When It Pays to Pay Your Investment Banker: New Evidence on the Role of Financial Advisors in M&As

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ABSTRACT

We provide new evidence on the role of financial advisors in M&As. Contrary to prior studies, top-tier advisors deliver higher bidder returns than their non-top-tier counterparts but in public acquisitions only, where the advisor reputational exposure and required skills set are relatively larger. This translates into 65.83 US$ million shareholder gain for an average bidder. The improvement comes from top-tier advisors' ability to identify more synergistic combinations and to get a larger share of synergies to accrue to bidders. Consistent with the premium price – premium quality equilibrium, top-tier advisors charge premium fees in these transactions.

JEL Classification**:** G14; G24; G34

Keywords**:** Investment Banks; Reputation; Mergers and Acquisitions; Abnormal Returns; Advisory Fees; Deal Completion; Self-Selection Bias; Organizational Form

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Mergers and acquisitions (M&As) constitute one of the most important activities in corporate finance, bringing about substantial re-allocations of resources within the economy. In 2007 alone, when the most recent merger wave peaked, corporations spent $4.2 trillion on M&A deals worldwide. Investment banks advised on over 85% of these deals by transaction value, generating an estimated $39.7 billion in advisory fees.[1]

The investment banking industry is dominated by a group of so-called "bulge bracket" firms. These top-tier investment banks have built up a reputation as experts in capital markets transactions, which, theoretically, should ensure that they perform superior services for their clients in return for premium fees (Chemmanur and Fulghieri (1994)). Surprisingly, however, the relevant empirical literature fails to support this intuitive reputation-quality mechanism, reporting a negative or at best insignificant relationship between bidder financial advisor reputation and bidder returns in M&As (see, for example, McLaughlin (1992), Servaes and Zenner (1996), Rau (2000), Hunter and Jagtiani (2003), and Ismail (2010)). This raises several interesting questions. Does the reputational capital mechanism fail in the market for merger advisory services? If so, why do firms employ top-tier advisors? Are top-tier banks employed just as execution houses to ensure deal completion for their clients? Finally, are there situations in which it pays off to pay for a top-tier financial advisor?

Motivated by the conflicting empirical evidence on the subject, we address these questions and revisit the role of financial advisors in M&As by examining the relationship between investment bank reputation and the price and quality of their merger advisory services. We use a large and comprehensive sample of U.S. acquisitions of public, private, and subsidiary firms announced over the period from 1996 to 2009. In an important departure from prior studies, we separately examine different types of acquisitions identified on the basis of the target firm's listing status for two reasons. First, reputation is not equally important in all transactions, and its effect is more pronounced in situations that create

relatively larger reputational exposure. Indeed, as Rhee and Valdez (2009) suggest, greater visibility leads to greater potential reputational damage. This provides investment banks with relatively greater incentives to act in the best interests of their clients, as bad advice in prominent situations should lead to a greater loss to the advisor's reputational capital. We argue that these incentives are profound in the case of public acquisitions, as these deals are closely followed by the market and often involve publicity as part of the bargaining process. Second, public acquisitions require more skill and effort on the part of the advisors as: i) it is more difficult to capture gains in public acquisitions due to greater bargaining power of public targets compared to that of unlisted firms ((Fuller, Netter, and Stegemoller (2002) and Officer (2007)); ii) these deals entail increased disclosure and frequently require regulatory and/or shareholder approvals, increasing deal complexity and hence demanding strong advisor professional qualifications; and iii) given the dispersed ownership of public targets, there is typically no identifiable party to stand behind any hidden or undisclosed liabilities of the target firm after closing the deal, which inhibits the ability of the bidder to arrange any form of post-deal indemnification from the seller, and thus puts ex-ante pressure on the bidder's investment banker to perform. In sum, we argue that advisor reputation is relatively more important in acquisitions of public firms.

We find strong support for our conjectures. In particular, partitioning the sample by target listing status, we find that top-tier advisors are associated with higher bidder returns in public acquisitions. The effect is economically significant: we estimate that using a top-tier advisor is associated with an average 1.01% improvement in bidder abnormal returns, which translates into a $65.83 million shareholder value enhancement for a mean-sized bidder. We further find that, in these transactions, top-tier advisors charge premium fees relative to those charged by their less reputable counterparts. Specifically, the top-tier fee premium is on the order of 0.25% in absolute terms. This finding is in line with the "premium price – premium

quality" type of equilibrium modelled in the seminal work on the reputational capital. In contrast, there is no effect of financial advisor reputation on bidder returns in acquisitions of unlisted firms (private or subsidiary firms).

Importantly, when examining the sources of the top-tier improvement, we find that they stem from the ability of top-tier bankers to identify and structure mergers with higher synergy gains. We also find evidence of their ability to secure a greater share of synergies for the bidding firm, but this is hampered when the target advisor is also top-tier. As for deal completion, there is only limited evidence that top-tier advisors are associated with higher deal completion rates. Finally, deals advised by top-tier investment banks take less time from announcement to completion.

We also consider endogeneity of bidder-advisor matching that arises from the advisor choice being correlated with certain observed or unobserved bidder- and/or deal-specific characteristics. Specifically, we show that top-tier advisors are hired by larger firms with higher book-to-market ratios and idiosyncratic volatility but lower pre-announcement stock-price run-ups. Top-tier advisors are also preferred by bidders when acquiring relatively larger targets. OLS estimates are therefore potentially biased. To address this concern we advocate the use of a self-selection control to reveal the pure effect of advisor reputation. All our results continue to hold after controlling for endogeneity using the two-stage Heckman (1979) procedure and its extension – a switching regression model with endogenous switching.

Finally, this study examines so-called "in-house" acquisitions, where the bidding firm does not retain an investment bank for the transaction. We examine the determinants of this choice and find that firms with high in-house M&A expertise are less likely to use external advice.

This study makes important contributions to the M&As and financial intermediation literature. First, it provides new evidence on the effect of investment bank reputation on bidder returns, which sheds light on the puzzling evidence found in prior work on the subject. Specifically, we find that bidding firms do gain more when employing top-tier advisors rather than non-top-tier advisors, but only in public acquisitions. We also show that this quality comes at a premium price in terms of advisory fees. Second, to our knowledge, this is the first study to explicitly account for the endogenous nature of bidder-advisor matching. Third, our study offers new insights on the determinants of the decision to retain a financial advisor and shows that in-house M&A expertise is an important determinant, among others. Our findings also have important implications for practitioners. For instance, we provide justification for the current practice of constructing "league tables" of financial advisors based on the value of the deals they advised. This is consistent with the notion that the position of the investment bank in these rankings signals the quality of its services. In addition, the ability of top-tier financial advisors to charge premium fees provides incentives for advisors to build up and protect their reputational capital, encouraging them to render superior services in the future.

Our study is related to the work of McLaughlin (1990, 1992), Chemmanur and Fulghieri (1994), Servaes and Zenner (1996), Rau (2000), Kale, Kini, and Ryan (2003), Hunter and Jagtiani (2003), and Ismail (2010). McLaughlin (1992), Servaes and Zenner (1996), Rau (2000), Kale, Kini, and Ryan (2003), Hunter and Jagtiani (2003), and Ismail (2010) empirically examine the relationship between advisor reputation and M&A outcomes. We update their work using a comprehensive sample of public, private, and subsidiary acquisitions, as well as by considering endogenous bidder-advisor matching, and offer new evidence on the associated relationships. McLaughlin (1990) examines investment banking contracts and fees in corporate acquisitions. We extend his work by distinguishing between top-tier and non-top-tier investment banks and show that top-tier advisors charge fees at a

premium for their services. We also examine and offer new evidence on other determinants of advisory fees. Further, we extend the work of Servaes and Zenner (1996) on in-house acquisitions, and show that bidders with more in-house M&A expertise are less likely to employ advisors. Overall, contrary to earlier studies, the findings of this paper are consistent with the predictions of the theoretical model of Chemmanur and Fulghieri (1994) when applied in the context of M&As.

The rest of the paper is organized as follows. Section I discusses the relevant literature. Section II describes our sample. Section III examines the effect of financial advisor reputation on bidder returns, advisory fees, and deal completion rates. We offer a discussion of our results in Section IV. Section V examines in-house acquisitions and the determinants of the decision to employ an advisor. We test the robustness of our results in Section VI. Finally, Section VII concludes the paper.

I. Related Literature

A. Theoretical Framework

The relationship between reputation, quality, and price was first modelled in the classical work of Klein and Leffler (1981), Shapiro (1983), and Allen (1984). These models are based on a situation in which a producer repeatedly sells its products in the market. When the quality of the product can only be assessed after the purchase (i.e., it is ex-ante unobservable), a premium price arises as a signal of high quality. This premium exists to compensate the seller for the resources expended in building up reputation, and offers the seller an incentive to not follow the "fly-by-night" strategy, whereby profit is maximized by lowering quality and the associated costs in the short run.

While these models relate to product markets, they are applicable to the case of investment banking services. Indeed, quality of these services is ex-ante unobservable, and

the banks need to sell their services to their clients repeatedly. Chemmanur and Fulghieri (1994) model this relationship specifically for the investment banking function, namely, the equity underwriting service. In their model, high reputation investment banks provide higher quality services and charge higher fees. The authors also suggest that their theoretical predictions could be extended to other situations where investment banks act as intermediaries in the financial markets.

B. Financial Advisors in M&As

The role of investment banks in the market for corporate control has received a fair amount of attention in the literature. For instance, Bowers and Miller (1990) show that top-tier advisors are able to identify deals with higher total synergies, but they are not able to provide a bargaining advantage to capture a larger share of these synergies. On the other hand, Michel, Shaked, and Lee (1991) find that deals advised by Drexel Burnham Lambert (a relatively less prestigious advisor in their sample) outperformed deals advised by bulge bracket investment banks in terms of bidder cumulative abnormal returns (CARs).

McLaughlin (1990) studies investment banker advisory fees in 195 tender offers between 1978 and 1985. Target firm advisory fees average 0.77% of acquisition value, while fees for the bidding firm bankers average 0.56% of deal value. Total fees in an average acquisition are 1.29% of transaction value. However, there is considerable variation in fees for comparable transactions. Additionally, in 80% of the contracts, the advisory fees are largely contingent on offer outcome, giving investment bankers considerable incentives to complete the deal. In addition, McLaughlin (1992) finds that bidders using lower-quality bankers offer significantly lower premiums and enjoy higher announcement period gains.

Servaes and Zenner (1996) examine the role of investment banks in U.S. acquisitions over the period 1981 to 1992. Interestingly, neither the use of an advisor in general nor the

use of a top-tier advisor affects announcement abnormal returns in their sample. Bidders are more likely to employ advisors when the transaction is complex, and when bidders have less prior acquisition experience. However, the researchers acknowledge that using only the largest acquisitions per year – the focus of their study – might not be representative of all transactions.

Rau (2000) shows that first-tier investment banks do not make better deals, as measured by bidder abnormal returns, apart from the tender offers subsample. In addition, he finds that the higher the proportion of contingent fees in the contract, the worse is the post-acquisition performance of the bidding firm. Later studies of Hunter and Jagtiani (2003) and Ismail (2010) also fail to find a positive relationship between bidder advisor reputation and bidder returns.[2]

In contrast with previous studies, Kale, Kini, and Ryan (2003) focus on a measure of the relative reputation of the merging parties' advisors. In doing so, the authors take into account the bargaining nature of a takeover contest. In their relatively small sample of 390 U.S. tender offers over the period 1981 to 1994, bidder gains, total synergy gains, as well as the share of total synergies accruing to the bidder rise with the bidder advisor's relative reputation.

In addition, other classifications of financial advisors have been employed in the literature. For instance, Allen et al. (2004) examine the role of commercial banks as financial advisors. The authors find that bidding firm returns are indifferent to the use of the firm's own commercial bank as a merger advisor. Further, Song and Wei (2010) examine the role of "boutique" financial advisors compared to full-service investment banks. They find that boutique advisors are more likely to be used in smaller transactions, and that, controlling for advisor reputation, acquirers hiring boutique advisors in public acquisitions pay lower premiums. However, this does not translate into superior abnormal returns, and fees charged

by boutiques are not different from those charged by full service banks. Completion rates are also unaffected by the use of boutique advisors by the acquiring firm.

In contrast to other studies, Chang et al. (2010) study the choice of advisors in M&As at the individual bank level. The authors show that prior relationships with the bank, industry expertise of the advisor, and a relationship with the merging partner positively affect the choice of advisor for a given transaction. In another bank-level study, Bao and Edmans (2011) study performance persistence of M&A advisors. They identify significant bank-level fixed effects, and further show that advisors in the top quintile of acquirer performance continue to provide better advice than those in the bottom quintile of acquirer performance for the next several years.[3]

Finally, Bodnaruk, Massa, and Simonov (2009) study the role of investment banks as insiders in the market for corporate control. The authors find that financial conglomerates affiliated with the investment bank advising the bidder often build up a stake in the target prior to the announcement and earn substantial profits. They also provide evidence that the size of this stake is positively (negatively) related to the probability of large announcement period losses (post-merger profitability) of the bidding firm.

Overall, prior evidence on the relationship between advisor reputation and abnormal returns associated with M&As is at best neutral, casting doubt on the quality of services provided by top-tier advisors.

II. Sample and Data

A. Sample Selection Criteria

We collect a sample of acquisitions announced between January 1, 1996 and December 31, 2009 from the Thomson Financial SDC Mergers and Acquisitions Database. Both successful and unsuccessful deals with nonmissing transaction value and payment method are

included (repurchases are excluded). Bidders are U.S. public firms and targets are U.S. public, private, or subsidiary firms. The original sample contains 18,865 deals. We clean the sample of liquidations, restructurings, leveraged buyouts, reverse takeovers, privatizations, bankruptcy acquisitions, and going private transactions, leaving a sample of 17,970 observations. Since we are interested in transactions that represent a transfer of control, we require that the bidder own less than 10% of the target before the deal and seek to acquire more than 50% as in Faccio, McConnell, and Stolin (2006), which yields a sample of 16,873 transactions. We further require that the bidder be covered in the CRSP database (CRSP share codes 10 and 11; cases with multiple classes of common stock are excluded) with sufficient data to calculate announcement period returns, which results in a sample of 13,287 deals. We next exclude deals worth less than $1 million and less than 1% of bidder market value, which leaves a sample of 11,563 deals. Finally, we require that the bidder advisor be reported by SDC, which results in a final sample of 4,803 transactions. Of these M&As, 4,451 deals were advised by an investment bank, while 352 deals did not involve an investment bank on the part of the bidder (in-house deals, as defined by Servaes and Zenner (1996)). Advisory fees are disclosed in 829 cases.[4]

B. Measure of Advisor Reputation

We download financial advisor league tables from Thomson Financial SDC. Table I presents the list of the top-25 investment banks ranked according to the value of deals they advised on. In the spirit of Fang (2005), we classify the top-8 investment banks by the value of deals advised as top-tier, and all other financial advisors as non-top-tier.[5] Fang (2005) argues that the binary classification is justified for two reasons. Economically, it captures the two-tiered structure of Wall Street that is acknowledged by both the academic literature and the financial press. Econometrically, it is also preferable because the use of a continuous

measure would require the variable to capture reputation in precision, and to have a constant effect on the dependent variables. The top-8 banks are Goldman Sachs, Merrill Lynch (now Bank of America Merrill Lynch), Morgan Stanley, JP Morgan, Credit Suisse First Boston, Citi/Salomon Smith Barney, Lehman Brothers (now Barclays Capital), and Lazard. These banks are the same as those in Fang (2005), indicating that this top-tier specification is stable across investment banking services.[6] These banks also appear in the bulge bracket specifications of earlier M&A studies (Servaes and Zenner (1996) and Rau (2000)). Thus, there is a great deal of stability in the reputation of these advisors over time.

[Please Insert Table I About Here]

We also track M&As among financial advisors themselves in order to correctly assign the reputation measure for each deal in the sample. For instance, Salomon Brothers, a top-tier financial advisor, was acquired by Travelers Group in 1998, which in turn merged with Citicorp to create Citigroup the same year (as part of Citigroup, Salomon Brothers was also known as Salomon Smith Barney up until October 2003). Thus, deals advised by Citicorp before the merger with Travelers Group are classified as advised by a non-top-tier advisor, whereas afterwards deals advised by Citigroup are classified as advised by a top-tier advisor. In the case of multiple advisors, the deal is classified as advised by a top-tier advisor if at least one of the advisors belongs to the top-8 group; this approach is standard in the literature (see, for example, Servaes and Zenner (1996) and Rau (2000)).

C. Sample Statistics

Table II presents descriptive statistics for the overall sample and for the top-tier and non-top-tier groups, respectively. All variables are defined in Appendix A. Panel A illustrates statistics for bidder characteristics. The mean (median) bidder *size* in our sample is 6,470.69 (858.15) US$ million. Clients of top-tier advisors are substantially larger (12.27 US$ billion)

than those of non-top-tier banks (2.38 US$ billion). Prior work shows that bidder announcement returns are negatively related to firm size (Moeller, Schlingemann, and Stulz (2004)).

[Please Insert Table II About Here]

Mean (median) *book-to-market* for the bidders in our sample is 0.47 (0.38). Bidders advised by top-tier investment banks appear to have lower book-to-market values, at least based on this univariate comparison. Dong et al. (2006) show that bidders with higher book-to-market ratios experience higher announcement period returns.

Bidders exhibit an average *run-up* of 5%, while the median run-up is a negative 6%. Run-ups do not appear to differ between the two categories of advisors. Rosen (2006) finds that bidder returns are negatively related to the bidder's stock price run-up.

Mean (median) bidder *sigma* (idiosyncratic volatility) is 0.029 (0.024) in our sample. Bidders advised by top-tier investment banks appear to have significantly lower sigma. Moeller, Schlingemann, and Stulz (2007) provide evidence that high sigma bidders generate lower announcement period returns in stock acquisitions.

Mean (median) bidder *leverage* for our sample is 0.20 (0.16), while bidders advised by top-tier investment banks are more levered than clients of non-top-tier advisors. Maloney, McCormick, and Mitchell (1993) report a positive relationship between bidder leverage and bidder gains in acquisitions.

The mean (median) value of the *cash flows-to-equity* ratio in our sample is 0.02 (0.05). Bidders advised by top-tier advisors appear to have significantly more free cash flow. High free cash flow induces empire-building acquisitions (Jensen (1986)). Accordingly, Lang, Stulz, and Walkling (1991) show a negative relationship between bidder returns and the cash flows-to-equity ratio.

Table II, Panel B presents statistics for deal characteristics. The average (median) *deal value* in our sample is 1,218.60 (163.96) US$ million. As one would expect, deals advised by top-tier advisors are significantly larger than those advised by non-top-tier advisors in terms of both mean and median values.

The mean (median) *relative size* of targets in our sample is 41.9% (19.8%). This measure does not differ across the two groups of advisors. Bidder returns have been shown to decrease with the relative size of the target in public acquisitions, while the converse is true for private and subsidiary acquisitions (Fuller, Netter, and Stegemoller (2002)).

Almost half of our sample (49.9%) represents acquisitions of *public* firms, while 32.8% are offers for *private* targets and the remaining 17.3% are *subsidiary* acquisitions. Top-tier advisors are more likely to work on public and subsidiary deals, and less likely to advise on private acquisitions.

A third (33%) of the acquisitions in our sample are *diversifying deals*. Morck, Shleifer, and Vishny (1990) find that investors respond negatively to diversifying acquisitions. However, recent research on the "diversification discount" suggests that diversification may be associated with higher firm value (Campa and Kedia (2002) and Villalonga (2004)).

Hostile deals represent only 1.8% of our sample. However, 3.10% of deals advised by top-tier banks are hostile, while only 1.00% of non-top-tier deals are resisted by target management. Servaes (1991) documents that hostile bids are associated with relatively lower bidder returns, while Schwert (2000) finds no significant effect. Approximately 13% of the deals represent *tender offers*. Jensen and Ruback (1983) document that tender offers are associated with higher bidder announcement returns.

In terms of the method of payment, 37% of the transactions in our sample are pure *stock*-financed, 26% represent pure *cash* offers, while the remaining 37% involve *mixed* consideration. Top-tier advisors work on a slightly higher (lower) proportion of pure cash

(stock) deals. Travlos (1987) shows that acquirers offering stock in public acquisitions experience lower returns. *Premiums* are quite high in our sample period. The mean premium is 42.38%, while the median premium is 34.36%. The premiums do not differ between deals advised by top-tier and non-top-tier advisors.

Deals advised by top-tier banks generate a mean (median) five-day *bidder CAR* of -0.03% (-0.44%), and acquisitions advised by non-top-tier banks experience a mean (median) *bidder CAR* of 0.74% (0.06%). The differences in mean and median CARs for the two categories of advisors are significant at the 10% and 5% level, respectively. In terms of *advisory fees*, top-tier advisors charge their clients a mean (median) advisory fee of 0.55% (0.41%) of the transaction value, while non-top-tier advisors charge 0.72% (0.52%) of the deal value. The mean (median) difference is statistically significant at the 5% (1%) level.[7]

These univariate comparisons could be misleading however, as they do not take into account any confounding effects. For instance, Table II reveals that top-tier advisors are hired by larger firms and for larger transactions. Prior work shows that large bidders are associated with lower announcement period returns (Moeller, Schlingemann, and Stulz (2004)), while percentage fee is a decreasing function of the transaction value (McLaughlin (1990)). Therefore, firm- and deal-specific characteristics need to be controlled for to reveal the net effect of advisor reputation on the variables of interest. Such cross-sectional regression analysis is presented in the next section.

Panels C and D of Table II present the differences between in-house deals and those advised by investment banks. In-house deals are different in several respects. For instance, these transactions are smaller in their absolute size (193.09 US$ million vs. 1,299.70 US$ million) as well as relative size (10.6% vs. 44.3%). In-house acquisitions are also relatively less likely to be diversifying. Additionally, bidders that pursue deals without external advice

appear to be less levered (0.15 vs. 0.20) and prefer to finance their transactions with pure stock. The correlation matrix of the above variables is presented in Table III.

[Please Insert Table III About Here]

III. Empirical Analysis

A. Bidder CARs

We re-examine the relationship between advisor reputation and *bidder CAR* in multivariate OLS regression analysis. We control for various bidder- and deal-specific characteristics found to affect bidder returns (described in the previous section), as well as for year fixed effects (coefficients suppressed). In addition, we use heteroskedasticity-robust standard errors adjusted for bidder clustering due to the presence of repeat acquirers in the sample. Table IV presents the results. In all of these regressions, our main variable of interest is *top-tier,* which is an indicator taking the value of one if a top-8 investment bank advised on the deal, and zero otherwise. To fully capture the well-documented interactions of target listing status and the method of payment effects (see, for example, Fuller, Netter, and Stegemoller (2002)) in the full-sample analysis, we create six mutually exclusive categories: *public deals X all-cash*, *public deals X payment includes stock*, *private deals x all-cash*, *private deals X payment includes stock*, *subsidiary deals X all-cash*, and *subsidiary deals X payment includes stock* (the omitted category) as in Masulis, Wang, and Xie (2007). Specification (1) shows that the top-tier variable is insignificant at conventional levels for the full sample, which is consistent with earlier studies. The signs on the control variables are generally in line with those in existing M&A literature.

[Please Insert Table IV About Here]

However, as explained earlier, the effect of reputation may not be equally important for all types of deals. We therefore run the regressions separately for public, private, and

subsidiary acquisitions (specifications (2), (3), and (4), respectively). This subsample analysis reveals a very interesting picture. The coefficient on *top-tier* is positive and highly statistically significant (at the 1% level) for the public acquisitions subsample. The magnitude of the coefficient suggests that the use of a top-tier advisor is associated with a 1.53% CAR improvement, ceteris paribus. In contrast, there is no effect of advisor reputation on *bidder CAR* in acquisitions of private or subsidiary firms.

It should be emphasized that the above analysis is based on the assumption that the choice of advisor is exogenously determined. However, as shown in Table II, there are significant differences in bidder- and deal-specific characteristics between the two categories of advisors, suggesting that advisors could be determined endogenously. Additionally, a decision to employ a top-tier or a less prestigious advisor is a matter of choice on the part of the bidder and the advisor. In this case self-selection bias could emerge, producing unreliable OLS estimates as shown by Heckman (1979). In fact, Heckman argues that self-selection bias is similar in nature to specification error (omitted variable bias) and proposes a two-step procedure to control for it.

We implement this procedure, where the first-stage equation models the choice between a top-tier and a non-top-tier advisor, and the second-stage equation(s) corrects for the selection bias.[8] It is advisable to have a variable that is present in the first-stage equation but not in the second-stage equation(s) (Li and Prabhala (2007)). Ideally, this variable should have an influence on the choice of advisor but not on the outcome. In the spirit of Fang (2005), we construct the variable *scope* to serve as such identification restriction. This variable measures the extent to which the bidding firm used the services of a top-tier investment bank across various capital market transactions in the past.[9] To construct this variable, we download data on equity issues, bond issues, and M&As from the Thomson Financial SDC database. The *scope* variable takes the value of one if in the five years prior to

the deal the bidder employed a top-tier investment bank at least once for an equity issue, a bond issue, or an acquisition. It takes the value of two if a top-tier bank was employed for two of the three types of transactions, and the value of three if in all three types of transactions a top-tier investment bank was employed. The *scope* variable takes the value of zero if a top-tier bank was never employed for any of these corporate transactions in the five-year period prior to the deal announcement.[10] We exclude the *tender offers* dummy and *premium* from the selection equation, as the acquisition technique and the valuations are generally determined by the advisor, not vice versa.[11]

Table V presents the results of this analysis. The *scope* variable is a highly significant (at the 1% level) determinant of the choice between a top-tier and a non-top-tier advisor, consistent with Fang (2005), across all target types. That is, the extent to which the bidder used the services of a top-tier bank in the past is positively related to the decision to employ a top-tier bank again. The probability of choosing a top-tier advisor is also positively related to bidder *size*, as well as the *relative size* of the deal. The choice of a top-tier advisor is negatively related to the pre-announcement stock price *run-up*. In addition, high *book-to-market* and high *sigma* firms are also more likely to retain top-tier financial advisors in public acquisitions. The pseudo-R^2s of the first-stage equations indicate that the model explains up to 25% of the choice between a top-tier and a non-top-tier advisor.

[Please Insert Table V About Here]

From the first-stage equation, we construct an *inverse Mills ratio* that we add as an additional regressor to the second-stage equation. The coefficient on this endogeneity control is positive and significant at the 5% level for public acquisitions only. This result reflects self-selection, which can be interpreted as follows: certain observed and unobserved characteristics that increase the likelihood of choosing a top-tier advisor further increase *bidder CAR*. If one interprets the unobserved component as advisor skill, then it can be

argued that top-tier advisors can identify better acquisitions and/or negotiate better terms. The selection term is insignificant at conventional levels for private and subsidiary acquisitions, indicating that the coefficient estimates for these subsamples in Table IV are reliable. Thus, we can conclude that the use of a top-tier advisor is not associated with higher bidder returns in private and subsidiary acquisitions.

Given the presence of selection bias in the public acquisitions subsample, to reveal the pure effect of advisor reputation on *bidder CARs* we need to address the following question: What would have been the outcome had the same deal been advised by an alternative type of advisor? We use a switching regression model with endogenous switching that allows us to answer the above what-if type of question. This can be done by specifying two second-stage equations – one for top-tier advisors, and one for non-top-tier advisors – and then evaluating bidder and deal characteristics of the acquisitions advised by top-tier advisors in the non-top-tier equation and vice versa. Panel A of Table VI presents the switching regression model estimates and Panel B presents the results of the what-if analysis.

[Please Insert Table VI About Here]

Reinforcing the insights gained from the coefficient on *inverse Mills ratio*, the results point out that a non-top-tier advisor would have delivered a lower *CAR*, while top-tier advisors would have put together a better deal. The improvement in *CAR* of the non-top-tier advisors is a negative 1.24%. Similarly, deals advised by non-top-tier advisors would have been better by 1.01%, on average, if a top-tier investment bank had been employed. Both numbers are statistically significant at the 1% level.

So far, we have provided evidence that the use of top-tier investment banks is associated with higher bidder returns in public acquisitions. To identify whether the superior services of top-tier advisors come at a premium price, we now examine advisory fees in these transactions.

B. Advisory Fees

M&A advisory fees are a major source of revenue for investment banks. According to Kolasinski and Kothari (2008), M&A advisory fees are at least as important as equity underwriting fees, and in some years they significantly exceed them. It is therefore interesting to examine whether the superior services of top-tier banks in public acquisitions are rewarded by premium fees, as predicted by the reputation theory. In addition, given the large cross-sectional variation in fees that is observed in practice (McLaughlin (1990)), we study the determinants of this variation.

Table VII presents the results for advisory fee OLS regressions.[12] Model (1) includes only our main explanatory variable, the *top-tier* indicator. The *advisory fees* variable appears to be negatively related to advisor reputation in this specification, corroborating the results of the univariate comparisons. However, McLaughlin (1990) shows that advisory fees as a percentage of transaction value decrease with transaction size. To control for this economies of scale effect, specification (2) includes the natural logarithm of *deal value* as an additional explanatory variable. As expected, advisory fees are significantly (at the 1% level) negatively related to transaction value. Controlling for transaction size, the top-tier advisors are associated with higher advisory fees (the coefficient is significant at the 1% level). Specification (3) includes the *relative size* of the deal as an additional control for the size effect, as well as the *payment includes stock* dummy. Advisory fees are positively related to the *relative size* of the transaction, while they are marginally lower when the payment includes stock, suggesting that advisors could be cross-subsidizing advisory fees by the associated equity financing fees.

[Please Insert Table VII About Here]

Specification (4) includes other deal-specific characteristics that are likely to influence advisory fees. Transactions that are d*iversifying* or *hostile*, as well as *tender offers*, are likely

to be more complex. We therefore expect positive coefficients for these variables. From the newly added variables, only the *diversification* dummy appears to be significant (at the 10% level). The *top-tier* variable remains positive and significant, at the 1% level, in this regression.

Finally, specification (5) adds *sigma* as an additional explanatory variable, which represents uncertainty about the value of the firm (Officer, Poulsen, and Stegemoller (2009)). We expect advisory fees to be higher for firms that are more difficult to value. As expected, advisory fees are positively related to the uncertainty about the value of the bidding firm. The coefficient is significant at the 1% level. The coefficient on *top-tier* is positive and significant at the 1% level, suggesting that, all else equal, top-tier advisors charge a fee that is on average 0.25 percentage points higher than non-top-tier investment banks.

Table VIII presents the switching regression model for advisory fees. As for the *CAR*s analysis, we exclude the *tender offers* dummy from the matching equation, as the acquisition technique is generally determined by the advisor, not vice-versa.[13] The coefficient on *inverse Mills ratio* is insignificant for both top-tier and non-top-tier equations, indicating that the OLS estimates in Table VII are not affected by selection bias. Accordingly, the fee "improvement" estimates for top-tier and non-top-tier categories (0.26% and -0.23%, respectively) are very close to the OLS top-tier coefficient estimate. This evidence leads us to conclude that top-tier advisors charge premium fees for their services in public acquisitions.

[Please Insert Table VIII About Here]

Thus far we have identified that top-tier advisors are associated with higher *bidder CAR*s and higher advisory fees in public acquisitions. Assuming market efficiency, a bidder's CAR incorporates all publicly available information regarding the NPV of the proposed transaction, including the advisory fee. Therefore, the net wealth effect of using the services of a top-tier advisor is positive. For a mean- (median-) sized bidder in the public acquisitions

sample, a 1.01% improvement in *bidder CAR* translates into a nontrivial 65.83 US$ million (8.67 US$ million) shareholder value gain. Thus, we conclude that top-tier banks provide better services by identifying/structuring superior deals in public acquisitions, and charge premium prices for their work.

This type of premium quality – premium price equilibrium is consistent with the product market literature (Klein and Leffler (1981), Shapiro (1983), and Allen (1984)) and the model of Chemmanur and Fulghieri (1994) on information production by financial intermediaries. These findings also have important practical implications. First, they suggest that the current practice of constructing league tables of financial advisors based on the value of the deals they advised is consistent with the notion that the position of the investment bank in these rankings signals the quality of its services. Second, the ability of top-tier advisors to charge premium fees provides them with an incentive to build up and protect their reputational capital, which in turn results in high quality services for their clients.

C. The Sources of the Top-Tier Improvement

It is interesting to examine what the sources of the top-tier improvement actually are.[14] On the one hand, top-tier investment bankers could be able to structure mergers with higher synergies (for example, by identifying better matches, that is, targets that better suit the bidder business portfolio). We call this the "better merger" hypothesis. On the other hand, top-tier advisors could be able to get a larger share of synergies to accrue to the bidding firm (for example, by negotiating better terms). This possibility is designated as the "skilled negotiation" hypothesis. Note that the two hypotheses are not mutually exclusive; in fact, Kale, Kini, and Ryan (2003) find evidence in support of both of these hypotheses in their sample of tender offers.

In the spirit of Kale, Kini, and Ryan (2003), we compute the dollar-denominated *synergy gain (SG)* and the *bidder's share of synergies (BSOS)*. Specifically, *SG* is the sum of bidder and target dollar-denominated gains, with dollar-denominated gains being the product of market value of equity four weeks prior to the announcement and the *CAR* (-2, +2) of the respective firms. The *BSOS* variable is computed as the bidder dollar-denominated gain divided by *SG* when *SG* is positive, and (1 - bidder dollar-denominated gain) divided by *SG* when *SG* is negative.[15] Table IX presents the results of the cross-sectional regression analysis of *SG* and *BSOS*.[16]

[Please Insert Table IX About Here]

In support of the better merger hypothesis, we find that top-tier advisors are associated with takeover transactions with higher synergy gains (specification (1)). This is consistent with the early work of Bowers and Miller (1990) as well as with Kale, Kini, and Ryan (2003). On the other hand, the coefficient on the *top-tier* variable in the bidder's share of synergies regression is positive, but not significant at conventional levels in specification (2). However, for this analysis, it is important to also consider the reputation of *the target* advisor, as the latter will also strive to appropriate a larger share of synergies. Therefore, the presence of a top-tier advisor on the target side may undermine the efforts of the bidder advisor and cancel out the effect of the *top-tier* variable alone. To control for this effect, we obtain data on the target firm advisor in these transactions and create a *target top-tier* indicator (taking the value of one if the target was advised by a top-tier advisor and zero otherwise). We then interact it with *top-tier,* our main variable of interest. Accordingly, the presence of a top-tier advisor on the target side will inhibit the ability of a bidder top-tier advisor to appropriate a larger share of synergies. In this case, the coefficient on this interaction term should be negative, representing a change in the slope of the *top-tier* variable over a base case in which the target advisor is non-top-tier. Specification (3) reveals that this is indeed the case, with both

variables being significant at the 5% level. It therefore appears that top-tier advisors do have an ability to get a larger share of synergies to accrue to the bidders, but this effect is cancelled out when targets also employ top-tier advisors. Thus, we also find evidence in support of the skilled negotiation hypothesis. We note several other interesting results. For instance, the coefficient on the *size* variable indicates that large bidders can more easily capture synergies. In addition, payment with stock is associated with a relatively lower share of synergies accruing to the bidder. Bidders get a relatively larger share of synergies in tender offers, but the opposite is true in hostile deals. This potentially explains why the M&A literature tends to find that bidder returns are higher in tender offers and lower in hostile deals. Finally, *sigma* and *book-to-market* obtain positive and significant coefficients.[17]

Overall, we conclude that the source of top-tier improvement stems from the ability of top-tier investment bankers to identify mergers that generate higher synergy gains and to get a larger share of these synergies to accrue to the bidder (though the latter is hampered when the target advisor is top-tier). This is consistent with Kale, Kini, and Ryan (2003). Our results continue to hold when we control for endogeneity of advisor reputation.

D. Are Top-Tier Advisors Hired to Complete Deals?

In this section, we explore whether top-tier investment bankers are hired simply to complete the M&A deals. In particular, we investigate whether top-tier banks are associated with higher deal completion rates. As in Table IV, we run the regressions for the overall sample as well as for public, private, and subsidiary acquisitions separately, and we control for bidder- and deal-specific characteristics and year fixed effects (coefficients not shown). Table X presents the results of the probit regression analysis.

[Please Insert Table X About Here]

Specification (1) shows that there is no effect of financial advisor reputation on deal completion in the overall sample. The most significant predictor of success is the *hostility* indicator, which obtains a negative coefficient with a *Z*-statistic of -13.27. From the other control variables we find that *tender offers* are more likely to be completed and stock price *run-up* also has a positive effect on deal completion, while *sigma* and the *relative size* of the deal have a negative effect on bid success.

Specifications (2), (3), and (4) present the results for public, private, and subsidiary acquisitions, respectively. We do not find a significant effect of advisor reputation on deal completion in public or private deals, but the *top-tier* indicator is positive for the subsidiary acquisitions subsample. However, we note that this result is based on a rather small number of unsuccessful bids (25) in the subsidiary acquisitions subsample. Our results continue to hold after controlling for endogeneity of advisor reputation. Overall, the findings from this section are consistent with the view that deal completion is not, in general, the top-tier advisors' main motivation.

E. Time to Resolution

Another interesting facet of a takeover deal is the time it takes from the announcement until the completion or withdrawal from the deal.[18] It is of particular interest in our setting, given that investment bankers are largely in charge of the negotiation process and therefore should exert significant influence over the time to the bid's resolution. The predicted direction of the relationship between advisor reputation and the time to resolution, however, is less clear. On the one hand, it is plausible that top-tier bankers are able to work through deals more quickly given their superior skills and expertise. We refer to this possibility as the "skilled advisor" hypothesis. Alternatively, since top-tier bankers have more reputational capital at stake, they might take more time to carefully evaluate the terms of the transaction

and negotiate favorable terms for the bidder. We refer to this alternative as the "diligent advisor" hypothesis. We restrict this analysis to the public acquisitions subsample since acquisitions of unlisted firms are often announced only when completed (Officer, Poulsen, and Stegemoller (2009)), causing the duration of the bid to be equal to one day when this was not in fact the case. Table XI presents the results.

[Please Insert Table XI about Here]

The dependent variable in these regressions is *time to resolution*, which measures the number of calendar days between the announcement and the resolution (completion or withdrawal) dates as reported by Thomson Financial SDC. A positive coefficient on the *top-tier* indicator (top-tier deals take longer) would support the diligent advisor hypothesis, while a negative coefficient (top-tier deals take less time) would constitute evidence in favor of the skilled advisor hypothesis. As with all our tests, we include bidder- and deal-specific characteristics as control variables. Specification (1) is estimated over all acquisition bids. The coefficient on the *top-tier* variable is negative and significantly different from zero at the 10% level. This indicates that top-tier advisors are associated with shorter bid durations. However, this does not yet mean that top-tier advisors actually close deals faster. To shed light on this question, specification (2) repeats the analysis for the completed bids sub-sample. The coefficient on the *top-tier* indicator remains negative and gains in significance (to the 5% level). Thus, it appears that top-tier investment banks are associated with shorter time to completion. Specification (3) estimates the same model on the subsample of unsuccessful bids. Here the *top-tier* variable is insignificantly different from zero, indicating that deals that ultimately fail do not differ in duration between the two categories of advisors. Our results are unchanged if we use the logarithmic transformation of *time to resolution* as the dependent variable and control for endogeneity of advisor reputation.

Overall, the data seem to support the skilled advisor hypothesis. Apparently, top-tier advisors not only do better deals, but they also achieve closure more rapidly. We interpret this as additional evidence of the superiority of top-tier investment banks as financial advisors in M&As.

IV. Discussion

A. Why Public Deals Only?

A natural question that arises from our findings is why financial advisor reputation matters only in public deals. We argue that advisor reputation is not equally important across all M&A transactions.

First, external visibility leads to greater reputational exposure (Rhee and Valdez (2009)) and thus creates relatively greater incentives for advisors to render superior services in public takeover situations. Indeed, public acquisitions are widely observed by the market, with most prominent deals extensively covered by the business press and the media. In contrast, acquisitions of unlisted targets are typically announced only when completed (Officer, Poulsen, and Stegemoller (2009)).

Second, public acquisitions demand more skill and effort on the part of the financial advisor for three reasons: i) public targets are associated with greater bargaining power compared to that of unlisted firms (Fuller, Netter, and Stegemoller (2002) and Officer (2007)), making it more difficult for the bidding firms to capture any synergies; ii) public acquisitions require more regulatory and/or shareholder approvals, and may involve fighting antitakeover defences; and iii) in acquisitions of public firms, the bidder's ability to obtain any post-deal indemnification for undisclosed or hidden obligations of the target is impounded by the dispersed ownership of public targets. For instance, if a private seller fails to disclose large environmental responsibility, the bidder may be able to claim compensation

(subject to the provisions of the purchase agreement that may entitle the buyer to indemnification for such liabilities). When the target is a public company, such recourse might be difficult as it requires claiming damages from thousands of individual selling shareholders. This puts additional pressure on the bidder's financial advisor to perform well, uncover any such risks, and price them, ex-ante, accordingly.

Our finding of superior services provided by top-tier financial advisors in public acquisitions is new to the literature. However, there are traces of this result in previous work on the subject. Although we cannot directly compare our results to prior studies as previous papers do not explicitly consider the interaction between the effect of advisor reputation and the target firm listing status, some parallels can be drawn.

Rau (2000) finds that top-tier advisors are associated with higher bidder announcement returns in tender offers but not in mergers. Since tender offers are public deals (while his mergers subsample contains both public and private targets), his findings can now be attributed, in light of the results of this study, to the relatively larger advisor reputational exposure in the tender offers part of his sample. Kale, Kini, and Ryan (2003) also focus on tender offer contests and find a positive association between advisor reputation and bidder returns; however, their result stands only when using a measure of the relative reputation of the merging parties' advisors. Our findings thus reconcile the existing evidence by showing that financial advisor reputation positively affects bidder returns in acquisitions of listed firms but not in private or subsidiary acquisitions.

B. Why Don't Top-Tier Banks Consume the Entire Surplus They Create?

Another relevant question raised by our results concerns the distribution of the surplus created by top-tier advisors.[19] In particular, the average *CAR* improvement brought about by the top-tier investment bank is 1.01%, which translates into a 65.83 US$ million wealth effect

(8.67 US$ million) for a mean- (median-) sized bidder, while at the same time the mean (median) advisory fee is only 5.41 US$ million (2 US$ million). It therefore does not seem feasible for top-tier advisors to capture the entire surplus they create. We offer two potential explanations for why top-tier banks do not consume all the benefit through a higher advisory fee.

First, if top-tier advisors leave no benefit for the client, there would be no direct incentive for the latter to engage a top-tier advisor. More formally, this would be a violation of the premium price – premium quality type of equilibrium modelled by Klein and Leffler (1981). In fact, one of Chemmanur and Fulghieri's (1994) model implications explicitly states that the net proceeds to the client of a reputable underwriter should be higher. In the M&A context, the bidder CAR represents such a net effect, as investors should already discount the advisory fee in an efficient market.

Second, the investment banking industry appears to be fixated on advisor rankings. Since the position of the advisor in the league tables secures future business (Rau (2000) and Bao and Edmans (2011)), advisors have an incentive to compete for market share and are therefore constrained in the extent to which they can raise prices. In a similar vein, advisors might care about superior bidder performance if bidders are performance-chasers, that is, if bidders choose advisors according to past bidder performance.[20] Leaving some benefit for the bidder thus suggests that the present value of the future income stream from future business exceeds the value of an alternative strategy whereby all of the surplus would be captured by the advisor in the short term.

V. In-House Acquisitions

Not all bidders resort to advice from financial intermediaries. As shown in Table II, 352 (7.9%) of the M&A deals in our sample are in-house acquisitions, where the bidder does not

employ an investment bank. Building upon the earlier work of Servaes and Zenner (1996), we also examine the determinants of the decision to employ an investment bank in an M&A transaction by performing probit regression analysis. Specifically, we examine whether the in-house M&A expertise of the bidder is a significant determinant, in addition to other characteristics.

Table XII presents the results. Our main variable of interest, *in-house M&A expertise,* is the number of in-house acquisitions made by the bidder in the previous five years. To separate the in-house expertise effect from the general M&A experience of the bidder, we control for bidder *M&A experience,* which is the overall number of acquisitions made by the bidding firm in the five-year period prior to the deal. We use Thomson Financial SDC data to construct these variables. We expect both variables to be negatively related to the decision to employ an advisor. In addition, we control for bidder and deal characteristics as in previous analyses. Specification (1) controls for bidder characteristics. The coefficients on both *in-house M&A expertise* and *M&A experience* are negative and highly significant (at the 1% level), with in-house expertise having a much more sizeable effect. Apparently, it is not so much the general M&A experience of the bidding firm, but rather the expertise of the bidder in executing transactions on its own that influences the decision to employ an advisor. This result carries through when we add deal characteristics in specification (2). In addition, we note that large bidders and low *book-to-market* bidders are more likely to use an investment bank for an acquisition. *Sigma* and *relative size* are also positively associated with the use of an investment banker. The p*ayment includes* s*tock* dummy obtains a negative coefficient significant at the 1% level. *Diversifying deals*, which proxies for information asymmetry as suggested by Servaes and Zenner (1996), are more likely to involve a financial advisor on the part of the bidder, while the opposite is true for *tender offers*. Finally, we note that our regressions explain up to almost 30% of the decision to employ an advisor. Running this

analysis by subsamples (public/private/subsidiary) does not provide further insights.[21] We conclude that in-house M&A expertise is an important determinant of the decision to employ a financial advisor for a corporate control transaction.

[Please Insert Table XII About Here]

VI. Additional Robustness Tests

The main conclusion of this study is that top-tier advisors are associated with better services and higher advisory fees in public acquisitions relative to their non-top-tier counterparts. In this section, we address the robustness of our novel evidence.

A. Financial Advisor Classification

The first robustness question concerns the top-tier definition. Given that the top-8 classification is arbitrary, we perform robustness analysis using top-5 and top-10 cutoffs. The results are very similar to those reported in the paper using the top-8 classification in terms of both signs and significance levels. Second, we control for the "boutique" vs. full-service investment bank classification of Song and Wei (2010).[22] We find that our results with respect to advisor reputation are not affected, while the boutique dummy is not significant in the bidder returns, advisory fees, or deal completion regressions, consistent with the findings of Song and Wei (2010). Finally, the recent financial crisis may have changed the reputation perception of top-tier investment banks. To test this proposition, we create an indicator variable for deals taking place during the crisis years (2007, 2008, 2009) and interact it with the top-tier variable. If crisis-related concerns have spoiled the reputation of top-tier advisors, we would expect a negative coefficient on this interaction in our returns regressions. However, we find that the coefficient on this variable is not significantly different from zero in all acquisitions subsamples. We thus conclude that the reputation of top-tier investment

banks was not affected by their involvement in the sub-prime mortgage crisis, at least with respect to merger advisory services.

B. Measure of Bidder Gains

The second relevant question that we address relates to the measurement of the quality of advice (bidder gains). Specifically, one can argue that the efforts of investment bankers do not end with the announcement, but continue until completion or withdrawal from the deal (for instance, as the target firm reacts, bids are revised and terms are changed). This implies that a short window surrounding the announcement does not fully capture the valuation effects of financial advisor reputation. To address this issue, a measure of bidder returns from announcement to completion/withdrawal is employed; the results are qualitatively similar.[23]

As a further check, we re-run our returns analysis using a probit model where the dependent variable is one if bidder return is positive and zero otherwise.[24] We find that top-tier advisors are associated with a higher probability of a positive bidder return in public acquisitions but not in private or subsidiary ones, echoing our main results.

C. Endogeneity Control

If our scope variable captures some of the effects not fully controlled for in the second-stage regressions, then it may not be a valid exclusion restriction. We therefore employ an alternative exclusion restriction, namely, a variable measuring the intensity of the bidder's relationship with top-tier investment banks. This variable is constructed as the proportion of the number of investment banking deals (M&As, bonds and equity underwriting) conducted by the bidder using a top-tier investment bank, in the five years prior to the deal, to the total number of investment banking deals (top-tier and non-top-tier) performed by the bidder. Our results are unchanged when using this alternative exclusion restriction.

Nevertheless, exclusion restrictions are not critical in the Heckman selection procedure, as the model is identified by the nonlinearity of —— and ——— (Li and Prabhala (2007)), implying that our model is valid even without an exclusion restriction. Consistent with this property, the model tested without an exclusion restriction yields robust results.

Finally, we use an alternative self-selection control technique, namely, propensity-score matching, implemented as in Drucker and Puri (2005). In this technique, top-tier deals are matched to non-top-tier deals based on a propensity score that is a function of bidder- and deal-specific characteristics. Differences between top-tier deals and matched non-top-tier deals for the outcome variables of interest (i.e., bidder returns, advisory fees, deal completion, time to resolution, synergy gains, and bidder's share of synergies) are then estimated. Our results continue to hold when using this alternative technique.

D. Other Sensitivity Tests

We also perform sensitivity tests i) using alternative short-run announcement period return windows such as (-1,+1) and (-5,+5); ii) using the equally-weighted CRSP index (as opposed to value-weighted) as the market return; iii) using market-adjusted abnormal returns (i.e., assuming α=0 and β=1 as market model parameters); iv) winsorizing the returns at the 1st and 99th or 5th and 95th percentiles to control for outliers; v) raising the minimum relative size of the deal threshold to at least 5% or at least 25% (leaving out 799 and 2,688 deals, respectively); vi) restricting the sample to 100% acquisitions (leaving out 46 deals); vii) excluding bidders from financial industries (SIC codes 6000-6999) (leaving out 1,284 deals); viii) excluding bidders from utility industries (SIC codes 4900-4999) (leaving out 140 deals); and ix) including a dummy variable for deals where the bidder's financial advisor arranged or provided financing, based on the Thomson Financial SDC advisor assignment variable (78 deals).[25] None of these variations changes our results.

VII. Conclusion

Contrary to prior findings, but consistent with the theoretical model of information production by financial intermediaries, this paper provides new evidence on the role of financial advisors in M&As. In particular, top-tier advisors are associated with higher bidder gains in public acquisitions, but not in private or subsidiary deals. This translates into a 65.83 US$ million shareholder value enhancement for a mean-sized bidder. Importantly, the improvement in bidder returns comes from the ability of top-tier bankers to identify mergers with higher synergies, consistent with the better merger hypothesis, and to get a larger share of synergies to accrue to the bidder, in line with the skilled negotiation hypothesis (though the latter is moderated when the target advisor is also top-tier). The differential impact of advisor reputation on abnormal returns gained by bidders across types of acquisitions (i.e., public, private, subsidiary deals) is attributed to the profound reputational exposure and larger set of advisor skills and effort required in acquisitions of public versus unlisted firms.

In addition, this study examines advisory fees and shows a positive relationship between advisor reputation and the price of their services in public acquisitions. This premium price – premium quality type of equilibrium is consistent with the seminal reputation literature. In terms of deal completion, there is weak evidence that top-tier advisors are associated with higher completion rates, but they are associated with shorter time to completion. Further, the existence of endogeneity in bidder-advisor matching is demonstrated, advocating the use of a model that explicitly controls for this bias. Finally, this study examines so-called in-house deals, whereby bidders do not employ a financial advisor for an M&A transaction. Bidding firms do not resort to external financial advice when their in-house M&A expertise is high.

In response to the questions raised in the introduction, the findings of this paper imply that: i) the reputational capital mechanism does function in the market for merger advisory

services, securing both higher synergy gains and a larger share of synergies for bidders advised by top-tier investment banks in return for premium fees; ii) the completion of an M&A deal is not the main motivation of a top-tier investment banker; and iii) paying for a top-tier financial advisor in public acquisitions is value enhancing. Overall, this paper resolves the long-standing puzzle of advisor reputation in M&As - an important corporate finance issue.

Appendix A. Variable Definitions

Variable	Definition
	Panel A: Dependent Variables and Advisor Reputation
CAR (-2, +2)	Cumulative abnormal return of the bidding firm's stock in the five-day event window (-2, +2) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 240 days and ending 41 days prior to the announcement. The CRSP value-weighted index return is the market return.
Advisory Fee	Total advisory fee paid by the bidder (excluding any fees for financing the deal) as a percentage of Deal Value from Thomson Financial SDC.
Completed Deals	Dummy variable: one for completed transactions, zero for unsuccessful bids.
Time to Resolution	Number of calendar days between announcement and resolution (completion or withdrawal) dates, both as reported by Thomson Financial SDC.
Synergy Gain (SG)	Sum of bidder and target dollar-denominated gains (the latter computed as the market value of equity four weeks prior to the announcement from CRSP in US$ million times the CAR (-2, +2) for the two firms).
Bidder's Share of Synergies (BSOS)	Bidder dollar-denominated gain (computed as the market value of equity four weeks prior to the announcement from CRSP times CAR (-2, +2)) divided by Synergy Gain if Synergy Gain is positive and (1 - Bidder dollar-denominated gain) divided by Synergy Gain if Synergy Gain is negative.
Bidder Used Advisor	Dummy variable: one for deals advised by a financial advisor, zero for in-house deals.
Top-Tier	Dummy variable: one for transactions advised by one of the top-8 financial advisors according to the value of deals advised by each bank during the sample period (1996 to 2009), zero for all other financial advisors. The top-8 financial advisors are Goldman Sachs, Merrill Lynch (now Bank of America Merrill Lynch), Morgan Stanley, JP Morgan, Credit Suisse First Boston, Citi/Salomon Smith Barney, Lehman Brothers (now Barclays Capital), and Lazard.

Panel B: Bidder Characteristics	
Size	Bidder market value of equity four weeks prior to the acquisition announcement from CRSP in US$ million.
Book-to-Market	Book value of equity at the fiscal year-end prior to the announcement divided by the market value of equity four weeks prior to the acquisition announcement. Book value of equity is from Compustat; market value of equity is from CRSP.
Run-Up	Market-adjusted buy-and-hold return of the bidding firm's stock over the period beginning 205 days and ending six days prior to the announcement date from CRSP.
Sigma	Standard deviation of the bidding firm's market-adjusted daily returns from CRSP over the period beginning 205 and ending six days before deal announcement.
Leverage	Total financial debt (long-term debt plus debt in current liabilities) divided by the book value of total assets for the fiscal year prior to acquisition announcement from Compustat.
Cash Flows-to-Equity	Income before extraordinary items plus depreciation minus dividends on common and preferred stock divided by the number of shares outstanding times the closing stock price at the fiscal year-end immediately prior to the announcement from Compustat.
Panel C: Deal Characteristics	
Deal Value	Value of the transaction from Thomson Financial SDC in US$ million.
Public Deals	Dummy variable: one for acquisitions of public firms, zero otherwise.
Private Deals	Dummy variable: one for acquisitions of private firms, zero otherwise.
Subsidiary Deals	Dummy variable: one for acquisitions of subsidiary firms, zero otherwise.
Relative Size	Value of the transaction from Thomson Financial SDC divided by the bidder's market value of equity four weeks prior to the announcement from CRSP.
Hostile	Dummy variable: one for deals defined as hostile or unsolicited by Thomson Financial SDC, zero otherwise.
Diversifying Deals	Dummy variable: one for cross-industry transactions, zero for same industry transactions. Industries are defined at the two-digit SIC level from Thomson Financial SDC.
Tender Offers	Dummy variable: one for tender offers, zero otherwise.
All-Cash Deals	Dummy variable: one for deals in which the sole consideration is cash, zero otherwise.
All-Stock Deals	Dummy variable: one for deals in which consideration is pure stock, zero otherwise.
Mixed Deals	Dummy variable: one for deals in which consideration is neither all-cash nor all-stock,

	zero otherwise.
Payment incl. Stock	Dummy variable: one for deals in which consideration includes some stock, zero otherwise.
Premium	Takeover premium from Thomson Financial SDC computed as the difference between the offer price and the target's stock price four weeks before the acquisition announcement divided by the latter; values beyond the range of [0, 2] are winsorized following Officer (2003).

Appendix B. Endogeneity Control

Assume an OLS regression model of the following form:

, (B.1)

where is a vector of firm- and deal-specific characteristics, is a dummy for top-tier advisors, and is the error term. For the OLS estimates to be reliable, this setup implicitly requires that be exogenous in equation (B.1). If is endogenous, then equation (B.1) cannot be consistently estimated by OLS. Heckman (1979) proposes a simple two-stage estimator to correct for this bias. First, the following equation is estimated by probit:[26]

, (B.2)

where is a vector of characteristics that affect the choice between a top-tier advisor and a non-top-tier advisor, and is the error term of the selection equation. Given the binary nature of our reputation measure,

and . (B.3)

When and are correlated, OLS estimates in equation (B.1) are biased. However, it has been shown that if equation (1) is replaced by

, (B.4)

where (.) and (.) are the density function and the cumulative distribution function of a standard normal, respectively, then equation (B.4) can be consistently estimated by OLS. Moreover, the coefficient will determine the effect of advisor reputation on . This model

appears in Puri (1996), Gande et al. (1997), and Gande, Puri, and Saunders (1999) in their studies of commercial banks' entry to the bond underwriting market.

The above setup can be further generalized to allow for any differences in the effect of bidder- and deal-specific characteristics on the outcome variables between the two types of advisors. The resulting model is known as a switching regression model with endogenous switching, whereby equation (B.4) is replaced by two equations:

(B.5)

. (B.6)

Equation (B.5) is the outcome equation for the top-tier group, and (B.6) is the outcome equation for the non-top-tier group but for the same deal. Of course, we only observe or , depending on the advisor used. Thus,

and . (B.7)

Endogeneity is modelled by allowing for the correlation between the residuals of the selection and outcome equations and (. This implies that the unobserved determinants of the advisor choice can now affect the outcome variable of interest. The following covariance matrix is thus nondiagonal:

cov (, ,) = (B.8)

Since we only observe (B.5) or (B.6) depending on the outcome of (B.2), and never both, the observed becomes a conditional variable, and the error terms in equations (B.5) and (B.6) do not have zero mean. However, it turns out that if equation (B.5) is augmented with an additional regressor ——, then the nonzero mean of is adjusted for and the

equation can be consistently estimated by OLS. Accordingly, for equation (B.6) this is ———. These additional regressors are known as inverse Mills ratios.

This setup is a generalization of the classical Heckman (1979) two-stage procedure and appears in Lee (1978) in a study of unionism and wages, in Dunbar (1995) in a study on the use of warrants for underwriter compensation, and in Fang (2005) in a study of investment bank reputation and the price and quality of bond underwriting services.

Since we only observe a deal advised by a top-tier or a non-top-tier advisor, we need to address the question "what would have been the outcome for the same deal, had it been advised by an alternative advisor" to infer the effect of advisor reputation on . This question can be answered by comparing the outcome under a top-tier advisor and the potential outcome with a non-top-tier advisor. Econometrically, the potential outcome can be estimated by evaluating in the alternative advisor outcome equation:

——— . (B.9)

The difference between the actual and hypothetical outcome is then computed and forms the basis of inference:

. (B.10)

The hypothetical value and the associated improvement are computed similarly.

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Table I
Top-25 U.S. Financial Advisor Ranking by Transaction Value

This table presents financial advisor ranking of the top-25 investment banks according to the value of deals on which they advised for a sample of M&A transactions targeting U.S. firms during the period January 1, 1996 to December 31, 2009 drawn from the Thomson Financial SDC Mergers and Acquisitions Database. Transaction value is in US$ million. The number of deals advised by each advisor is also presented. Credit is allocated fully to both bidder and target firm advisors and to each eligible advisor in the case of multiple advisors for a single party. Equity carve-outs, exchange offers, and open market repurchases are excluded.

Rank	Financial Advisor	Transaction Value	Number of Deals
	Top-Tier		
1	Goldman Sachs	5,875,818	2,567
2	Merrill Lynch (now Bank of America Merrill Lynch)	4,505,156	3,224
3	Morgan Stanley	4,315,578	2,072
4	JP Morgan	4,111,013	2,831
5	Citi/Salomon Smith Barney	3,407,442	2,304
6	Credit Suisse First Boston	3,026,933	2,878
7	Lehman Brothers (now Barclays Capital)	2,374,155	1,444
8	Lazard	1,447,960	1,125
	Non-Top-Tier (shown from Top-9th to Top-25th)		
9	UBS	1,428,585	1,368
10	Deutsche Bank	1,185,674	1,139
11	Evercore Partners	746,074	175
12	Commerzbank	523,988	332
13	Houlihan Lokey	434,593	1,668
14	Sagent Advisors	429,722	367
15	Wells Fargo	397,746	582
16	Blackstone Group	353,597	203
17	Greenhill	301,084	146
18	Rothschild	229,334	289
19	Jefferies	214,554	1,189
20	BNP Paribas	177,777	53
21	RBS	176,675	324
22	Duff and Phelps	175,336	416
23	Centerview Partners	169,950	29
24	Keefe Bruyette & Woods	164,843	591
25	CIBC World Markets	160,040	468

Table II
Sample Descriptive Statistics

The table presents descriptive statistics for a sample of U.S. public, private, and subsidiary acquisitions announced over the period January 1, 1996 to December 31, 2009 drawn from the Thomson Financial SDC Mergers and Acquisitions Database. Panels A and B describe the mean, median, and number of observations for bidder- and deal-specific characteristics, respectively, both for the whole sample as well as for top-tier and non-top-tier advisors. Panels C and D show the same statistics for in-house deals and deals advised by an investment bank. Top-tier advisors are defined as the top-8 financial advisors (see Table I) by the value of deals on which they advised. All others are non-top-tier financial advisors. In-house deals include transactions with no financial advisor involved. Stock price data are from CRSP; accounting data are from Compustat. All variables are defined in Appendix A. Statistical tests for differences in means and equality of medians for each characteristic for top-tier versus non-top-tier and in-house versus advisor used categories are also presented.

	All Sample (1)			Top-Tier (2)			Non-Top-Tier (3)			Difference (2)-(3)	
	Mean	Median	N	Mean	Median	N	Mean	Median	N	*p*-value Mean	*p*-value Median
Panel A: Bidder Characteristics											
Size	6,479.693	858.152	4803	12,271.210	2,685.565	1861	2,384.581	389.839	2590	0.000	0.000
Book-to-Market	0.469	0.376	4626	0.426	0.335	1807	0.502	0.402	2475	0.000	0.000
Sigma	0.029	0.024	4476	0.026	0.026	1753	0.033	0.028	2378	0.000	0.000
Run-Up	0.048	-0.055	4476	0.037	-0.054	1753	0.059	-0.066	2378	0.335	0.443
Leverage	0.197	0.157	4608	0.230	0.205	1798	0.180	0.128	2469	0.000	0.000
Cash Flows-to-Equity	0.024	0.051	4524	0.045	0.057	1767	0.006	0.047	2418	0.003	0.000
Panel B: Transaction Characteristics											
Deal Value	1,218.602	163.96	4803	2,515.831	490.523	1861	425.876	82.175	2590	0.000	0.000
Relative Size	0.419	0.198	4803	0.463	0.214	1861	0.429	0.229	2590	0.238	0.330
Public Deals	0.499	-	4803	0.566	-	1861	0.432	-	2590	0.000	-
Private Deals	0.328	-	4803	0.227	-	1861	0.399	-	2590	0.000	-
Subsidiary Deals	0.173	-	4803	0.207	-	1861	0.169	-	2590	0.001	-
Diversifying Deals	0.330	-	4803	0.343	-	1861	0.339	-	2590	0.790	-
Hostile Deals	0.018	-	4803	0.031	-	1861	0.010	-	2590	0.000	-
Tender Offers	0.068	-	4803	0.092	-	1861	0.051	-	2590	0.000	-
All-Cash Deals	0.260	-	4803	0.287	-	1861	0.251	-	2590	0.007	-
All-Stock Deals	0.370	-	4803	0.313	-	1861	0.363	-	2590	0.001	-
Mixed Deals	0.370	-	4803	0.400	-	1861	0.386	-	2590	0.343	-
Premium (public only)	42.384%	34.360%	2141	41.070%	33.410%	1003	42.567%	34.780%	972	0.346	0.474
CAR (-2, +2)	0.369%	-0.233%	4803	-0.033%	-0.438%	1861	0.735%	0.063%	2590	0.063	0.025
Advisory Fee (public only)	0.649%	0.478%	735	0.553%	0.411%	322	0.724%	0.517%	413	0.011	0.006

Table II - Continued

	In-House (4)			Advisor Used (5)			Difference (4)-(5)	
	Mean	Median	N	Mean	Median	N	*p*-value Mean	*p*-value Median
Panel C: Bidder Characteristics								
Size	5,992.001	839.168	352	6,518.262	858.390	4451	0.685	0.231
Book-to-Market	0.457	0.413	344	0.470	0.371	4282	0.668	0.032
Sigma	0.023	0.020	345	0.030	0.025	4131	0.000	0.000
Run-Up	0.030	0.001	345	0.050	-0.060	4131	0.629	0.018
Leverage	0.150	0.126	341	0.201	0.161	4267	0.000	0.005
Cash Flows-to-Equity	0.044	0.051	339	0.022	0.052	4185	0.355	0.909
Panel D: Transaction Characteristics								
Deal Value	193.089	42.692	352	1,299.703	178.000	4451	0.000	0.000
Relative Size	0.106	0.059	352	0.443	0.222	4451	0.000	0.000
Public Deals	0.634	-	352	0.488	-	4451	0.000	-
Private Deals	0.341	-	352	0.327	-	4451	0.602	-
Subsidiary Deals	0.026	-	352	0.185	-	4451	0.000	-
Diversifying Deals	0.199	-	352	0.341	-	4451	0.000	-
Hostile Deals	0.006	-	352	0.019	-	4451	0.076	-
Tender Offers	0.065	-	352	0.068	-	4451	0.832	-
All-Cash Deals	0.179	-	352	0.266	-	4451	0.000	-
All-Stock Deals	0.719	-	352	0.342	-	4451	0.000	-
Mixed Deals	0.102	-	352	0.392	-	4451	0.000	-
Premium (public only)	49.258%	36.555%	166	41.807%	34.120%	1975	0.010	0.034
CAR (-2, +2)	-0.002%	-0.003%	352	0.414%	-0.226%	4451	0.404	0.753
Advisory Fee (public only)	N/A	N/A	N/A	0.649%	0.478%	735	N/A	N/A

Table III
Correlation Matrix

The table presents pairwise correlations of the variables. The sample consists of U.S. public, private, and subsidiary acquisitions announced over the period January 1, 1996 to December 31, 2009. All variables are defined in Appendix A.

	Top-Tier	CAR	Completed Deals	Advisory Fee	Size	Deal Value	Book-to-Market	Run-Up	Sigma	Public Deals	Relative Size	Payment incl. Stock	Diversifying Deals
CAR	-0.028												
Completed Deals	-0.027	0.047											
Advisory Fee	-0.074	0.011	0.030										
Size	0.215	-0.052	-0.030	-0.075									
Deal Value	0.178	-0.069	-0.067	-0.077	0.549								
Book-to-Market	-0.069	0.146	-0.028	0.353	-0.093	-0.057							
Run-Up	-0.015	-0.089	0.045	-0.067	0.024	0.031	-0.226						
Sigma	-0.140	0.076	-0.021	0.240	-0.142	-0.089	0.117	0.165					
Public Deals	0.132	-0.190	-0.140	-0.125	0.138	0.164	0.001	-0.013	-0.169				
Relative Size	0.018	0.331	-0.099	0.008	-0.074	0.062	0.231	-0.050	0.086	0.041			
Payment incl. Stock	-0.040	-0.052	-0.053	-0.062	-0.041	0.071	0.001	0.077	0.212	0.168	0.088		
Diversifying Deals	0.004	0.030	-0.003	0.098	0.025	-0.025	-0.023	-0.011	0.001	-0.062	-0.001	-0.071	
Hostile Deals	0.075	-0.035	-0.400	-0.024	0.048	0.090	0.017	-0.016	-0.043	0.138	0.055	-0.030	-0.012
Tender Offers	0.081	-0.006	-0.061	0.006	0.044	-0.010	0.004	-0.041	-0.073	0.276	0.001	-0.192	0.061
Premium	-0.022	-0.051	0.033	0.027	-0.027	-0.040	-0.042	0.157	0.135	0.009	-0.041	-0.051	0.000
Leverage	0.126	0.038	-0.046	-0.049	0.018	0.046	-0.060	-0.004	-0.136	0.029	0.148	-0.014	0.011
Cash Flows-to-Equity	0.046	-0.100	-0.008	-0.397	0.022	0.018	-0.173	0.028	-0.272	-0.004	-0.011	-0.040	-0.003

	Hostile Deals	Tender Offers	Premium	Leverage
Tender Offers	0.213			
Premium	0.030	0.139		
Leverage	0.047	0.006	-0.047	
Cash Flows-to-Equity	0.016	0.032	0.014	0.036

Table IV

Cross-Sectional Regression Analysis (OLS) of Bidder CARs

The table presents results of the cross-sectional OLS regression analysis of *bidder CARs* on advisor reputation and other bidder- and deal-specific characteristics for a sample of U.S. public, private, and subsidiary acquisitions announced over the period 1996 to 2009. Variables are defined in Appendix A. All regressions control for year fixed effects whose coefficients are suppressed. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *t*-statistics reported in parentheses are based on standard errors adjusted for heteroskedasticity and bidder clustering. N denotes the number of observations.

	All (1)	Public (2)	Private (3)	Subsidiary (4)
Intercept	0.0226	0.0388[b]	0.0863[a]	-0.0822[b]
	(0.92)	(2.45)	(3.11)	(-2.22)
Top-Tier	0.0018	0.0153[a]	0.0047	0.0068
	(0.34)	(2.98)	(0.60)	(0.60)
Ln (Size)	-0.0002	-0.0039[a]	-0.0103[a]	0.0052
	(-0.07)	(-2.59)	(-3.15)	(1.38)
Book-to-Market	0.0051	0.0202[a]	-0.0118	0.0382
	(0.45)	(2.88)	(-0.88)	(1.46)
Run-Up	-0.0099[a]	-0.0123[a]	-0.0047	-0.0036
	(-2.61)	(-2.64)	(-0.74)	(-0.27)
Sigma	0.1827	-0.6784[a]	0.2699	0.8086[b]
	(0.79)	(-2.74)	(0.80)	(2.43)
Public Deals X All-Cash	-0.0334[a]			
	(-3.68)			
Public Deals X Payment incl. Stock	-0.0718[a]			
	(-8.55)			
Private Deals X All-Cash	-0.0145			
	(-1.45)			
Private Deals X Payment incl. Stock	-0.0134			
	(-1.37)			
Subsidiary Deals X All-Cash	-0.0081			
	(-0.88)			
Payment incl. Stock		-0.0225[a]	-0.0077	0.0004
		(-4.65)	(-1.18)	(0.04)
Relative Size	0.0478[b]	-0.0095[b]	0.0295[b]	0.0720[a]
	(2.38)	(-2.14)	(2.55)	(6.28)
Diversifying Deals	0.0011	-0.0012	-0.0021	0.0071
	(0.29)	(-0.26)	(-0.30)	(0.75)
Tender Offers Dummy	0.0181[a]	0.0244[a]	-0.1208[a]	
	(2.64)	(4.30)	(-9.09)	
Hostile Deals	-0.0369[a]	-0.0205[b]		
	(-3.28)	(-2.37)		
Premium		-0.0001		
		(-0.83)		
Leverage	-0.0053	0.0167	0.0062	-0.0299
	(-0.33)	(1.27)	(0.31)	(-1.20)
Cash Flows-to-Equity	-0.0212[b]	-0.0711[a]	0.0110	-0.0140[c]
	(-2.40)	(-3.80)	(0.48)	(-1.76)
N	3995	1836	1232	754
Adjusted-R^2	0.195	0.108	0.054	0.502

Table V
Heckman Two-Stage Procedure - Bidder CARs

The table presents results of the Heckman two-stage procedure for *bidder CARs* analysis for a sample of U.S. public, private, and subsidiary acquisitions announced over the period 1996 to 2009. The first column for each subsample is the first-stage selection equation estimated by probit regression, where the dependent variable is one if the bidding firm retained a top-tier advisor and zero otherwise. The second column for each subsample is the second-stage equation, where the dependent variable is *bidder CAR* and the *inverse Mills ratio* adjusts for the nonzero mean of error terms. See Appendix A for variable definitions and Appendix B for details on the Heckman model. The *scope* variable takes the value of one if in the five years prior to the deal the bidder employed a top-tier investment bank at least once for an equity issue, a bond issue, or an acquisition; it takes the value of two if a top-tier bank was employed for two of the three types of transactions; it takes the value of three if in all three types of transactions a top-tier investment bank was employed; and it takes the value of zero if a top-tier bank was never employed for any of these corporate transactions in the five-year period prior to deal announcement. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *t*-statistics are in parentheses (*Z*-statistics for the probit regression). N denotes the number of observations.

	Public		Private		Subsidiary	
	Selection	Outcome	Selection	Outcome	Selection	Outcome
Intercept	-3.3188[a]	0.0235[c]	-3.3807[a]	0.0710[a]	-2.7440[a]	-0.0626[b]
	(-14.359)	(1.731)	(-10.959)	(3.158)	(-7.369)	(-2.352)
Scope	0.3452[a]		0.3847[a]		0.3424[a]	
	(8.203)		(6.224)		(5.434)	
Ln (Size)	0.3451[a]	-0.0025[b]	0.4003[a]	-0.0101[a]	0.3070[a]	0.0049[c]
	(14.374)	(-2.026)	(10.377)	(-3.968)	(7.156)	(1.695)
Book-to-Market	0.1867[b]	0.0179[a]	0.1570	-0.0162[c]	0.0580	0.0415[a]
	(2.264)	(3.791)	(1.466)	(-1.888)	(0.475)	(4.016)
Run-Up	-0.0989[b]	-0.0127[a]	-0.1284[b]	-0.0033	-0.1738[c]	-0.0057
	(-2.074)	(-3.979)	(-2.079)	(-0.724)	(-1.667)	(-0.692)
Sigma	5.9931[a]	-0.7501[a]	-4.2883	0.3436	-4.8962	0.4467
	(2.680)	(-4.857)	(-1.544)	(1.591)	(-1.370)	(1.606)
Relative Size	0.3188[a]	-0.0070[c]	0.1961[a]	0.0305[a]	0.2289[a]	0.0716[a]
	(6.271)	(-1.912)	(3.360)	(5.479)	(3.462)	(25.603)
Payment incl. Stock	0.0432	-0.0200[a]	0.0991	-0.0045	0.2797[a]	0.0006
	(0.527)	(-3.422)	(0.970)	(-0.516)	(2.625)	(0.062)
Diversifying Deals	-0.0320	-0.0008	-0.1171	-0.0014	0.0110	0.0075
	(-0.468)	(-0.176)	(-1.298)	(-0.188)	(0.105)	(0.792)
Tender Offers Dummy		0.0252[a]		-0.1285		
		(3.882)		(-1.014)		
Hostile Deals	0.2361	-0.0198[c]				
	(1.422)	(-1.838)				
Premium		-0.0000				
		(-0.718)				
Leverage	0.0728	0.0216[c]	-0.3113	0.0117	0.3046	-0.0280
	(0.395)	(1.761)	(-1.345)	(0.633)	(1.191)	(-1.274)
Cash Flows-to-Equity	-0.0024	-0.0722[a]	0.3985	0.0146	0.1679	-0.0164[b]
	(-0.028)	(-8.941)	(1.103)	(0.689)	(0.657)	(-2.040)
Inverse Mills Ratio		0.0069[b]		0.0019		0.0093
		(2.348)		(0.345)		(1.443)
N	2009	1836	1232	1232	754	754
Pseudo-R^2 (Adj.-R^2)	0.250	(0.100)	0.241	(0.053)	0.225	(0.498)

Table VI

Public Acquisitions - Switching Regression Model for Bidder CARs

The table presents results of the switching regression model analysis of *bidder CARs* for a sample of U.S. public acquisitions announced over the period 1996 to 2009. Panel A presents the coefficient estimates. The first column is the first-stage selection equation estimated by probit regression, where the dependent variable is one if the bidding firm retained a top-tier advisor and zero otherwise. The second and third columns are the second-stage equations for top-tier and non-top-tier deals, respectively. See Appendix A for variable definitions and Appendix B for details on the model. The *scope* variable takes the value of one if in the five years prior to the deal the bidder employed a top-tier investment bank at least once for an equity issue, a bond issue, or an acquisition; it takes the value of two if a top-tier bank was employed for two of the three types of transactions; it takes the value of three if in all three types of transactions a top-tier investment bank was employed; and it takes the value of zero if a top-tier bank was never employed for any of these corporate transactions in the five-year period prior to deal announcement. Panel B presents the results of the what-if analysis based on the switching regression model estimates. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. *Inverse Mills ratio* adjusts for the nonzero mean of error terms; its construction is discussed in Appendix B. The *t*-statistics are in parentheses (*Z*-statistics for the probit regression). N denotes the number of observations.

Panel A: Model	Selection	Top-Tier	Non-Top-Tier
Intercept	-3.3188[a]	0.0970[c]	0.1282[a]
	(-14.36)	(1.90)	(3.85)
Scope	0.3452[a]		
	(8.20)		
Ln (Size)	0.3451[a]	-0.0090[b]	-0.0172[a]
	(14.37)	(-2.17)	(-3.24)
Book-to-Market	0.1867[b]	0.0216[a]	0.0001
	(2.26)	(3.47)	(0.02)
Run-Up	-0.0989[b]	-0.0129[a]	-0.0068
	(-2.07)	(-3.03)	(-1.30)
Sigma	5.9931[a]	-0.5134[b]	-1.4039[a]
	(2.68)	(-2.19)	(-6.05)
Relative Size	0.3188[a]	-0.0163[a]	-0.0142[b]
	(6.27)	(-2.65)	(-2.18)
Payment incl. Stock	0.0432	-0.0197[b]	-0.0239[a]
	(0.53)	(-2.51)	(-2.72)
Diversifying Deals	-0.0320	-0.0008	0.0008
	(-0.47)	(-0.12)	(0.11)
Tender Offers Dummy		0.0221[b]	0.0307[a]
		(2.57)	(3.06)
Hostile Deals	0.2361	-0.0242[c]	-0.0216
	(1.42)	(-1.89)	(-1.08)
Premium		-0.0000	-0.0001
		(-0.23)	(-0.82)
Leverage	0.0728	0.0338[c]	-0.0072
	(0.39)	(1.96)	(-0.39)
Cash Flows-to-Equity	-0.0024	-0.1158[a]	-0.0742[a]
	(-0.03)	(-4.79)	(-8.21)
Inverse Mills Ratio		-0.0292[c]	-0.0417[b]
		(-1.71)	(-2.14)
N	2009	935	901
Pseudo-R^2 (Adj.-R^2)	0.250	(0.088)	(0.127)

Panel B: What-if Analysis	Top-Tier Deals	Non-Top-Tier Deals
Actual CAR	-2.14%[a]	-2.64%[a]
Hypothetical CAR	-3.38%[a]	-1.63%[a]
Improvement	-1.24%[a]	1.01%[a]

Table VII
Cross-Sectional Regression Analysis (OLS) of Advisory Fees on Advisor Reputation and Bidder- and Deal-Specific Characteristics

The table presents results of the cross-sectional OLS regression analysis of percentage advisory fees on advisor reputation and other bidder- and deal-specific characteristics for a sample of U.S. public acquisitions over the period 1996 to 2009. Variables are defined in Appendix A. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *t*-statistics reported in parentheses are based on standard errors adjusted for heteroskedasticity and bidder clustering. N denotes the number of observations.

	(1)	(2)	(3)	(4)	(5)
Intercept	0.0072[a]	0.0180[a]	0.0216[a]	0.0234[a]	0.0192[a]
	(13.32)	(11.91)	(6.39)	(4.38)	(3.44)
Top-Tier	-0.0017[a]	0.0026[a]	0.0024[a]	0.0026[a]	0.0025[a]
	(-2.69)	(4.67)	(4.17)	(4.77)	(4.69)
Ln (Deal Value)		-0.0021[a]	-0.0020[a]	-0.0020[a]	-0.0017[a]
		(-9.81)	(-11.08)	(-10.89)	(-10.02)
Relative Size			0.0008[b]	0.0008[b]	0.0004
			(2.08)	(2.08)	(1.05)
Payment incl. Stock			-0.0048[c]	-0.0070	-0.0072
			(-1.79)	(-1.47)	(-1.51)
Diversifying Deals				0.0017[c]	0.0015[c]
				(1.90)	(1.70)
Tender Offers Dummy				-0.0031	-0.0028
				(-1.04)	(-0.93)
Hostile Deals				-0.0001	-0.0002
				(-0.06)	(-0.15)
Sigma					0.0968[a]
					(5.19)
N	735	735	735	735	735
Adjusted-R^2	0.007	0.148	0.168	0.179	0.208

Table VIII

Public Acquisitions - Switching Regression Model for Advisory Fees

The table presents results of the switching regression model analysis of advisory fees for a sample of U.S. public acquisitions announced over the period 1996 to 2009. Panel A presents the coefficient estimates. The first column is the first-stage selection equation estimated by probit regression, where the dependent variable is one if the bidding firm retained a top-tier advisor and zero otherwise. The second and third columns are second-stage equations for top-tier and non-top-tier deals, respectively. See Appendix A for variable definitions and Appendix B for details on the model. The *scope* variable takes the value of one if in the five years prior to the deal the bidder employed a top-tier investment bank at least once for an equity issue, a bond issue, or an acquisition; it takes the value of two if a top-tier bank was employed for two of the three types of transactions; it takes the value of three if in all three types of transactions a top-tier investment bank was employed; and it takes the value of zero if a top-tier bank was never employed for any of these corporate transactions in the five-year period prior to deal announcement. Panel B presents the results of the what-if analysis based on the switching regression model estimates. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. *Inverse Mills ratio* adjusts for the nonzero mean of error terms; its construction is discussed in Appendix B. The *t*-statistics are reported in parentheses (*Z*-statistics for the probit regression). N denotes the number of observations.

Panel A: Model	Selection	Top-Tier	Non-Top-Tier
Intercept	-2.4123[a]	0.0190[a]	0.0212[a]
	(-8.08)	(7.21)	(6.49)
Scope	0.5644[a]		
	(7.75)		
Ln (Deal Value)	0.3042[a]	-0.0018[a]	-0.0016[a]
	(7.85)	(-7.03)	(-2.71)
Relative Size	0.0801	-0.0001	0.0007
	(0.85)	(-0.23)	(0.67)
Payment incl. Stock	-0.1554	-0.0023[c]	-0.0109[a]
	(-0.79)	(-1.96)	(-4.72)
Diversifying Deals	-0.1151	0.0003	0.0024[b]
	(-0.95)	(0.56)	(2.21)
Tender Offers Dummy		-0.0012	-0.0045[b]
		(-1.24)	(-2.20)
Hostile Deals	0.4714	0.0003	-0.0004
	(1.46)	(0.22)	(-0.08)
Sigma	2.1608	0.0551[a]	0.1196[a]
	(0.64)	(3.17)	(4.12)
Inverse Mills Ratio		0.0004	-0.0004
		(0.45)	(-0.16)
N	735	322	413
Pseudo-R^2 (Adj.-R^2)	0.306	(0.379)	(0.175)

Panel B: What-if Analysis	Top-Tier Deals	Non-Top-Tier Deals
Actual Fee	0.55%	0.72%
Hypothetical Fee	0.32%	0.99%
Improvement	-0.23%[a]	0.26%[a]

Table IX

The Sources of the Top-Tier Improvement

The table presents results of the cross-sectional OLS regression analysis of *synergy gains (SG)* and *bidder's share of synergies (BSOS)* on advisor reputation and other bidder- and deal-specific characteristics for a sample of U.S. public acquisitions announced over the period 1996 to 2009. Variables are defined in Appendix A. The interaction variable interacts the *top-tier* indicator with the *target top-tier* indicator (the latter takes the value of one if the target was advised by a top-tier advisor and zero otherwise). Regressions control for year fixed effects whose coefficients are suppressed. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *t*-statistics reported in parentheses are based on standard errors adjusted for heteroskedasticity and bidder clustering. N denotes the number of observations.

	(1) SG	(2) BSOS	(3) BSOS
Intercept	150.3564[c]	-0.9455[a]	-1.0983[a]
	(1.84)	(-3.65)	(-4.08)
Top-Tier	48.7990[b]	0.0747	0.2147[b]
	(2.17)	(0.79)	(2.04)
Top-Tier X Target Top-Tier			-0.2768[b]
			(-2.49)
Ln (Size)	-9.1180	0.0435	0.0612[b]
	(-0.94)	(1.57)	(2.16)
Book-to-Market	-5.7802	0.1683[a]	0.1749[a]
	(-0.37)	(2.75)	(2.83)
Run-Up	-33.5091	-0.0523	-0.0520
	(-1.39)	(-1.06)	(-1.03)
Sigma	-1,334.9379[c]	16.4871[a]	16.2314[a]
	(-1.88)	(5.64)	(5.33)
Relative Size	22.4461	-0.0520	-0.0332
	(1.31)	(-0.97)	(-0.62)
Payment incl. Stock	-29.7396	-0.2914[a]	-0.2622[b]
	(-1.09)	(-2.69)	(-2.34)
Diversifying Deals	-9.6358	0.0644	0.0470
	(-0.44)	(0.76)	(0.54)
Tender Offers Dummy	89.3413[a]	0.2626[b]	0.2610[b]
	(2.99)	(2.40)	(2.35)
Hostile Deals	-34.2614	-0.7509[a]	-0.7027[a]
	(-0.58)	(-3.13)	(-2.88)
Leverage	-40.1724	0.0925	0.0681
	(-0.72)	(0.38)	(0.27)
Cash Flows-to-Equity	-6.4110	0.0780[c]	0.0650
	(-0.51)	(1.72)	(0.45)
N	1799	1799	1763
Adjusted-R^2	0.016	0.024	0.039

Table X

Cross-Sectional Regression Analysis (Probit) of Deal Completion on Advisor Reputation and Bidder- and Deal-Specific Characteristics

The table presents results of the cross-sectional probit regression analysis of deal completion on advisor reputation and other bidder- and deal-specific characteristics for a sample of U.S. public, private, and subsidiary acquisitions announced over the period 1996 to 2009. The dependent variable is a binary variable taking the value of one for completed transactions and zero for unsuccessful bids. Variables are defined in Appendix A. All regressions control for year fixed effects whose coefficients are suppressed. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *Z*-statistics are reported in parentheses. N denotes the number of observations.

	All (1)	Public (2)	Private (3)	Subsidiary (4)
Intercept	1.9165[a]	1.6687[a]	2.1352[a]	3.9745[a]
	(7.57)	(4.88)	(3.55)	(5.08)
Top-Tier	0.0136	0.0788	-0.1926	0.5465[b]
	(0.17)	(0.75)	(-1.02)	(2.17)
Ln (Size)	0.0352	0.0334	0.0470	-0.1462[b]
	(1.51)	(1.10)	(0.78)	(-2.04)
Book-to-Market	0.0477	0.1298	0.1355	-0.1224
	(0.74)	(1.50)	(0.71)	(-0.51)
Run-Up	0.2245[a]	0.2211[b]	0.3465[b]	0.3293
	(3.17)	(2.35)	(2.00)	(1.27)
Sigma	-5.8083[a]	-7.4525[b]	-4.5062	-9.4423
	(-2.74)	(-2.13)	(-0.92)	(-1.63)
Public Deals X All-Cash	-0.2389			
	(-1.36)			
Public Deals X Payment incl. Stock	-0.3850[a]			
	(-2.94)			
Private Deals X All-Cash	0.4273[c]			
	(1.86)			
Private Deals X Payment incl. Stock	0.1307			
	(0.89)			
Subsidiary Deals X All-Cash	0.4446[b]			
	(2.18)			
Payment incl. Stock		-0.0743	-0.2922	-0.6281[a]
		(-0.54)	(-1.30)	(-2.66)
Relative Size	-0.0580[b]	-0.2428[a]	-0.1373	-0.0066
	(-2.51)	(-4.15)	(-1.61)	(-0.14)
Diversifying Deals	-0.0556	-0.0805	0.0581	-0.0492
	(-0.76)	(-0.83)	(0.36)	(-0.23)
Tender Offers Dummy	0.4477[a]	0.4268[a]		
	(2.82)	(2.59)		
Hostile Deals	-2.4312[a]	-2.4271[a]		
	(-13.27)	(-12.86)		
Premium		0.0027[c]		
		(1.92)		
Leverage	-0.2094	-0.3056	0.4418	-0.6761
	(-1.19)	(-1.23)	(1.04)	(-1.44)
Cash Flows-to-Equity	-0.2032	-0.2000	0.0703	-0.3909
	(-1.30)	(-1.05)	(0.17)	(-0.74)
N	3995	1836	1231	583
Pseudo-R^2	0.200	0.233	0.0941	0.141

Table XI

Time to Resolution

The table presents results of the cross-sectional OLS regression analysis of the time to bid resolution on advisor reputation and other bidder- and deal-specific characteristics for a sample of U.S. public acquisitions announced over the period 1996 to 2009. Variables are defined in Appendix A. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *t*-statistics reported in parentheses are based on standard errors adjusted for heteroskedasticity and bidder clustering. N denotes the number of observations.

	All Bids (1)	Completed Bids (2)	Withdrawn Bids (3)
Intercept	108.9060[a]	105.5683[a]	156.8331[b]
	(7.08)	(7.15)	(2.40)
Top-Tier	-9.6205[c]	-10.9321[b]	-16.8565
	(-1.96)	(-2.22)	(-0.75)
Ln (Size)	3.8085[b]	3.7051[b]	10.3462
	(2.42)	(2.32)	(1.55)
Book-to-Market	15.3839[b]	17.4272[a]	12.1141
	(2.39)	(2.91)	(1.10)
Run-Up	-4.8718[c]	-3.5465	-12.0687
	(-1.68)	(-1.29)	(-0.63)
Sigma	-1,060.9967[a]	-867.3329[a]	-2,966.8838[a]
	(-8.17)	(-7.18)	(-3.82)
Payment incl. Stock	34.2603[a]	31.7896[a]	23.6079
	(5.42)	(5.62)	(0.64)
Relative Size	13.9837[a]	14.9759[a]	6.9726
	(2.96)	(2.63)	(0.64)
Diversification Dummy	-15.1181[a]	-15.5462[a]	-5.9471
	(-3.42)	(-3.77)	(-0.31)
Tender Offers Dummy	-49.7835[a]	-54.7263[a]	-6.6386
	(-8.08)	(-9.34)	(-0.19)
Hostile Deals	13.6703	84.1928[b]	-63.6925
	(0.65)	(2.32)	(-1.49)
Premium	-0.0113	-0.0241	-0.0452
	(-0.21)	(-0.44)	(-0.26)
Leverage	32.8233[a]	30.7289[b]	64.5790[c]
	(2.71)	(2.47)	(1.84)
Cash Flows-to-Equity	-8.8687[c]	-4.1358	-106.4361[c]
	(-1.65)	(-0.76)	(-1.97)
N	1836	1650	186
Adjusted-R^2	0.131	0.162	0.087

Table XII
In-House Acquisitions

The table presents results of the probit regression analysis of the decision to employ a financial advisor for a sample of U.S. public, private, and subsidiary acquisitions announced over the period 1996 to 2009. The dependent variable is a dummy that takes the value of one if the bidding firm retained a financial advisor and zero otherwise. Variables are defined in Appendix A. The *in-house expertise* variable is the number of in-house deals announced by the bidder in the five years prior to the acquisition announcement. The *M&A experience* variable is the total number of deals announced by the bidder in the five-year period prior to the deal. The symbols a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. The *Z*-statistics are reported in parentheses. N denotes the number of observations.

	(1)	(2)
Intercept	0.3172[c]	-0.7176[a]
	(1.75)	(-3.11)
In-House Expertise	-0.2896[a]	-0.2490[a]
	(-10.48)	(-7.84)
M&A Experience	-0.0346[a]	-0.0388[a]
	(-4.07)	(-4.03)
Ln (Size)	0.1315[a]	0.2342[a]
	(6.62)	(9.52)
Book-to-Market	0.1331	-0.1818[c]
	(1.50)	(-1.75)
Sigma	14.1571[a]	16.4042[a]
	(5.85)	(5.98)
Run-Up	-0.0695	-0.0848
	(-1.32)	(-1.35)
Relative Size		3.1732[a]
		(12.03)
Payment incl. Stock		-0.3985[a]
		(-4.72)
Diversifying Deals		0.1864[b]
		(2.44)
Tender Offers Dummy		-0.4483[a]
		(-3.40)
Hostile Deals		-0.0204
		(-0.05)
Leverage		0.2825
		(1.28)
Cash Flows-to-Equity		0.1218
		(0.91)
N	4443	4327
Pseudo-R^2	0.147	0.288

Footnotes

[1] Source: Thomson Financial SDC.

[2] Another related study is Daniels and Phillips (2007), which examines the role of financial advisors in REIT mergers and finds that the use of an advisor, as well as a top-tier advisor, results in higher transaction values.

[3] In a related study Ertugrul and Krishnan (2009) examine the effect of individual bankers' characteristics on M&A outcomes.

[4] A caveat is in order. Virtually all of our advisory fees data pertain to public deals, restricting our fees analysis to public acquisitions. Even for public deals, advisory fees are not always disclosed as the SEC does not require this disclosure (McLaughlin (1990)). To formally address this issue, one could explicitly model the disclosure of fees in a first stage of a Heckman-type sample selection model. Yet this approach would be weak as it is unclear what the determinants of disclosing or not disclosing the fees are. Indeed, in running such a model, we find that a first-stage equation of the disclosure of advisory fees on our deal characteristics explains only 2% of this variation, making this remedy rather unreliable. When comparing the sample with advisory fees data to that without such data, we find that fees are more likely to be disclosed in larger deals and when the method of payment is stock. Therefore, it is important to control for these characteristics in our subsequent analysis.

[5] Given that the top-8 specification of top-tier advisors is still arbitrary, we check the robustness of our results using alternative cutoffs – please see Section VI.

[6] The only difference with Fang (2005) is that Lazard, a prominent merger advisor, replaced DLJ.

[7] As mentioned earlier (footnote 4), our advisory fees analysis is limited to public acquisitions. We do not have enough observations to conduct meaningful tests for private or subsidiary deals.

[8] The procedures used in this analysis are described in Appendix B.

[9] The extent to which the bidding firm used the services of the *same* advisor in the past may create an informational advantage for that advisor, possibly leading to better acquisitions. For this reason, the scope variable measures the extent to which the bidding firm used the services of *any* top-tier advisor, rather than a particular investment bank.

[10] For robustness reasons we also consider an alternative identification restriction and obtain qualitatively similar results - please see Section VI.

[11] The results are unchanged when these variables are included in the selection equation.

[12] If top-tier advisors are hired for their ability to finance the transaction, and if the advisory fees are cross-subsidized by the financing fees, then our measure of advisory fees for the top-tier category is biased downward, which will work against our finding a fee premium for the top-tier group of investment banks.

[13] The results hold when the tender offers dummy is included in the selection equation.

[14] We thank the Advisory Editor for suggesting this analysis.

[15] Note that for this analysis we further require that the target firm be covered in CRSP with sufficient data to calculate announcement period returns.

[16] Kale, Kini, and Ryan (2003) stress the importance of controlling for the influence of outliers, given the high degree of dispersion in these variables. We therefore winsorize them at the 5^{th} and 95^{th} percentiles.

[17] Introducing a similar interaction into the synergies regression does not change the magnitude of the top-tier variable, while the interaction obtains an insignificant coefficient.

[18] We thank the referee for suggesting this analysis.

[19] We thank the referee for raising this question.

[20] However, Bao and Edmans (2011) provide evidence that clients do not chase past performance of M&A advisors when selecting banks for future business, possibly due to an inefficient failure to learn.

[21] Specifically, we find that in-house M&A expertise is negative and significant in all sub-samples.

[22] We are grateful to Weihong Song and Diana Wei for sharing with us their list of advisors classified as boutiques.

[23] Specifically, we use buy-and-hold abnormal returns measured from one day prior to the announcement through one day after the resolution of uncertainty regarding the acceptance of the bid.

[24] We also employed alternative definitions, whereby the dependent variable i) takes the value of one when the return is positive and significantly different from zero (at the 5% level) and zero otherwise; and ii) takes the value of one when the return is positive and significantly different from zero (at the 5% level) and zero when it is negative and significantly different from zero (at the 5% level), discarding the insignificant returns. In all cases we obtain the same result.

[25] This variable is positive and significant in the advisory fees regressions, indicating that advisors charge higher fees for these additional services. The magnitude and significance of the top-tier coefficient are unchanged.

[26] The reader can refer to Maddala (1983) for a detailed treatment of selection models and the properties of the two-stage estimator.