Prior Client Performance and the Choice of Investment Bank Advisors in Corporate Acquisitions[*]

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Abstract:
Contrary to earlier studies, we find that prior client performance is a significant determinant of the likelihood that an investment bank will be chosen as the advisor by future acquirers and that prior client performance is a significant determinant of the changes through time in banks' shares of the advisory business. Further, we find that the changes in the market values of acquirers at the announcement of acquisition attempts are positively correlated with contemporaneous changes in the market values of their advisors. Two implications arise: (1) managers of acquiring firms consider advisors' prior client performance when choosing their advisors and (2) market forces work to align advisors' and clients' interests in the acquisition market.

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1. Introduction

Over the decade of 2002–2011, in the U.S. alone, corporate acquirers paid over $20 billion to investment banks in financial advisory fees to facilitate their acquisitions.[1] Given the dollar amounts involved, and given the importance of such takeovers for acquirers, a natural presumption is that a value-maximizing acquirer will choose its advisor based on the advisor's demonstrated ability to create value for its clients. The evidence appears to be at odds with that presumption.

Specifically, Rau (2000) and Bao and Edmans (2011) report that investment banks' shares of the corporate acquisition advisory market are unrelated to the value created for their clients in their clients' prior acquisition attempts. The implication is that acquirers, when choosing their advisors, are not sensitive to whether the advisors created value for their clients in prior acquisition attempts. Bao and Edmans investigate this implication directly by estimating a model of advisor choice in which the key independent variable is the value created for prior clients (i.e., prior clients' announcement period abnormal returns, CARs) and the dependent variable is an indicator identifying whether the bank is chosen as the advisor for a current acquisition attempt. They find no significant relation between the two variables. In commenting on their results, both Rau (2000) and Bao and Edmans (2011) characterize the absence of any apparent relation between the value created for prior clients (henceforth, prior client performance) and the likelihood that the advisor will be chosen by current acquirers as "puzzling."

[1] Figure is estimated from *Securities Data Corporation* (*SDC*) data.

The results are puzzling only if prior client performance is informative of future client performance. On this point, Bao and Edmans find that client performance is persistent and is, therefore, informative of future performance. That is, they find that advisors' clients' performance is positively correlated through time across clients. Bao and Edmans reconcile the findings of persistence in client performance and the absence of a relation between prior client performance and the likelihood that an advisor will be chosen by later acquirers by concluding that clients "do not chase performance" when choosing their advisors. A discomforting implication of this conclusion is that, when choosing their acquisition advisors, acquirers pass up the potential for value creation by ignoring advisors' prior client performance - - information that would be informative about the likely value to be created by the choice of an advisor. In setting forth the results of their advisor choice analysis, Bao and Edmans do so cautiously, commenting that "these results are only suggestive, due to the difficulty of identifying 'free' clients … and our small sample size" (Bao and Edmans 2011, p. 2311).

With that caveat in mind, and with an eye toward resolving the puzzle identified by both studies, we revisit the analyses of Rau (2000) and Bao and Edmans (2011). We begin by re-estimating a model of advisor choice. Our estimation refines and extends the analysis of Bao and Edmans by estimating a fixed-effect logit model, by extending the sample period covered (i.e., 1984–2011 vs. 1993–2007) and by expanding the parameters of the sample considered. The key independent variable in our model is prior client performance measured as either prior clients' equal-weighted average 5-day announcement period CARs or prior clients' scaled aggregate 5-day announcement period market value changes and the dependent variable is a dummy indicating whether the bank is chosen for the current acquisition attempt. After controlling for other factors, we find that prior client performance is a statistically significant

determinant of whether an investment bank will be chosen as the advisor by subsequent acquirers. Further, the relation is economically significant; depending on which measure of prior client performance is used, a one standard deviation increase in prior client performance corresponds to an 8.7% or 10.0% point estimate of the increase in the likelihood that a bank will be chosen as the advisor in later acquisition attempts.

Having concluded that prior client performance is a significant determinant of advisor choice, we consider the relation between client performance and advisor market share. We propose that market share, similar to many other economic variables, is likely to have a strong stationary component. As a consequence, the appropriate analysis is not the effect of client performance on the level of the bank's market share (as considered by Rau 2000 and Bao and Edmans 2011), but rather the effect of client performance on the bank's incremental market share. We, therefore, examine the effect of prior client performance on the change in the bank's market share through time.

After controlling for other factors, we find that the change in an advisor's market share is significantly positively correlated with prior client performance: advisors whose prior clients do well experience gains in market share. Depending on which measure of prior client performance is used, a one standard deviation increase in prior client performance increases an advisor's market share by 8.7% or 9.8%.

Our findings imply that value-increasing acquisitions by clients should be associated with an increase in their advisors' market values. To explore this implication, we investigate acquisition attempts for which stock price data are available for both the advisor and the client. We inquire whether acquirers' announcement period CARs are correlated with their advisors' announcement period CARs. We find that they are. Specifically, when we convert CARs to

market values, on average, an investment bank's market value increases by $0.208 for every dollar that an acquisition creates in value for its client. One interpretation of this piece of evidence is that the advisor's market value gain extends beyond the current transaction and incorporates the value of an increase in future market share.

The results of our estimation of the advisor choice model naturally give rise to the question of why our results differ from those of Bao and Edmans. The apparent answer has to do with certain idiosyncrasies in the way in which Bao and Edmans construct their sample. These idiosyncrasies have the effect of reducing the size of the sample by roughly 80%. When we impose the same criteria on the data as do Bao and Edmans and re-estimate the advisor choice model over the same time period as do they (i.e., 1993–2007) we, too, find that the coefficient of prior client performance is not statistically significant (and negative). As we describe in later sections, we experiment with a host of alternative specifications of the time period over which the model is estimated, the interval over which CARs are calculated, and criteria for inclusion of an acquirer in the sample. As it turns out, the insignificant (and negative) coefficient of prior client performance in the advisor choice model appears to be confined to the particular sample used by Bao and Edmans.[2]

Our analyses alleviate concern with the discomforting implication noted above that (presumably value maximizing) acquirers ignore information in advisors' prior client acquisition performance when choosing their advisors. An unfortunate outcome of our analyses is, however, a different discomforting possibility. The possibility is that, because acquirers choose their advisors on the basis of the advisors' prior client performance, and because client performance is

[2] We wish to emphasize that the criteria used by Bao and Edmans in selecting the sample for estimating their advisor choice model flow naturally from the analyses that precede it. Those analyses comprise the primary objective of their study which is to investigate whether client performance is persistent. Any bias that happens to arise in the estimation of their advisor choice model is most certainly inadvertent.

persistent, the market for advisors would quickly devolve into one dominated by a single "best" advisor as clients rush to the advisor who created the greatest value for its clients in the prior period. That possibility is discomforting because it is contrary to the currently observed robust multi-participant market for advisory services.

With that possibility in mind, we investigate how it can be that client performance is persistent, clients choose advisors on the basis of the advisor's prior client performance, and the market for advisory services persists without becoming monopolized by a single "best" advisor. The answer lies in the fact that client performance is one, but not the only, factor that acquirers consider when choosing their advisors. To explore this point, we conduct a stochastic simulation analysis in which the market begins with 50 potential advisors. Through time, we assign CARs to advisors/clients based on a persistence coefficient of the magnitude calculated by Bao and Edmans. We use the coefficients of our estimated choice model to assign clients to advisors. Our interest is in the share of the market garnered by banks/advisors through time.

When the coefficients of all variables except the coefficient of prior clients' CARs are set to zero, the market converges to a single advisory service provider in two periods. That is, if prior client performance is the only factor considered by potential acquirers when choosing their advisors, the market quickly devolves to a single provider. However, when we allow other factors to also be at work in the choice model, including prior relationships between the client and the advisor, the market does not "collapse." Rather, in the typical run, after 50 years, 10 advisors control 65% of the market and all other advisors each have a small market share. That is, after many periods, the market for advisory services looks much like the market for advisory services actually observed in the U.S. with a handful of "national" banks/advisors and a larger number of "regional" banks/advisors.

Arguably, the puzzling evidence regarding the choice of advisors by corporate acquirers begins with McLaughlin (1990) who reports that contracts between would-be corporate acquirers and their investment bank advisors specify that much, if not all, of the compensation to be paid to the advisor depends upon successful completion of the acquisition rather than whether or to what extent the acquisition creates value for the acquirer. He notes that such contracts appear to create a severe conflict of interest in which the advisor has an incentive to complete the acquisition regardless of the valuation consequences for the acquirer. He goes on to speculate, however, that market forces may work to curb the apparent conflict of interest in advisory contracts. He proposes that value-creating acquisitions can generate reputational capital for advisors that becomes manifest when the banks are awarded future advisory mandates, and it is the prospect of future mandates that helps to align acquirers' and their advisors' incentives. In this way, market forces can alleviate the potential conflict of interest.

The evidence set forth in this study can be interpreted as consistent with McLaughlin's conjecture in so far as we find that advisors are rewarded for providing value-increasing advice for their clients. The reward comes in the form of an increase in the advisor's market value when the value-increasing acquisitions are announced. The value increase for the advisor reflects (at least in principle) the value associated with the service provided to its current client and the value that derives from an increase in market share associated with providing value-increasing services to its current client. Thus, our results suggest that market forces do counteract, at least to some extent, the potential conflict of interest embedded in acquirer advisory contracts.

The paper is organized as follows. Section 2 provides certain further details of the studies by McLaughlin (1990), Rau (2000), and Bao and Edmans (2011). Section 3 identifies the

sources of the data. Section 4 describes the measures of the acquirer's value created (or destroyed) in acquisition attempts. Section 5 presents the methodology used to identify the empirical determinants of acquirers' choices of advisors and reports the results of the analysis. Section 6 describes the tests and results of the market share analysis. Section 7 describes the analysis of the relation between changes in the market value of acquirers and their advisors. Section 8 presents certain robustness tests and conducts experiments to reconcile our findings with those of Bao and Edmans (2011). Section 9 describes our simulations of the market for advisory services. Section 10 concludes.

2. Literature review

Various studies explore the determinants of the decision by an acquirer to employ a financial advisor in an acquisition attempt and the roles of advisors in such attempts. Such studies include, among others, Servaes and Zenner (1996), Kale, Kini and Ryan (2003), Allen, Jagtiani, Peristiani, and Saunders (2004), Francis, Hasan, and Sun (2008), Bodnaruk, Massa, and Simonov (2009), and Golubov, Petmezas, and Travlos (2012). However, the studies most closely related to this one are McLaughlin (1990), Rau (2000), and Bao and Edmans (2011).

McLaughlin (1990) studies the fee structure of advisory contracts in 195 inter-firm corporate tender offers during 1978–1985. He finds that, in the typical contract, more than 80% of the advisory fee is paid only if the acquisition is completed and that the fees are not contingent on whether the transaction creates value for the acquirer. He proposes that such contracts create a potential conflict of interest between the banker and the client, but further speculates that "investment bankers may be more easily controlled by other means, for example, through reputation" (McLaughlin 1990, p. 231).

Rau (2000) investigates the determinants of the aggregate market share of investment banks that advise acquirers in their merger and tender offer transactions over the period of 1980–1994. In light of McLaughlin's findings, he casts his analysis as a test of the "superior deal" hypothesis versus the "deal completion" hypothesis. According to the superior deal hypothesis, advisors' market shares should be related to their prior clients' performance measured as the value created for acquirers' shareholders. According to the deal completion hypothesis, valuation of the deal is of secondary importance; rather it is the fraction of transactions completed that determines advisors' market shares.

Rau calculates prior client performance as the post-acquisition annual and semi-annual CARs for acquisitions that took place over the year prior to which advisors' market shares are being considered. He measures the percentage of deals completed and advisors' market shares over the same year. He finds that advisors' market shares are significantly related to prior market share and the percentage of deals completed, but unrelated to prior client performance. After undertaking a battery of robustness tests, Rau concludes "[t]here is no relation between the post-acquisition performance of the acquirers the bank has advised in the past and the bank's subsequent market share" and that the puzzle remains as to "why the market fail[s] to recognize that providing incentives to complete a deal does not necessarily result in value maximization for the acquiror" (Rau 2000, p. 323).

Bao and Edmans (2011) add to the puzzle by reporting that the 3-day announcement period CARs earned by acquirers advised by specific banks during 1980–2007 are persistent. Thus, banks' future clients should be able to discern that certain banks are more successful in creating value for their clients than are others. Nevertheless, they find that banks' shares of the advisory market are unrelated to their prior clients' announcement period CARs.

Bao and Edmans also estimate a logit model in which the dependent variable is an indicator as to whether a specific bank is chosen as the advisor for an acquirer's current acquisition attempt. Their key independent variable is prior clients' equal-weighted average 3-day announcement period CARs. They estimate their model using only "free acquirers" where free acquirers include only acquirers that have not used an investment bank to assist in any type of transaction over the prior five years. Further, because of data limitations regarding the time period over which prior bank relationships can be identified, their sample of free acquirers is limited to the years 1993–2007. They report that prior clients' performance is not a significant determinant of the acquirer's choice of an advisor for its current takeover attempt.

However, to be fair to Bao and Edmans, the primary focus of their study is whether advisors' contribution to clients' performance is persistent through time. They conclude that it is. Their choice of advisor analysis is of secondary concern. Nevertheless, like Rau, they find the lack of a "reward for good M&A advice" to be a puzzle.

It is this literature and the "puzzling" findings of such studies that frame our analyses.

3. Data sources and sample

3.1. Data sources

In this section we set forth the sources of our data. We use the *SDC Platinum Mergers and Acquisitions* (*SDC*) database to construct a sample of acquisition attempts. The sample begins with 1979 and ends with December 2011. The initial sample encompasses 153,951 transactions classified as merger or acquisition attempts, including both completed and non-completed transactions. We exclude acquisition attempts in which the acquirer owned more than 50% of the target's stock prior to the acquisition attempt or was seeking to own less than 50% after the acquisition. We also impose a limit on the minimum value of the acquisition of $10

million in constant 2005 dollars. These criteria give rise to 34,461 acquisition attempts over the period of 1979–2011. However, because we use five years of data to measure prior client performance and to identify prior client relationships for estimating the advisor choice model and market share regressions, we use only acquisitions announced over the interval of 1984–2011 to estimate the models.

As does Rau (2000), we include as an advisor to the acquirer any bank that "acts as dealer manager," "lead or other underwriter," "provides financial advice," "provides a fairness opinion," "initiates the deal or represents shareholders, board[s] of directors, [or] major holder[s]". We do not include as an advisor to the acquirer any bank that represented the seller or any bank that merely acted as an equity participant, or arranged or provided financing. These criteria give rise to 11,324 acquisition attempts for which *SDC* identifies a financial advisor for the acquirer.

The advisors are identified by alpha codes listed under the heading of "Acquiror Financial Advisors (Codes)." For certain of our analyses, we require the names of the advisors. To obtain the names of the advisors, we access target data. For targets, *SDC* provides advisors' alpha codes and long names under the heading of "Financial Advisor Long Name." By cross-referencing lists, we match alpha codes of acquirers' advisors with the names of advisor banks. For most banks, the alpha codes and long names do not change through time. In some instances, due to name changes, mergers, and acquisitions, more than one alpha code may refer to the same bank. To identify whether it is indeed the same bank, we review the history of investment bank acquisitions on *SDC*, the entries of banks in *Wikipedia*, and entries regarding bank mergers and acquisitions in *Lexis Nexis*. In those instances where they are the same bank, we assign the same alpha code to both entities.

When one bank acquires another, we assign the alpha code of the acquiring bank to the merged entity. In essence, we assume that the acquired bank seizes to exist. To the extent that the reputational capital of the acquired bank would have carried over to the acquiring bank, this procedure introduces noise into the analysis of the relation between advisors and their clients. Additionally, it is inevitable that we are unable to find information on all acquisitions and name changes among banks, particularly smaller ones. This may introduce additional noise into our analysis. Such noise is likely to reduce the empirical significance of the relation between advisors and their clients' performance.

Data describing the acquirer and the characteristics of the transaction are collected from *SDC*. Table 1 presents, by year, the number of acquisitions in our sample and the number of investment banks that served as the advisor for at least one acquirer in that year over the period 1984–2011.

For each acquirer and for each acquirer's financial advisor for which the data are available, we obtain daily stock returns and market capitalizations from the *CRSP* database.[3] We collect information about each acquirer's equity and debt issuances and the lead underwriters for each issuance from the *SDC's New Issues* database. We use *Institutional Brokers Estimate System* (*I/B/E/S*) to derive a measure of the advisor's security analyst coverage.[4]

3.2. The sample

Table 2 presents selected summary statistics for the sample. As shown in Panel A, on average, as measured by book value of assets, acquirers are roughly six times the size of targets; roughly 86% of acquirers and 64% of targets had stock that was publicly traded at the time of the

[3] For acquirers with a public status of "subsidiary," if they are available, we obtain daily stock returns and market capitalizations of the acquirer's "immediate" or "ultimate" parent.

[4] The way in which this measure is calculated is described in Appendix A. We thank Michael Cliff and David Denis for generously providing the links between investment bank codes in the *SDC* and the *I/B/E/S* databases.

acquisition attempt; in 30%, 25%, and 45% of the transactions the medium of payment was all cash, all stock, or a combination of the two, respectively; and 89% of the attempts resulted in a completed transaction. In 13.9%, 8.9%, and 5.4% of the attempts, the acquirer had used the same advisor in a prior acquisition attempt, a prior equity offering, or prior debt offering, respectively, within five years of its current acquisition attempt.

4. Value created

A key variable in each of our analyses is the value created (or destroyed) by acquirers at the announcement of their acquisition attempts. In our primary tests, we use the acquirer's CAR calculated over the 5-day interval centered on the announcement date of the acquisition attempt as the basis for measuring value created. The CAR is calculated as the cumulative 5-day announcement period stock return minus the return on a corresponding benchmark portfolio. Benchmark portfolios are the 25 Fama-French size and book-to-market value-weighted portfolios (Fama and French 1992; Fama and French 1995). We truncate all CARs at 1% and 99%.[5]

Certain of our analyses require a measure of the value created by an investment bank's acquirer clients over a period of years. There are various ways in which such a measure could be constructed. We use two different measures. The first is from Rau (2000). In this procedure, the CAR for each acquisition is converted to a dollar value by multiplying the CAR by the market capitalization of the acquirer's common equity as of 60 days prior to the announcement. For each advisor, the dollar values thus calculated for its clients are summed over the relevant time period (in our analyses one-year, i.e., 365 calendar day, and three-year, i.e., 1,095 calendar day, intervals) and normalized by the total equity market capitalization of these clients. The

[5] We exclude two transactions in which the target is incorrectly identified by *SDC* as being the acquirer.

second measure, from Bao and Edmans (2011), is an equally-weighted average of the CARs of the advisor's clients over the relevant one- or three-year interval.

We refer to the first of these measures as the normalized net present value (NNPV) of the advisor's prior clients and the second as the equal-weighted CAR (EWCAR) of the advisor's prior clients. We refer to these measures collectively as prior client performance. As shown in Panel B of Table 2, the mean one-year and three-year prior NNPVs are –0.5% and –0.4%; the mean one-year and three-year prior EWCARs are 0.1% and 0.2%; and the mean and median CARs of the current acquisition attempts are –0.2% and –0.7%.

5. Choice of acquisition advisor and advisors' prior client acquisition performance

In this section, we examine the association between the acquisition performance of an bank's prior clients and the likelihood that the bank will be chosen as an advisor for subsequent acquisitions. Specifically, we investigate (1) whether the acquisition performance of the bank's prior clients is a determinant of the likelihood that the bank will be chosen as the advisor by subsequent acquirers and (2) whether the announcement period CAR associated with an acquisition is a determinant of the likelihood of a serial acquirer retaining its prior advisor for a subsequent acquisition attempt.

5.1. Choice of an advisor

To address the first question, we estimate the following "choice of advisor" model

$$\text{Prob(bank is chosen as advisor)} = f_1(\text{bank's prior client performance}, X_1), \quad (1)$$

where X_1 is a matrix of control variables. We assume that an acquirer chooses an advisor from among all banks that are active in the advisory market at the time of its current acquisition. Because the banks that are not chosen are matched to the bank that is chosen as the advisor in a particular acquisition, we estimate a fixed-effects logistic regression with fixed effects at the

individual acquisition level (Chamberlain 1980; Hosmer and Lemeshow 2000; McFadden 1974). The fixed effects account for acquisition-specific effects and also control for varying unconditional probabilities of a bank being chosen as an advisor in the acquisition as the number of active advisors varies through time.

Specifically, the probability that acquirer *i* selects bank *j* is

$$\text{Prob}\,(y_{ij}=1)=\frac{\exp(\sum_{j=1}^{Ji} y_{ij}x_{ij}\beta)}{\sum_{di\in Di}\exp(\sum_{j=1}^{Ji} d_{ij}x_{ij}\beta)} \qquad (2)$$

where x_{ij} is a vector of independent variables, β is a vector of their corresponding coefficients, d_{ij} is a parameter that takes a value of zero or one and satisfies $\sum_{j=1}^{Ji} y_{ij}=\sum_{j=1}^{Ji} d_{ij}$, D_{ij} is the set of all possible combinations of d_{ij}, and J_i is the number of alternative banks from which acquirer *i* is choosing. The model estimates the likelihood that a bank is chosen as the advisor relative to the likelihood the bank is not chosen. The explanatory variable of interest is the acquisition performance of the bank's prior clients. We estimate the model separately using client performance measured over the one-year (i.e., 365 day) or three-year (i.e., 1,095 day) interval prior to the announcement of the current acquisition.

Depending upon the specification being estimated, in order for an acquisition to enter the estimation, the acquirer's advisor must have been the advisor in at least one other acquisition attempt over the relevant one-year or three-year interval preceding the acquisition and the advisor's prior client must have stock returns available on *CRSP*. In order for any bank that is not chosen to be considered as active in the advisory market, the bank must have been chosen as an advisor in at least one acquisition attempt announced over the one-year or three-year interval prior to the announcement of the current acquisition attempt and to be chosen as the advisor for

at least one acquisition attempt after the current acquisition attempt up to and including December 2011.

The estimations include various control variables, each of which is meant to capture factors that might influence the acquirer's choice of its financial advisor. The control variables include the fraction of prior announced acquisition attempts that were completed in which the bank was an acquirer's advisor, the share (by dollar value) of acquisition attempts in which the bank was an acquirer's advisor over the prior three years, an indicator as to whether the bank served as the advisor to the acquirer on a prior acquisition attempt and whether the bank served as the lead underwriter in a prior equity or debt issuance by the current acquirer, the bank's breadth of analyst coverage in the acquirer's industry, and a measure of the bank's expertise in the target's industry. We include these variables, respectively, because Rau (2000) reports that a bank's current market share is correlated with the fraction of its client's prior acquisition attempts that are successfully completed, because Rau reports that a bank's current market share is significantly related to the bank's prior market share, because a prior relationship with the bank, either as an advisor on a prior takeover attempt or as a lead underwriter, might influence the acquirer's choice of advisor, because Cliff and Denis (2004), among others, find that the choice of an equity underwriter is correlated with whether the underwriter provides analyst coverage of the issuer's stock, and because an acquirer's choice of advisor may be related to whether the bank had advised prior acquirers whose targets resided in the same industry as the current target.

With respect to the predicted effects of these factors on the choice of advisor, we expect the signs of the coefficients to be positive for each variable except the fraction of prior acquisitions completed. With respect to the sign of this variable, we are agnostic because Rau's

findings suggest a positive effect, while Mooney and Sibilkov's (2012) argument suggests a negative effect. Mooney and Sibilkov (2012) propose that some acquirer advisors are skilled at screening out potential acquisition attempts that are unlikely to be completed, thereby avoiding the costs of unsuccessful acquisition attempts. These advisors are characterized by a higher fraction of completed acquisitions attempts. But because screened out acquisition attempts would not appear in the sample, this creates, ceteris paribus, a negative relation between the fraction of prior acquisitions completed and observed advisor choice. The control variables used in this and other analyses are defined and described in greater detail in Appendix A.

The estimations that include three years of prior client performance encompass 10,189 acquisition attempts. Those that include one year of prior client performance encompass 8,717 acquisition attempts. For each acquisition, the number of observations that enters the estimation is the number of banks that were active in the advisory market at the time of announcement. These range from two to 106. Thus, the total number of observations in the four estimations ranges from 382,917 to 689,173.

The results of the four estimations are reported in Table 3. In each case, the coefficient of prior client performance is positive and statistically significant with a p-value of less than 0.01. The implication is that, after controlling for other factors that might influence an acquirer's choice of a financial advisor, the bank's prior client performance is a significant determinant of the likelihood that a specific bank is chosen as the advisor for the acquirer's current acquisition attempt. Thus, acquirers tend to choose banks that advised in acquisitions that created more value for their clients at the announcement of the clients' acquisition attempts.

To measure the economic significance of the bank's prior client performance on the acquirer's choice of an advisor, we estimate marginal effects using NNPV and EWCAR

measured over the prior one year. These are 0.019 and 0.022. A one standard deviation increase in NNPV (i.e., 6.92%) or EWCAR (i.e., 6.83%) leads to a 0.131% or 0.150% increase in the probability that the bank will be chosen as the advisor by future acquirers. The appropriate way to consider the economic significance of the marginal effect of the bank's prior client performance is to compare the marginal effect with the unconditional likelihood of being chosen. As determined by the model, the unconditional probability of any bank being chosen is 1.5%. Thus, a one-standard-deviation increase in NNPV or EWCAR increases the bank's likelihood of being chosen by 8.7% or 10.0%.

Further, as shown in Table 3, with the exception of the fraction of acquisitions completed, the coefficient of each of the control variables is positive and statistically significant. Thus, whether the bank was the advisor on a prior acquisition attempt and whether the bank was the underwriter of a debt or equity offering by the current acquirer are statistically significant determinants of whether the bank will be chosen as the advisor for the current acquisition attempt (all p-values less than 0.01). Additionally, the coefficients of the bank's prior market share and the breadth of analyst coverage of the acquirer's industry are positive and statistically significant (all p-values less than 0.01).[6] The negative (and statistically significant) coefficient of the fraction of prior acquisitions completed is contrary to the implication from Rau's (2000) study, but is consistent with the implication of Mooney and Sibilkov (2013). Nevertheless, after controlling for all of these factors, the bank's prior clients' performance is a statistically and economically significant determinant of the acquirer's choice of a financial advisor.

In undertaking these analyses, we made various choices with respect to the time periods over which certain variables are measured and with respect to the way in which the sample is

[6] This finding is consistent with evidence in Krigman, Shaw, and Womack (2001) and Cliff and Denis (2004) that firms compensate investment banks for their analyst coverage by choosing banks that provided coverage to service their other investment banking needs.

constructed. In sections 8, we describe tests in which we use alternative measurement intervals and samples. Suffice it to say here that, with minor exceptions, the banks' prior client performance is a positive and statistically significant determinant of acquirers' choices of financial advisors in all specifications.

5.2. Decision to retain an initial advisor in a subsequent acquisition

As a further consideration of whether prior client performance influences subsequent acquirers' choices of their advisors, we examine whether the likelihood of a serial acquirer retaining its prior advisor for a subsequent takeover attempt is correlated with the announcement period CAR associated with its prior acquisition. We construct the sample for this analysis as follows. For each of the 11,324 acquisition attempts in which the acquirer used an advisor, we search the *SDC* database to determine whether that acquirer attempted a subsequent acquisition within five years. If so, we include a paired observation of the two acquisitions in the sample of serial acquisition attempts, regardless of whether the acquirer used an advisor in the subsequent acquisition attempt. We require that announcement period stock returns be available for the acquirer as of the announcement of the first acquisition attempt in the pair. These specifications yield a sample of 934 pairs of acquisitions.

For each pair, we classify an acquirer as having retained (or switched) its advisor if the advisor from the preceding acquisition appears (or does not appear) as an advisor to the acquirer in a subsequent acquisition attempt. However, the decision to retain or switch advisors has a third alternative - - which is to undertake an attempt without any advisor. Thus, the analysis of advisor retention is conditional on the decision to use an advisor for the subsequent acquisition attempt. For that reason, we explicitly incorporate the decision by the acquirer to use an advisor in its subsequent acquisition. Doing so requires that we estimate two equations. The first

equation, the selection equation, models the first step decision to use an advisor. This equation has the form

$$\text{Prob(advisor is used)} = f_2(X_2), \tag{3}$$

where X_2 is a matrix of variables that control for factors related to the acquirer's decision to use an advisor in the subsequent acquisition. For all observations in which an advisor is used, a second equation models the decision of whether to retain the advisor. The second equation, the outcome equation, has the form

$$\text{Prob(advisor is retained)} = f_3(\text{prior acquisition performance}, X_3), \tag{4}$$

where X_3 is a matrix of control variables. We estimate these two equations using a bivariate probit model with sample selection. This model is used when two equations may be related and when the dependent variable in the outcome equation is binary (Poirier 1980).[7]

The presumption of this analysis is that an acquirer who has used a specific advisor in a prior acquisition attempt has information about whether the advisor contributed to the value created in the prior transaction. The results of this analysis can provide confirmation of (or raise questions about) the conclusions drawn from the analyses of section 5.1.

The control variables in the selection equation (defined in Appendix A) represent factors that might influence a serial acquirer's decision to use an advisor for its subsequent acquisition (Servaes and Zenner 1996). These include the acquirer's CAR associated with the announcement of the first acquisition in the pair, the time period between the preceding and subsequent acquisition, the number of acquisitions by the acquiring firm prior to the first acquisition in the pair, the log of the change in the equity market value of the acquirer between the pair of acquisitions, the log of the ratio of the book value of assets of the subsequent target to

[7] This model is similar to the Heckman (1979) selection model with the exception that the Heckman model requires a continuous dependent variable in the outcome equation.

the book value of assets of the acquirer, the number of concurrent bidders for the target in the second acquisition, a dummy variable to indicate whether the acquirer and second target have the same 2-digit SIC code, and a dummy variable to indicate whether the target is publicly traded. All 934 pairs of acquisitions attempts are used in estimating the selection equation.

In the retention equation, the variable of primary interest is the CAR of the acquirer's preceding acquisition attempt. The control variables represent factors that might affect the decision of whether to retain the acquirer's prior advisor in its subsequent acquisition. These include the proportion of the acquirer's prior acquisitions in which the acquirer was assisted by the same advisor as used in its preceding acquisition attempt, the market share of the preceding advisor, a measure of the preceding advisor's experience in the subsequent target's industry, a dummy to indicate whether the dollar amounts paid for the targets in the two acquisitions differ by more than 50%, a dummy variable to indicate whether the advisor provided analyst coverage for the acquirer during the 12 months prior to the acquisition announcement, and the number of years between the two acquisitions. Estimation of the retention equation includes 577 pairs of acquisition attempts.

The results of the estimation are reported in Table 4. In the retention model, the coefficient of the acquirer's CAR at the announcement of the first acquisition attempt in the pair is positive and statistically significant with a p-value of 0.005. Thus, given that an acquirer chooses to hire an advisor, the greater the value creation associated with the acquirer's prior acquisition attempt, the more likely is the acquirer to use its prior advisor in its subsequent attempt. To measure the economic significance of the acquirer's CAR on the likelihood of the same advisor being chosen for the subsequent acquisition attempt, we calculate the marginal effect of the acquirer's CAR (i.e., 0.768). Given the standard deviation of the acquirer's CAR of

8.7% and the unconditional probability of advisor retention of 49%, a one standard deviation increase in the acquirer's CAR increases the probability of advisor retention by 13.6% (i.e., 0.768 x 0.087/0.49 = 0.136).

One important ancillary statistic here is that the unconditional probability of retaining the same advisor is 49%. There is apparently a good deal of stickiness in advisor choice. Nevertheless, better (or worse) client performance in the prior acquisition has a significant impact on the likelihood of retaining that advisor for the subsequent attempt.

6. Client performance and investment banks' future market share

The analyses of the prior section demonstrate that prior client acquisition performance is a positive and significant determinant of the likelihood that an investment bank will be chosen as an advisor for subsequent acquisition attempts. These results are, or at least appear to be, inconsistent with the interpretation offered by Rau (2000) and Bao and Edmans (2011) that a bank's market share is not related to the acquisition performance of acquirers the bank has advised in the past, but is strongly related to its prior market share. One possible explanation is that market share, like many other economic variables, embeds a strong stationary component. That is, an investment bank's current period market share is strongly determined by its prior period market share.

If that is the case, the appropriate question is not whether prior client performance determines the level of future market share, but rather whether prior client performance determines future changes in the advisor's market share. In this section, we examine whether changes in banks' market shares are related to their prior client performance. To do so, we consider two empirical specifications. First, we examine the relation between change in advisor's market share and the level of prior client performance ("change-on-level"). Second,

we examine the relation between change in advisor's market share and change in prior client performance ("change-on-change"). Change-on-level specifications test whether superior client performance over some time period attracts new clients for the bank during the subsequent time period. Change-on-change specifications test whether relative improvement in client performance through time attracts new clients for the bank during the subsequent time period.

As a preliminary look at the data, we examine univariate statistics of the changes in advisors' market shares. We calculate changes in market shares over one-year (market share in calendar year *i+1* minus market share in calendar year *i*) and three-year (market share during calendar years *i+1* through *i+3* minus market share in calendar year *i*) periods. To examine whether the changes in banks' market shares are related to the level of prior client performance, we partition banks into those with positive and those with negative prior client performance during calendar year *i*. Similarly, for the change-on-change specification, we partition the banks into those with positive and those with negative changes in prior client performance over the interval of calendar year *i-1* through calendar *i*. We then calculate mean and median changes in market share for each set of banks. This analysis gives rise to 16 comparisons.

Table 5 reports these statistics. Panel A presents results based on the level of client performance. In general, the univariate statistics are consistent with the proposition that the relative level of prior client acquisition performance is positively related with changes in advisors' market shares. For banks with positive NNPV, mean and median market shares increase over the subsequent one-year and three-year periods; for banks with negative NNPV, mean and median market shares decline over the subsequent one-year and three-year periods. Indeed, the most dramatic effects occur when prior performance is negative. In these cases, the declines in market share are always in the double digits. Importantly, the differences in mean

and median changes in market shares between banks with positive NNPV and those with negative NNPV are statistically significant in three of the four comparisons with p-values of 0.08 or less. For example, for the average bank with positive prior client NNPV, the market share increases 2.8% over the subsequent one year relative to its prior year's market share, while for the average bank with negative prior client NNPV, the market share falls by 19.2% over the subsequent one year. The p-value for the difference between the two is 0.03.

The results using EWCAR as the measure of client performance are similar but not quite as strong. In all instances, banks with positive prior client EWCAR experience increases in market shares and those with negative prior client EWCAR experience decreases in their subsequent market shares. However, the differences between the increases and decreases in market shares are not always statistically significant. For example, for banks with positive one-year prior client EWCAR, the mean increase in market share is 1.1%, for banks with negative one-year prior client EWCAR, the mean decrease in market share is 17.1%, but the p-value for the difference is only 0.11.

Panel B of Table 5 presents the results based on changes in prior client performance. The results here are also consistent with the proposition that prior client acquisition performance is positively related with changes in banks' market shares. In brief, in six of the eight calculations, banks with improvements in prior client performance experience subsequent increases in their market shares. In all eight of the calculations, banks with relative degradation in prior client performance experience subsequent decreases in their market shares. We then compare banks with improvements in prior client performance and those with degradation in prior client performance. In five of the eight comparisons, the difference in subsequent changes in market share between banks with improvements in prior client performance and those with degradation

in prior client performance is statistically significant, with p-values of 0.09 or less. In short, client performance appears to be a determinant of changes in banks' shares of the acquisition advisory market.

To control for other factors that might influence advisor market share, we estimate regressions in which the dependent variable is the change in banks' market shares over the one-year (or three-year) period following the period during which prior client performance is measured, where change in market share is the log of the investment bank's market share in calendar year *i+1* (or *i+1* through *i+3*) minus that in calendar year *i*. The explanatory variable of interest is either prior client performance measured during calendar year *i* or the change in prior client performance over the interval of calendar year *i–1* through calendar *i*.

For those specifications in which the explanatory variable of interest is the level of prior client performance, we employ the same control variables as Rau (2000) plus two others. Specifically, the control variables used by Rau are the log of the bank's market share, the fraction of acquisitions completed, the fraction of hostile acquisitions, the fraction of contested acquisitions, and the average fraction of cash used as consideration in acquisitions for which the bank served as an acquirer's advisor (defined in Appendix A). All of these are measured over calendar year *i*. Because the dependent variable in our specification is in change form, we also include the prior change in the log of the investment bank's market share from year *i–1* to year *i* to control for reversals in market share. We further include calendar-year dummies to control for the varying numbers of banks that are active in the advisory market in any given year.

We estimate regressions using ordinary least squares (OLS) and allow for standard errors clustered at the investment bank level. For those specifications for which the explanatory variable of interest is the change in prior client performance, the explanatory variables are the

same as those in specifications with the level of prior client performance as the explanatory variable of interest, except that the variables are measured as the change between calendar year *i–1* and calendar year *i*.

The results of the change-on-level regressions are reported in Panel A of Table 6 and the results of change-on-change regressions are reported in Panel B. In each of the eight regressions, the coefficient of prior client performance (whether in level or change form) is positive and statistically significant. For seven of the eight coefficients, the p-value is 0.05 or less and for the other it is 0.094. These results indicate that investment banks that advise in acquisitions that create more (less) value for acquirers subsequently experience increases (decreases) in their shares of the advisory market.

To examine the economic significance of these results, we use the coefficients of NNPV and EWCAR from the one-year change in market share regressions from Panel A. A one standard deviation increase in NNPV or EWCAR translates into a 9.8% or 8.7% increase in the bank's percentage share of the acquisition advisory market over the following one-year period.[8]

7. Client's acquisition performance and advisor's market value

Our analyses to this point yield three findings: (1) prior client performance is positively related to the likelihood that an investment bank will be chosen as an advisor by future acquirers; (2) an acquirer's CAR during the announcement of a prior acquisition attempt is positively related to the likelihood that the acquirer will retain its advisor for its subsequent acquisition attempt; and (3) prior client performance is positively related to future changes in the advisor's market share. An implication that arises from these results is that a value-increasing (value-

[8] A one standard deviation increase in NNPV (i.e., 8.2%) or EWCAR (i.e., 8.3%) relative to other advisors produces an increase of 0.094 or 0.083, respectively, in the dependent variable. Because the dependent variable is in log form, we take the exponent of the changes in the dependent variable to obtain the change in the ratio of the future market share to the current market share.

decreasing) acquisition attempt by an investment bank's client should increase (decrease) the value of the investment bank advisor at the time of the acquisition announcement. This implication arises for two reasons. One, when an advisor mandate is awarded to an investment bank, the mandate carries a possibility of a concurrent reward in the form of advisory fees. Two, when the announcement of the mandate gives rise to an increase in client's value, this should give rise to an increase in the expected number of future mandates for the bank with their associated rewards which should also increase the bank's value.

In this section, we empirically investigate this implication by examining the relation between the change in the market value of the acquirer's equity around the acquisition announcement and the change in the market value of its advisor's equity during the same interval. Specifically, we estimate an OLS regression in which the dependent variable is the advisor's 5-day announcement period CAR centered on the announcement day of the client's acquisition attempt and the key independent variable is the acquirer's CAR over the same interval.[9]

The control variables used in the regression represent factors that might influence the change in the advisor's market value during the acquisition announcement period. These include the log of the ratio of the total book value of assets of the target to the total book value of assets of the acquirer, a dummy variable to indicate whether the acquirer and target have the same 2-digit SIC code, a dummy variable to indicate whether the transaction is classified as hostile, a dummy variable to indicate whether cash was used as consideration, the number of concurrent bidders for the target, and a dummy variable to indicate whether the target is public. The set of

[9] A reader might be concerned that we scaled the market value changes in the left-hand side and right-hand side of the regression by different denominators. We also estimated a regression scaling the market value change of the advisor and the market value change of the acquirer by the book value of the acquirer. The coefficient is positive with a p-value of 0.002.

acquisitions used in this analysis includes all 502 acquisition attempts for which stock price data are available from *CRSP* for the acquirer and the advisor over the 5-day interval surrounding the announcement of an acquisition by the advisor's client.

The results of the regression are reported in Table 7. The coefficient of the client's CAR is positive, 0.068, and statistically significantly different from zero with a p-value of 0.008. According to these results, for every dollar in market value created (or lost) for the acquirer, the investment bank, on average, gains (or loses) $0.208 in market value.[10] The evidence indicates that an acquisition attempt that creates (destroys) value for the acquirer also creates (destroys) value for its advisor.

8. Robustness tests

In conducting our analyses, we made various decisions regarding methodology and measurement of variables. In this section we undertake analyses to determine to what extent certain decisions could have altered our conclusions. These analyses have three components. The first two focus on the model of advisor choice. The third consider certain aspects of the market share analysis. In general, these analyses are aimed at answering the question of whether our results are robust to different assumptions and procedures.

8.1. The analysis of the choice of advisor: subsample tests and model specifications

We begin by asking whether the relation between prior client performance and advisor choice is robust to certain variations in the sample. First, we examine whether the relation holds in certain subsamples of acquisitions that have been shown to exhibit differences in performance in other contexts. For example, prior literature suggests that acquirer CARs differ depending on whether the target is a public or private firm (Fuller, Netter, and Stegemoller 2002; Faccio,

[10] To arrive at the estimate, we multiply the coefficient by the average market capitalization of the advisor ($9.8B) and divide by the average market capitalization of the acquirer ($3.2B) in the sample used in this regression.

McConnell, and Stolin 2006) and upon the method of payment for the target (Travlos 1987; Moeller, Schlingemann, and Stulz 2004). We partition our sample by the target's public/private status and by the method of payment. We then test whether prior client acquisition performance in acquisitions of public targets affects the choice of an advisor for an acquisition of a public target. We also perform similar analyses for acquisitions of private targets, for acquisitions in which consideration is exclusively cash, and for acquisitions in which consideration is exclusively stock. The positive and significant relation between prior client performance and advisor choice remains in these subsamples with the only exception being the "cash-only" subsample (for which the number of observations drops by 90% relative to the full sample).

Second, most of the analyses in our study involve a lead/lag relation between prior client performance and the awarding of advisor mandates. Arguably, if potential acquirers consider the performance of an advisor's prior clients, these acquirers might be more interested in the bank's more recent acquisitions, and the importance of client performance should deteriorate over time. However, a counterargument might posit that information about the quality of an advisor's services spreads with a lag, such that the quality of more recent acquisitions does not immediately register with potential acquirers. Unfortunately, we lack a theory to guide our choice of an appropriate interval over which to search for a correlation between acquirers' performance and the effect of that performance on a subsequent acquirer's choice of advisor. Therefore, we estimate the choice model using a variety of lead/lag relations, ranging from one-year to five-year intervals. In every instance, the sign of the coefficient of interest is positive and has a p-value of 0.01 or less.

8.2. Exploring the differences between our findings and those of Bao and Edmans (2011)

Perhaps a bigger question is why our results differ from those of Bao and Edmans (2011).

In particular, our finding that prior client acquisition performance is positively related to the likelihood that an investment bank is chosen as an advisor by future acquirers contrasts with the finding of Bao and Edmans who also estimate logit regressions, but find a negative albeit statistically insignificant relation between prior client performance and the likelihood that a bank will be chosen by future acquirers. In this section, we consider explanations for this difference.

Presumably the difference in results derives from differences in statistical procedure, sample period, or sample selection criteria (hereafter, collectively, differences in empirical methodology). Bao and Edmans's estimations differ from ours on eight dimensions. Six of these are self-explanatory. They include our 5-day CAR vs B&E's 3-day CAR, our sample period of 1984–2011 vs B&E's sample period of 1993–2007, our truncation of CARs vs B&E's winsorization of CARs, our use of all available advisors vs B&Es use of only the largest 143 advisors, our fixed-effects logit vs B&E's ordinary logit, and our measurement of client performance measured over the 365-day (or 1,095-day) period prior to the current acquisition vs B&E's measurement of prior client performance over the calendar year (or three calendar years) prior to the calendar year of the current acquisition.

The other two differences between our procedure and that of Bao and Edmans require some explanation. First, when conducting their tests, in order for an acquisition to enter their sample, Bao and Edmans require that the bank not have been an acquisition advisor, equity or debt underwriter, or a counterparty to a lending agreement with the acquirer during the five years prior to the acquisition in which the advisor choice is being made. They refer to these acquirers as "free acquirers" in the sense that they are not bound by prior experience to any specific bank. In comparison, we include all acquirers regardless of any prior relationship with a potential advisor and control for such relationships with dummy variables.

Second, as we noted above, the primary focus of Bao and Edmans's analysis is on persistence in client returns. Of necessity, such an analysis requires that announcement period stock returns be available for the acquirer in each acquisition attempt. Because Bao and Edmans use the same sample in their choice regressions as they do in their persistence analysis, they inadvertently require that stock returns be available for the acquirer in the acquisition for which the choice of advisor is being analyzed. In comparison, because such stock return information is unnecessary for the choice analysis, we do not impose any such requirement on our sample; we require only that prior client performance be available.

As a first step in this investigation, we modify our analysis of advisor choice by adjusting each of the eight dimensions to correspond to that of Bao and Edmans.[11] Further, as do Bao and Edmans, we use only EWCARs. In this analysis, we measure prior client performance over a one-year interval. The results of the regression are reported in Table 8. With all eight dimensions adjusted to match Bao and Edmans, the coefficient of prior client performance is negative, statistically insignificant, and at –0.725, similar in magnitude to that reported by Bao and Edmans.

Having replicated the Bao and Edmans's result, we now seek to determine whether any of the eight differences in empirical methodology individually can explain the difference in results. To do so, we modify our original choice regression adjusting one dimension at a time. We, thus, estimate eight regressions. In four of these experiments, the sample used is the same as in our original analysis, but one of the variables is measured differently. For example, prior client performance is measured over the calendar year prior to the current calendar year rather

[11] One implementation that differs slightly from Bao and Edmans's is that we identify free acquirers over the time period of 1984–2011 by excluding acquirers involved in any advisor-assisted transaction reported in the *SDC Mergers and Acquisitions* database or acquirers that used an underwriter in an equity issuance or debt issuance as reported by the *SDC New Issues* database within five years prior to the current acquisition. Bao and Edmans (2011) also exclude banks/clients with prior lending agreements. Our data do not allow for that restriction.

than over the 365 calendar days prior to the current acquisition. In the other four, the sample used is only a subsample of the original sample. Nevertheless, in each of the regressions, the coefficient of prior client performance is positive and statistically significant with all p-values being less than 0.039. Individually, therefore, none of the differences in empirical methodology can explain the difference in results.

We then examine whether any two differences in methodology in combination can explain the difference in results. There are 28 possible combinations of differences taken two at a time which give rise to 28 regressions, each of which differs from our original estimation on two dimensions. The only couplet that produces a negative (and insignificant) coefficient of prior client performance is when we use the sample of free acquirers and require that stock returns be available for the current acquisition (and all other elements remain the same as our original specification). We present the results of this regression in Table 8. This combination of requirements gives rise to a sample that comprises 20% of the full sample (i.e., the sample is reduced from 8,906 to 1,865 acquisition attempts).

The first of these two criteria, the subsample of free acquirers, was a choice made by Bao and Edmans with the aim of identifying a sample uncontaminated by prior relationships. The second, the requirement of stock return availability for the current acquirer, is a spillover from their main analysis of persistence in client performance. The result is that Bao and Edmans conduct their analysis with an inadvertently idiosyncratic sample that appears to be not representative of the population of corporate acquirers as a whole.

On a more affirmative basis, we can say that for the full time period and with the full set of acquirers, prior client performance is positively and significantly correlated with the choice of an acquisition advisor.

8.3 Analysis of the change in market share for banks of high and low market share

We now consider a further examination of the market share results. In particular, because it is possible that the market share results are due primarily to small banks, we re-estimate the regressions of Table 6 separately for advisors with high (i.e., above median) and low (i.e., below median) market share. In each of these sixteen regressions, the coefficient of prior client performance is positive. For small banks, two of the eight p-values are less than 0.05 with two other having a p-value less than 0.10. For large banks, three of the eight p-values are less than 0.05 with another four having p-values less than 0.10. The market share results are clearly not only due to "small" banks. As with the comparison of our results with those of Bao and Edmans, sample size could play a role in these analyses. Or it could be that changes in market share reflect a jostling for position among advisors in which smaller banks sometimes displace larger banks and larger banks, in turn, slip. In any event, the market share results are not due only to small banks.

9. Simulation of the market for acquisition advisory services

To this point, the results of our analyses resolve one puzzle, but open the door to a second. In particular, contrary to the conclusions of Bao and Edmans (2011) and Rau (2000), acquirers do appear to take into account the experience of advisors' prior clients when choosing their own acquisition advisor, thereby, resolving one puzzle. The new puzzle follows from Bao and Edmans's evidence that advisors' performance is persistent. If acquirers select their advisors on the basis of the acquisition performance of the advisor's prior clients, and client performance is persistent, how can it be that the market for advisory services does not quickly converge into a market of a single service provider as acquirers flock to the advisor whose clients experienced the highest CARs in the prior period? A variation of that question is - - if the results of our

analyses are correct, how long would it take for the advisory market to converge into a market dominated by a single advisor?

To explicitly address the latter question (and implicitly the former) we conduct a stochastic simulation analysis of the market for advisory services. We base this analysis on the empirical results yielded by the choice model estimated using 12 prior months of prior client CARs. We use the first 12 months/periods of the simulation to generate a history of acquirer CARs. Each month we identify a set of acquirers and randomly assign CARs to them where the CARs are drawn from a normal distribution with a mean and standard deviation equal to the mean and standard deviation of empirically observed CARs in our sample. Each month, we then randomly assign acquirers to advisors with all advisors being assigned the same number of acquirers. The analysis begins with 50 banks. One hundred acquisitions occur each month. During the first 12 months, all banks have equal market share, with each bank servicing 24 acquisitions.

The simulation calculates the average CAR of each advisor's clients over the first 12 months. In the 13th month, another set of acquirers is identified. Each acquirer is randomly assigned as having prior acquisition advisory relationships (or none) and prior debt and/or equity underwriting relationships (or none) with one or more banks. Thus, each bank can have relationships with one or more acquirers (or none) and each acquirer can have relationships with one or more banks (or none). The advisory and underwriting relationships are drawn from uniform distributions with means calibrated so that the frequency of advisors that have prior relationships with acquirers (and vice versa) is the same as observed in our sample.[12]

[12] The calibrations are required because the means and standard deviations characterize the distributions of variables for the set of all banks from which an acquirer chooses, while we need to match the statistics that we observe to the subset of banks that are chosen as advisors.

We assign advisory relationships in such a way that the likelihood of an advisor having a relationship with a specific acquirer increases in proportion to the advisor's market share over the prior 12 months. Each bank is randomly assigned a breadth of analyst coverage of the acquirer's industry and an expertise in the target's industry. Both are drawn from normal distributions with means and standard deviations calibrated so that the means and standard deviations of these variables for the set of chosen advisors is equal to that observed empirically in our sample. The advisor's market share over the prior 12 months is scaled so that the mean of the market share of the set of chosen advisors is equal to that observed in our sample.

Given this information (i.e., acquirers, advisors, advisors' clients' average prior 12-month CARs, advisors' prior 12-month market share, prior advisory and underwriting relationships, analyst coverage, and industry expertise), in the 13th month acquirers choose their advisors based on the empirically estimated coefficients of the model of advisor choice reported in Column (2) of Table 3. A CAR is assigned to that acquirer that equals the sum of a random component (according to the distribution described above) and a persistence component, which equals the coefficient of persistence times the advisor's prior CARs. This ensures that client CARs of the advisor are persistent through time. The magnitude of the coefficient of persistence is chosen to replicate the results reported by Bao and Edmans (Table 6, Panel A, p. 2306). The procedure is repeated for the 14th month and so on for 600 months (i.e., 50 years).

The results of various runs of the simulation are shown in Table 9 along with the actual shares of the advisory market based on *SDC* data for the years 1984–2011. In an initial run of the simulation, we set all coefficients of the advisor choice model equal to zero except for the coefficient of prior client performance. Reassuringly, the bank with the best client performance (i.e., highest average client CAR) in year 1 is chosen as the advisor by 92% of the acquirers in

year 2, and is chosen by 100% of acquirers in all subsequent years. That is, when prior client performance is the only factor that acquirers consider, the advisory market quickly converges to a single "best" advisor.

In the second run, we set the advisor choice coefficients equal to their estimated values as shown in Table 3. In the 50th year, the largest five banks are chosen as the advisors for 44.2% of the acquisitions, the next five banks are chosen as the advisors for an additional 20.6% of the acquisitions, and the remaining 35.2% of the deals are allocated among the other 40 banks. The result of this experiment resembles the advisory market that we observe in practice. As shown in the first column of Table 9, over the time period of 1984–2011, on an equal weighted basis, in actuality, the top 5 banks serviced 51.8% of the market, the next 5 banks advised 19.0%, and the remaining 29.2% of the market was spread among all other banks.

In the final two experiments, we modify the coefficient of persistence of client CARs and assign all other coefficients of the choice model as in Table 3. First, we set the coefficient of persistence to zero, simulating the advisory market with no persistence in performance. In the 50th year of this run, the top five banks garner 32.6% of the market and the second five banks service 17.7% of the market. That is, persistence in client performance does not attract clients, and it is other factors, randomly distributed among advisors, that determine market share. Second, we increase the coefficient of persistence to double that of the level reported by Bao and Edmans. In this experiment, the market again converges to a single advisor, but not until after 16 years of operation.

The simulation analysis shows that when the parameters of the model match those observed empirically, the market for advisory services evolves over time to resemble the actual market for advisory services. When other factors beyond prior client CARs, such as prior

relationships, play no role in the acquirer's choice of its advisor, the market for advisory services quickly devolves into one dominated by the single "best" advisor. Further, when persistence in acquirer CARs becomes very high and other factors do play a role, the market again devolves, albeit not quickly, into one dominated by a single "best" advisor. However, when the other factors play a role (as we observe empirically) and persistence in acquirer CARs is at the level observed empirically, the market shares of advisors are similar to what we observe empirically. In sum, the market does not converge into one with only one service provider so long as persistence is not too high and so long as other factors play a role in advisor choice.

10. Summary and conclusion

Bao and Edmans (2011) report that acquisition advisors' clients' performance (i.e., announcement period CAR) is persistent through time for a given advisor. Reasonable economic theory (and common sense) would predict that value-maximizing managers would use such information in choosing their advisors for later acquisitions. However, existing empirical evidence is contrary to that prediction. In particular, Bao and Edmans (2011) and Rau (2000) find that advisors' market shares are unrelated to their prior clients' acquisition performance and Bao and Edmans also find that advisors' prior client performance is not a significant variable in an empirical model of acquirers' advisor choice. They, along with Rau, describe their results as puzzling, but they resolve, or at least set aside, the puzzle by concluding that "acquirers do not chase performance" (Bao and Edmans 2011, p. 2311).

When presenting the results of their model of advisor choice, Bao and Edmans (2011) do so modestly, commenting that "these results are only suggestive, due to the difficulty of identifying 'free' clients … and our small sample size." We take up the implied challenge by estimating a fixed-effects logit model of advisor choice over the time period of 1984–2011 with

a comprehensive sample and find that prior client performance enters as a significant variable when clients choose their acquisition advisors.

We also find that prior client performance is positively associated with changes in advisors' market shares and that changes in clients' market values are positively associated with changes in advisors market values. These results indicate that advisors are rewarded (punished) for good (bad) acquisition advice.

The resolution of that puzzle leads to a second one: if acquirers choose their advisors based on the advisors' prior client performance and client performance for a given advisor is persistent across acquirers, how can it be that the market for advisory services does not converge to one dominated by a single provider as all clients quickly migrate to the same "best" advisor? The reason is that other factors, such as prior relationships between advisors and clients, also influence acquirers' choices of advisors.

As we show in a simulation model in which we use the coefficients of the empirical choice model and the empirical estimates of persistence in prior client performance, the simulated market for advisory services resembles the market that we actually observe with a few banks having large market shares and a larger number of banks having smaller market shares. That is, persistence in advisors' clients' performance and subsequent acquirers using that information in their choices of advisors can co-exist in a market with multiple advisors because clients use information other than prior client performance in choosing their acquisition advisors.

Our analysis addresses a fundamental issue noted by McLaughlin (1990). McLaughlin reports that investment bank advisory contracts with corporate acquirers provide incentives for the advisor to "get the deal done" regardless of whether the acquisition creates value for the advisor's client. He observes that such contracts create a potential conflict of interest between

the advisor and its client. He further speculates, however, that the bank's concern with its reputation may alleviate this potential conflict of interest.

Perhaps the most direct way in which the effect of good service on an advisor's reputation would manifest itself is in the gain of future clients. Consistent with McLaughlin's conjecture, we find that prior client acquisition performance is associated with changes in banks' shares of the advisory market and that client acquisition performance is positively related with changes in advisors' market values. Market forces appear to align, at least to some extent, acquirers' and advisors' incentives.

Appendix A
Variable definitions and construction

Variable Name	Definition
Common variables used throughout the paper	
Normalized net present value (Client performance NNPV)	The aggregate abnormal changes in market value of an investment bank's acquirer clients in acquisitions announced over the relevant time period, normalized by the aggregate equity market capitalization of these acquirers. Aggregate abnormal changes in market value are computed by multiplying the acquirer's cumulative announcement period abnormal return (CAR) by the market capitalization of the acquirer's common equity as of 60 days prior to the announcement. Announcement period is the five trading day interval (-2; +2) centered on the announcement date of the acquisition attempt. The CAR is calculated as the acquirer's stock return minus the return on a corresponding benchmark portfolio over the announcement period. Benchmark portfolios are the 25 Fama-French value-weighted portfolios constructed by independently sorting stocks according to size and book-to-market.
Equal-weighted CAR (Client performance EWCAR)	An equal-weighted average of an investment bank's acquirer clients' cumulative announcement period abnormal return (CAR) in acquisitions announced over the relevant time period.
Fraction of acquisitions completed	The fraction of acquisition attempts in which the investment bank served as the acquirer's advisor that were ultimately completed during the one or three years prior to an acquisition attempt.
Prior three-year's bank market share	The share of the total value of all acquisitions listed on *SDC* in the prior three years on which the investment bank advised. Value of an acquisition is total value of consideration paid by the acquirer as determined by *SDC*.
Bank is prior advisor	Equals 1 if the investment bank served as a merger and acquisition (M&A) advisor for the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
Bank is prior equity underwriter	Equals 1 if the investment bank served as a lead underwriter for an equity offering by the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
Bank is prior debt underwriter	Equals 1 if the investment bank served as a lead underwriter for a debt offering by the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
Bank's breadth of coverage	The proportion of firms listed in *Compustat* operating in the acquirer's primary two-digit SIC code for which the investment bank provided analyst coverage in the year prior to the acquisition announcement.
Bank's expertise in target industry	The value-weighted proportion of acquisitions announced over the three years prior to the current acquisition in which the investment bank served as an acquirer's advisor in an acquisition that involved a target from the same two-digit SIC industry as the target of the current acquisition.
Log (target size/acquirer size)	The log of the ratio of the book value of assets of the target to the book value of assets of the acquirer in the current acquisition.
Number of bidders	The number of concurrent bidders in the current acquisition.
Firms in similar industries	Equals 1 if the acquirer's primary two-digit SIC code is the same as that of the target of the current acquisition and 0 otherwise.

Target is publicly traded	Equals 1 if the target of the current acquisition is publicly traded and 0 otherwise.

Variables used in advisor retention regressions

Preceding acquisition announcement CAR	Abnormal return of the acquirer stock during the 5 trading day period (-2; +2) centered at the announcement of the preceding acquisition, adjusted for 25 Fama-French size and book-to-market portfolios.
Fraction of prior acquisitions with advisor	The fraction of all acquisitions involving the acquirer during the five years prior to the preceding acquisition in which the firm was assisted by the investment bank advising in the preceding acquisition.
Advisor experience in the subsequent target's industry	The value-weighted proportion of acquisitions announced during the three years prior to the subsequent acquisitions in which the advisor served as an acquirer advisor that involved a target from the same two-digit SIC industry as the target of the subsequent acquisition.
Values of the two acquisitions differ	Equals 1 if the value of the subsequent acquisition differs by more than 50% from that of the preceding acquisition and 0 otherwise.
Advisor provided analyst coverage	Equals 1 if in the prior acquisition, the acquirer's advisor provided analyst coverage for the acquirer in 12 months prior to the acquisition announcement and 0 otherwise.
Years between acquisitions	The number of years between the announcement of the preceding and subsequent acquisition.
Number of prior acquisitions by the acquirer	The log of 1 plus the number of acquisitions involving the acquirer during the five years prior to the current acquisition.
Log (firm value change between acquisitions)	The log of the ratio of the market value of the acquirer's equity 60 days prior to the subsequent acquisition to the market value of the acquirer's equity 60 days prior to the preceding acquisition.

Variables used in the analyses of the changes in market shares

Market share	The log of the investment bank's market share of the business of advising acquirers, measured by the dollar value of the acquisitions.
Fraction of hostile acquisitions	The fraction of acquisitions for which the bank served as the acquirer's advisor during year *i* that were perceived as hostile by the target according to *SDC*.
Fraction of contested acquisitions	The fraction of acquisitions for which the bank served as the acquirer's advisor during year *i* that had more than one bidder.
Fraction financed with cash	The average fraction of cash used as consideration in acquisitions for which the bank served as the acquirer's advisor during year *i*.

Variables used in the analysis of the changes in market values

Advisor's CAR	Cumulative announcement period abnormal return of an investment bank during its acquirer client's acquisition attempt.
Acquirer's CAR	Cumulative announcement period abnormal return of an acquirer during its acquisition attempt.
Hostile takeover	Equals 1 if the transaction is classified as hostile and 0 otherwise.
Paid by cash	Equals 1 if cash is used as consideration in the acquisition and 0 otherwise.

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Table 1
Number of advisors and acquisitions, 1984–2011

This table presents, by year, the number of acquisitions in the sample and the number of investment banks that served as the financial advisor to at least one acquirer during 1984–2011. Data are from the *SDC Platinum Merger and Acquisition* database.

Year	Number of acquisitions	Number of advisors	Year	Number of acquisitions	Number of advisors
1984	217	57	1998	738	164
1985	201	51	1999	744	166
1986	303	80	2000	711	142
1987	302	95	2001	435	124
1988	399	116	2002	326	107
1989	315	110	2003	315	105
1990	160	83	2004	422	134
1991	138	66	2005	468	128
1992	161	85	2006	526	159
1993	241	87	2007	555	167
1994	366	131	2008	320	134
1995	431	128	2009	237	112
1996	515	146	2010	327	121
1997	689	173	2011	267	103

Table 2
Descriptive statistics for acquirers, targets, acquisitions, and acquirer advisors in acquisition attempts

This table presents summary statistics of acquirers, targets, acquisitions, and acquirer advisors. Data on acquisitions are from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. The sample period is 1984–2011. Advisor refers to the financial advisor for the acquirer. Variables are defined in Appendix A.

Panel A	Mean	Median
Characteristics of acquirers and targets		
Book value of assets of the acquirer, $ millions	15,761	1,185
Book value of assets of the target, $ millions	2,772	301
Value of the acquisition, $ millions	1,131	185
Percentage of publicly traded acquirers	86.1	100
Percentage of publicly traded targets	63.8	100
Characteristics of acquisitions		
Percentage of consideration paid in cash	42.8	23.8
Percentage of all-cash acquisitions	30.1	0
Percentage of all-stock acquisitions	24.9	0
Percentage with hostile target attitude	3.9	0
Percentage of acquisitions completed	88.6	100
Characteristics of acquirers' advisors		
Percentage of advisors that are prior advisors to the same acquirer	13.9	0
Percentage of advisors that are prior equity underwriters to the same acquirer	8.9	0
Percentage of advisors that are prior debt underwriters to the same acquirer	5.4	0

Panel B	Mean	Median
Client performance NNPV, one year	-0.5%	-0.7%
Client performance NNPV, three years	-0.4%	-0.6%
Client performance EWCAR, one year	0.1%	-0.2%
Client performance EWCAR, three years	0.2%	0.1%
Acquirer CAR	-0.2%	-0.7%

Table 3

Prior client acquisition performance and the choice of the acquirer's advisor

This table reports the results of regressions that estimate the likelihood that an investment bank is chosen as an acquirer's advisor versus the likelihood that the bank is not chosen. For each acquisition in the sample, the regression includes one observation for each investment bank that was active in the advisory market at the time of the acquisition announcement. A bank is active in the advisory market if it has been chosen for the current acquisition attempt and at least one acquisition attempt prior to the current acquisition attempt or if it has served as an advisor in at least one acquisition attempt announced before and at least one announced after the announcement of the current acquisition attempt. Data on acquisitions are from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated for acquisitions announced during 1984–2011. Regressions are estimated using logistic models with fixed effects at the acquisition level. Variables are defined in Appendix A. Client performance NNPV, EWCAR, and fraction of acquisitions completed are estimated over one year and three years prior to the announcement of the current acquisition. Other variables are estimated over the relevant periods before the announcement of the acquisition. Standard errors are clustered at the acquisition level. Coefficient estimates are reported with p-values in parentheses.

	Likelihood that Bank is Chosen as Advisor			
Variable	(1)	(2)	(3)	(4)
Client performance NNPV, 1 year	1.303			
	(<0.001)			
Client performance EWCAR, 1 year		1.484		
		(<0.001)		
Client performance NNPV, 3 years			1.694	
			(<0.001)	
Client performance EWCAR, 3 years				1.730
				(<0.001)
Fraction of acquisitions completed, 1 year	-0.150	-0.152		
	(0.002)	(0.002)		
Fraction of acquisitions completed, 3 years			-0.128	-0.122
			(0.008)	(0.012)
Prior 3-year's bank market share	7.795	7.754	8.701	8.713
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Bank is prior advisor	2.776	2.772	2.928	2.926
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Bank is prior equity underwriter	2.372	2.365	2.452	2.455
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Bank is prior debt underwriter	1.267	1.266	1.278	1.281
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Bank's breadth of coverage	5.642	5.654	6.037	6.005
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Bank's expertise in target industry	0.756	0.755	0.864	0.862
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Observations	382,911	387,330	685,507	689,173
Pseudo R-squared	16.4%	16.4%	17.1%	17.1%

Table 4

Acquirer performance and advisor retention in consecutive acquisitions

This table reports the results of a regression of the likelihood that an investment bank that advised the acquirer in a preceding acquisition is retained as the advisor for the acquirer's subsequent acquisition. Data on acquisitions are taken from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated for acquisitions announced during 1984–2011. Unless otherwise specified, variables are calculated from the fiscal year-end financial reports that ended in the 12 months prior to the subsequent acquisition attempt. The regressions are estimated using bivariate probit with sample selection. Hire model reports the results of the selection equation estimation, which models the likelihood that the acquirer used any advisor in its subsequent acquisition attempt. Retain regression estimates the likelihood that the advisor that assisted in the preceding acquisition attempt will be an advisor in the subsequent acquisition attempt. Variables are defined in Appendix A. Prior three-year market share is estimated for the advisor in the preceding acquisition attempt over three-years prior to the announcement of the preceding acquisition attempt. Standard errors are clustered at the acquirer level. Coefficient estimates are reported with p-values in parentheses.

	Model	
	Hire	Retain
Variable	(1)	(2)
Preceding acquisition announcement CAR	-0.981	1.927
	(0.157)	(0.005)
Fraction of prior acquisitions with advisor		1.719
		(<0.001)
Prior three-year's bank market share		-0.015
		(0.830)
Advisor experience in the subsequent target's industry		0.032
		(0.860)
Values of the two acquisitions differ		-0.578
		(0.002)
Advisor provided analyst coverage		-0.259
		(0.083)
Years between acquisitions	-0.057	-0.088
	(0.031)	(0.247)
Number of prior acquisitions by the acquirer	-0.102	
	(0.012)	
Log (firm value change between acquisitions)	0.363	
	(<0.001)	
Log (target size/acquirer size)	0.175	
	(<0.001)	
Number of bidders	-0.375	
	(0.003)	
Firms in similar industries	0.287	
	(<0.001)	
Target is publicly traded	0.129	
	(0.151)	
Constant	0.471	0.470
	(0.055)	(0.183)
Wald test of equation independence		-0.313
		(0.274)
Observations	934	577

Table 5

Univariate statistics of the change in advisors' market shares sorted by prior client acquisition performance

This table presents univariate statistics of the percentage change in the investment bank's share of the advisory market. One-year change is market share in calendar year *i+1* minus market share in calendar year *i*. Three-year change is market share during calendar years *i+1* through *i+3* minus market share in calendar year *i*. Statistics are sorted by positive and negative client performance NNPV and client performance EWCAR estimated in calendar year *i*. Acquisitions are obtained from the *SDC Mergers and Acquisitions* database. Stock return data are from *CRSP*. The sample period is 1984–2011. P-values for the t-test of the differences in medians and means are reported.

Panel A

	Client performance NNPV			Client performance EWCAR		
	Positive	Negative	p-value for difference	Positive	Negative	p-value for difference
Change in advisor's market share						
One-year, mean	2.8%	-19.2%	0.03	1.1%	-17.1%	0.11
One-year, median	19.4%	-18.4%	0.00	14.7%	-14.8%	0.02
Three-year, mean	10.4%	-15.9%	0.08	5.9%	-13.9%	0.18
Three-year, median	8.7%	-15.2%	0.11	2.5%	-16.6%	0.19

Panel B

	Change in Client performance NNPV			Change in Client performance EWCAR		
	Positive	Negative	p-value for difference	Positive	Negative	p-value for difference
Change in advisor's market share						
One-year, mean	-0.7%	-20.0%	0.04	0.2%	-17.6%	0.07
One-year, median	12.5%	-22.3%	0.00	9.9%	-17.2%	0.01
Three-year, mean	7.1%	-16.3%	0.09	3.8%	-13.9%	0.21
Three-year, median	0.3%	-13.8%	0.31	-3.0%	-13.1%	0.46

Table 6
Prior client acquisition performance and the change in advisor's market share

This table reports the results of OLS regressions in which the dependent variables are the change in the log of the investment bank's market share of the acquisition advising market. One-year change is market share in calendar year *i+1* minus market share in calendar year *i*. Three-year change is market share during calendar years *i+1* through *i+3* minus market share in calendar year *i*. Data on acquisitions are from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated for acquisitions announced during 1984–2011. Variables are defined in Appendix A. Client performance NNPV, client performance EWCAR, prior market share, the fractions of completed, hostile, contested deals, and fraction financed with cash are computed during calendar year *i*. Changes in client performance NNPV, client performance EWCAR, the fractions of completed, hostile, and contested acquisitions, and fraction of acquisitions financed with cash are computed from calendar year *i–1* to calendar year *i*. Calendar year indicators are dummy variables to indicate each calendar year in the sample. Standard errors are clustered at the investment bank level. Coefficient estimates are reported with p-values in parentheses.

Panel A

	Dependent Variable: Change in Market Share			
Variable	One-year		Three-year	
Client performance NNPV	1.143		2.102	
	(0.049)		(0.044)	
Client performance EWCAR		1.001		2.612
		(0.094)		(0.020)
Prior market share	-0.21	-0.027	-0.035	-0.040
	(0.421)	(0.316)	(0.387)	(0.315)
Change in market share	-0.130	-0.132	-0.396	-0.400
from year i-1 to year i	(0.074)	(0.067)	(<0.001)	(<0.001)
Fraction of acquisitions completed	0.643	0.667	0.514	0.517
	(0.118)	(0.100)	(0.512)	(0.513)
Fraction of hostile acquisitions	-0.715	-0.759	-0.609	-0.582
	(0.154)	(0.132)	(0.479)	(0.489)
Fraction of contested acquisitions	-1.156	-0.981	-0.688	-0.705
	(0.044)	(0.076)	(0.405)	(0.374)
Fraction financed with cash	0.555	0.523	0.251	0.220
	(0.101)	(0.106)	(0.542)	(0.594)
Calendar year indicators	Yes	Yes	Yes	Yes
Observations	418	421	434	437
Adjusted R-squared	8.1%	8.1%	15.3%	15.8%

Table 6 – continued

Panel B

Variable	Dependent Variable: Change in Market Share			
	One-year		Thee-year	
Change in client performance NNPV	1.135		2.062	
	(0.011)		(0.009)	
Change in client performance EWCAR		1.143		2.592
		(0.009)		(0.003)
Prior market share	-0.044	-0.046	-0.052	-0.056
	(0.064)	(0.051)	(0.227)	(0.183)
Change in market share	-0.122	-0.126	-0.397	-0.399
from year i-1 to year i	(0.087)	(0.077)	(<0.001)	(<0.001)
Change in fraction of acquisitions completed	0.015	0.025	0.270	0.247
	(0.965)	(0.941)	(0.658)	(0.681)
Change in fraction of hostile acquisitions	-0.829	-0.840	0.407	0.423
	(0.057)	(0.059)	(0.437)	(0.420)
Change in fraction of contested acquisitions	-0.056	-0.018	0.499	0.420
	(0.861)	(0.957)	(0.375)	(0.464)
Change in fraction financed with cash	0.290	0.281	-0.233	-0.209
	(0.167)	(0.175)	(0.526)	(0.566)
Calendar year indicators	Yes	Yes	Yes	Yes
Observations	418	421	434	437
Adjusted R-squared	8.6%	8.7%	15.4%	15.8%

Table 7

Stock returns of the acquirer and advisor during the announcement of the acquisition attempt

This table reports the results of an OLS regression in which the dependent variable is the cumulative abnormal return of the acquirer's advisor during the announcement of the acquisition attempt. Data on acquisitions are from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated for acquisitions announced during 1984–2011. Variables are defined in Appendix A. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors. Coefficient estimates are reported with p-values in parentheses.

Variable	Dependent Variable: Advisor's CAR
Acquirer's CAR	0.068
	(0.008)
Log (target size/acquirer size)	-0.002
	(0.215)
Firms in similar industries	0.002
	(0.653)
Hostile takeover	0.025
	(<0.001)
Paid by cash	-0.005
	(0.170)
Number of bidders	-0.003
	(0.572)
Target is publicly traded	0.007
	(0.106)
Constant	-0.001
	(0.997)
Observations	502
Adjusted R-squared	3.5%

Table 8

Advisor choice model using the sample of free acquirers with stock returns data available

This table reports the results of regressions that estimate the likelihood that a bank is chosen as an acquirer advisor versus the likelihood that the bank is not chosen. For each acquisition in the sample, the regression includes one observation for each investment bank that was active in the advisory market at the time of the acquisition announcement. A bank is active in the advisory market if it has been chosen for the current acquisition attempt and at least one acquisition attempt prior to the current acquisition attempt or if it has served as an advisor in at least one acquisition attempt announced before and at least one announced after the announcement of the current acquisition attempt. Data on acquisitions are taken from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Variables are defined in Appendix A. Fraction of acquisitions completed is estimated over one-year prior to the announcement of the current acquisition. Other variables are estimated over the relevant periods before the announcement of the acquisition. Regression description details are as follows. Regressions are estimated using standard logistic models in Bao and Edmans methodology, and using logistic model with fixed effects at the acquisition level in our methodology. In both regressions, the samples include only acquisitions in which an acquirer has not engaged in any acquisitions, equity issuances, or debt issuances with any investment bank as the advisor or underwriter during the five years prior to the acquisition in which the advisor choice is being made and acquirer returns are available from *CRSP* during the announcement of the current acquisition attempt. In addition, in "Bao and Edmans Methodology" regression, the sample period is 1993–2007 and only the largest 143 advisors by the value of acquisitions they advised in enter the analysis. Client performance B&E is an equal-weighted average of an investment bank's acquirer clients' cumulative announcement period abnormal return (CAR) measured over a 3-day interval centered at the acquisition announcement in acquisitions announced over the calendar year prior to the calendar year of the current acquisition attempt (CAR is winsorized at 1% and 99%). In "Our Methodology Free Acquirers and Acquirer Returns Available" regression, the sample period is 1984–2011 and client performance EWCAR is estimated over one year prior to the announcement of the current acquisition. Standard errors are clustered at the acquisition level. Coefficient estimates are reported with p-values in parentheses.

	Regression Description	
	Bao and Edmans Methodology	Our Methodology Free Acquirers with Stock Returns Available
Variable	(1)	(2)
Client performance B&E, 1 year	-0.725	
	(0.259)	
Client performance EWCAR, 1 year		-0.633
		(0.340)
Prior 3-year's bank market share	6.544	5.489
	(<0.001)	(<0.001)
Fraction of acquisitions completed, 1 year		0.012
		(0.950)
Bank's breadth of coverage		9.258
		(<0.001)
Bank's expertise in target industry		2.182
		(0.030)
Constant	-4.359	
	(<0.001)	
Observations	21,615	26,651
Pseudo R-squared	0.7%	6.9%

Table 9

Actual and simulated market shares of acquisition advisors

This table compares the market shares that result from the stochastic simulation model of the market for acquirer advisors with actual market shares of acquirer advisors. The actual market shares presented in column (1) are average values of annual market shares during 1984–2011. The market shares are weighted equally. The simulated market shares are presented in columns (2)–(6) under different assumptions about the persistence in client CARs for a given advisor. The model is based on the empirically estimated model of advisor choice given in Table 3. In various runs of the simulation model, the coefficients of the control variables of the choice model are set to their estimated values (All Coefficients) or to zero (Client Performance Only). The model is allowed to run for 50 years with monthly choices of advisors by 100 acquirers per month. The market shares presented are estimated in the final year of the simulation. The stochastic variable is acquirer CARs. The mean and variance of CARs are set at their empirically estimated levels. The choice of advisor model is estimated with attempted acquisitions from the time period of 1984–2011.

	SDC Sample	Simulations				
	Weighted Equally	Client Performance Only	All Coefficients			
			Coefficient of Persistence			
			Zero	Actual	Actual*1.5	Actual*2
	(1)	(2)	(3)	(4)	(5)	(6)
Percentage market share of top 5 banks	51.8	100.0	32.6	44.2	78.6	100.0
Percentage market share of second 5 banks	19.0	0.0	17.7	20.6	5.3	0.0
Percentage market share of the other banks	29.2	0.0	49.7	35.2	16.1	0.0