combined announcement returns and operating performance of the new firm in the long-run. Interestingly, when we analyze the first and second-degree connections separately we find that the positive relation

between board connections and the performance of the deal is significant only in the case of second-degree connections. We also find that the likelihood of forced CEO turnover within five years of the deal completion is significantly lower in connected transactions than in non-connected transactions; this result is significant for both first-degree and second-degree connections. These findings are consistent with the deal quality hypothesis that the existence of a board connection increases the likelihood of the two firms representing a better quality match and having greater chances for smooth post-deal integration.

When we analyze acquirer and target announcement returns separately, we find a sharp difference between how board connections affect each type of firm. First-degree connections are positively related to acquirer announcement returns but negatively related to target announcement returns and takeover premiums. We do not observe the same patterns in second-degree connections. Although acquirer shareholders enjoy greater announcement returns in second-degree connections, target announcement returns and takeover premiums are not negatively related to the presence of second-degree connections. These results provide support for the asymmetric information hypothesis. The information advantage of insiders and their ability to avoid overpayment is likely to be greater in first-degree connections. In addition, given that 69.2% of the connected directors in the first-degree connections are executives at the acquirer firm and all of them are retained in the new firm after the deal, it is reasonable to expect that they have greater incentives to negotiate a favorable price for their shareholders and avoid overpaying for the target firm.

The observation that most connected directors in first-degree connections are executives at acquirer firms may suggest a conflict of interest between acquirer and target shareholders. If such executives are more likely to act in the best interest of acquirer shareholders than target shareholders, they may underpay target shareholders at the benefit of acquirer shareholders. While this argument is consistent with our result that offer premiums and target announcement returns are negatively related to the presence of a first-degree connection, a univariate comparison of target abnormal returns shows that target shareholders do not obtain lower announcement returns in first-degree connections, compared to

second-degree connections and non-connected acquisitions. We interpret this result as evidence that board connections help acquirers avoid overpayment rather than acquire target firms below fair value.

Advisory fees provide another piece of supporting evidence for the asymmetric information hypothesis. Although advisory fees are lower in connected transactions than in non-connected transactions, the result is significant only in first-degree connections. This is consistent with the view that insiders' need for investment banks to price and structure the deal is lower in the presence of board connections, particularly in first-degree connections.

We also present evidence that a first-degree board connection between two firms has a positive impact on the probability of a subsequent M&A transaction between them. This result provides support for the asymmetric information hypothesis that board connections may reduce the asymmetric information insiders and executives at one firm face about the true value of the other firm, and increase the likelihood that these two firms undertake an M&A transaction. Note that an alternative explanation for the positive relation between board connections and the probability of a subsequent deal is that two firms planning a merger may initiate a board connection first in order to facilitate the deal. Doing so can help them get to know each other better and understand whether there is a good match between them before they actually merge. Although we cannot completely rule out such a possibility, our data on the date of common directors' appointments to acquirer and target boards does not favor this interpretation. In our sample, a typical connected director serves on the board of the acquirer and/or the target five years before the announcement of the acquisition. Hence, unless M&A transactions are planned or anticipated five years in advance, it is unlikely that firms planning a merger first initiate a board connection to facilitate the planned M&A transaction.

Taken together, while we find evidence consistent with the deal quality hypothesis, the evidence is much stronger for the asymmetric information hypothesis that board connections help reduce asymmetric information between acquirer and target firms. Our results are not consistent with the agency cost hypothesis that board connections are related to inefficient deal making.

There has been a recent and growing interest regarding the role of corporate boards in the M&A activity of a firm. Our paper contributes to this literature by providing new evidence on the role of corporate boards in M&A transactions. Our analysis uncovers a new channel through which board of directors plays a significant role in improving firm performance by facilitating M&A transactions at more favorable prices from the perspective of acquirer firm shareholders. In addition, board connections are associated with better performing deals.

In recent work, Schmidt (2008) investigates the costs and benefits of friendly boards in the context of acquisitions, and finds that more friendly boards are associated with higher announcement returns for acquirers with greater advisory needs. In the case of acquirers with greater monitoring needs, more friendly boards are associated with lower announcement returns. Schonlau and Singh (2009) study whether firms with better networked boards engage in better acquisitions, and find that well-connected firms exhibit better performance in the years after the acquisition. They also show that firms with better connected and more central boards are more likely to make acquisitions as well as to be acquired. Their paper classifies firms with many board connections to other firms as better networked firms and investigates the acquisition activity of such firms, but does not look at direct connections between acquirers and targets—the primary focus of our paper. Being a better networked firm does not necessarily imply that the acquirer and the target are directly connected to each other through their board of directors. Similar to our result on the positive effect of board connections between two firms on the probability of an M&A transaction between them, Stuart and Yim (2009) find that firms whose board of directors possess previous LBO experience are more likely to receive a takeover offer from a private equity firm.

The organization of the paper is as follows. Section 2 introduces our M&A sample and reports summary statistics. Section 3 analyzes the relation between board connections, and acquisition announcement returns and takeover premiums. Section 4 investigates financial advisory fees paid to investment banks in the presence of a board connection. Section 5 examines the relation between board connections, and long-run operating performance and forced CEO turnover after the deal. Section 6

studies the relation between board connections between two firms and the likelihood of a subsequent M&A transaction between them. A final section concludes.

2. Data and Sample Description

Our sample of acquisitions is from Securities Data Company's (SDC) US Mergers and Acquisitions database. We begin with all completed mergers and acquisitions with the announcement date and the effective date between 1996 and 2008. We identify all deals in which both the acquirer and the target are public firms, and the acquirer controls less than 50% of the target before the acquisition announcement and owns 100% of the target after the transaction. We require that both the acquirer and the target have annual financial statement information available from Compustat and daily stock return data from CRSP. We further eliminate small transactions in which the deal value disclosed in SDC is less than $5 million, or less than 1% of the acquirer's market capitalization measured on the sixth trading day prior to the announcement date.

We choose our time period from 1996 to 2008 because the SEC has mandated that all registrants file their documents online using the EDGAR system starting from 1996. The EDGAR database has over 600 different types of forms, and for the purpose of our study, we gather all available proxy statements (Form DEF 14-A). Proxy statements provide detailed information for each director, such as their name, age, working experience, board affiliation, education background, and other useful information. We also supplement our director data with RiskMetrics (formerly IRRC) Directors database. This data is of annual frequency and covers directors of S&P500, S&P MidCaps, and S&P SmallCaps firms. We require that both the acquirer and the target have proxy statements on EDGAR, or have available director information on RiskMetrics in the year immediately prior to the deal announcement. Our final sample consists of 1,664 M&A transactions which meet these criteria.

For each M&A transaction, we read through the director information sections of the acquirer's and the target's proxy statements in the year prior to the acquisition. If the acquirer and the target share a common director, the deal is classified as a transaction with a first-degree connection. Similarly, if at

least one director from the acquirer firm and one director from the target firm sit together on the board of a third company, the deal is classified as a transaction with a second-degree connection. We combine these two types of director connections and create a dummy variable, *Connected transaction*, which equals one if there is a connection through board representation between the acquirer and the target firm, and zero otherwise. Among the 1,664 M&A deals announced between 1996 and 2008, 156 are classified as connected transactions, and the rest 1,508 as transactions with no connections. In 65 out of 156 connected transactions, we have a first-degree connection between the acquirer and the target, and in the remaining 91 transactions we have a second-degree connection. In 11 of the 65 first-degree connections, the connected director is an independent director at both the acquirer and the target. In 45 observations, the connected director is an executive at the acquirer, and in 34 observations he is an executive at the target firm. [1] In the case of second-degree connections, the connected director at the acquirer firm is an independent director in 64 out of 91 transactions, and he is an executive at the acquirer in the remaining 27 transactions. Similarly, the connected director at the target firm is an independent director in 69 transactions, and an executive at the target in the remaining 22 transactions. These patterns suggest that connected directors are less likely to be independent in first-degree connections than in second-degree connections.

Table 1 presents the distribution of our M&A sample by announcement year. Consistent with Moeller, Schlingemann, and Stulz (2004), we find that the number of acquisitions does not increase monotonically through time: it drops significantly in the early 2000s from its highest level in 1999, rebounds back in 2003, and then hits another trough in 2008. In Table 1, we also report the distribution by announcement year for connected transactions and non-connected transactions respectively. These two subsamples present a similar time trend as the overall sample. In terms of dollar deal values, connected transactions represent 19.8% of the overall transaction volume from 1996 to 2008.

[1] Some connected directors are executives at both the acquirer and the target firm, such as being the CEO of the acquirer and the chairman of the target firm. This explains why the sum of independent and executive directors in first-degree connections is greater than the number of first-degree connections.

Table 2 reports the summary statistics for various acquirer, target, and deal characteristics. We describe the variable construction in more detail in the Appendix. The table first presents the means for the full sample, and then for two subsamples based on the presence of a connected director between the acquirer and the target. Acquirers are on average larger, and tend to acquire bigger targets in connected transactions than in non-connected transactions. Quality of corporate governance of acquirer and target firms measured by the GIM index (Gompers, Ishii, and Metrick (2003)) is similar across the two subsamples. The percentage of stock deals, defined as those involving stock financing, is the same in each subsample. Furthermore, connected transactions are more likely to be diversifying acquisitions. We will control for these differences when we analyze performance implications of director connections in our subsequent analysis.

3. Board Connections, Announcement Returns, and Takeover Premiums

3.1 Univariate Analysis

We measure abnormal announcement returns with the standard event study method developed by Brown and Warner (1985). We use the CRSP value-weighted return as the market return and estimate the market model parameters over the period from event day -210 to event day -11. We follow Bradley, Desai, and Kim (1988) and form a value-weighted portfolio of the acquirer and the target with the weights based on their market capitalization at the eleventh trading day prior to the acquisition announcement date. We adjust for toeholds by subtracting the target equity held by the acquirer from the target's market capitalization. Table 3 presents the cumulative abnormal returns (CARs) for acquirer (ACARs), target (TCARs) as well as combined portfolio of acquirer and target firms (PCARs) around acquisition announcements. We report mean and median CARs over three different windows: the standard three-day event window (-1, +1), the five-day event window (-2, +2), and the seven-day event window (-3, +3).

Panel A of Table 3 shows that the full sample mean abnormal returns for acquirers range from -2.15% to -2.23% and are significantly different from zero. Although mean announcement returns for our sample of acquirers are lower than what is reported in other studies such as Fuller, Netter, and

Stegemoller (2002) and Masulis, Wang, and Xie (2007), this is not very surprising given that our sample contains larger acquirers and public targets. The negative ACARs are in line with the evidence in earlier studies that on average M&A transactions destroy value for acquirer shareholders when they involve acquisitions of public targets. Target firms have a positive mean CAR of 20.32%-21.64%. Average PCARs vary from 0.91% to 1.03%, consistent with the positive combined returns documented by Andrade, Mitchell, and Stafford (2001), Moeller et al. (2004), and Wang and Xie (2009). Median CARs show a similar pattern as the means.

We next split the entire M&A sample into two groups based on the presence of a director connection between the acquirer and the target, and summarize the subsample CAR results. For acquirers, mean ACARs are not significantly different from zero in connected transactions, while in non-connected transactions, mean ACARs range from -2.29% to -2.42% and are significantly different from zero at 1% level. This result continues to hold when we break board connections into first-degree and second-degree connections in Panel B. This suggests that acquisitions of public targets do not lead to value destruction for acquirer shareholders if the acquirer and the target firm have a board connection before the acquisition. This result is consistent with both the deal quality hypothesis and the asymmetric information hypothesis. If the deal profitability is positively related to the existence of a board connection, larger acquirer returns in connected transactions could reflect greater value creation in such transactions as long as the acquirer does not overpay for the target. On the other hand, based on the asymmetric information hypothesis, it is possible that acquirers in connected transactions are more informed about the true value of the target firm, and using their informational advantage, they are able to avoid overpayment. Note that while the deal quality hypothesis implies a greater amount of surplus created in connected transactions, the asymmetric information hypothesis implies that the acquirer extracts a greater portion of the total surplus, all else constant. In our subsequent analysis, we will try to distinguish between these two explanations.

Our finding that acquirers experience better announcement returns in connected transactions is remarkable for two reasons. First, numerous studies show that acquisitions of public targets generate

significantly negative abnormal returns for acquirer shareholders. Bradley et al. (1988) report a -3% excess returns to acquirers of 1980s, Wang and Xie (2009) document a -2.9% acquirer announcement return for a sample of acquisitions where both acquirers and targets are covered by the IRRC database, and Moeller et al. (2004) find a -1.7% average abnormal return for large acquirers acquiring public targets over the period from 1980 to 2004. Second, connected transactions generate better performance in spite of the fact that they involve larger acquirers, public targets, and are more likely to be diversifying acquisitions; all three features have been shown by earlier research to affect acquirer announcement returns negatively: Moeller et al. (2004) find that larger acquirers experience lower announcement returns, Fuller et al. (2002) show that acquirer shareholders lose when purchasing a public target, and Morck, Shleifer, and Vishny (1990) report lower acquirer announcement returns for more diversifying acquisitions.

In contrast to acquirer announcement returns, target announcement returns in connected transactions are not significantly different from those in non-connected transactions. Panel A of Table 3 shows that mean TCARs are lower in connected transactions although the difference between the two subsamples is not significant. This result continues to hold when we look at first-degree and second-degree connections separately in Panel B of Table 3.

To gain a better understanding of the drivers of higher acquirer announcement returns in connected deals, we proceed with the analysis of takeover premiums. It is possible that acquirers obtain higher announcement returns in connected transactions since they are able to avoid overpayment for the target firm—one of the most commonly cited explanations in the literature for poor acquirer announcement returns. To investigate this possibility, we obtain a measure of takeover premium from SDC, (PREM4WK), defined as the difference between the offer price and target trading price 4 weeks prior to the announcement date. Panel C of Table 3 compares PREM4WK across connected and non-connected transactions and shows that the premiums are lower in connected transactions, although the difference between the two subsamples is not significant. We continue with an alternative measure of takeover premium proposed in recent work by Baker, Pan and Wurgler (2009). This paper argues that

psychological factors involving reference points and anchors play an important role in pricing M&A transactions. More specifically, the target's 52-week high price represents a reference price to investors and managers, and displays a strong effect on the determination of the offer price for the target firm. The paper finds that offer prices in M&A transactions are often biased toward the 52-week high price of the target and in fact, the 52-week high price is the modal price offered to target firms. In addition, acquirer firm shareholders interpret offer prices driven by the target's 52-week high as overpayment and show a greater negative reaction at the announcement of the transaction.

Following Baker et al. (2009), we define the 52-week target high as the 52-week high stock price of the target firm over the 365 calendar days ending 30 days prior to the announcement date, and define a measure of takeover premium, (PREM52WKH), as the difference between the offer price and the 52-week high price of the target. Panel C of Table 3 shows that, consistent with Baker et al. (2009), 57% of the M&A transactions in our entire sample have an offer price above the target's 52-week high stock price. However, it is significantly less likely to have the offer price above the target's 52-week high price in connected transactions than in non-connected transactions. Furthermore, the mean premium in connected transactions is -7.55% and significantly different from zero at 5% level. In contrast, the mean premium in non-connected transactions is 0.38% and not significantly different from zero. More interestingly, when we separate connections into first-degree and second-degree connections in Panel D of Table 3, we find that the offer premium in first-degree connections is significantly lower than that in second-degree connections. In addition, the probability of setting the offer price above the target's 52-week high price is significantly lower in first-degree connections than in second-degree connections. [2]

These results are important for several reasons. First, they suggest that acquirers in first-degree connected transactions pay lower premiums, which could explain why they experience higher announcement returns. This result is consistent with the view that the ability to avoid overpaying is greater in first-degree connections since the informational advantage of insiders is likely to be greater in

[2] Although the probability of the offer price being above the target's 52 week-high price is greater in second-degree connections than in non-connected transactions, the difference between the two subsamples is not significant.

first-degree connections than in second-degree connections. This finding may provide an explanation for why acquirer announcement returns are greater and target announcement returns are smaller in first-degree connections than in second-degree connections, although the differences across the two subsamples are not significant. It is also consistent with the observation that 69.2% of the directors in first-degree connections are executives at the acquirer firm rather than independent directors and stay in the new firm after the deal. One can expect that connected directors have stronger incentives to avoid overpayment and to create value for acquirer shareholders particularly when they are executives at the acquirer and continue to be employed by the new firm after the deal.

The fact that most connected directors are executives at acquirer firms may suggest a conflict of interest between acquirer and target shareholders. If such executives are more likely to act in the best interest of acquirer shareholders than target shareholders, they may have incentives to underpay target shareholders at the benefit of acquirer shareholders. While this argument is consistent with our result that first-degree connections exhibit lower offer premiums, examining target abnormal returns in Panel B of Table 3 shows that target announcement returns are not significantly lower in first-degree connections, compared to second-degree connections and non-connected transactions. More specifically, target shareholders obtain a 17.35% three-day announcement return in first-degree connections, 21.61% in second-degree connections, and 20.37% in non-connected transactions, and there is no significant difference among these returns. Hence, taken all together, we interpret our findings as evidence that board connections help acquirers avoid overpayment rather than acquire target firms at an unfavorable price from the perspective of target firm shareholders.

Next, we turn our attention to combined portfolio announcement returns of acquirer and target firms. Panel A of Table 3 shows that PCARs are significantly higher in connected transactions than in non-connected transactions and the differences across the two samples are significant at 5% level for all three windows. When we split connections into first-degree and second degree connections in Panel B of Table 3, we find that PCARs are higher in second-degree connections, though the difference between the two subsamples is not significant. To the extent that these returns can be interpreted as a measure of

synergy gains from the deal, this finding is consistent with the deal quality hypothesis that board connections are positively associated with the profitability and the success of the deal due to acquirer and target's previous knowledge and familiarity about each other. They are not consistent with the agency cost hypothesis that board connections are related to inefficient deal making.

Overall, our results from the univariate analysis are consistent with the prediction of the deal quality hypothesis that connected transactions are more likely to combine firms with a better quality match between them and such deals are associated with greater value creation. In addition, our results suggest that acquirers are able to limit the extent of overpayment for targets by offering lower takeover premiums in the case of first-degree connections. Hence, our results document a previously unexplored role of corporate boards in the M&A activity of a firm by showing that board connections mitigate the extent of overpayment in M&A transactions – one of the major reasons why acquirers lose from acquisitions. We do not find support for the agency cost hypothesis: connected deals generate better combined and acquirer announcement returns than non-connected deals. In addition, firms involved in such deals do not exhibit poor quality corporate governance, measured by the GIM index, compared to firms involved in non-connected deals.

3.2 Multivariate Analysis

3.2.1 Board Connections and Announcement Returns

We further explore our univariate results in a multivariate setting including factors which have been shown to affect announcement results by earlier work. Following Moeller et al. (2004), we control for acquirer firm size, relative deal size, method of payment, whether the acquisition is diversifying, deal attitude, deal competition, whether the deal involves a tender offer, whether the deal is a merger of equals, whether both companies are from high-tech industries (Loughran and Ritter (2004)), as well as acquirer and target firm's Tobin's Q, leverage, and profitability. All regressions include year and industry dummies to control for year and industry fixed effects.

Table 4 presents OLS regression results of acquirer CARs over the (-1, +1) window surrounding the acquisition announcement.[3] Our key independent variable is the *Connected transaction* dummy, which equals one if at least one director of the acquirer and one director of the target are connected through same board representation and zero otherwise. In regression (1) we regress ACAR on the *Connected transaction* dummy and other control variables, and find consistent results with our earlier univariate analysis. The *Connected transaction* dummy has a positive and significant effect on acquirer abnormal returns: having a board connection between acquirer and target firms increases the 3-day ACAR by 1.824 percentage points. For our control variables, most of the parameter estimates are consistent with the findings of the previous literature. Consistent with Moeller et al. (2004), we find a strong negative correlation between acquirer size and ACAR. We also find that deals involving stock financing are associated with lower acquirer abnormal returns. In Regression (2), we separate board connections as first-degree and second-degree connections and repeat the baseline regression. We define *1st-degree connected* dummy equal to one if there is a first-degree connection between the acquirer and the target, and zero otherwise. Similarly, *2nd-degree connected* dummy is an indicator variable which equals one if there is a second-degree connection between the acquirer and the target, and zero otherwise. The coefficients on the *1st-degree connected* dummy and *2nd-degree connected* dummy are both positive and significant, implying that both types of director connections are associated with higher acquirer returns.

Table 5 presents the results on target returns where the dependent variable is the 3-day TCAR. We include the same set of control variables as in the ACAR regressions. In Regression (1) we regress TCAR on *Connected transaction* dummy and the control variables, and find that board connections have no significant relation with target returns. However, when we separate board connections into first-degree and second-degree connections in Regression (2), we find that first-degree connections are associated with significantly lower TCARs, while second-degree connections are not related to TCARs. This is consistent with our univariate result that target abnormal returns are lower in transactions with first-

[3] We replicate our baseline results based on CARs measured over different event windows. The results do not change qualitatively.

degree connections, although the difference in the univariate comparison is not significant. As discussed in the previous section, one potential explanation for this result is that directors in first-degree connections have a greater information advantage about the true value of the target firm and hence, are more likely to avoid overpayment. Second, since the majority of them are executives at the acquirer firm, they may have greater incentives to avoid overpayment. We will elaborate more on this point in the next section where we analyze the relation between board connections and takeover premiums.

We examine the announcement returns for the acquirer and the target as a combined portfolio in Table 6 where the dependent variable is the 3-day PCAR. In Regression (1), we use the same control variables as before and find a significant and positive coefficient on the *Connected transaction* dummy. In Regression (2), interestingly only the *2nd-degree connected* dummy is positive and significant, suggesting that deals between firms with a second-degree connection are associated with greater value creation. Since the deal quality hypothesis predicts a stronger positive relation between board connections and deal performance in first-degree connections than in second-degree connections, we interpret this result as partial support for the deal quality hypothesis.

3.2.2 Board Connections and Takeover Premiums

To further investigate whether board connections help acquirers avoid overpayment, we proceed with the multivariate analysis of takeover premiums. We use the same takeover premium measures (PREM4WK and PREM52WKH) as in section 3.1. If connected directors have informational advantage about the true stand-alone value of the target as well as the amount of synergies from the deal, they may have a greater ability to price the deal accurately and lower tendency to engage in psychology pricing by setting the offer price above the 52-week high price of the target. In addition, they may use their information advantage to reduce the extent of overpayment for the target and to allocate the surplus created in the deal more evenly between the acquirer and the target. Hence, we expect takeover premiums to be lower and offer prices to be less likely to exceed 52-week target high in connected deals.

Table 7 reports our results on the relation between board connections and takeover premiums after controlling for firm and deal characteristics that have been shown to affect the level of premiums such as method of payment, industry relatedness of the acquisition, deal attitude, deal competition, whether the deal involves a tender offer, whether the deal is a merger of equals, whether both companies are from high-tech industries, as well as acquirer and target firm size and Tobin's Q (Schwert (2000), Officer (2003), and Moeller et al. (2004)). In regressions (1) and (3), we regress takeover premiums (PREM4WK and PREM52WKH) on the *Connected transaction* dummy and the set of control variables. Although the *Connected transaction* dummy has no significant effect on PREM4WK, it is negatively related to PREM52WKH. In regressions (2) and (4), we separate board connections into first-degree and second-degree connections. We find that first-degree board connections are negatively related to the PREM4WK measure, and both types of connections are negatively related to the PREM52WKH measure. Consistent with our univariate results, the coefficient of the *1st-degree connected* dummy is much more negative than that of the *2nd-degree connected* dummy, supporting the asymmetric information hypothesis that the informational advantage of directors is likely to be greater in first-degree connections than in second-degree connections, and hence, acquirers are more able to avoid overpaying in first-degree connected transactions.

Regression (5) is a Probit regression where the dependent variable is a dummy which equals one if the offer price is greater than or equal to 52-week high price of the target, and zero otherwise. We find a negative relation between board connections and the probability of the offer price being above the target's 52-week high price. In regression (6) where we split board connections into first-degree and second-degree connections, we see that the negative relation between board connection and offer premium is significant only in the first-degree connection case: having a first-degree connection reduces the likelihood of the offer price exceeding the target's 52-week high price by 26.7%. Overall, these results support the view that first-degree board connections increase acquirers' ability to value deals and set offer prices based on true target firm value and true value of synergies. Note that since most connected directors in the first-degree connections are executives at the acquirer firms and all of them are retained in

the new firm after deal completion, one can expect that they have a strong incentive to negotiate a favorable price for acquirer shareholders and to avoid overpaying target shareholders. To the extent that the outside market is aware of this ability, lower premiums offered in connected transactions are consistent with greater acquirer announcement returns.

Our results from the analysis of takeover premiums are consistent with the interpretation that the presence of a first-degree board connection appears to lead to a more fair allocation of the surplus between acquirer and target shareholders by limiting the extent of overpayment for the target, and generates higher acquirer and lower target announcement returns, relative to a situation with no board connection between the two firms. These results do not necessarily imply that target shareholders get underpaid in first-degree connections given that a univariate comparison of target announcement returns shows no significant difference between returns obtained by target shareholders in first-degree connections and second-degree connections as well as in connected and non-connected transactions.

Overall, our findings regarding first-degree transactions are more supportive of the asymmetric information hypothesis while our results concerning second-degree connections are more consistent with deal quality hypothesis that board connections are positively related to the success and profitability of an M&A transaction between the connected firms.

3.3 Additional Analyses and Robustness

Strategic Alliance Effect

One potential explanation for the positive effect of board connections on merger performance could be that M&A transactions between connected firms are preceded by a business relationship between the acquirer and the target firm such as strategic alliances and joint ventures, and formation of such business relationship is positively correlated with one or both firms gaining a board of director from the partner firm. If the two firms in such a relationship end up merging subsequently, such transactions could be expected to generate better performance due to the previous business relationship between the two firms. In other words, existence of previous strategic alliances between the acquirer and the target may be

driving board connections as well as better merger performance. Consistent with this view, Higgins and Rodriguez (2006) find that acquisitions in the pharmaceutical industry generate better announcement returns for acquirer firms if they are preceded by a strategic alliance activity between the acquirer and the target firm.

To understand whether our results are driven by previous business relationships between the acquirer and the target firm, we add two additional control variables into our baseline regressions. The first control is an alliance dummy which equals one if there exists any kind of alliances between the acquirer and the target in the 3 years prior to the acquisition announcement, and zero otherwise. We obtain our alliance data from SDC Joint Ventures/Alliances database. Although the sample of connected transactions exhibits a higher percentage of previous alliances between the acquirer and the target firm than non-connected sample (2.6% vs. 1.1%), the difference is not significant. The second variable we control is acquirer firm's toehold in the target prior to the announcement. Only in 2.6% of the transactions in our sample, the acquirer possesses a toehold in the target prior to launching a bid.

Table 8 reports the regression results with two added controls. Consistent with our baseline findings, the *Connected transaction* dummy continues to have a positive and significant effect on acquirer and combined portfolio announcement returns. Therefore, our results are unlikely to be driven by previous alliances between acquirer and target firms.

Location Effect

Another potential explanation for our findings could be that they are capturing a location effect. Kedia, Panchapagesan, and Uysal (2007) find that acquirer announcement returns in local transactions are higher than those in non-local transactions. If geographically closer firms are more likely to share common board of directors (although we are not aware of any academic study or empirical evidence on this conjecture), our results regarding higher acquirer returns could be driven by geographic proximity of the acquirer and the target firm. Put differently, it could be that geographically closer firms are more

likely to have common directors and to experience greater announcement returns when they announce a merger.

To address this possibility, we add geographic proximity variables into our regression. We obtain data on the city and the state of acquirer and target firms from SDC, and match this data with US Census Bureau Gazettee to get latitude and longitude for each acquirer and target firm. Geographic distance between each acquirer and target is then calculated using the Great Circle Distance Formula.[4] We use the same local transaction dummy as Kedia et al. (2007) and classify an acquisition to be local if the acquirer's headquarter is located within 100km of the target firm. In our connected sample 38% acquisitions are local deals, significantly higher than the 24% in non-connected sample.

Table 9 reports the results. After we control for the location effect, *Connected transaction* dummy continues to have a positive and significant effect on ACAR and PCAR. For robustness check, we replace the local transaction dummy with the natural logarithm of the geographic distances between acquirer and target firms, and find similar results.

4. Board Connections and Advisory Fees

Investment banks play an important role in the market for corporate control. They identify potential target firms, propose high synergy deals, and facilitate M&A transactions (McLaughlin (1990, 1992)). If firms in connected transactions are more informed and knowledgeable about deal profitability and synergy gains, their need for investment banks for initiating, pricing and structuring such deals may be lower, leading to the prediction that transaction costs in connected transactions should be lower. Since each firm's knowledge about the other firm and sources of the synergy in the deal is likely to be greater in first-degree connections, the need for investment banks in first-degree connection should be lower. In addition, if the information asymmetry between the acquirer and the target firm is smaller in first-degree connections, one can also expect a lower need for investment banks in pricing deals with first-degree

[4] $D(a,b) = \arccos\left[\cos(a_1)\cos(a_2)\cos(b_1)\cos(b_2) + \cos(a_1)\sin(a_2)\cos(b_1)\sin(b_2) + \sin(a_1)\sin(b_1)\right] * r$, where a_1 and b_1 (a_2 and b_2) are the latitudes (longitudes) of the two points (in radians) respectively, and r denotes the radius of the earth (approximately 3,963 statutory miles).

board connections. To test this prediction, we collect financial advisor data from SDC. In our sample, an average M&A deal involves one financial advisor for the acquirer and one for the target firm. We do not find any significant difference in the number of financial advisors hired in connected versus non-connected transactions. Similarly when we look at the dollar amount of financial advisory fees as the sum of fees paid to acquirer and target's financial advisors, the difference is not significant across the two subsamples. Because advisory fees are highly correlated with transaction value, we calculate percentage advisory fees by dividing the amount of fees by deal value, and compare percentage fees across two subsamples. Consistent with our conjecture, we find that the percentage fee paid in connected transactions is 0.97%, significantly lower than the 1.34% in non-connected transactions.

To explore this result in a multivariate setting, we run an OLS regression model where we regress advisory fees on the *Connected transaction* dummy and other control variables. Table 10 presents the results on the relation between board connections and advisory fees after controlling for a number of deal characteristics as well as acquirer and target firm size. Regressions (1) and (2) use the natural logarithm of total financial advisory fees as the dependent variable, and Regressions (3) and (4) use the percentage fees paid relative to deal value as the dependent variable. We find that both measures of financial advisory fees are negatively related to the presence of first-degree board connections. This evidence is consistent with our conjecture that the directors in the first-degree connections know more about the true underlying value of the target and potential synergies, leading to a lower need for advisory role of investment banks in initiating and pricing the deal.

5. Board Connections and Post-Acquisition Long-Run Performance

Our findings on combined acquirer and target announcement returns support the hypothesis that connected transactions are associated with greater wealth creation from the acquisition, consistent with the deal quality hypothesis. In this section, we complement this finding by examining the long-run performance of connected transactions after deal completion. If connected directors have superior knowledge about each company's business, operations and culture, they may have a positive effect on the

success of the post-merger integration process and the probability of realizing expected synergies from the deal. Hence, one can expect that connected transactions exhibit better operating performance than non-connected transactions.

We follow Chen, Harford, and Li (2007) and use the ratio of earnings before interest and taxes to total assets (ROA) as a measure of operating performance of the new firm. We subtract the median industry ROA, based on all the firms in the two-digit SIC code of the new firm, from the new firm's ROA to take into account industry-specific factors. To control for the time-series predictability of operating performance, we estimate an AR(1) model where we regress the post-acquisition industry-adjusted five-year average ROA of the new firm on the pre-acquisition industry-adjusted ROA of the acquirer firm. We use the residual from this AR(1) regression as our measure of abnormal change in ROA, denoted by ΔROA. In our sample, while the mean ΔROA is 0.016 for connected transactions, it is only -0.001 for non-connected transactions, and the difference is significant at 10% level.

We next study the relation between board connections and long-run M&A performance in a multivariate setting using the same set of explanatory variables as in our CAR regressions. Table 11 presents the results. Regression (1) shows that the *Connected transaction* dummy has a positive and significant effect on the operating performance measure ΔROA. In Regression (2) where we separate board connections into first-degree and second-degree connections, we find that that only the *2nd-degree connected* dummy has a positive and significant coefficient on ΔROA. This result combined with our earlier finding that combined announcement returns around the acquisition announcement is positively related to second-degree board connections is supportive of the deal quality hypothesis although this hypothesis implies that the positive relation between deal performance and board connections should be stronger in first-degree connections.

5.1 Post-Acquisition Forced CEO Turnover

Lehn and Zhao (2006) study the relation between acquirer returns around acquisition announcements and the probability of subsequent CEO turnover in acquirers, and find that CEOs who

undertake value-reducing acquisitions with poor acquirer announcement returns are more likely to be replaced than CEOs who undertake value-increasing acquisitions. If connected transactions are expected to have a stronger motivation and greater value creation potential, one can expect that the probability of forced CEO turnover after such transactions should be lower. Hence, in this section we examine the likelihood of CEO turnover across connected transactions and non-connected transactions to increase our understanding of the relation between board connections and acquisition performance in the long run.

Our main sources of CEO turnover information are proxy statements, company reports, and news wires from Factiva, LexisNexis, and other online resources. As in Lehn and Zhao (2006), we examine CEO turnover within 5 years of each transaction. Hence, we focus on deals announced before 2004 and exclude delisted acquirers. These restrictions reduce our sample size to 950 among which 102 are connected transactions, and 938 are non-connected transactions. We follow Parrino (1997) and Lehn and Zhao (2006), and classify CEO turnover as forced if it is reported that the CEO is fired or forced to step down, or if the CEO departs due to unspecified policy disagreements. For all other cases, if the departing CEO is younger than age 60 and the news do not cite death, poor health, or the acceptance of another position as a departing reason, or the article reports the CEO is retiring but no retirement plan was announced at least six months ago, then CEO turnover is also classified as a forced turnover. We define a forced CEO turnover dummy variable which equals one if the acquirer's CEO is replaced involuntarily within 5 years of the M&A announcement, and zero otherwise. In our sample of 950 CEOs, 156 are forced out within 5 years of the acquisition. Among them, only 10 CEOs come from the sample of connected transactions, accounting for 10% of the connected transaction sample; 146 CEOs are from non-connected transactions, accounting for 17% of the non-connected transaction sample. This difference is significant at 1% level.

To determine whether the univariate result holds after controlling for other variables associated with forced CEO turnover, we estimate a Probit regression model in which the dependent variable is the probability of forced CEO turnover within five years of acquisition announcement. Similar to Lehn and Zhao (2006), we include 3-day acquirer abnormal returns around the acquisition announcement, CEO age,

CEO tenure, CEO/Chairman dummy, relative deal size, stock deal dummy, and pre- and post-announcement buy-and-hold abnormal stock returns in our regression. Table 12 presents the results. In Regression (1), the *Connected transaction* dummy is negatively related to the probability of forced CEO turnover within the first five years after the transaction. In Regression (2), we separate board connections into first-degree and second-degree connections and find significantly lower CEO turnover rates in both first-degree and second-degree connected transactions. Similar to Lehn and Zhao (2006), we find that CEOs are more likely to get fired in stock financed deals, while CEO turnover likelihood is negatively related to CEO tenure and post-announcement buy-and-hold stock returns. However, in contrast to Lehn and Zhao (2006), we do not find a significant relation between acquirer announcement returns and the probability of CEO turnover after the acquisition.

6. Board Connections and the Probability of a Subsequent M&A Transaction

Having a board connection could reduce the information asymmetry about the profitability and the quality of a match between two firms, and may facilitate an M&A transaction between them. Therefore, the existence of a board connection between two firms could be positively related to observing a subsequent M&A transaction between them. We test this hypothesis following a similar method used in Bodnaruk, Massa, and Simonov (2009).

Ideally, we would like to study the entire corporate universe, identify board connections between any two firms, and follow their subsequent M&A activity. However, this requires a huge and unrealistic amount of data collection effort. Instead, we focus on the RiskMetrics Director database to investigate whether board connections between two firms covered by this database are positively related to observing a subsequent M&A transaction between them. RiskMetrics contains annual director information of S&P 1500 firms starting from 1992. Among those M&A deals in which both the acquirer and the target firm are covered by RiskMetrics database, 9.8% of the deals have board connections. In our overall sample of 1,664 completed M&As in which both the acquirer and the target firm have available proxy statements on EDGAR, 9.4% of the transactions have board connections. Since these two percentages are quite

comparable, we assume that the sample of M&A deals between firms covered by RiskMetrics is a reasonable representation of the entire universe of M&A transactions.

Similar to the methodology adopted in Bodnaruk et al. (2009), for each actual acquirer in our sample of M&A transactions, we define the set of all potential acquirer firms as the ones covered by RiskMetrics in the same 2-digit SIC industry of the acquirer firm with similar size (within 30% band of market capitalization).[5] We perform the same procedure for each actual target firm and find its corresponding set of potential target firms. We then create a matrix where each row of the matrix represents a potential acquirer, and each column a potential target firm. We then use the RiskMetrics Directors database to identify for each pair of firms in the matrix whether there has been a board connection between them, within one year before the announcement of the actual M&A transaction we consider. We create a *board connection* dummy which equals one if a given pair of firms in the matrix have been connected through their board of directors, and zero otherwise. We next estimate a Probit model where the dependent variable equals one if there is an M&A transaction taking place between each pair of firms over the next three months, and zero otherwise. The key explanatory variable is the *board connection* dummy. We follow Bodnaruk et al. (2009) to include a number of control variables such as firm size, Tobin's Q, return on assets, sales growth, leverage ratio, returns and volatility in the prior six months, industry Herfindahl index, and geography proximity of the two firms. Table 13 reports the Probit regression results. In Regression (1), the coefficient on *board connection* dummy is positive and significant at 5% level, indicating that firms with current board connections are more likely to engage in future acquisitions. In Regression (2) where we separate board connections as first-degree and second-degree connections, we find that only first-degree board connections is positively related to observing a subsequent M&A deal between the connected firms. This result is also economically significant: having a first-degree board connection between two firms increases the probability of the two firms engaging in an M&A deal from 0.6% to 3.1%, or more than five times.

[5] We also match based on different industry definition (3-digit SIC codes) or different size band (20%, 40%), and find similar results.

Note that there is a potential reverse causality explanation for our finding that first-degree board connections between two firms have a significantly positive impact on the probability of a future M&A transaction between them. Two firms that have been planning a merger could first initiate a board connection to increase the likelihood of a successful merger between them. To investigate this possibility, we manually collect director tenure data from RiskMetrics, proxy statements (DEF 14A), Factiva, Forbes, and other news sources. We find that, in first-degree connections, a typical connected director spends on average 5.7 years on both the acquirer's board and the target's board before the acquisition announcement. In second-degree connections, connected directors spend 4.1 years on the board of a third firm before the acquisition announcement. These results suggest that connected directors have been with the acquirer and target firms long before the announcement of the deal. It is unlikely that they have been appointed to the board to facilitate a planned acquisition unless M&A transactions have been anticipated 4-5 years before they take place.

7. Conclusions

This paper presents evidence that M&A transactions where the acquirer and the target have a board connection before the acquisition announcement generate better performance for the acquirer both at the announcement and in the long run. In first-degree connected transactions, acquirers pay significantly lower takeover premiums, consistent with the view that board connections help acquirers avoid overpaying for target firms. We also document lower financial advisory fees paid to investment banks in first-degree connections. Examining the long-run performance of connected deals, we find that second-degree board connections are positively related to the operating performance of the new firm and both types of connections are negatively related to the probability of forced CEO turnover after the deal, suggesting that connected transactions perform well in the long run as well. Finally, we find that the existence of a first-degree board connection between two firms has a positive impact on the probability of a subsequent M&A deal between them.

Overall, while our results from the analysis of second-degree connections are consistent with the hypothesis that board connections are positively related to the success and profitability of an M&A transaction between the connected firms, our results from first-degree connections are more supportive of the view that first-degree board connections mitigate the extent of overpayment for the target firm by reducing the degree of asymmetric information between the acquirer and the target. We do not find any evidence suggesting that board connections are associated with inefficient or value destroying deals.

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Appendix: Variable Definitions

Variables	Definitions
Connected transaction	Dummy variable: 1 if there is a connection through board representation between the acquirer and the target, 0 otherwise.
1st-degree connected	Dummy variable: 1 if the acquirer and the target share a common director, 0 otherwise.
2nd-degree connected	Dummy variable: 1 if at least one director from the acquirer firm and one director from the target sit together on a third common board, 0 otherwise.
Panel A: measures of acquisition performance	
ACAR	Cumulative abnormal percentage return for the acquirer using the market model estimated using the return data for the period (-210, -11).
TCAR	Cumulative abnormal percentage return for the target using the market model estimated using the return data for the period (-210, -11).
PCAR	Cumulative abnormal percentage return for a value-weighted portfolio of the acquirer and the target using the market model estimated using the portfolio return data for the period (-210, -11). The weights are based on the market capitalizations of the acquirer and the target at the 6-th trading day prior to the announcement date. The target's weight is adjusted for the acquirer's toehold.
PREM4WK	Premium of offer price to target trading price 4 weeks prior to the original announcement date. This variable is taken from SDC.
PREM52WKH	Premium of offer price to target's 52-week high stock price over the 365 calendar days ending 30 days prior to the announcement date.
OP>=52WKH?	Dummy variable: 1 if the offer price is greater than or equal to the target 52-week high stock price, 0 otherwise.
ΔROA	Residual from a cross-sectional regression of post-acquisition five-year average industry-adjusted ROA on the pre-merger industry-adjusted measure.
Panel B: acquirer and target characteristics	
Firm size	Natural logarithm of market value of equity calculated as the number of shares outstanding multiplied by the stock price at the 11th trading day prior to the acquisition announcement.
Tobin's Q	Market value of assets over book value of assets.
Leverage	Book value of debts over book value of total assets.
OCF/assets	Sales minus the cost of goods sold, sales and general administration expenses, and working capital change, scaled by total assets.
GIM index	Governance index based on 24 antitakeover provisions, taken from GIM (2003).
ROA	Operating income before depreciation, scaled by book value of total assets.
Sales growth	Percentage change in sales over the prior fiscal year.
Lagged returns	Stock return over the six months before the announcement using CRSP daily data.
Volatility	Stock volatility over the six months before the announcement using CRSP daily data.
Industry Herfindahl	Sum of the squares of the sales market shares over all firms within the industry.
Panel C: deal characteristics	
Stock deal	Dummy variable: 1 for deals involving non-zero stock financing, 0 otherwise.
Diversifying acquisition	Dummy variable: 1 if acquirer and target do not share a Fama-French industry, 0 otherwise.
Relative deal size	Natural logarithm of deal value divided by acquirer's market value of equity.
Tender offer	Dummy variable: 1 for tender offers, 0 otherwise.
Hostile	Dummy variable: 1 if a bid is hostile, 0 otherwise.
Competed	Dummy variable: 1 if a deal has competing bidders, 0 otherwise.

Merger of equals	Dummy variable: 1 if the deal is classified as merger of equals by SDC, 0 otherwise.
High tech combination	Dummy variable: 1 if bidder and target are both in high tech industries defined by Loughran and Ritter (2004), 0 otherwise.
Panel D: Other controls	
Alliance dummy	Dummy variable: 1 if there are strategic alliances or joint ventures between acquirers and targets in the three years prior to the announcement, 0 otherwise.
Toehold	Percentage of the target's stock owned by the acquirer prior to the announcement date.
Local transaction dummy	Dummy variable: 1 if the acquirer firm's headquarter is located within 100km of the target firm, 0 otherwise.

Table 1: Sample Distribution by Announcement Year

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The table first presents the number and percentage of acquisitions for each year for the full sample and then for the two subsamples based on the existence of a board connection between the acquirer and the target. Connected transactions refer to M&A transactions where there is a board connection between the acquirer and the target. Non-connected transactions refer to M&A transactions where there is no board connection between the acquirer and the target.

Year	Full Sample		Connected Transactions		Non-Connected Transactions	
	Number	Percentage	Number	Percentage	Number	Percentage
1996	66	3.97	5	3.21	61	4.05
1997	167	10.04	24	15.38	143	9.48
1998	229	13.76	19	12.18	210	13.93
1999	226	13.58	26	16.67	200	13.26
2000	181	10.88	19	12.18	162	10.74
2001	147	8.83	14	8.97	133	8.82
2002	57	3.43	7	4.49	50	3.32
2003	117	7.03	5	3.21	112	7.43
2004	117	7.03	2	1.28	115	7.63
2005	110	6.61	8	5.13	102	6.76
2006	119	7.15	9	5.77	110	7.29
2007	104	6.25	15	9.62	89	5.90
2008	24	1.44	3	1.92	21	1.39
Total	1,664	100.00	156	100.00	1,508	100.00

Table 2: Summary Statistics

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The table first presents the means for the full sample and then for the two subsamples based on the existence of a board connection between the acquirer and the target. Connected transactions refer to M&A transactions where there is a board connection between the acquirer and the target. Non-connected transactions refer to M&A transactions where there is no board connection between the acquirer and the target. All variable definitions are in the Appendix. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	Full Sample	Connected Transactions	Non-Connected Transactions	Diff. b/w Connected and Non-Connected
# of M&As	1,664	156	1,508	
Acquirer Characteristics				
Mkt cap ($Mil.)	11998	17498	11429	**
Tobin's Q	2.15	2.31	2.14	
Leverage	0.21	0.24	0.21	**
OCF/assets	0.10	0.10	0.10	
GIM index	9.25	9.14	9.26	
Target Characteristics				
Mkt cap ($Mil.)	1338	2549	1212	***
Tobin's Q	1.86	1.97	1.85	
Leverage	0.20	0.24	0.20	*
OCF/assets	0.06	0.06	0.06	
GIM index	9.01	9.12	9.00	
Deal Characteristics				
Transaction value ($Mil.)	1926	3596	1754	***
Relative deal size	0.40	0.42	0.39	
Stock deal	0.70	0.70	0.70	
Tender offer	0.14	0.17	0.13	
Diversifying acquisition	0.31	0.40	0.30	**
Competed	0.04	0.04	0.04	
Hostile	0.01	0.01	0.01	
Merger of equals	0.02	0.02	0.02	
High-tech combination	0.23	0.19	0.24	

Table 3: Univariate Comparisons of CARs and Takeover Premiums

This table presents the mean and median of acquirer return (ACAR), target return (TCAR), and combined portfolio return (PCAR) over the three-day, five-day, and seven-day event windows around acquisition announcement dates as well as takeover premiums based on target's previous 4 week stock price (PREM4WK) and previous 52-week high stock price (PREM52WKH). Panel A reports CARs of connected and non-connected transactions, Panel B reports CARs of first-degree connections and second-degree connections, Panel C reports premiums in connected and non-connected transactions, and the fraction of transactions where the offer price (OP) is greater than or equal to 52-week high price of the target. Panel D reports premiums and the fraction of transactions where the offer price is greater than or equal to 52-week high price of the target in first-degree connections and second-degree connections. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: CARs of Connected and Non-Connected Transactions

	Full Sample		Connected Transactions		Non-connected Transactions		Diff. b/w Connected and Non-connected	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
ACAR								
[-1,+1]	-2.15***	-1.46***	-0.80	-0.71	-2.29***	-1.58***	1.48**	0.87**
[-2,+2]	-2.16***	-1.67***	-0.38	-0.61	-2.35***	-1.78***	1.97***	1.17**
[-3,+3]	-2.23***	-1.84***	-0.41	-0.91	-2.42***	-1.93***	2.01***	1.02**
TCAR								
[-1,+1]	20.32***	16.77***	19.84***	17.32***	20.37***	16.71***	-0.53	0.61
[-2,+2]	21.12***	17.96***	21.00***	19.17***	21.13***	17.86***	-0.13	1.31
[-3,+3]	21.64***	18.70***	21.35***	20.99***	21.67***	18.32***	-0.32	2.66
PCAR								
[-1,+1]	0.91***	0.57***	2.03***	1.33***	0.80***	0.50***	1.23**	0.83**
[-2,+2]	1.03***	0.69***	2.34***	2.02***	0.89***	0.63***	1.45**	1.39**
[-3,+3]	0.96***	0.75***	2.37***	2.45***	0.81***	0.64***	1.56**	1.81**

Panel B: CARs of First-Degree Connections and Second-Degree Connections

	First-Degree Connections		Second-Degree Connections		Diff. b/w First and Second Degree	
	Mean	Median	Mean	Median	Mean	Median
ACAR						
[-1,+1]	-0.69	-0.57	-0.89	-0.71	0.20	0.14
[-2,+2]	0.11	0.03	-0.72	-0.62	0.84	0.66
[-3,+3]	-0.03	-1.02	-0.68	-0.73	0.65	-0.29
TCAR						
[-1,+1]	17.35***	15.29***	21.61***	19.47***	-4.26	-4.18
[-2,+2]	18.62***	17.28***	22.70***	20.99***	-4.08	-3.71
[-3,+3]	19.15***	20.28***	22.93***	22.19***	-3.78	-1.91
PCAR						
[-1,+1]	1.40	0.84	2.47***	2.00***	-1.06	-1.17
[-2,+2]	1.92*	1.46*	2.64***	2.10***	-0.72	-0.65
[-3,+3]	1.82	0.38	2.77***	2.64***	-0.95	-2.26

Panel C: Premiums in Connected and Non-Connected Transactions

	Full Sample		Connected Transactions		Non-connected Transactions		Diff. b/w Connected and Non-connected	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
PREMIUM								
PREM4WK	40.46***	33.01***	38.43***	31.50***	40.68***	33.26***	-2.25	-1.76
PREM52WKH	-0.37	4.17	-7.55**	-1.54**	0.38	4.84	-7.93***	-6.39***
OP>=52WKH?	0.57***	1.00***	0.48***	0.00***	0.58***	1.00***	-0.11**	-1.00**

Panel D: Premiums in First-Degree Connections and Second-Degree Connections

	First-Degree Connections		Second-Degree Connections		Diff. b/w First and Second Degree	
	Mean	Median	Mean	Median	Mean	Median
PREMIUM						
PREM4WK	38.02***	30.46***	38.71***	32.33***	-0.69	-1.88
PREM52WKH	-15.65***	-14.04***	-1.51	5.01	-14.14**	-19.04***
OP>=52WKH?	0.31***	0.00***	0.60***	1.00***	-0.29***	-1.00***

Table 4: OLS Regressions of Acquirer Announcement Returns

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable is ACAR, the 3-day cumulative abnormal return of acquirer firms. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Connected transaction dummy	1.824***	
	(3.185)	
1st-degree connected dummy		1.837**
		(1.989)
2nd-degree connected dummy		1.815***
		(2.759)
Acquirer size	-0.432***	-0.432***
	(-3.537)	(-3.514)
Stock deal	-3.106***	-3.106***
	(-7.918)	(-7.910)
Diversifying acquisition	0.349	0.349
	(0.919)	(0.919)
Relative deal size	-1.129***	-1.129***
	(-6.017)	(-6.014)
Tender offer	0.319	0.319
	(0.590)	(0.590)
Hostile	1.442	1.442
	(1.205)	(1.205)
Competed	-0.686	-0.686
	(-0.812)	(-0.813)
Merger of equals	2.481*	2.482*
	(1.701)	(1.699)
High-tech combination	-0.398	-0.398
	(-0.476)	(-0.475)
Acquirer Tobin's Q	-0.481***	-0.481***
	(-3.015)	(-3.012)
Acquirer leverage	1.013	1.013
	(0.801)	(0.800)
Acquirer OCF/assets	4.971**	4.970**
	(2.153)	(2.154)
Target Tobin's Q	0.001	0.001
	(0.004)	(0.004)
Target leverage	0.312	0.313
	(0.309)	(0.309)
Target OCF/assets	-3.183*	-3.183*
	(-1.867)	(-1.867)
Constant	4.065***	4.063***
	(2.781)	(2.776)
Observations	1,664	1,664
Adj. R-squared	0.133	0.133

Table 5: OLS Regressions of Target Announcement Returns

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable is TCAR, the 3-day cumulative abnormal return of target firms. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Connected transaction dummy	-0.352	
	(-0.202)	
1st-degree connected dummy		-4.636*
		(-1.902)
2nd-degree connected dummy		2.776
		(1.218)
Acquirer size	-0.586*	-0.672**
	(-1.830)	(-2.086)
Stock deal	-5.036***	-5.057***
	(-3.757)	(-3.791)
Diversifying acquisition	-0.250	-0.268
	(-0.215)	(-0.231)
Relative deal size	-1.815***	-1.866***
	(-3.683)	(-3.783)
Tender offer	6.875***	6.815***
	(4.000)	(3.985)
Hostile	1.224	1.224
	(0.298)	(0.299)
Competed	-6.156***	-6.315***
	(-3.182)	(-3.243)
Merger of equals	-13.354***	-13.597***
	(-6.533)	(-6.723)
High-tech combination	-3.671*	-3.722*
	(-1.900)	(-1.916)
Acquirer Tobin's Q	0.346	0.362
	(1.125)	(1.173)
Acquirer leverage	-2.817	-2.627
	(-0.833)	(-0.776)
Acquirer OCF/assets	2.340	2.618
	(0.394)	(0.438)
Target Tobin's Q	-1.086***	-1.096***
	(-2.722)	(-2.719)
Target leverage	-4.140	-4.229
	(-1.422)	(-1.454)
Target OCF/assets	-3.442	-3.575
	(-0.919)	(-0.951)
Constant	28.604***	29.072***
	(6.205)	(6.280)
Observations	1,664	1,664
Adj. R-squared	0.122	0.125

Table 6: OLS Regressions of Combined Portfolio Announcement Returns

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable is PCAR, the 3-day cumulative abnormal return of combined portfolio of acquirers and targets. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Connected transaction dummy	1.162**	
	(2.044)	
1st-degree connected dummy		0.394
		(0.466)
2nd-degree connected dummy		1.722**
		(2.410)
Acquirer size	-0.412***	-0.428***
	(-3.484)	(-3.568)
Stock deal	-2.997***	-3.001***
	(-8.086)	(-8.125)
Diversifying acquisition	0.125	0.122
	(0.340)	(0.331)
Relative deal size	0.574***	0.565***
	(3.319)	(3.270)
Tender offer	1.097**	1.086**
	(2.171)	(2.146)
Hostile	2.195	2.195
	(1.547)	(1.540)
Competed	-0.840	-0.868
	(-1.072)	(-1.109)
Merger of equals	-1.885	-1.929
	(-1.352)	(-1.385)
High-tech combination	-0.341	-0.350
	(-0.445)	(-0.456)
Acquirer Tobin's Q	-0.386**	-0.383**
	(-2.478)	(-2.452)
Acquirer leverage	0.909	0.943
	(0.792)	(0.823)
Acquirer OCF/assets	4.012*	4.062*
	(1.826)	(1.843)
Target Tobin's Q	-0.132	-0.133
	(-0.640)	(-0.645)
Target leverage	-1.586*	-1.602*
	(-1.659)	(-1.680)
Target OCF/assets	-1.490	-1.514
	(-0.928)	(-0.943)
Constant	9.396***	9.480***
	(6.358)	(6.405)
Observations	1,664	1,664
Adj. R-squared	0.121	0.122

Table 7: OLS and Probit Regressions of Takeover Premiums

This table presents OLS coefficients and Probit marginal effects of takeover premiums for the sample of completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. Regressions (1) and (2) report OLS regression coefficients where the dependent variable is PREM4WK. Regressions (3) and (4) report OLS regression coefficients where the dependent variable is PREM52WKH. Regressions (5) and (6) report marginal coefficients for Probit regressions where the dependent variable is a dummy which equals one if the offer price (OP) is greater than or equal to 52-week high of target stock price prior to the acquisition announcement, and zero otherwise. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	PREM4WK		PREM52WKH		OP>=52WKH?	
	(1)	(2)	(3)	(4)	(5)	(6)
Connected transaction dummy	-2.641		-9.874***		-0.138***	
	(-1.125)		(-3.315)		(-2.971)	
1st-degree connected dummy		-7.377**		-14.612***		-0.267***
		(-2.008)		(-3.056)		(-3.844)
2nd-degree connected dummy		0.707		-6.253*		-0.037
		(0.252)		(-1.753)		(-0.617)
Log(acquirer market cap)	2.401***	2.363***	1.459**	1.404**	0.015	0.013
	(3.753)	(3.701)	(2.093)	(2.017)	(1.290)	(1.139)
Log(target market cap)	-5.123***	-5.172***	1.284	1.248	0.023*	0.022*
	(-6.916)	(-6.976)	(1.577)	(1.530)	(1.749)	(1.704)
Acquirer Tobin's Q	1.534***	1.555***	0.448	0.471	0.014	0.014*
	(2.582)	(2.609)	(0.628)	(0.660)	(1.587)	(1.647)
Target Tobin's Q	-0.379	-0.387	-1.534*	-1.533	-0.037***	-0.036***
	(-0.493)	(-0.502)	(-1.652)	(-1.637)	(-3.259)	(-3.222)
Stock deal	0.784	0.762	-8.001***	-8.066***	-0.094***	-0.096***
	(0.456)	(0.443)	(-3.842)	(-3.883)	(-2.644)	(-2.709)
Tender offer	5.654**	5.617**	-0.736	-0.837	0.032	0.030
	(2.466)	(2.451)	(-0.262)	(-0.299)	(0.688)	(0.638)
Hostile	13.368**	13.349**	-8.611	-8.686	-0.214	-0.218
	(2.070)	(2.060)	(-1.086)	(-1.101)	(-1.309)	(-1.335)
Diversifying acquisition	2.041	1.994	1.291	1.255	-0.009	-0.010
	(1.150)	(1.125)	(0.687)	(0.668)	(-0.286)	(-0.323)
Competed	8.898**	8.717**	-4.368	-4.563	-0.085	-0.090
	(2.107)	(2.046)	(-1.139)	(-1.183)	(-1.299)	(-1.372)
Merger of equals	-18.633***	-18.901***	-18.090***	-18.246***	-0.287***	-0.290***
	(-5.278)	(-5.351)	(-3.241)	(-3.265)	(-2.723)	(-2.757)
High-tech combination	2.740	2.636	-2.117	-2.278	-0.050	-0.055
	(0.968)	(0.932)	(-0.589)	(-0.634)	(-0.945)	(-1.030)
Observations	1,612	1,612	1,511	1,511	1,511	1,511
Adj./Pseudo R-squared	0.151	0.152	0.121	0.122	0.090	0.093

Table 8: OLS Regressions of Announcement Returns Controlling for Strategic Alliance Effect

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variables are ACAR, TCAR, and PCAR, respectively. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	ACAR	TCAR	PCAR
Connected transaction dummy	1.739***	0.821	1.149*
	(2.924)	(0.450)	(1.920)
Strategic alliance dummy	1.698	-0.347	1.583
	(1.146)	(-0.102)	(1.180)
Toehold	0.022	-0.403***	-0.003
	(0.563)	(-3.165)	(-0.067)
Acquirer size	-0.437***	-0.620*	-0.419***
	(-3.565)	(-1.937)	(-3.522)
Stock deal	-3.101***	-5.177***	-3.001***
	(-7.889)	(-3.864)	(-8.084)
Diversifying acquisition	0.342	-0.225	0.120
	(0.901)	(-0.194)	(0.326)
Relative deal size	-1.128***	-1.900***	0.571***
	(-6.005)	(-3.869)	(3.296)
Tender offer	0.302	7.139***	1.096**
	(0.561)	(4.170)	(2.172)
Hostile	1.487	1.167	2.235
	(1.239)	(0.285)	(1.571)
Competed	-0.726	-6.152***	-0.877
	(-0.860)	(-3.194)	(-1.119)
Merger of equals	2.404*	-13.350***	-1.958
	(1.656)	(-6.525)	(-1.405)
High-tech combination	-0.430	-3.543*	-0.364
	(-0.512)	(-1.828)	(-0.473)
Acquirer Tobin's Q	-0.475***	0.310	-0.382**
	(-2.959)	(1.011)	(-2.441)
Acquirer leverage	1.021	-2.896	0.912
	(0.809)	(-0.856)	(0.797)
Acquirer OCF/assets	4.874**	2.628	3.937*
	(2.107)	(0.444)	(1.789)
Target Tobin's Q	-0.006	-1.025***	-0.134
	(-0.028)	(-2.588)	(-0.647)
Target leverage	0.320	-4.069	-1.575*
	(0.316)	(-1.406)	(-1.648)
Target OCF/assets	-3.114*	-3.344	-1.419
	(-1.819)	(-0.890)	(-0.881)
Constant	4.065***	28.597***	9.396***
	(2.778)	(6.195)	(6.353)
Observations	1,664	1,664	1,664
Adj. R-squared	0.133	0.125	0.121

Table 9: OLS Regressions of Announcement Returns Controlling for Location Effect

The sample consists of 1,664 completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variables are ACAR, TCAR, and PCAR, respectively. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	ACAR	TCAR	PCAR
Connected transaction dummy	1.764***	-0.192	1.154**
	(3.078)	(-0.111)	(2.021)
Local dummy	0.365	-0.970	0.047
	(0.919)	(-0.879)	(0.124)
Acquirer size	-0.424***	-0.607*	-0.411***
	(-3.447)	(-1.881)	(-3.436)
Stock deal	-3.121***	-4.995***	-2.999***
	(-7.932)	(-3.730)	(-8.065)
Diversifying acquisition	0.350	-0.252	0.125
	(0.922)	(-0.217)	(0.340)
Relative deal size	-1.131***	-1.811***	0.574***
	(-6.031)	(-3.677)	(3.315)
Tender offer	0.335	6.830***	1.099**
	(0.619)	(3.975)	(2.171)
Hostile	1.431	1.253	2.194
	(1.188)	(0.305)	(1.545)
Competed	-0.688	-6.152***	-0.840
	(-0.816)	(-3.184)	(-1.072)
Merger of equals	2.403	-13.144***	-1.895
	(1.640)	(-6.423)	(-1.356)
High-tech combination	-0.415	-3.626*	-0.344
	(-0.495)	(-1.877)	(-0.447)
Acquirer Tobin's Q	-0.486***	0.359	-0.387**
	(-3.042)	(1.162)	(-2.480)
Acquirer leverage	1.054	-2.925	0.914
	(0.836)	(-0.862)	(0.797)
Acquirer OCF/assets	4.990**	2.291	4.015*
	(2.159)	(0.386)	(1.826)
Target Tobin's Q	0.002	-1.089***	-0.132
	(0.010)	(-2.720)	(-0.639)
Target leverage	0.332	-4.192	-1.584*
	(0.329)	(-1.438)	(-1.653)
Target OCF/assets	-3.188*	-3.430	-1.490
	(-1.871)	(-0.914)	(-0.928)
Constant	3.934***	28.951***	9.379***
	(2.682)	(6.255)	(6.271)
Observations	1,664	1,664	1,664
Adj. R-squared	0.133	0.122	0.121

Table 10: OLS Regressions of M&A Financial Advisory Fees

The table presents OLS regression results of M&A financial advisory fees for the sample of completed US mergers and acquisitions between 1996 and 2008. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable in (1) and (2) is the natural logarithm of dollar value of total advisory fees. The dependent variable in (3) and (4) is the percentage of total advisory fees relative to transaction value. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	Log (dollar fees)		Percentage fees	
	(1)	(2)	(3)	(4)
Connected transaction dummy	-0.246**		-0.202*	
	(-2.244)		(-1.959)	
1st-degree connected dummy		-0.594**		-0.658***
		(-2.544)		(-3.276)
2nd-degree connected dummy		-0.102		-0.013
		(-0.879)		(-0.119)
Log(deal value)	0.716***	0.698***	-0.361***	-0.384***
	(8.242)	(8.100)	(-2.629)	(-2.828)
Log(acquirer market cap)	-0.030	-0.035	-0.037	-0.043
	(-0.900)	(-1.036)	(-0.666)	(-0.781)
Log(target market cap)	0.033	0.048	0.047	0.067
	(0.384)	(0.563)	(0.344)	(0.493)
Stock deal	-0.048	0.001	-0.269	-0.205
	(-0.458)	(0.010)	(-1.198)	(-0.893)
Diversifying acquisition	0.043	0.049	0.029	0.037
	(0.716)	(0.820)	(0.308)	(0.392)
Tender offer	0.230**	0.282***	0.019	0.087
	(2.528)	(2.943)	(0.104)	(0.461)
Merger of equals	-0.077	-0.089	-0.005	-0.021
	(-0.596)	(-0.686)	(-0.034)	(-0.131)
Hostile	0.226	0.210	0.060	0.039
	(1.414)	(1.292)	(0.357)	(0.230)
Competed	-0.024	-0.016	0.223	0.234
	(-0.112)	(-0.074)	(1.151)	(1.208)
High-tech Combination	0.022	0.020	-0.048	-0.051
	(0.188)	(0.167)	(-0.209)	(-0.220)
Constant	-3.006***	-2.963***	3.574***	3.630***
	(-8.223)	(-8.595)	(7.726)	(8.139)
Observations	446	446	446	446
Adj. R-squared	0.834	0.836	0.420	0.426

Table 11: OLS Regressions of Long-Run Operating Performance

The sample presents OLS regression results of long-run operating performance for the sample of completed US mergers and acquisitions between 1996 and 2005. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable is ΔROA, defined as the residual from a cross-sectional regression of the post-acquisition five year average industry-adjusted ROA on the pre-merger measure. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Connected transaction dummy	0.014*	
	(1.800)	
1st-degree connected dummy		0.009
		(0.870)
2nd-degree connected dummy		0.018*
		(1.648)
Acquirer size	0.001	0.001
	(0.717)	(0.625)
Stock deal	-0.006	-0.006
	(-1.058)	(-1.043)
Diversifying acquisition	-0.012**	-0.012**
	(-2.395)	(-2.410)
Relative deal size	-0.005**	-0.005**
	(-2.496)	(-2.515)
Tender offer	0.004	0.004
	(0.570)	(0.570)
Hostile	0.012	0.012
	(0.843)	(0.839)
Competed	-0.009	-0.009
	(-0.922)	(-0.942)
Merger of equals	0.002	0.002
	(0.131)	(0.103)
High-tech combination	-0.027**	-0.027**
	(-2.323)	(-2.337)
Acquirer Tobin's Q	0.002	0.002
	(1.046)	(1.059)
Acquirer leverage	0.041**	0.042**
	(2.338)	(2.374)
Acquirer OCF/assets	0.042	0.043
	(0.986)	(0.999)
Target Tobin's Q	0.006*	0.006*
	(1.822)	(1.823)
Target leverage	-0.010	-0.010
	(-0.642)	(-0.649)
Target OCF/assets	0.026	0.025
	(1.060)	(1.051)
Constant	-0.052***	-0.052***
	(-3.023)	(-2.986)
Observations	1,007	1,007
Adj. R-squared	0.224	0.223

Table 12: Probit Regressions of Forced CEO Turnover

This table presents the marginal effects from Probit regression of forced CEO turnover for the sample of completed US mergers and acquisitions between 1996 and 2003. Both the acquirer and the target are public firms with complete CRSP and Compustat information, and have proxy statements on EDGAR or have available data on RiskMetrics in the year immediately prior to the acquisition announcement. The dependent variable is the forced CEO turnover dummy which equals one if acquirer's CEO was forced out within five years of the acquisition announcement, and zero otherwise. Definitions of the independent variables are in the Appendix. All regressions control for calendar year-fixed effects and industry fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Connected transaction dummy	-0.079**	
	(-2.401)	
1st-degree connected dummy		-0.079*
		(-1.646)
2nd-degree connected dummy		-0.074*
		(-1.801)
ACAR[-1,+1]	-0.001	-0.001
	(-0.743)	(-0.741)
Stock deal	0.026	0.026
	(0.937)	(0.938)
CEO age	-0.006***	-0.006***
	(-3.569)	(-3.574)
CEO tenure	-0.008**	-0.008**
	(-2.480)	(-2.476)
Relative deal size	0.009	0.009
	(0.861)	(0.866)
CEO/Chairman	-0.017	-0.018
	(-0.528)	(-0.531)
Pre-BHAR	-0.019	-0.019
	(-0.632)	(-0.631)
Post-BHAR	-0.045***	-0.045***
	(-3.055)	(-3.054)
Observations	923	923
Pseudo R-squared	0.114	0.114

Table 13: Probit Regressions of the Probability of M&A Transactions

This table presents the marginal effects from Probit regressions for estimating the probability of M&A transactions. For each acquirer (target), we define the set of all potential acquirer (target) firms as the ones in the same 2-digit SIC industry with similar size (within 30% band of market capitalization). The dependent variable is a dummy which equals one if there is a M&A transaction taking place between potential acquirers and potential targets, and 0 otherwise. Definitions of the independent variables are in the Appendix. All regressions control for industry and year-fixed effects whose coefficients are suppressed for brevity. T-statistics based on standard errors adjusted for heteroskedasticity (White (1980)) and firm clustering are reported in parentheses. ***, **, and * stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Board connection dummy	0.003**	
	(1.992)	
1st-degree connected dummy		0.025***
		(3.946)
2nd-degree connected dummy		0.000
		(0.334)
Located in the same area (0,1)	0.007***	0.007***
	(5.162)	(4.928)
Acquirer Characteristics		
Log assets	0.001***	0.001***
	(6.228)	(6.452)
Tobin's Q	-0.000	-0.000
	(-0.355)	(-0.340)
Leverage	-0.002	-0.002
	(-0.940)	(-0.885)
ROA	0.012***	0.011***
	(3.256)	(3.247)
Sales growth	0.000**	0.000**
	(2.460)	(2.485)
Lagged returns	0.002***	0.002***
	(4.302)	(4.185)
Volatility	0.000	0.000
	(0.508)	(0.552)
Industry Herfindahl	-0.031	-0.031
	(-1.172)	(-1.187)
Target Characteristics		
Log assets	0.000	0.000
	(1.172)	(1.275)
Tobin's Q	0.000	0.000
	(1.028)	(0.611)
Leverage	0.002	0.002
	(1.167)	(1.210)
ROA	0.001	0.002
	(0.467)	(0.548)
Sales growth	-0.000	-0.000
	(-0.620)	(-0.561)
Lagged returns	0.000	0.000
	(0.470)	(0.479)
Volatility	0.000	0.000
	(0.378)	(0.332)
Industry Herfindahl	0.043***	0.043***
	(3.026)	(3.008)
Observations	30,040	30,040
Pseudo R-squared	0.176	0.181