

Hiring Merger-counterparty's Ex-advisor as M&A Advisor: Causes and Consequences

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Abstract

We examine a large sample of merger transactions and find that both acquirers and targets exhibit a propensity to hire the merger counterparty's ex-banks to advise on the deal, and this propensity is more pronounced in friendly deals. When acquirers hire targets' ex-advisors, they pay lower premiums and obtain a higher proportion of merger synergies. The corresponding targets exhibit lower announcement returns and are less likely to be propositioned by competing bidders. These results suggest that acquirers amplify their bargaining advantage in merger negotiations by hiring target firms' ex-advisors. However, when targets hire acquirers' ex-advisors, there are no discernible value effects on either firm.

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I. Introduction

Mergers and acquisitions are typically characterized by information asymmetry between the merging firms as well as between the firms and the market. The exchange and transmission of information between deal participants may therefore influence several aspects of the transaction such as cumulative abnormal return and premium paid for the transaction. Any reduction in information asymmetry may also reduce bargaining and transaction costs, resulting in better overall deal outcomes. By virtue of their prior relationships, banks typically have access to “inside” information about firms. When hired as merger advisors they are therefore well placed to act as conduits, resulting in greater information flow and communication between firms.¹

In this paper, we examine the economic causes and implications of choosing merger advisors. In particular, we focus on aspects that have been largely unexplored in empirical work - namely banks’ prior relationships with the merger counterparty. We consider these relationships from perspectives of acquirers and targets separately as firms’ incentives for choosing a particular advisor (and consequences of this choice) may be quite different. We expect acquirers to have strong incentives to hire targets’ former advisors as it may reduce the need to produce new information about the target, allow accurate estimation of potential synergies, engender bargaining power, and potentially provide competitive advantage over probable rival bidders.² Although similar incentives are valid from target firms’ perspective, they come with one big caveat - as targets normally cease to exist as standalone companies if the mergers succeed, they cannot use the promise of future businesses to lure acquirers’ former advisors to accept the advisory mandate.

¹ Advisors may be hired for several reasons such as their reputation, acquirer experience, deal complexity, and target business structure (e.g., Servaes and Zenner 1996, Rau 2000, Kale, Kini, and Ryan 2003).

² Although overbidding problem can be alleviated by acquiring the target using stocks (Hansen 1987) or by installing risk management devices such as a termination fee provision (Officer 2003), it can also be mitigated by hiring the target’s previous advisor who has better knowledge about the value of the target.

It is, however, important to note that banks may not always agree to advise a firm under the circumstances discussed above. In hostile takeovers, if hiring merger-counterparty's bank is perceived as creating a channel for potentially transmitting firm-sensitive information, it may negatively affect the bank's reputation in the market and even lead to litigation. For example in 2003 Dana Corp – who was the target of a hostile bid by ArvinMeritor – filed a lawsuit in New York against UBS (who advised the acquirer) and illustrates a circumstance when the acquirer engages the services of target's financial advisor –

According to the lawsuit, UBS has acted as an investment banker and financial adviser to Dana on a "significant corporate project" since "at least" March 2002. UBS provided "substantial financial and investment advice" to Dana with respect to the project from March 2002 through the end of May, the lawsuit said...As recently as May 23, Dana and UBS met to discuss "current material, non-public" information about Dana, the lawsuit said.(Dow Jones Corporate Filings Alert, August 5 2003)³

The potential of being sued and consequent damage to its reputation may therefore limit a bank's ability to accept mandates under such circumstances. There is however, no explicit law or regulation that prohibits banks from providing advisory services to the merger counterparty. The mandated disclosure requirements under current SEC rules require disclosure of material relationships only in the past two years between the financial advisor and the parties to the underlying transaction and any compensation received as a result of that relationship.⁴ This (and other similar instances) suggests that a firm is more likely to succeed in hiring a merger-counterparty's bank for non-hostile transactions. Further, and even in the absence of such conflicts, it is reasonable to assume that the acquirer and target are likely to initially disagree on

³ ArvinMeritor withdrew its offer on November 23, 2003 and Dana reached an out-of-court settlement (terms undisclosed) with UBS in December 2003.

⁴ See Item 1015(b)(4) of Regulation M-A under the Securities Exchange Act of 1934. This regulation has recently been used in *Art Technology Group Inc. Shareholders Litigation* (2010) whereby the Delaware Supreme Court enjoined the acquisition of Art Technology Group Inc. by Oracle Corporation, and required the financial advisor to Art Technology to disclose a description of the type of services the advisor had performed for Oracle and the aggregate compensation paid by Oracle to the financial advisor for the prior four years (Hughes, 2012).

some deal aspects such as premiums, employing a bank with merger-counterparty relationship may greatly facilitate the negotiations resulting in amicable outcomes. The presence of a bridge may nonetheless lead to more efficient transactions overall and an orderly transfer of control.⁵ Therefore, the first open empirical question is simply “how prevalent is it for firms to hire merger-counterparty’s former banks in a proposed transaction?” A second set of related and open questions relate to the outcomes of such transactions – do they create value for acquirers and targets? Do they affect the distribution of synergy gains between the merging firms? Do they affect the existence of competing bids? Our analysis addresses these issues by first examining firms’ propensity to hire merger-counterparty’s ex-advisor, followed by investigating the effects of this advisor choice on the shareholders’ wealth of acquirers and targets.

Using a sample of 4,491 acquisitions undertaken between publicly listed and US-domiciled firms between 1985 and 2008, we observe that 8.1% of acquirers hire target’s ex-advisor to advise on the deals, given that target firms have hired merger advisors in the past. The frequency of targets hiring acquirer’s past bank is higher – 13.1% of targets make a similar decision, conditional on that acquirers have ex-advisors from past transactions.⁶ When the advisor choice is analysed in a multivariate setting, our results suggest that both acquirers and targets are significantly more likely to hire merger-counterparty’s ex-bank even after controlling for their (own) prior relationship with the bank, bank’s industry expertise and its relationship with other intra-industry competitors, and its market share of mergers and acquisitions. Additionally, the propensity of firms to hire merger counterparty’s ex-bank is only significant for

⁵ A special case is that both acquiring and target firms employ the same advisor. Agrawal et al. (2011) find that common advisors are not associated with better deal outcomes. In our sample, common advisors only exist in roughly 4% of the deals that involve hiring merger-counterparty’ ex-advisors

⁶ The conditional probabilities are higher if we consider banks that have served as underwriters in the past. Acquirers hire target’s ex-underwriter in about 12.1% of the cases, whereas targets hire acquirer’s ex- underwriter in about 17.9% of the cases.

friendly deals, a result that underscores the notion that banks themselves may be averse to accepting such mandates in contentious deals.

When we examine the value effect of acquirers hiring target's ex-bank, our results suggest that it does not influence acquirer abnormal announcement returns. However, target abnormal returns are significantly and negatively affected, implying that target firms may be at a bargaining disadvantage under these circumstances. On analyzing the situation whereby the target hires acquirer's ex-bank, our results show that this variable has no effect on either acquirer or target abnormal returns. We further augment this analysis by evaluating the effects of these decisions on premiums paid by the bidding firms. Controlling for known determinants of premiums, results show that when acquirer hires target's ex-bank, it pays lower premium but the hiring of acquirer's ex-bank does not influence the premiums in any way. Taken together these results suggest that although there are value-related benefits from hiring merger-counterparty's ex-banks, these benefits are asymmetric – they accrue to the acquirers but not to the targets.

We also test for the possibility that acquirer's hiring of target's ex-bank may deter subsequent bidders from entering the contest – the likely facilitation role of the bank (and any resulting informational advantage) for the incumbent bidder may be unsurmountable. Our results support this conjecture and indicate that when the acquirer hires target's ex-bank, the likelihood of competing bid is lower, as is the number of competing bids. Further, our analysis also indicates a negative relation between acquirer's hiring of target's ex-bank and target's share of total synergy gains, which suggests that targets may be at a bargaining disadvantage under these circumstances.

The rest of the paper proceeds as follows. Section II briefly reviews the relevant literature and develops our hypotheses. Section III describes our sample, variable construction, and the

empirical methodologies. Main results are presented in Section IV, followed by robustness checks in Section V. Section VI concludes.

II. Literature Review and Hypothesis Development

We begin by reviewing the literature that has examined the role of banks in information transmission in mergers and acquisitions. Ivashina et al. (2009) examine the influence of lending banks on the likelihood of a client firm becoming a takeover target, whereby the acquirer is also a client of the same bank.⁷ This effect is stronger the higher the number of same-industry clients served by the bank, further suggesting that lending banks play a significant role by transmitting target specific information (generated during normal course of lending) to acquirers. Ivashina et al. (2009) also show that by acting as intermediaries banks transfer debt (and hence their exposure) from weak borrowers to strong borrowers. The role of banks as conduits for information transmission has also been examined in special cases where the same bank advises both the acquirer and the target (Agrawal et al. 2011). The presence of “common advisors” however does not lead to better deal outcomes (when compared with deals advised by separate banks) there are no discernible wealth effects for acquirers or targets, and deals are not completed any sooner than otherwise.

Extant literature has also examined other direct channels of communication between merging firms. Cai and Sevilir (2012) study mergers between firms whose boards are connected directly (share a common director) or indirectly (a director from acquirer and target each sits on a third board). Their results suggest that direct connections are indeed beneficial - acquirers obtain significantly higher announcement returns and pay lower premiums. Board connections are also

⁷ Allen et al. (2004) analyze cases whereby a firm hires its commercial bank as its merger advisor. Targets that hire their own commercial banks experience higher announcement returns, whereas there is no such effect for acquirers.

positively related to the operating performance of the new firm and negatively related to the probability of forced CEO turnover, suggesting that connections are related to higher quality transactions, and that they reduce the degree of asymmetric information between the acquirer and the target about the other's value. On the other hand, Ishii and Xuan (2011) study the effects of social ties between acquirer and target directors and find that they have a significantly negative effect on the abnormal returns to the acquirer and to the combined entity upon merger announcement. They also find that acquirer CEOs are compensated more for completing mergers with connected targets, and conclude that social ties between the acquirer and the target lead to poorer decision-making and lower value creation for shareholders.

It is reasonable to argue that if firms are not entirely willing to negotiate a merger or a takeover, bank's role may be seen more as that of "information leakage" rather than that of "information transmission". In a more general setting, Asker and Ljungqvist (2010) examine the influence of potential information leakage on firms sharing underwriters with competitors and on the extent of competition amongst banks providing such services. A firm's strategically sensitive information (e.g. operational efficiency, customer/supplier relationships, progress on research and development projects etc.) is valuable to a product-market rival and may inhibit sharing of underwriters (for both equity and bond issuance) between large firms in an industry (Asker and Ljungqvist 2010). Their results suggest that firms' concerns about informational frictions make them reluctant to share a bank with major product-market rivals and that these issues pose an endogenous limit on banks' market power.⁸ Further, the threat of leakage exists in both directions – the advisor may leak information about its other clients (who are the source of its industry expertise, which in turn, allows for efficient issuance of equity and debt) to the new client or it may leak client-related information to other firms. As these firms will continue to compete with

⁸ Anand and Galetovic (2000), Azoulay (2004), and Baccara (2007) examine various aspects of this proposition.

each other in the future and therefore any “loss” due to information leakage may indeed be quite large. As illustrated by the previously cited example of the lawsuit between Dana Corp. and UBS, concerns about information leakage may especially be valid in hostile deals whereby a merging firm engages the services of the merger counterparty’s ex-bank. Calomiris and Singer (2004) document 52 instances of large (target value > \$1 billion) hostile takeovers and suggest that buyers who are advised by banks with prior relationship with targets may be more discriminating in selecting their targets and in price offered.

In a more general sense, any additional information available to a firm (whether it is through information transmission or leakage) may enhance its ability to create value. For instance any extra information available to the acquirer may result in significant loss of bargaining power for the target, accompanied with loss of premium and lower likelihood of bidder competition. From an acquirer’s viewpoint, the effect may be analogous to obtaining a toehold in the target as toeholds have been shown to result in lower target resistance, lower likelihood of competing bids, and lead to lower premiums (Betton and Eckbo 2000). Conversely, if the target were to hire the acquirer’s ex-bank, it may provide it with valuable insights about the suitor’s true estimate of merger synergies, allowing the target to extract a higher premium.⁹

Our main hypotheses therefore address issues related to the hiring of merger counterparty’s ex-bank for current transactions. Given that a firm employs an investment bank, and controlling for other determinants of advisor choice, we posit that both acquirers and targets are more likely to hire an advisor that has past connections with the merger counterparty. We also

⁹ Information leakage hypothesis from Asker and Ljunqvist (2010) may also play a role in a merger. A firm that employs merger counterparty’s ex-bank (which also has industry expertise) as an advisor in a horizontal merger may have access to two sources of valuable information – one is information about the merger counterparty, and the second is information about its intra-industry competitors. By contrast, such flows of sensitive information may be relatively less important when the proposed acquisition is a diversifying one, which is less likely to be driven by synergetic reasons or shocks in the respective industries. The acquirer and the target are therefore less likely to use sensitive information to value their counterparties which belong to another industry.

expect that any resultant effects on value – in terms of abnormal returns and synergies – will be positively related to the advisor hiring decision. These decisions are also expected to be inversely related to both the existence of competing bids and the number of rival bidders, as the involvement of ex-banks may create an insurmountable barrier to other potential suitors for the target.

III. Sample and Data

We collect from the SDC/Platinum database all the completed and withdrawn U.S. domestic mergers and acquisition (M&A) deals announced between January 1985 and December 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. We exclude stock repurchases, exchange offers, and recapitalizations from the sample. In addition, our sample meets the following criteria:

1. The deal value is disclosed.
2. Both the acquirer and target are listed companies.
3. The acquirer controls less than 50% of the shares of the target at the announcement date and owns 100% after the completion or seek to own 100% after the transaction.
4. The deal value corresponds to at least 1% of the acquirer's market value of equity at the end of the fiscal year prior to the acquisition announcement.

Thus, the number of deals in our final sample is 4,491. We also collect the advisor information from the SDC/Platinum. As we examine the effect of past bank-counterparty relationship on the choice of financial advisor, we only include “frequent” advisors in our study by involving only banks that advised more than 100 M&A deals in the sample period. As the SDC/Platinum sometimes reports multiple codes for the same bank, we manually check these codes and combine that to a single code if they belong to the same bank. To account for major

bank mergers during the study period, we utilize the data provided in Corwin and Schultz (2005), and Ljungqvist, Marston and Wilhelm (2006), supplemented by the SDC/Platinum and other financial news sources. Appendix A lists the final set of survival banks, together with their predecessors, during the sample period. The number of candidate banks varies from 57 to 107 over time, depending on past mergers and the date a bank first appears in SDC Mergers and Acquisitions.

Table 1 reports the summary statistics of the sample M&A deals in our sample. The sample consists of 23.5% of pure cash deals, 43.0% of pure stock deals, and 33.5% of cash-and-stock mix and others. A vast majority of transactions – 93.9% – are classified as “friendly” by SDC. To classify an M&A deal as horizontal or diversifying, we compare three-digit SIC codes of acquirer and target and a deal is classified as horizontal if the acquirer and target share the same three-digit SIC. 52.7% of the deals are classified as horizontal mergers, and 47.3% are classified as diversifying mergers. Table 1 also reports that 72.4% of acquirers and 90.1% of targets hire at least one financial advisor. Our sample includes 1,606 (904) deals in which acquirers (targets) have ex-advisors from past M&A transactions. Acquirers (targets) hire targets’ (acquirers’) ex-advisors in 73 (211) deals, which account for 8.1% (13.1%) of the deals with targets (acquirers) having ex-advisors, and 1.6% (4.7%) of all deals.

[Table 1]

Table 2 reports the summary statistics for market shares of the fifteen most active financial advisors in our sample. We compute the total market share of a bank by counting the number (column 2) or summing up the value (column 3) of all the deals advised by the surviving bank and its predecessors. If there are multiple advisors for an acquirer (target) in a merger, each advisor is allocated a count of $1/n$ or a $1/n$ share of value, where n is the total number of advisors.

Column 2 shows that Bank of America Securities (and its predecessors) advised on 780 (10.7%) of all advisor contracts, followed by Credit Suisse with 719 (9.8%), and Goldman Sachs & Co with 682 (9.3%). The last column shows that the ranks of the sample banks if the ranks are defined in terms of the total value of transactions advised.

[Table 2]

IV. Main results

Table 3 presents the advisor-choice model regression results for acquirers and targets. Our empirical model of advisor choice is similar to underwriter choice models employed by Ljungqvist, Marston, and Wilhelm (2006). Each firm's (acquirer or target) decision is thus modelled as choosing an advisor from amongst all possible competing banks, whereby the choice is influenced by variables of interest such as industry expertise, prior relationship and information leakage to its product-market rivals among others. To be more specific, each firm k (acquirer or target) is modelled as having a utility function as follows.

$$u_{kjt} = \alpha Y_{kjt} + \beta X_{kjt} + \varepsilon_{kjt}, \quad (1)$$

where Y_{kjt} is a set of bank-specific variables of interest, including prior relationship and industry expertise. Ljungqvist, Martson and Wilhelm (2006), and Asker and Ljungqvist (2010) show that a bank's industry expertise and its relationship with the securities issuer is positively related to its probability of being selected as an underwriter. X_{kjt} is a vector of other determinants of advisor choice, including bank's market share, transaction size, relative transaction size (defined as the absolute difference between deal size and the average size of recent deals done by the bank under consideration), and ε_{kjt} is the normally distributed error term that captures transaction-specific idiosyncratic shocks at time t . Given this utility function, each firm chooses the advisor that

maximizes its utility. The probability that a bank j advises a firm k at time t is modelled in a setting as,

$$\text{Prob}(\text{bank } j \text{ advises firm } k \text{ in transaction } t) = f(a + bY_{kjt} + cX_{kjt}), \quad (2)$$

where f is the cumulative normal distribution function, and the dependent variable takes a value of one if a bank is chosen to advise the acquirer (target) of a particular M&A deal, zero otherwise.

Column (1) reports the results from the full-sample regressions. It shows that a bank is more likely to be the acquirer's (target's) advisor if it has past relationships with both the acquirer and the target. The economic magnitude is such that if a bank's prior relationship with its merger-counterparty changes from 0 to 1, the likelihood of a bank being chosen by the acquirer (target) as an advisor is increased by almost 60% (130%) relative to the unconditional probability evaluated at the mean values of explanatory variables.¹⁰ Similarly, if a bank's prior relationship with firm itself increases by one standard deviation 0.14% (0.17%), the likelihood of a bank being chosen by the acquirer (target) as an advisor is increased by 33.7% (20%) over and above the unconditional probability evaluated at the mean values of explanatory variables.

Consistent with Ljungqvist, Martson and Wilhelm (2006) and Asker and Ljungqvist (2010), a bank's industry expertise is positively related to the probability of it being selected for the advisory role. Also consistent with Asker and Ljungqvist, a bank is less likely to be selected by the acquirer (target) if it has a stronger past relationship with the acquirer's (target's) product-market rivals, where product-market rivals are defined as top 3 firms in a 4-digit SIC industry in terms of net sales. This suggests that firms are concerned about possible leakage of strategically

¹⁰ The probability of a bank being chosen by the acquirer (target) as an advisor increases by almost 0.53% (1.30%) over and above the conditional probability evaluated at the mean values of explanatory variables 0.89% (1.00%).

important information to their product market rivals when selecting financial advisor for a merger deal.¹¹

The coefficients of other variables are as expected. The coefficient for banks' overall market share is also positive and significant. The only explanatory variable that reduces the likelihood of a bank being chosen is *Relative Transaction Size*, which is significant at the 1% level, suggesting that the average value of their past deals is also a significant determinant of advisor choice. Further, the estimated relationships are remarkably similar for both acquirers and targets, implying that both sets of firms attribute significance to the same set of factors while choosing their merger advisors.

The result that bank merger-counterparty relationship is positively related to the bank's probability of being selected is potentially consistent with the hypothesis that hiring counterparty's advisor can help seal the deal by building up a hurdle to reduce competition. For example, when the acquirer hires the target's former advisor with the target's consent, it may gain access to the target's proprietary information which is not available to other potential bidder. To further test for this possibility, we split the sample into two groups according to the target's attitude towards the acquirer (hostile versus friendly) and re-run the above regressions for each of the two groups. The notion is that if hiring merger-counterparty's former bank is primarily for information sharing purposes, the target will strongly resist this if no agreement has been formed between the acquirer and the target. The results are presented in columns (2) and (3) and suggest that bank-counterparty relationship increases a bank's probability of being selected only in friendly deals. This finding is consistent with our hypothesis.

[Table 3]

¹¹ This result is also consistent with the bank's unwillingness to take on the advisory role because of influence of other large firms in the same industry that may be its clients (Asker and Ljungqvist, 2010).

We now test for any effects of bank-hiring decisions on the announcement returns for merging firms. Table 4 reports the results from the regressions for three-day [-1,+1] cumulative abnormal returns (CAR) of acquirers and targets.¹² We aim to test if acquirer's decision to hire target's former bank creates value for acquirer's shareholders. The main variable of interest is an indicator variable for the acquirer's decision to hire the target's former bank. Following Moeller, Schlingemann, and Stulz (2004) and Masulis, Wang and Xie (2007), we include firm characteristics including leverage ratio, total assets, M/B, and free cash flow as control variables. To control for deal characteristics, we include five indicators for tender offer, diversifying mergers, mergers in high-tech industries, hostile transactions, and pure-cash transactions respectively. Previous studies show that acquirer's CAR is higher for tender offers (Bates and Lemmon, 2003; Officer, 2003), lower for diversifying mergers than horizontal mergers (Fan and Goyal, 2006), lower if both the acquirer and the target are in high-tech industries (Loughran and Ritter, 2004), lower for hostile takeovers than for friendly deals (Cai, Song and Walkling, 2011) and lower for stock offers than for cash transactions (Travlos, 1987). *Relative Size* is included as Travlos (1987) shows that acquirer's CAR is negatively related with relative deal size.¹³ Finally, we use *Industry M&A* to control for the intensity of M&A activities in target industry (Moeller, Schlingemann, and Stulz, 2004). We adjust standard errors for heteroskedasticity and correlation across observations for a given firm. Constant terms, year fixed effects and industry fixed effects are also included but not reported.

Column (1) shows that acquirers' CAR is unrelated to its decision to hire the target's former bank. Although we postulated that hiring the target's former advisor may provide the

¹² SDC does not always provide accurate announcement dates, thus we use five-day [-2,+2] cumulative abnormal returns to re-produce table 5 and find our results are qualitatively unchanged. Masulis, Wang and Xie (2007) and Cai and Sevilir (2012) use the five-day window to estimate CARs.

¹³ The sign of the coefficient for *RelativeSize* is positive in Moeller, Schlingemann and Stulz (2004).

acquirer with competitive edge in the bidding process, the results suggest that this decision does not create value for the acquirer's shareholders. A possible explanation for this is that the decision to limit competition by an action is endogenous to a number of factors such as auction costs when negotiations fail (Aktas et al, 2010), and the acquirer's decision to hire the target's advisor may be correlated with other strategies of reducing competition such as target termination fee (Officer, 2003) and toehold (Betton et al, 2009). Indeed, Boone and Mulherin (2008) find no significant relation between returns to bidders and merger competition after controlling for endogeneity.

Smaller acquirers experience more positive CAR, but glamour acquirers experience more negative CAR. The acquirers' CAR is higher for tender offer, higher for pure-cash deals than stock-financed deals but lower for hostile deals and this is consistent with the prior literatures discussed above.

Results in column (2) shows that target's CAR is more negative if the acquirer hires its former bank. This is consistent with our hypothesis that acquirer can reduce potential completion by hiring the target's former bank. Besides, targets gain more in hostile deals and pure-cash deals, which consistent with Andrade, Mitchell and Stafford (2001). Targets with low M/B and high free cash flows experience more positive CAR. These findings are consistent with Manne (1965), and Alchian and Demsetz (1972) that corporate takeovers can be used to create shareholder value by eliminating poorly performing managers.

It should be emphasized that OLS analysis is based on the assumption that firms and advisors are randomly matched. However, the results in Table 3 show that a firm has strong preference to choose its merger-counterparty's prior advisor as current advisor and suggest that advisors are chosen endogenously. The standard method used to correct the selection bias is the treatment effect model developed by Heckman (1979). Our treatment model comprises two

stages. In Appendix C, we use probit regressions to first determine the factors that influence why acquirer/target choose merger-counterparty's prior bank as its M&A advisor (columns 1 and 2 are for acquirer and target decision respectively). We obtain the inverse Mills ratio (IMR) from the first stage and use it as an additional explanatory variable in the second stage regression that tests whether firm's decision to hire merger-counterparty's former bank creates value for acquirer/target's shareholders. Convincing implementation of the treatment effect model requires at least one variable in the first stage equation can be excluded from the set of independent variables in the second stage regression (so called exclusion restrictions).¹⁴ In Appendix C, the number of advisors hired by its counterparty in the past and the number of advisors it hires are identified as exclusion restrictions and results show that the acquirer's/target's probability of hiring the merger-counterparty's advisor is positively related to the number of advisor it hires and the number of advisors hired by its counterparty in the past.¹⁵

Columns (3) and (4) in Table 4 report (second-stage) regressions that are identical to those in columns (1) and (2) respectively, but the models are now estimated with a two-step treatment effects to account for the potential endogeneity between the wealth effect of merger and the acquirer's decision to hire the target's former bank. Specifically, the acquirer's decision to hire the target's former bank is estimated with a first-stage Probit model as shown in column (1) of appendix C to yield the IMR which is then added to the second-stage regression for the acquirer's and target's CAR. The results indicate that after controlling for the endogeneity the

¹⁴ See Li and Prabhala(2007) for an excellent literature review.

¹⁵ We select the exclusion restrictions in a manner similar to Fang (2005) and Golubov, Petmezas, and Travlos(2012). In Golubov, Petmezas, and Travlos(2012), endogeneity is a concern when analyzing whether firms hire reputable M&A advisors. The authors use the variable "scope" as the exclusion restriction, and this variable indicates the extent to which the reputable bank of the M&A deal has served the firm for equity, bond, and acquisition issues during the past 5 years. It is reasonable to assume that a firm is more likely to hire reputable bank as its M&A advisor if it has past experience in hiring reputable banks in the past.

main findings remain qualitatively unchanged – acquirer’s hiring of target’s ex-bank does not affect its own announcement returns but decreases the target returns .

[Table 4]

Table 5 reports results for regressions that are identical to that in Table 4, but it now tests whether acquirer and target abnormal returns are affected by the target’s decision to hire acquirer’s former bank.¹⁶ Therefore, the key variable is indicator for target’s decision to hire acquirer’s former bank. Again, regressions in columns (1) and (2) are estimated by the ordinary-least-squares (OLS) method, while regressions in columns (3) and (4) are estimated by a treatment-effect model with the first-stage result given by column (2) of appendix C. The results show clearly that target’s decision to hire acquirer’s former bank does not affect the values of the firms involved. The coefficients of all other variables are essentially unchanged.

[Table 5]

Table 6 reports the regressions for the premium paid by acquirer.¹⁷ The explanatory variables used are the same as those in Tables 4 and 5. Columns (1), (2), and (3) report the OLS regression results and columns (4), (5) and (6) report the treatment-effect regression results. Consistent with the results reported in Table 4, an acquirer pays a lower premium to the target if it hires the target’s former bank and the results are robust after controlling for the potential endogeneity in the hiring decision. On the other hand, the target gains nothing from hiring the acquirer’s former bank.

[Table 6]

¹⁶ Similar to the analysis in table 4, we also use five-day [-2,+2] cumulative abnormal returns to reproduce table 5 and find our results are qualitatively unchanged.

¹⁷ There are various methods in literature to define premium. We follow the method employed in a recent paper by Bates and Becher (2011) - premium is measured as the initial share price (or final price if initial price unavailable) as reported by SDC, deflated by the share price of the target at 5 trading days before the announcement date, less one. Moreover, we eliminate the transactions where premium is less than -20% and winsorize the remaining premiums at the 5% and 95%.

To sum up, Tables 4, 5 and 6 support our hypothesis that the acquirer of a merger can reduce potential competition by hiring the target's former bank. We show that targets get lower merger premiums when bidders hire the targets' former advisors, and the targets' stock prices experience more negative returns in those transactions. On the other hand, the target of a merger does not gain from hiring the acquirer's former bank.

To further confirm our hypothesis that an acquirer of a merger can reduce competition by hiring the target's former advisor. Table 7, column (1) reports the marginal effects of a Probit regression, where the dependent (indicator) variable captures the existence of competing bidders in a merger. Explanatory variables include an indicator for acquirer hiring target's former advisor, together with target firm characteristics and some deal-specific variables. Consistent with our hypothesis, the result suggests that rival bidders are less likely to exist if the acquirer hires the target's former advisor. This competitive advantage is further boosted if the acquirer has a toehold as it allows the acquirer to bid high without bearing the full cost.¹⁸ Our result shows that it is indeed the case. A toehold by the bidder reduces the probability of the existence of rival bidders. Jennings and Mazeo (1993) find that a higher premium can deter competing offers and is also associated with a lower likelihood of rejection. Consistent with their finding, our result also shows that a higher premium is associated with a lower probability of competing bids. The positive coefficient on percentage-of-cash is consistent with Jennings and Mazeo (1993), and doesn't support Fishman (1989)'s prediction that cash preempts competing bids. Additionally, rival bidders are more likely to exist if the target is larger in terms of total assets as it is possible that a higher synergy value is likely to exist for larger transactions. Highly levered targets and

¹⁸ Betton, Eckbo and Thorburn(2009) suggest that a toehold is useful if it exceeds certain threshold. We therefore incorporate a toehold dummy which is set equal to one if toehold is larger than 5%, zero otherwise. Once a company purchases 5% or more of another company, the acquirer must file a form 13D with the SEC and explain to the target firm in writing the reason for the purchase of 5% or more of its stock. Filing form 13D additionally notifies the public of what the company is intending to do with its toehold purchase, and may be a precursor to a hostile takeover.

targets with high growth opportunities are unattractive to potential bidders, probably because they are unable to serve as a cash cow for acquirers after mergers. On the other hand, targets with more free cash flows attract more competing bidders, though the effect is statistically insignificant.

Table 7, column (2) provides the results of a Negative Binomial Regression, which examines whether the hiring target's prior bank affects the number of rival bidders. The results are consistent with those reported in column (1) - hiring target's prior bank reduces the number of rival bidders – and the signs and significances of all the control variables are also quantitatively unchanged.

[Table 7]

In order to provide additional evidence regarding the bargaining advantage that accrues to the acquirers, we examine the total synergy and the relative distribution of synergy between acquirer and target shareholders. Having employed target's ex-bank, the acquiring firms may capture a disproportionately higher share of merger synergies. We follow Bates, Lemmon, and Linck (2006) to estimate total US million dollar-denominated synergy as follows -

$$\text{Synergy} = \text{acquirer pre-bid MV} * \text{acquirer CAR} + (1-\alpha) * \text{target pre-bid MV} * \text{target CAR} \quad (3)$$

where pre-bid MV is the firm market value of day -2 relative to the announcement day, CAR is the three-day [-1,+1] cumulative abnormal returns and α is the toehold of the acquirer. We calculate gains (or losses) to target shareholders and their gains (or losses) relative to the proportion of the firm they own prior to the announcement. We evaluate them in the following two equations -

$$\text{Target share of synergy (TSOS)} = [(1-\alpha) * \text{target pre-bid MV} * \text{target CAR}] / \text{synergy} \quad (4)$$

$$\text{Relative Target share of synergy (relative TSOS)} = \text{Target share of synergy} / (1-\alpha) \quad (5)$$

Similar to Bates et al. (2006), TSOS captures the proportion of total synergy that is captured by the target shareholders, and Relative TSOS measures the proportional gains for target shareholders relative to their pre-bid ownership of the target. Bates et al. (2006) also emphasize the importance of addressing the outliers as some deals with small wealth gains can produce extreme values in our measures. Following Golubov et al. (2012), we winsorize these three measures at the 5th and 95th percentiles to construct our dependent variables. Using the previously employed set of explanatory variables, regressions in Table 8 examine any relation between firms' hiring decisions and merger synergies. In column (1) – which employs total dollar value of synergy as a dependent variable – we find that neither firm's hiring of merger counterparty's ex-bank affects total synergy. However results in column (2) indicate a strong and statistically negative relation between target's share of total synergy and acquirer's decision to hire its ex-bank, which supports the notion that the target firm may be at a bargaining disadvantage. This result is further bolstered by the model in column (3), which indicates that it is target's pre-bid shareholders that bear the brunt of diminished share of value created by the transaction.¹⁹

[Table 8]

Combining the results in Tables 6, 7, and 8, we conclude that hiring target's prior bank reduce competition from other rival bidders and let target in a bargaining disadvantage which makes target management have less power of resistance.²⁰ Thus, hiring target's prior bank makes resisted target manager more likely to accept lower premium.

¹⁹ The results are qualitatively unchanged if we use treatment effect to account for the potential endogeneity problem associated with advisor choice.

²⁰ Jennings and Mazzeo (1993) shows that competition is positive related to target resistance.

V. Robustness checks

To check the robustness of our main results, we conduct several additional tests and report some of the results in Table 9. Although the dependent and control variables used in these tables are the same as those used in Tables 4 through 8, to save space, we only report the coefficient estimates on variables regarding hiring merger-counterparty's ex-bank. Also, we only report results obtained using the plain-vanilla pooled OLS, probit, and negative binomial models. Similar results (untabulated) are obtained using the treatment effect procedure.

To examine whether companies pay a fee premium in exchange for services provided by merger-counterparty's ex-banks, we define the total advisory fee as a percentage of deal value and then regress it on the independent variables used in Table 6. The regressions are estimated for acquirers and targets separately. The results (untabulated) suggest that there is no significant fee premium for both acquires and targets. Additional analysis (untabulated) reveals that Target firms' ex-advisors, who help acquirers in the current deal, are highly likely to be chosen to advise on future deals of acquirers – roughly 58% of them are hired by acquirers in future transactions as advisors.

Furthermore, we examine whether hiring merger-counterparty's ex-advisor impacts the post-merger performance, the probability of deal completion, and time to resolution.²¹ For both acquirers and targets, however, we do not find any significant results.

Our sample includes 4,491 merger deals undertaken by publicly listed and US domiciled firms between 1985 and 2008. However, due to missing values of dependent and explanatory variables, the sample size varies across different tables. To check the robustness of our results, we exclude observations with missing value of any dependent and explanatory variables in

²¹ The definitions of the dependent variables can be found in Appendix B. The independent variables included in these regressions are all the same as those in Table 6.

Tables 4-8 and re-run all regressions. Although we end up with a much smaller sample (1,889 deals), our results are qualitatively unchanged and reported in Panel A of Table 9.

In some M&A deals, companies do not have a chance to hire merger-counterparty's ex-banks if their counterparties have not engaged any advisors in the past. In order to address this selection issue, we include two dummy variables, "Target hired advisor in the past" and "Acquirer hired advisor in the past" in the regressions reported in Table 4-8. The results reported in Panel B of Table 10 indicate that our results are essentially unaffected.

To examine whether hiring merger-counterparty's ex-underwriters has similar value effects as those of hiring merger-counterparty's ex-advisor, we include in regressions two dummy variables that are equal to one if firms hire merger-counterparty's ex-underwriters, and zero otherwise. The results in Panel C of Table 10 reveal that, unlike hiring targets' ex-advisors, hiring targets' ex-underwriter has no effects on CARs, premium, and the likelihood of having competing bids, and the number of rival bidders. These findings imply that compared to target firms' ex-underwriters, ex-advisors inherently offer acquirers more value relevant services because of their experience of valuing target firms in the past M&A transactions.

[Table 9]

VI. Conclusion

This paper examines the causes and consequences of one firm hiring its merger-counterparty's ex-advisor to provide banking advice for a transaction. We examine this decision in light of other factors that have been shown to influence the hiring of merger advisors – namely bank's market share, its past relationship with the hiring firm, and its relationship with the firm's intra-industry competitors. On one hand, employing merger counterparty's ex-bank may be driven by benign motives such as creating a communication channel with the counterparty to

facilitate negotiations. On the other hand, such decision may be motivated by the desire to gain access to counterparty's non-public information (which the ex-bank possesses), thereby allowing the firm to negotiate the merger from a much stronger position than it would have otherwise.

Our results suggest that hiring merger-counterparty's ex-bank indeed provides benefits to the firm, but these benefits are distributed asymmetrically between the merging firms. Both acquirer and target are more likely to employ the counterparty's ex-bank, although this result is only evident for friendly deals. Acquirers who hire target's ex-banks pay lower premiums, although their own abnormal returns are unaffected. Concurrently, target abnormal returns are lower, as is their share of synergies. Additionally, both the likelihood of competing bids, as well as the number of competing bidders is reduced when the acquirer employs target's ex-bank as an advisor. However we do not obtain comparable results when a target hires acquirer's ex-bank. We do not find any empirical support for the notion that information leakage, rather than information sharing, may be driving the results. Overall, we conclude that firms' decisions to hire merger counterparty's ex-banks to advise on current mergers has significant, albeit one-sided, benefits for some participants in such transactions.

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Table 1: Summary Statistics of Merger Transaction Characteristics from 1985 to 2008

The merger and acquisition data is obtained from Thomson Financial's SDC Mergers and Acquisitions database. The sample includes 4491 acquisitions undertaken between publicly listed and US domiciled firms between 1985 and 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. An acquisition is defined as a diversify one if the acquirer and target have different 3-digit SIC codes reported by SDC and the residuals are classified as horizontal acquisitions.

Deal characteristics	No. of transactions	% of the sample
<i>Method of offer</i>		
Pure cash	1056	23.5
Pure stock	1932	43.0
Others, or combination of cash and stock	1503	33.5
<i>Attitude</i>		
Friendly	4216	93.9
Hostile or unsolicited	268	6.0
Undefined	7	0.2
<i>Industry relatedness</i>		
Horizontal	2367	52.7
Diversify	2124	47.3
<i>Deal status</i>		
Completed	3958	88.1
Withdrawn	533	11.9
<i>Number of rival bidders</i>		
0	4,093	91.1
1	313	7.0
2	67	1.5
3+	18	0.4
<i>Number of acquirer's financial advisors</i>		
0	1,240	27.6
1	2,791	62.2
2	396	8.8
3	49	1.1
4+	15	0.3
<i>Number of target's financial advisors</i>		
0	446	9.9
1	3,424	76.2
2	541	12.1
3	71	1.6
4	9	0.2
Targets have ex-advisors	904	20.1%
Acquirers have ex-advisors	1,606	35.8%
Acquirers hire targets' ex-advisors	73	1.6%
Targets hire acquirers' ex-advisors	211	4.7%

Table 2: Market Share of Most Active Banks in Announced Mergers from 1985-2008

Market share of a surviving bank is defined as the number or value of mergers advised by the bank and its predecessors, divided by the number of transactions in the sample. If there is more than one bank advising the acquirer/target in a transaction, each participating bank will get 1/n of the count or 1/n share of value, where n is the number of advisers. The sum of the column is greater the number of transactions because we count bidders' advisers and targets' advisers separately.

Surviving bank	(1) No. of transactions	(2) % of total counts	(3) % of total value
Bank of America Securities	780	10.7	14.1
Credit Suisse	719	9.8	9.2
Goldman Sachs	682	9.3	16.6
Citigroup	578	7.9	9.6
Morgan Stanley Dean Witter	550	7.5	11.9
JP Morgan	543	7.4	12.4
UBS Warburg	406	5.5	4.5
Lehman Brothers	370	5.1	5.9
Keefe, Bruyette and Woods	285	3.9	0.7
Deutsche Bank Securities	252	3.4	1.4
Sandler O'Neill Partners	219	3.0	0.5
Wachovia Corp	180	2.5	0.7
Lazard	138	1.9	3.7
RBC Capital Market	123	1.7	0.1
KeyCorp	109	1.5	0.1

Table 3: Probit Models Explaining Acquirer's and Target's Advisor Choices

We estimate the probability that a bank is chosen as a financial advisor for the acquirer and target of 4491 acquisitions over the period 1985 to 2008. The “Acquirer’s advisor” column shows the result from a probit model estimation for the outcomes between (i) being chosen as the acquirer’s advisor and (ii) not being chosen by both the acquirer. The “Target’s advisor” column shows the result from the probit model estimation for the outcomes between (i) being chosen as the target’s advisor and (ii) not being chosen by the target. Variable definitions can be found in appendix B and these variables are defined for the acquirer and target respectively. Firstly we run the regressions using the whole sample, and then split the sample into two groups according to the target’s attitude towards the acquirer (friendly versus hostile) and re-run the above regressions. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given deal. We use ***, **, and * to mark coefficients significance at the 1%, 5% and 10% level, respectively.

	All Sample(1)		Friendly Sample(2)		Hostile Sample(3)	
	Acqirer's advisor	Target's Advisor	Acqirer's Advisor	Target's Advisor	Acqirer's Advisor	Target's Advisor
Bank-merger counterparty relationship	0.179** (2.5)	0.338*** (7.5)	0.210*** (2.7)	0.359*** (7.7)	-0.172 (-0.8)	-0.042 (-0.2)
Bank-firm relationship	2.200*** (38.7)	1.952*** (30.1)	2.201*** (37.5)	1.885*** (27.5)	2.113*** (9.3)	2.628*** (12.2)
Bank’s industry expertise	2.429*** (11.9)	3.243*** (16.6)	2.614*** (11.6)	3.429*** (16.1)	0.729 (1.5)	1.481*** (2.6)
Bank- industry rival relationship	-1.331** (-2.6)	-1.848*** (-4.8)	-1.677*** (-2.6)	-2.154*** (-4.9)	0.939 (1.0)	0.676 (0.8)
Bank’s market share	18.018*** (53.2)	16.410*** (53.7)	17.973*** (50.0)	15.818*** (48.9)	18.712*** (16.6)	22.899*** (21.8)
Log(Relative transaction size)	-0.014*** (-2.7)	-0.075*** (-18.1)	-0.013** (-2.4)	-0.076*** (-17.8)	-0.063** (-2.4)	-0.042* (-1.9)
Log(Transaction size)	0.031*** (7.1)	0.063*** (16.8)	0.028*** (6.4)	0.060*** (16.1)	0.100*** (3.6)	0.078*** (3.9)
Constant	-2.692*** (-115.5)	-2.457*** (-144.6)	-2.688*** (-109.7)	-2.434*** (-140.0)	-2.844*** (-30.4)	-2.962*** (-30.9)
Num of deals	3251	4045	3052	3785	194	253
Observations	232283	288371	218873	270945	13091	16968
Pseudo R-sq	0.21	0.16	0.21	0.15	0.21	0.33

Table 4: The impact of hiring target's former advisor on cumulative abnormal returns

The sample includes 4491 acquisitions undertaken between publicly listed and US domiciled firms between 1985 and 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. The dependent variables are CAR(-1,1) for acquirer and target respectively. To compute CAR (-1, 1), we estimate the market model from event day returns over the period -205 to -6, using the equally weighted CRSP index as benchmark portfolio, and then cumulate the daily abnormal returns from one day before the announcement date of the M&A to one day after the announcement date of the M&A. The first two columns are estimated using OLS, whereas the latter two columns are two-step treatment effects accounting for the potential endogeneity between the wealth effect of merger and the acquirer's decision to hire the target's former bank. All explanatory variables are measured at the end of the fiscal year immediately before the acquisition announcement date. All continuous variables are winsorized at the 0.5% level at both tails of the distribution and are defined in Appendix B. Constant terms, year fixed effects, and industry fixed effects are included in the regressions but not reported. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given firm. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Acquirer's CAR(-1,1)	Target's CAR(-1,1)	Acquirer's CAR(-1,1)	Target's CAR(-1,1)
Acquirer hires target's former advisor	-0.01 (-0.4)	-0.06** (-2.2)	-0.02 (-0.8)	-0.19*** (-3.5)
Leverage ^{Acquirer}	0.01 (1.2)		0.02 (1.3)	
Ln (Assets) ^{Acquirer}	-0.00** (-2.1)		-0.00 (-1.0)	
(M/B) ^{Acquirer}	-0.00*** (-3.0)		-0.00*** (-3.9)	
(Free cash flow) ^{Acquirer}	0.00 (0.1)		0.00 (0.0)	
Tender offer	0.01** (2.1)	0.09*** (7.0)	0.01 (1.6)	0.08*** (6.2)
Relative Size	-0.00 (-0.6)	-0.02*** (-6.1)	-0.00 (-1.2)	-0.02*** (-4.8)
Diversify	-0.00 (-1.0)	0.00 (0.3)	-0.00 (-0.4)	0.02* (1.7)
High Tech	-0.00 (-0.4)	0.01 (1.0)	-0.00 (-0.5)	0.01 (0.8)
Hostility	-0.01* (-1.8)	0.03** (2.1)	-0.00 (-0.6)	0.04** (2.4)
Pure-Cash Deals	0.02*** (6.6)	0.05*** (4.2)	0.03*** (5.9)	0.05*** (3.8)
Industry M&A	0.00 (1.5)	0.00 (0.7)	0.00* (1.7)	-0.00 (-0.3)
(Leverage) ^{Target}		-0.00 (-0.1)		-0.01 (-0.5)
Ln (Assets) ^{Target}		-0.00 (-1.0)		-0.00 (-0.2)
(M/B) ^{Target}		-0.01** (-2.4)		-0.01*** (-3.8)
(Free cash flow) ^{Target}		0.02** (2.5)		0.01 (0.8)
IMR1			0.00 (0.2)	0.08*** (2.8)
Observations	2679	2421	1950	1933
Adjusted R2	0.07	0.12	0.07	0.12

Table 5: The impact of hiring acquirer's former advisor on cumulative abnormal returns

The sample includes 4491 acquisitions undertaken between publicly listed and US domiciled firms between 1985 and 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. The dependent variables are CAR(-1,1) for acquirer and target respectively. To compute CAR (-1, 1), we estimate the market model from event day returns over the period -205 to -6, using the equally weighted CRSP index as benchmark portfolio, and then cumulate the daily abnormal returns from one day before the announcement date of the M&A to one day after the announcement date of the M&A. The first two columns are estimated using OLS, whereas the latter two columns are two-step treatment effects accounting for the potential endogeneity between the wealth effect of merger and the target's decision to hire the acquirer's former bank. All explanatory variables are measured at the end of the fiscal year immediately before the acquisition announcement date. All continuous variables are winsorized at the 0.5% level at both tails of the distribution and are defined in Appendix B. Constant terms, year fixed effects, and industry fixed effects are included in the regressions but not reported. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given firm. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Acquirer's CAR(-1,1)	Target's CAR(-1,1)	Acquirer's CAR(-1,1)	Target's CAR(-1,1)
Target hires acquirer's former advisor	-0.00 (-0.1)	-0.01 (-0.8)	-0.00 (-0.3)	-0.03 (-0.7)
Leverage ^{Acquirer}	0.01 (1.1)		0.02 (1.3)	
Ln (Assets) ^{Acquirer}	-0.00 (-1.3)		-0.00 (-1.1)	
(M/B) ^{Acquirer}	-0.00*** (-2.7)		-0.00*** (-3.9)	
(Free cash flow) ^{Acquirer}	0.00 (0.2)		0.00 (0.0)	
Tender offer	0.01** (2.2)	0.09*** (7.2)	0.01* (1.7)	0.09*** (6.4)
Relative Size	-0.00 (-0.8)	-0.02*** (-6.1)	-0.00 (-1.2)	-0.02*** (-4.7)
Diversify	-0.00 (-0.7)	0.00 (0.3)	-0.00 (-0.4)	0.02 (1.5)
High Tech	-0.00 (-0.7)	0.01 (1.0)	-0.00 (-0.6)	0.01 (0.7)
Hostility	-0.01 (-1.5)	0.03** (2.2)	-0.00 (-0.5)	0.04*** (2.6)
Pure-Cash Deals	0.03*** (6.9)	0.05*** (4.4)	0.03*** (5.9)	0.05*** (4.0)
Industry M&A	0.00* (1.7)	0.00 (0.7)	0.00* (1.7)	-0.00 (-0.3)
(Leverage) ^{Target}		-0.00 (-0.1)		-0.02 (-0.7)
Ln (Assets) ^{Target}		-0.00 (-1.1)		-0.00 (-0.8)
(M/B) ^{Target}		-0.01** (-2.4)		-0.01*** (-3.7)
(Free cash flow) ^{Target}		0.02** (2.6)		0.01 (0.9)
IMR2			0.00 (0.0)	0.02 (0.7)
Observations	2541	2421	1950	1933
Adjusted R2	0.07	0.12	0.07	0.12

Table 6: Regression of the premiums on explanatory variables

The sample includes 4491 acquisitions undertaken between publicly listed and US domiciled firms between 1985 and 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. The dependent variable is the premiums paid by bidders to the targets. Following Bates and Becher (2011), we measure the premium as the initial share price (or final price if initial price unavailable) as reported by SDC, deflated by the share price of the target at 5 trading days preceding the announcement date, less one. Moreover, we eliminate the transactions where premium is less than -20% and winsorize the remaining premiums at the 5% and 95%. The first three columns are estimated using OLS, whereas the latter three columns are two-step treatment effects accounting for the potential endogeneity between the wealth effect of merger and the firm's decision to hire the counterparty's former bank. All explanatory variables are measured at the end of the fiscal year immediately before the acquisition announcement date. All continuous variables are winsorized at the 0.5% level at both tails of the distribution and are defined in Appendix B. Constant terms, year fixed effects, and industry fixed effects are included in the regressions but not reported. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given deal. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	OLS			Treatment effect		
Acquirer hires target's former advisor	-0.07**		-0.07**	-0.15**		-0.14**
	(-2.1)		(-2.2)	(-2.3)		(-2.2)
Target hires acquirer's former advisor		-0.03	-0.03		-0.08	-0.07
		(-1.2)	(-1.2)		(-1.4)	(-1.3)
Leverage ^{Acquirer}	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03
	(-1.2)	(-1.2)	(-1.2)	(-0.9)	(-0.9)	(-0.8)
Ln (Assets) ^{Acquirer}	0.02***	0.02***	0.02***	0.02***	0.02***	0.02***
	(3.1)	(3.1)	(3.2)	(3.2)	(3.4)	(3.4)
(M/B) ^{Acquirer}	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(3.6)	(3.6)	(3.6)	(3.2)	(3.3)	(3.3)
(Free cash flow) ^{Acquirer}	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(-0.5)	(-0.6)	(-0.5)	(-0.6)	(-0.6)	(-0.6)
Tender offer	0.03*	0.03**	0.03**	0.03*	0.03*	0.03*
	(1.9)	(2.0)	(2.0)	(1.9)	(1.9)	(1.9)
Relative Size	0.01	0.01	0.01	0.01	0.01	0.01
	(1.0)	(1.1)	(1.1)	(1.2)	(1.4)	(1.3)
Diversify	0.01	0.01	0.01	0.01	0.01	0.01
	(1.1)	(1.0)	(1.1)	(1.0)	(0.8)	(0.9)
High Tech	0.02	0.02	0.02	0.02	0.01	0.02
	(1.1)	(1.0)	(1.1)	(0.9)	(0.7)	(0.9)
Hostility	0.01	0.01	0.01	0.01	0.01	0.01
	(0.5)	(0.5)	(0.5)	(0.4)	(0.4)	(0.4)
Pure-Cash Deals	0.01	0.01	0.01	0.01	0.01	0.01
	(1.1)	(1.0)	(1.1)	(0.7)	(0.7)	(0.7)
Industry M&A	0.00	0.00	0.00	-0.00	-0.00	-0.00
	(0.4)	(0.4)	(0.5)	(-0.1)	(-0.1)	(-0.1)
(Leverage) ^{Target}	0.06**	0.06*	0.06**	0.04	0.03	0.04
	(2.0)	(2.0)	(2.0)	(1.1)	(1.0)	(1.0)
Ln (Assets) ^{Target}	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(-3.9)	(-4.1)	(-3.9)	(-3.5)	(-3.8)	(-3.5)
(M/B) ^{Target}	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(-4.8)	(-4.7)	(-4.8)	(-4.5)	(-4.4)	(-4.4)
(Free cash flow) ^{Target}	-0.02**	-0.02**	-0.02**	-0.03***	-0.03***	-0.03***
	(-2.3)	(-2.3)	(-2.3)	(-2.8)	(-2.7)	(-2.8)
IMR1				0.05		0.05
				(1.5)		(1.4)
IMR2					0.03	0.02
					(1.0)	(0.8)
Observations	1988	1988	1988	1828	1828	1828
Adjusted R2	0.08	0.08	0.08	0.07	0.07	0.07

Table 7: Likelihood of existing competing bids

We study the likelihood of existing competing bids from acquirer's perspective of 4491 acquisitions over the period 1985 to 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. In column 1, the dependent variable is a dummy variable, equal 1 if multiple bidders exist and the econometric method used is Probit model with marginal effect reported. In column 2, the dependent variable is the number of the rival bidders and the econometric method used is Negative Binomial Regression. All explanatory variables are measured at the end of the fiscal year immediately before the acquisition announcement date. All continuous variables are winsorized at the 0.5% level at both tails of the distribution and are defined in Appendix B. Constant terms, year fixed effects, and industry fixed effects are included in the regressions but not reported. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given deal. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) if multiple bidders exist (dummy)	(2) number of the rival bidders
Acquirer hires target's former advisor	-0.029* (-2.0)	-0.827** (-2.0)
Toehold dummy	-0.034** (-2.3)	-1.255** (-2.3)
Premium	-0.045*** (-2.9)	-0.892*** (-2.9)
Percentage of cash	0.000*** (5.7)	0.008*** (4.8)
(Leverage) ^{Target}	-0.042** (-2.2)	-0.839** (-2.3)
Ln (Assets) ^{Target}	0.017*** (7.7)	0.313*** (7.4)
(M/B) ^{Target}	-0.007* (-1.8)	-0.242** (-2.3)
(Free cash flow) ^{Target}	0.014 (1.6)	0.356 (1.6)
Observations	2198	2198
Pseudo R-sq	0.20	0.16

Table 8: Strategic bargaining aspects of takeover contests

The sample includes 4491 acquisitions undertaken between publicly listed and US domiciled firms between 1985 and 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. The table shows OLS results of synergy, target's share of synergy, and relative target's share of synergy. The detailed definitions and formulas to get these three variables can be found in Appendix B. All explanatory variables are measured at the end of the fiscal year immediately before the acquisition announcement date. All continuous variables are winsorized at the 0.5% level at both tails of the distribution and are defined in Appendix B. Constant terms, year fixed effects, and industry fixed effects are included in the regressions but not reported. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given deal. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Synergy	TSOS	Relative TSOS
Acquirer hires target's former advisor	-93.06 (-1.4)	-0.46** (-2.5)	-0.49*** (-2.6)
Target hires acquirer's former advisor	15.52 (0.4)	0.05 (0.4)	0.04 (0.3)
Leverage ^{Acquirer}	-3.66 (-0.1)	-0.14 (-0.6)	-0.13 (-0.6)
Ln (Assets) ^{Acquirer}	-5.53 (-0.8)	-0.04 (-1.4)	-0.04 (-1.2)
(M/B) ^{Acquirer}	-12.34*** (-2.9)	0.02 (0.8)	0.02 (0.8)
(Free cash flow) ^{Acquirer}	-10.51 (-0.7)	-0.01 (-0.2)	-0.01 (-0.2)
Tender offer	25.36 (1.4)	0.07 (0.7)	0.08 (0.8)
Relative Size	4.57 (0.6)	-0.02 (-0.5)	-0.02 (-0.4)
Diversify	-21.87 (-1.5)	-0.02 (-0.3)	-0.03 (-0.4)
High Tech	-35.41 (-1.5)	0.09 (0.7)	0.09 (0.8)
Hostility	18.10 (0.7)	-0.02 (-0.1)	-0.00 (-0.0)
Pure-Cash Deals	5.12 (0.3)	-0.28*** (-3.1)	-0.26*** (-2.8)
Industry M&A	5.87 (1.2)	-0.05* (-1.9)	-0.05* (-1.9)
(Leverage) ^{Target}	-45.43 (-1.1)	-0.18 (-0.9)	-0.16 (-0.8)
Ln (Assets) ^{Target}	7.63 (1.0)	0.11*** (3.4)	0.11*** (3.4)
(M/B) ^{Target}	-3.73 (-0.5)	-0.02 (-0.8)	-0.02 (-0.8)
(Free cash flow) ^{Target}	-10.73 (-0.8)	0.12** (2.3)	0.13** (2.4)
Observations	2040	2040	2038
Adjusted R2	0.04	0.03	0.03

Table 9 Robustness checks

In this table we report three robustness checks. In Panel A, we exclude deals with missing value for any dependent and explanatory variables in Tables 4- 8. In Panel B, we control for two additional dummy variables to account for the selection issue that companies may not have ex-advisors in the past. In panel C, we add two new variables capturing the relationship between companies and their merger-counterparty's ex-underwriters.

	Table 4		Table 5		Table 6	Table 7		Table 8		
	Acquirer's CAR	Target's CAR	Acquirer's CAR	Target's CAR	Premium	If multiple bidders exist	Number of the rival bidders	Synergy	TSOS	Relative TSOS
Panel A: Unified sample that includes deals with no missing values for all variables in Tables 4-8										
Acquirer hires target's former advisor	-0.01 (-1.1)	-0.05* (-1.7)			-0.07** (-2.1)	-0.035** (-2.1)	-0.977** (-2.4)	-92.98 (-1.3)	-0.44** (-2.2)	-0.48** (-2.4)
Target hires acquirer's former advisor			-0.00 (-0.6)	-0.01 (-0.3)	-0.03 (-1.2)			18.13 (0.4)	-0.03 (-0.2)	-0.04 (-0.3)
Panel B: Control for selection issues										
Acquirer hires target's former advisor	0.00 (0.1)	-0.06** (-2.1)			-0.07** (-2.1)	-0.031** (-2.1)	-0.940** (-2.2)	-84.67 (-1.2)	-0.38* (-1.9)	-0.41** (-2.1)
Target hired advisor in the past	-0.01** (-2.2)	0.00 (0.0)			-0.00 (-0.2)	0.006 (0.7)	0.203 (1.3)	-12.73 (-0.6)	-0.13 (-1.5)	-0.14 (-1.6)
Target hires acquirer's former advisor			0.00 (0.3)	-0.02 (-0.9)	-0.03 (-1.2)			20.40 (0.4)	0.02 (0.1)	0.00 (0.0)
Acquirer hired advisor in the past			-0.01 (-1.5)	0.00 (0.4)	0.00 (0.1)			-7.97 (-0.5)	0.07 (0.9)	0.09 (1.1)
Panel C: Hiring merger-counterparty's ex-underwriters										
Acquirer hires target's former advisor	-0.01 (-0.4)	-0.06** (-2.1)			-0.07** (-2.1)	-0.030** (-2.0)	-0.851** (-2.0)	-82.35 (-1.2)	-0.45** (-2.4)	-0.48** (-2.5)
Acquirer hires target's former underwriter	-0.00 (-0.1)	0.01 (0.7)			0.01 (0.8)	-0.005 (-0.4)	-0.200 (-0.8)	93.89*** (2.9)	0.08 (0.5)	0.09 (0.6)
Target hires acquirer's former advisor			-0.00 (-0.3)	-0.01 (-0.8)	-0.03 (-1.5)			6.27 (0.1)	0.07 (0.5)	0.06 (0.4)
Target hires acquirer's former underwriter			-0.01 (-1.6)	-0.00 (-0.3)	-0.02 (-1.5)			-24.95 (-1.0)	0.12 (1.0)	0.12 (1.0)

Appendix A: Major Bank Mergers in the Banking Industry

The table summarizes the major merger and acquisition events in the banking industry. The sample banks are selected by forming a union of two groups of banks: (1) the sample of Ljungqvist, Marston and Wilhelm (2006); and (2) the sample of 50 most active banks in M&A activities by transaction value over the period 1985 to 2008. The effective dates of bank mergers are obtained from Corwin and Schultz (2005), supplemented by other financial news sources. The numbers in the brackets following bank names define the predecessor-successor relationships among banks. The number at the beginning represents the surviving bank. The first subsequent character (a or b) represent one of the two predecessors of the surviving bank. The second, third and fourth characters further define the earlier predecessors. For example, Credit Suisse First Boston (2a) and Donaldson Lufkin & Jenrette (2b) are predecessors of Credit Suisse First Boston (2), the surviving bank. Credit Suisse (2aa) and First Boston Corp (2ab) are predecessors of Credit Suisse First Boston (2a).

Surviving Bank	Effective date	Bank 1	Bank 2	
<i>Sample bank from Ljungqvist, Martson and Wilhelm (2006)</i>				
Citigroup/Salomon Smith Barney (1)	19860731	Schroders (1aba)	Wertheim Holdings (1abb)	
	19971128	Salomon Brothers (1aaba)	Smith Barney Inc (1aabb)	
	19981008	Citicorp (1aaa)	Travelers (1aab)	
	20000501	Salomon Smith Barney Holdings (1aa)	Schroders-Worldwide Investment (1ab)	
	20010202	Salomon Smith Barney Holdings (1a)	Geneva Companies (1b)	
Credit Suisse (2)	19881222	Credit Suisse (2aa)	First Boston Corp (2ab)	
	20001103	Credit Suisse First Boston (2a)	Donaldson Lufkin & Jenrette (2b)	
Lehman Brothers (3)	19840510	Shearson/American Express (3aa)	Lehman Brothers (3ab)	
	19880429	Shearson Lehman Brothers (3a)	EF Hutton (3b)	
JP Morgan & Co (4)	19920326	Chemical Bank (4aaaaaaa)	Manufacturers Hanover Bank (4aaaaaab)	
	19960331	Chemical Bank (4aaaaaa)	Chase Manhattan (4aaaaab)	
	19990325	Robert Fleming Hldgs Ltd (4aaaba)	Jardine Fleming Group Ltd (4aaabb)	
	19991210	Chase Manhattan Corp (4aaaaa)	Hambrecht & Quist Group (4aaaab)	
	20000411	Chase Manhattan Corp (4aaaa)	Robert Fleming Hldgs Ltd (4aaab)	
	20001231	Chase Manhattan Corp (4aaa)	JP Morgan & Co (4aab)	
	20040701	JP Morgan Chase & Co (4aa)	Bank One Corp (4ab)	
	20080530	JP Morgan Chase & Co (4a)	Bear Stearns Cos Inc(4b)	
	UBS Warburg (5)	19950131	PaineWebber (5baa)	Kidder Peabody & Co Inc (5bab)
		19950703	Swiss Bank Corp (5abaa)	SG Warburg Securities (5abab)
19970902		SBC Warburg (Swiss Bank Corp) (5aba)	Dillon Read & Co (5abb)	
19980629		Union Bank of Switzerland (5aa)	Swiss Bank Corp (5ab)	
20000612		PaineWebber Group, Inc (5ba)	JC Bradford & Co (5bb)	
Deutsche Bank Securities (6)	20001103	UBS AG (5a)	Paine Webber Group, Inc (5b)	
	19900330	Deutsche Bank AG (6ba)	Morgan Grenfell (6bb)	
	19970902	Alex Brown, Inc (6aa)	Bankers Trust New York Corp (6ab)	
	19990604	BT Alex Brown (6a)	Deutsche Bank AG (6b)	
Wachovia Corp (7)	19980202	First Union Corp (7aaaa)	Wheat First Butcher Singer (7aaab)	
	19990401	Wachovia Corp (7aaba)	Interstate/Johnson Lane (7aab)	
	19990731	Prudential Securities (7abaa)	Vector Securities Intl., Inc (7abab)	
	19991231	Prudential Securities (7aba)	Volpe Brown Whelan & Co (7abb)	

	20010904	First Union Corp (7aaa)	Wachovia Corp (7aab)
	20030701	Wachovia Corp (7aa)	Prudential Securities (7ab)
	20071001	Wachovia Corp (7a)	AG Edwards Inc (7b)
Oppenheimer Holdings (8)	19890815	Canadian Imperial Bank of Commerce (8abaa)	Wood Gundy Inc (8abab)
	19971103	CIBC Wood Gundy Securities (8aba)	Oppenheimer & Co Inc (8abb)
	20030103	Fahnestock Viner Holdings Inc (8aa)	CIBC Oppenheimer's retail brokerage business (the Private Client and U.S. Asset Management Divisions) was sold (8ab)
	20080114	Oppenheimer Holdings Inc (8a)	CIBC World Markets-US Bus (8b)
Bank of America Securities (9)	19920422	Bank America Corp (9aaaaa)	Securities Pacific (9aaaaab)
	19940901	BankAmerica Corp (9aaaa)	Continental Bank (9aaaab)
	19971001	BankAmerica Corp (9aaaa)	Robertson Stephens & Co (9abbb)
	19971001	NationsBank Corp (9aaba)	Montgomery Securities (13a)
	19980202	Fleet Financial Group Inc (9abaa)	Quick & Reilly Group(9abab)
	19980901	BankBoston Corp (9abba)	Robertson Stephens & Co (9abbb)
	19980930	BankAmerica Corp (9aaa)	NationsBank Corp (9aab)
	19991001	Fleet Financial Group Inc (9aba)	BankBoston Corp (9abb)
	20040401	BankAmerica Corp (9aa)	FleetBoston Financial (9ab)
	20061218	Merrill Lynch & Co Inc (9ba)	Petrie Parkman & Co Inc (9bb)
	20090101	Bank of America Corp (9a)	Merrill Lynch & Co Inc (9b)
Morgan Stanley Dean Witter (10)	19970531	Dean Witter Discover & Co (10a)	Morgan Stanley Group, Inc (10b)
SG Cowen Securities Corp (11)	19980630	Cowen & Co. (11a)	Societe Generale Securities (11b)
	2006	Cowen carved out	
Goldman Sachs & Co (12)			
Thomas Weisel Partners LLC (13)	19980921	Spun off from Montgomery Securities (13a)	
<i>Other banks which are classified as the top-50 in SDC by transaction value</i>			
Drexel Burnham Lambert (14)			
Lazard (15)			
US Bancorp Piper Jeffery (16)	19980501	US Bancorp (16aa)	Piper Jaffray Companies (16ab)
	19990104	US Bancorp (16a)	Libra Investment, Inc (16b)
	20031231	US Bancorp (16x) spun off Piper Jaffray (16)	
SunTrust Robinson-Humphrey (17)	19980102	SunTrust Banks Inc (17aa)	Equitable Securities Corp (17ab)
	20010727	SunTrust Banks Inc (17a)	Robinson-Humphrey (17b)
Houlihan Lokey (18)			
ABN-AMRO (19)	19950309	ING (19baa)	Barings Securities (19bab)
	19971008	ING Barings (19ba)	Furman Selz LLC (19bb)
	20010430	ABN-AMRO Holding NV (19a)	ING Baring-US Operations (19b)
Dresdner (20)	19950823	Dresdner Bank AG (20aa)	Kleinwort Benson (20ab)
	20010105	Dresdner Bank AG (20a)	Wasserstein Perella Group, Inc (20b)
Stephens Inc (21)			

Greenhill & Co (22)			
Jefferies & Co (23)	20010321	Jefferies & Co (23aaa)	Quarterdeck Investment (23aab)
	20031213	Jefferies Group Inc (23aa)	Broadview Holdings (23ab)
	20070621	Jefferies & Co (23a)	Putnam Lovell Group Inc (23b)
Blackstone (24)			
Evercore Partners (25)			
Allen & Co. (26)			
RBC Capital Market (27)	19980102	Dain Bosworth (27abaa)	Rauscher Pierce Refsnes (27abab)
	19980406	Dain Rauscher Corp (27aba)	Wessels Arnold & Henderson LLC (27abb)
	20010110	Royal Bank of Canada (27aa)	Dain Rauscher Corp (27ab)
	20011101	Royal Bank of Canada (27a)	Tucker Anthony Sutro (27b)
Stifel Financial Corp (28)	20020429	Ryan Beck & Co (28ba)	Gruntal & Co. (28bb)
	20070228	Stifel Financial Corp (28a)	Ryan Beck & Co (28b)
KPMG (29)			
Daniels & Associates Inc (30)			
Peter J Solomon (31)			
Raymond James (32)	19980511	First Chicago NBD Corp (32aaa)	Roney & Co (32aab)
	19981002	First Chicago NBD Corp (32aa)	BANC ONE Corp (32ab)
	19990614	Roney Capital Markets (BANC ONE) (32a)	Raymond James Financial, Inc (32b)
William Blair & Co (33)			
PricewaterhouseCoopers (34)	19980701	Price Waterhouse (34a)	Coopers & Lybrand LLC (34b)
Ernst & Young (35)			
Needham & Co (36)			
Simmons & Co (37)			
KeyCorp (38)	19980908	McDonald & Co Investments, Inc (38aaa)	Essex Capital Markets, Inc (38aab)
	19981026	McDonald & Co Investments, Inc (38aa)	KeyCorp (38ab)
	19990603	McDonald & Co Investments, Inc (38a)	Trident Financial Corp (38b)
Keefe, Bruyette and Woods, Inc. (39)	19960508	Keefe, Bruyette and Woods, Inc. (39a)	Charles Webb & Co. (39b)
Sandler O'Neill Partners (40)			
Alliant Partners (41)			
Austin Associates Inc (42)			
Robert W Baird & Co Inc (43)			
Baxter Fentriss & Co (44)			
BB&T Corp. (45)	19971002	BB&T Corp. (45aaa)	Craigie Inc. (45aab)
	19990326	BB&T Corp. (45aa)	Scott & Stringfellow Financial (45ab)
	20050105	BB&T Corp. (45a)	Windsor Group LLC (45b)
Berkery, Noyes & Co. (46)			
BMO Capital Markets (47)	19871031	Bank of Montreal (47a)	Nesbitt Thomson Inc (47b)
Brown, Gibbons, Lang & Co LP (48)			
Duff & Phelps (49)			

Friedman Billings Ramsey (50)
Goldsmith Agio Helms & Co. (51)
Grant Thornton LLP (52)
Harris Williams & Co. (53)
Hovde Financial (54)
Lincoln International (55)
Morgan Joseph & Co Inc (56)
Morgan Keegan Inc (57)
Rothschild (58)
RSM Equico Capital Markets (59)
Sperry Mitchell (60)
Udata Capital Inc (61)

Appendix B: Variable definitions

Variables	Definition and estimation
<i><u>A. Main explanatory variables</u></i>	
Bank-merger counterparty relationship	Dummy variable: one if a bank advised at least one M&A deal for the merger-counterparty in previous 5 years
Acquirer hires target's former advisor	Dummy variable: one if acquirer hires a bank which advised at least one M&A deal for the target in previous 5 years
Target hires acquirer's former advisor	Dummy variable: one if target hires a bank which advised at least one M&A deal for the acquirer in previous 5 years
<i><u>B. Main dependent variables</u></i>	
CAR(-1,+1)	Three-day cumulative abnormal return calculated using the market model. The market model parameters are estimated using the return data for the period (-205,-6)
Premium	Following Bates and Becher (2011), we measure the premium as the initial share price (or final price if initial price unavailable) as reported by SDC, deflated by the share price of the target at 5 trading days preceding the announcement date, less one. Moreover, we eliminate the transactions where premium is less than -20% and winsorize the remaining premiums at the 5% and 95%.
Competing bids	Dummy variable: one if multiple bidders exist (variable "cha" in SDC)
Number of rival bidders	The number of bidders (variable "bidcount" in SDC) less one.
Synergy	Synergy= acquirer pre-bid MV*acquirer CAR + (1- α)*target pre-bid MV*target CAR, where pre-bid MV is the firm market value of day -2 relative to the announcement day in US \$ million, CAR is the three-day [-1,+1] cumulative abnormal returns and α is the toehold of the acquirer.
Target share of synergy (TSOS)	We calculate the share of synergy to target shareholders. The calculation formula is [(1- α)*target pre-bid MV*target CAR]/ synergy. The definitions of components of the formula can be found in the above "Synergy" item.
Relative Target share of synergy (relative TSOS)	We calculate the share of synergy to target shareholders relative to their proportional share of the firm owned prior to the bid. The formula is Relative Target share of synergy (relative TSOS) = Target share of synergy/(1- α). The definitions of components of the formula can be found in the above "Synergy" item.
Advisory fee	Total advisory fee paid as a percentage of deal value.
Post-merger performance	Three-year buy-and-hold stock returns (BHR) after the effective date minus one.
Probability of completion	Dummy variable: one for completed transactions, zero for withdrawn bids.
Time to resolution	Number of calendar days between announcement and resolution (completion or withdrawal) dates.
<i><u>C. Control variables</u></i>	
Bank-firm relationship	The number of advisory deals advised by a bank for the firm divided by the total number of deals done with advisory service by the firm during past 5 years
Bank's industry expertise	The number of deals advised by a bank in the firm's industry divided by the total number of deals with advisory service in the firm's industry during past 5 years
Bank- industry rival relationship	Number of advisory deals advised by a bank for largest THREE firms in the firm's industry (excluding the firm itself if the firm is among top 3) divided by the total number of deals with advisory service in the firm's industry during past 5 years
Bank's market share	Defined as the number of deals advised by a bank divided by the total number of deals in previous calendar year
Log(Relative transaction size)	Natural log of the absolute difference between the transaction value and the average transaction value of a bank during past 5 years
Log(Transaction size)	Natural log of the transaction value
Num of advisors hired by merger-counterparty in the past	Self-explanatory

Num of advisors hired by firm in the current deal	Self-explanatory
T-overlap	Percentage of target's investors from the bidder's investor base
A-overlap	Percentage of acquirer's investors from the target's investor base
Distance	Natural log of one plus the kilometers denominated distance between the acquirer and the target.
Tender offer	Dummy variable: one for tender offers, zero otherwise.
Relative size	Deal Value divided by the acquirer's market value of equity at the end of the fiscal year prior to the acquisition announcement
Diversify	Dummy variable: one if the acquirer and target have different 3-digit SIC codes reported by SDC and zero otherwise
High Tech	Dummy variable: one if a deal is made between two firms in high tech industries as defined by Loughran and Ritter (2004) and zero otherwise
Hostility	Dummy variable: one if the SDC classifies the acquisition as a hostile takeover and zero if the SDC classifies the acquisition as a friendly takeover
Pure-Cash Deals	Dummy variable: one if the acquisition is financed by all cash and zero otherwise
Industry M&A	Annual value of all SDC acquisition deals in each of 3-digit SIC industry / Compustat firms' total book value of assets in the same SIC industry for the same year. To indicate the intensity of acquisition activity in the target industry.
Toehold dummy	Dummy variable: one if acquirer's ownership in the target at the announcement date is larger than 5%.
Percentage of cash	Self-explanatory
Leverage	(Short-term debt + long-term debt) / total assets
Ln (Assets)	Natural log of book value of total assets
(M/B)	Total assets minus book equity plus market equity divided by total assets
Free cash flow	Operating income before depreciation - interest expense - income taxes - capital expenditures, scaled by book value of total assets

Appendix C: Likelihood of hiring merger-counterparty's former advisors

We use probit model to estimate the probability that a firm hires merger-counterparty's former advisors for the acquirer and target of 4491 acquisitions over the period 1985 to 2008, in which either the acquirer or the target employs at least one advisor from the list in Appendix A. All explanatory variables are defined in Appendix B for the acquirer and target respectively. The z-statistics in parentheses are calculated from the Huber/White/Sandwich heteroskedastic consistent errors, which are also corrected for correlation across observations for a given firm. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Acquirer hires target's former bank (1) or not (0)	Target hires acquirer's former bank (1) or not (0)
Num of advisors hired by merger- counterparty in the past	0.772*** (7.2)	0.473*** (11.0)
Num of advisors hired by firm in the current deal	0.284*** (3.4)	0.382*** (4.4)
Distance	-0.067** (-2.0)	-0.028 (-1.0)
T-overlap	-0.934** (-2.0)	-0.060 (-0.2)
A-overlap	-0.252 (-0.4)	-0.135 (-0.2)
Tender offer	0.100 (0.5)	0.175 (1.3)
Relative Size	-0.125 (-1.4)	0.041 (0.8)
Diversify	0.012 (0.1)	-0.296** (-2.5)
High Tech	0.167 (0.8)	-0.088 (-0.6)
Hostility	-0.414 (-1.2)	-0.097 (-0.4)
Pure-Cash Deals	-0.230 (-1.1)	0.046 (0.3)
Industry M&A	0.011 (0.2)	0.044 (1.3)
Leverage ^{Acquirer}	0.852* (1.7)	0.088 (0.2)
Ln (Assets) ^{Acquirer}	0.086 (0.8)	0.046 (0.8)
(M/B) ^{Acquirer}	-0.024 (-0.4)	-0.013 (-0.4)
(Free cash flow) ^{Acquirer}	0.247 (0.7)	0.143 (0.7)
(Leverage) ^{Target}	0.443 (1.0)	-0.480 (-1.4)
Ln (Assets) ^{Target}	-0.021 (-0.2)	-0.029 (-0.4)
(M/B) ^{Target}	-0.189 (-1.6)	0.020 (0.6)
(Free cash flow) ^{Target}	-0.154** (-2.2)	0.005 (0.1)
Constant	-2.486*** (-5.0)	-2.509*** (-8.0)
N	1957	1957
Pseudo R-sq	0.36	0.25

Appendix C reports the results from the estimation of the Probit models for acquirers' and targets' decisions to hire their counterparty's ex-advisors. The model estimated here is different from the bank choice model presented in Table 3. Specifically, Table 3 is a bank choice model examining the likelihood of a given bank being chosen by firms as the advisor and therefore primarily includes bank characteristics in the regression. Here we investigate whether an acquirer (or a target firm) hires its merger-counterparty's bank or not. The primary explanatory variables in these regressions are, therefore, both firm and deal characteristics. The Probit model for firms' decision to hire counterparty's former advisors is as follows -

$$Prob(\text{firm hires counterparty's former advisor at time } t) = f(a + bY_{kjt}), \quad (6)$$

where f is the cumulative normal distribution function, and the dependent variable is a dummy that equals one if the acquirer (target) hires its merger-counterparty's former advisor, zero otherwise. Y_{kjt} is a set of firm and deal specific variables, including (1) the number of advisors hired by merger-counterparty in the past;²² (2) the number of advisors hired by the acquirer (target) in the current deal; (3) geographical distance between the acquirer and the target; (4) two variables for investor overlap of acquirer and target;²³ (5) relative deal size and the intensity of acquisition activity in the target industry (Industry M&A); (6) five indicator variables for tender offer, diversifying mergers, hostile takeovers, pure cash deals and whether the deal is made between two firms in high tech industries; and (7) firm characteristics.

Results reported herein show that the acquirer's/target's probability of hiring the merger-counterparty's advisor is positively related to the number of advisor it hires and the number of advisors hired by its counterparty in the past. Controlling for these two variables, column (1) shows that higher the proportion of target's investors from bidder's investor base, the lower the probability of bidder hiring the target's former bank to provide merger advisory services. Additionally, the possibility of hiring target's prior bank is higher if acquirer's leverage is higher, but is lower if target has more free cash flow. The emphasized point is that the possibility of hiring target's prior bank is higher if acquirer and target locates nearer (better familiarity and communication). This finding refutes the information leakage hypothesis and supports the facilitation story. Other variables have statistically insignificant impact on the acquirer's probability of hiring the target's former bank. Column (2) provides additional results that indicate that the target's probability of hiring the acquirer's former bank is lower in diversifying mergers than in horizontal mergers, suggesting that target shareholders may also consider situations where synergy is likely to be realized and estimation of synergy is important. All other variables are statistically insignificant and the pseudo- R^2 s of the two columns indicate that the models explains up 36% (25%) of the choice of hiring target's (acquirer's) prior advisors for acquirer (target).

The key purpose of Appendix C is to yield the inverse Mill's ratio (IMR) used to correct the potential endogeneity in the decision of hiring counterparty's former bank as M&A advisor. The inverse Mill's ratio yielded from column 1 is denoted as IMR1 and the one from column 2 is IMR2. Put differently, we use results from these regressions to estimate the first stage of the treatment effect models.

²² For example, a target did 3 deals in the past. In deal 1, it hired Goldman Sachs. In deal 2, it hired Goldman Sachs too. In deal 3, it didn't hire any advisor. Although it hired Goldman Sachs twice, the value of the variable is one.

²³ Matvos and Ostrovsky(2008) and Harford, Jenter and Li(2011) examine the effect of cross-ownership on acquisition decisions. We construct the cross-ownership the same as Matvos and Ostrovsky(2008).