

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

Valeriy Sibilkov

University of Wisconsin-Milwaukee

John J. McConnell

Purdue University

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 of the changes through time in banks' shares of the advisory business. Further, 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) acquirers consider advisors' prior client performance when choosing their advisors and (2) market forces work to align advisors' and clients' interests in the acquisition market. (*JEL* G32, G34)

Over the decade of 2002–2011, in the United States alone, corporate acquirers paid over \$20 billion to investment banks in advisory fees to facilitate their acquisitions.¹ Given the dollar amounts involved and 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 their clients' prior takeover attempts. Bao and Edmans (2011) investigate this implication directly

This paper has benefited from helpful comments by and discussions with Jack Bao, David Denis, Alex Edmans, Mara Faccio, Micah Officer, Raghavendra Rau, Henri Servaes, Steven Sibley, Denis Sosyura, Laura Starks, Miroslava Straska, Gregory Waller, and an anonymous referee and from presentations at the University of Wisconsin – Milwaukee, Temple University, and the American Finance Association annual meeting (2014). Send correspondence to Valeriy Sibilkov, Lubar School of Business, University of Wisconsin – Milwaukee, Milwaukee, WI 53201, USA; telephone: 414-229-4369. E-mail: sibilkov@uwm.edu.

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

by estimating a model of advisor choice in which the dependent variable is an indicator identifying whether a bank is chosen as the advisor for a current acquisition attempt and the key independent variable is the value created for prior clients. They find no significant relation between the two variables. 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.”

The results are puzzling only if prior client performance is informative of future client performance. On this point, Bao and Edmans (2011) find that client performance is persistent and is therefore informative of future performance. Bao and Edmans (2011) 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 discomfiting 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 is 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 (2011) do so cautiously, commenting that “these results are only suggestive, due to the difficulty of identifying ‘free’ clients [i.e., clients not already linked to advisors] . . . and our small sample size” (Bao and Edmans 2011, 2,311).

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 (2011) by estimating a fixed effects logit model, extending the sample period covered, and 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 or value-weighted average 5-day announcement period CARs, and the dependent variable is a dummy indicating whether the bank is chosen for the current acquisition attempt. 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.

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 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 is 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.

We find that the change in an advisor's market share is 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 find that acquirers' announcement period CARs are correlated with their advisors' CARs during the same period. 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 evidence is that the advisor's 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 (2011). The apparent answer has to do with certain idiosyncrasies in the way in which Bao and Edmans (2011) constructed their sample. These idiosyncrasies have the effect of reducing sample size by roughly 80%. When we impose the same criteria on the data as did Bao and Edmans (2011) and re-estimate the advisor choice model over the same time period as they did, we too find that the coefficient of prior client performance is not statistically significant (and negative). We experiment with a host of alternative specifications of the time period over which the model is estimated, the criteria for inclusion of an acquirer in the sample, and the interval over which CARs are calculated. 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 (2011).²

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

² We wish to emphasize that the criteria used by Bao and Edmans (2011) 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.

That possibility is discomfoting because it is contrary to the actually observed robust multiparticipant 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 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 fifty potential advisors. Through time, we assign CARs to advisors/clients based on a persistence coefficient of the magnitude calculated by Bao and Edmans (2011). 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 prior clients’ CARs, are set to zero, the market converges to a single advisor in two periods. That is, if prior client performance is the only factor considered by acquirers when choosing their advisors, the market quickly devolves to a single provider. However, when we allow other factors also to 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, ten advisors control 65% of the market, and all other advisors each have a small market share. This resembles the market for advisory services observed in the United States with a handful of “national” banks and a larger number of “regional” banks.

Arguably, the puzzling evidence regarding the choice of advisors by corporate acquirers begins with McLaughlin’s (1990), who reports that contracts between corporate acquirers and their 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 which 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 that market forces may work to curb this apparent conflict of interest. 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 align acquirers’ and their advisors’ incentives. In this way, market forces can alleviate the conflict of interest.

The evidence set forth in this study can be interpreted as consistent with McLaughlin’s (1990) conjecture, in that 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.

1. 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 et al. (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's (1990), Rau (2000), and Bao and Edmans (2011).

McLaughlin's (1990) studies the fee structure of advisory contracts in corporate tender offers from 1978–1985. In the typical contract, more than 80% of the advisory fee is paid only if the acquisition is completed and 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 he further speculates that “investment bankers may be more easily controlled by other means, for example, through reputation” (McLaughlin's 1990, 231).

Rau (2000) investigates the determinants of the market shares of investment banks that advise acquirers in takeover attempts from 1980–1994. He casts his analysis as a test of the “superior deal” hypothesis versus the “deal completion” hypothesis. According to the former, advisors' market shares are related to their prior clients' performance measured as the value created for acquirers' shareholders. According to the latter, valuation of the deal is of secondary importance; rather it is the fraction of deals completed determines advisors' market shares.

Rau (2000) calculates prior client performance as the postacquisition annual and semiannual CARs for acquisitions announced over the year prior to which advisors' market shares are being considered. He finds that advisors' market shares are significantly related to prior market share and the percentage of deals completed but are unrelated to prior client performance. Rau (2000) 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, 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 from 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 (2011) also estimate a logit model of the likelihood that a specific bank is chosen as the advisor for an acquirer's current acquisition. Their key independent variable is prior clients' equal-weighted average 3-day announcement period CARs. They estimate their model using only "free acquirers," which are 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 period over which prior bank relationships can be identified, their sample of free acquirers is limited to 1993–2007. They report that prior client performance is not a significant determinant of the choice of an advisor. However, to be fair to Bao and Edmans (2011), 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 (2000), 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.

2. Data Sources and Sample

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 noncompleted 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. Because we use five years of data to measure prior client performance and to identify prior client relationships, we use only acquisitions announced during 1984–2011 in our analyses.

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 any bank that represented the seller or any bank that merely acted as an equity participant or arranged or provided financing as an advisor. 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)." When one bank acquires another, we assign the alpha code of the acquiring bank to the merged entity. To the extent

Table 1
Number of advisors and acquisitions, 1984–2011

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

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

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. Such noise is likely to reduce the empirical significance of any relation between advisors and their clients’ performance.

Data describing the acquirer and 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 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 the *Institutional Brokers Estimate System (I/B/E/S)* to derive a measure of the advisor’s security analyst coverage.⁴

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 publicly traded stock at the time of the acquisition attempt; 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.

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.

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

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
<hr/>		
Panel B	Mean	Median
Client performance VWCAR, one year	-0.5%	-0.7%
Client performance VWCAR, 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%

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.

3. Value Created

A key variable in our analyses is the value created for acquirers at the announcement of acquisition attempts. We use the acquirer's CAR calculated over the 5-day interval centered on the announcement date of the acquisition attempt to measure value created. The CAR is the cumulative 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, 1995). We truncate all CARs at 1% and 99%.⁵

Some of our analyses require a measure of the value created by an investment bank's acquirer clients over a period of years. We use two different measures. The first is from Rau (2000). In this procedure, the CAR for each acquirer 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 days, and

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

three years, i.e., 1,095 calendar days) and normalized by the total equity market capitalization of these clients. The 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 value-weighted CAR (VWCAR) 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 VWCARs 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% .

4. Choice of Acquisition Advisor and Advisors' prior Client Acquisition Performance

In this section, we investigate (1) whether prior client performance 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.

4.1 Choice of an advisor

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

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

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. Specifically, we estimate a fixed effects logistic regression with fixed effects at the individual acquisition level (Hosmer and Lemeshow 2000; McFadden 1974). The fixed effects account for acquisition-specific effects and 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.

The model estimates the likelihood that a bank is chosen as the advisor relative to the likelihood that the bank is not chosen. The explanatory variable of interest is prior client performance. We estimate the model separately using client performance measured over the one- or three-year interval prior to the announcement of the current acquisition.

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 one- or three-year interval preceding the acquisition and the advisor's prior client must have stock returns available on *CRSP*. For any bank that is not chosen to be

considered as active in the advisory market, the bank must have been an advisor in at least one acquisition attempt announced over the one- or three-year interval prior to the announcement of the current acquisition attempt and in at least one acquisition attempt after the current acquisition attempt up to and including December 2011.

The estimations include control variables to capture factors that might influence the acquirer's choice of its 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 completed, because Rau (2000) 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 analyst coverage of the issuer's stock by the underwriter, 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.

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 (2000) findings suggest a positive effect, whereas Mooney and Sibilkov's (2012) argument suggests a negative effect. 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 (one year) of prior client performance encompass 10,189 (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 choice of an advisor, we estimate marginal effects using one-year VWCARs and EWCARs. These are 0.019 and 0.022. A one-standard-deviation increase in VWCAR (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. The appropriate way to consider the economic significance of the marginal effect of prior client performance is to compare the effect with the unconditional likelihood of being chosen, which, according to the model, is 1.5%. Thus, a one-standard-deviation increase in VWCAR 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 (2000) study but is consistent with that of Mooney and Sibilkov (2012). 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 variables are measured and with respect to the way the sample is constructed. In Section 7, we describe tests in which we use alternative measurement intervals and samples. Suffice it to say, with minor exceptions, the banks' prior client performance is a positive and statistically significant determinant of acquirers' choices of financial advisors.

4.2 Decision to retain an initial advisor in a subsequent acquisition

As a further consideration of whether prior client performance influences 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

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

Table 3
Prior client acquisition performance and the choice of the acquirer's advisor

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

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 advised 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 from 1984–2011. Regressions are estimated using a logistic model with fixed effects at the acquisition level. Variables are defined in Appendix A. Client performance VWCAR, 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.

prior acquisition. To construct the sample for this analysis, 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 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 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. 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 decision to use an advisor. This equation has the form

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

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

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

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).

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 pair of acquisitions, 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 acquisitions, the log of the ratio of the book value of assets of the subsequent target to the book value of assets of the acquirer, the number of concurrent bidders for the target in the subsequent 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. 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, the market share of the advisor, a measure of the 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 to indicate whether the advisor provided analyst coverage for the acquirer, and the number of years between the two acquisitions. Estimation of the retention equation includes 577 pairs of acquisition attempts.

Table 4
Acquirer performance and advisor retention in consecutive acquisitions

Variable	Model	
	Hire (1)	Retain (2)
Preceding acquisition announcement CAR	-0.981 (0.157)	1.927 (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 (0.031)	-0.088 (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 (0.055)	0.470 (0.183)
Wald test of equation independence		-0.313 (0.274)
Observations	934	577

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 from 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 is an advisor in the subsequent acquisition attempt. Variables are defined in Appendix A. The 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.

The results of the estimation are reported in Table 4. In the retention model, the coefficient of the acquirer's CAR at 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 prior acquisition attempt, the more likely is the acquirer to use its prior advisor in its current attempt. To measure the economic significance of the acquirer's CAR on the likelihood of advisor retention, 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., $0.768 \times 0.087/0.49 = 0.136$).

One important ancillary statistic is that the unconditional probability of retaining the 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.

5. Client Performance and Investment Banks' Future Market Share

The analyses of the prior section demonstrate that prior client acquisition performance is a 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 whether it 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. We consider two empirical specifications. First, we examine the relation between the change in the advisor's market share and the level of prior client performance ("change-on-level"). Second, we examine the relation between the change in advisor's market share and the change in prior client performance ("change-on-change"). Change-on-level specifications test whether superior client performance over some time period attracts clients during the subsequent period. Change-on-change specifications test whether relative improvement in client performance through time attracts clients subsequently.

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 year i) and three-year (market share during calendar years $i + 1$ through $i + 3$ minus market share in year i) periods. To examine whether the changes in market shares are related to the level of prior client performance, we partition banks by positive and negative prior client performance during calendar year i . Similarly, for the change-on-change specification, we partition banks by positive and negative changes in prior client performance over the interval of calendar year $i - 1$

Table 5
Univariate statistics of the change in advisors' market shares sorted by prior client acquisition performance

Panel A

	Client performance VWCAR			Client performance EWCAR		
	Positive	Negative	<i>p</i> -value for difference	Positive	Negative	<i>p</i> -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 VWCAR			Change in client performance EWCAR		
	Positive	Negative	<i>p</i> -value for difference	Positive	Negative	<i>p</i> -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

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 year i . Three-year change is market share during calendar years $i+1$ through $i+3$ minus market share in year i . Statistics are sorted by positive and negative client performance VWCAR and EWCAR estimated in 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.

through year i . We then calculate mean and median changes in market share for each set of banks.

Table 5 reports the 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 performance is positively related with changes in advisors' market shares. For banks with positive prior client VWCAR, mean and median market shares increase over the subsequent one- and three-year periods; for banks with negative VWCAR, mean and median market shares decline over the subsequent one- 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 VWCAR, and those with negative VWCAR 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 VWCAR, the market share increases 2.8% over the subsequent one year relative to its prior year's market share, whereas for the average bank with negative VWCAR, 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 are similar but are not quite as strong. In all instances, banks with positive EWCAR experience increases in market shares and those with negative EWCAR experience decreases in subsequent market shares. However, the differences between the two sets are not always statistically significant. For example, for banks with positive one-year EWCAR, the mean increase in market share is 1.1%, and for banks with negative one-year 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 and those with degradation in prior client performance. In five of the eight comparisons, the difference in changes in market share between banks with improvements 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 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 bank's market share in calendar year $i + 1$ (or $i + 1$ through $i + 3$) minus that in year i . The explanatory variable of interest is either prior client performance measured during calendar year i (change-on-level specification) or the change in prior client performance over the interval of year $i - 1$ through year i (change-on-change specification).

For change-on-level specifications, we employ the same control variables as Rau (2000) plus two others. Those used by Rau (2000) 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. 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 . 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 and allow for standard errors clustered at the bank level. For change-on-change specifications, the

explanatory variables are the same as those in change-on-level specifications, except that the variables are measured as the change between calendar year $i - 1$ and 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 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 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 VWCAR and EWCAR from the one-year change in market share regressions from panel A. A one-standard-deviation increase in VWCAR or EWCAR results in a 9.8% or 8.7% increase in the bank's percentage share of the acquisition advisory market over the following one-year period.⁷

6. Client's Acquisition Performance and Advisor's Market Value

An implication that arises from the results to this point is that a value-increasing (value-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. First, 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. Second, 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 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 period.⁸

The control variables in the regression include the log of the ratio of the book value of assets of the target to the book value of assets of the acquirer, the

⁷ A one-standard-deviation increase in VWCAR (i.e., 8.2%) or EWCAR (i.e., 8.3%) produces an increase of 0.094 or 0.083, respectively, in the dependent variable. We take the exponent of the changes in the dependent variable, which is in log form, to obtain the change in the ratio of the future market share to the current market share.

⁸ We also estimated a regression scaling the market value change of the advisor and of the acquirer by the book value of the acquirer. The coefficient is positive with a p -value of 0.002.

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

Panel A				
Variable	Dependent variable: Change in market share			
	One-year		Three-year	
Client performance VWCAR	1.143 (0.049)		2.102 (0.044)	
Client performance EWCAR		1.001 (0.094)		2.612 (0.020)
Prior market share	-0.21 (0.421)	-0.027 (0.316)	-0.035 (0.387)	-0.040 (0.315)
Change in market share from year $i - 1$ to year i	-0.130 (0.074)	-0.132 (0.067)	-0.396 (< 0.001)	-0.400 (< 0.001)
Fraction of acquisitions completed	0.643 (0.118)	0.667 (0.100)	0.514 (0.512)	0.517 (0.513)
Fraction of hostile acquisitions	-0.715 (0.154)	-0.759 (0.132)	-0.609 (0.479)	-0.582 (0.489)
Fraction of contested acquisitions	-1.156 (0.044)	-0.981 (0.076)	-0.688 (0.405)	-0.705 (0.374)
Fraction financed with cash	0.555 (0.101)	0.523 (0.106)	0.251 (0.542)	0.220 (0.594)
Calendar year indicators	yes	yes	yes	yes
Observations	418	421	434	437
Adjusted R ²	8.1%	8.1%	15.3%	15.8%

Panel B				
Variable	Dependent variable: Change in market share			
	One-year		Three-year	
Change in client performance VWCAR	1.135 (0.011)		2.062 (0.009)	
Change in client performance EWCAR		1.143 (0.009)		2.592 (0.003)
Prior market share	-0.044 (0.064)	-0.046 (0.051)	-0.052 (0.227)	-0.056 (0.183)
Change in market share from year $i - 1$ to year i	-0.122 (0.087)	-0.126 (0.077)	-0.397 (< 0.001)	-0.399 (< 0.001)
Change in fraction of acquisitions completed	0.015 (0.965)	0.025 (0.941)	0.270 (0.658)	0.247 (0.681)
Change in fraction of hostile acquisitions	-0.829 (0.057)	-0.840 (0.059)	0.407 (0.437)	0.423 (0.420)
Change in fraction of contested acquisitions	-0.056 (0.861)	-0.018 (0.957)	0.499 (0.375)	0.420 (0.464)
Change in fraction financed with cash	0.290 (0.167)	0.281 (0.175)	-0.233 (0.526)	-0.209 (0.566)
Calendar year indicators	yes	yes	yes	yes
Observations	418	421	434	437
Adjusted R ²	8.6%	8.7%	15.4%	15.8%

This table reports the results of ordinary least squares (OLS) regressions in which the dependent variables are the change in the log of the investment bank's market share of the advisory market. One-year change is market share in calendar year $i + 1$ minus market share in year i . Three-year change is market share during calendar years $i + 1$ through $i + 3$ minus market share in 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 VWCAR and EWCAR, prior market share, the fractions of completed, hostile, contested deals, and fraction financed with cash are computed during year i . Changes in client performance VWCAR and EWCAR, the fractions of completed, hostile, and contested acquisitions, and fraction of acquisitions financed with cash are computed from calendar year $i - 1$ to 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.

Table 7
Stock returns of the acquirer and advisor during the announcement of the acquisition attempt

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^2	3.5%

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 heteroscedasticity and autocorrelation robust standard errors. Coefficient estimates are reported with p -values in parentheses.

number of concurrent bidders for the target, and dummies to indicate whether the acquirer and target have the same 2-digit SIC code, to indicate whether the transaction is classified as hostile, to indicate whether cash was used as consideration, and to indicate whether the target is public. The set of 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 during the announcement of the acquisition.

The results of the regression are reported in Table 7. The coefficient of the client's CAR is positive and statistically significant 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.⁹ The evidence indicates that an acquisition attempt that creates (destroys) value for the acquirer also creates (destroys) value for its advisor.

7. Robustness Tests

In this section, we undertake analyses that, in general, are aimed at answering the question of whether our results are robust.

⁹ 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.

7.1 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 samples of acquisitions that have been shown to exhibit differences in performance in other contexts. We partition our sample by the target's public/private status (Fuller, Netter, and Stegemoller 2002; Faccio, McConnell, and Stolin 2006) and by the method of payment for the target (Travlos 1987; Moeller, Schlingemann, and Stulz 2004). We then test whether prior client performance in acquisitions of public targets affects the choice of an advisor for an acquisition of a public target. We 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 samples with the only exception being the "cash-only" sample (for which the number of observations drops by 90% relative to the full sample).

Second, most of our advisor choice analyses involve a lead/lag relation between prior client performance and the awarding of advisor mandates. Unfortunately, we lack a theory to guide our choice of an interval over which to search for a correlation between acquirers' performance and the effect of that performance on a later acquirer's choice of advisor. Therefore, we estimate the choice model using a variety of lead/lag relations, ranging from one- 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.

7.2 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 (2011), 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 methodology). Bao and Edmans's (2011) estimations differ from ours on eight dimensions. Six of these are self-explanatory and include our 5-day CAR versus B&E's 3-day CAR, our sample period of 1984–2011 versus B&E's sample period of 1993–2007, our truncation of CARs versus B&E's winsorization of CARs, our use of all available advisors versus B&E's use of only the largest 143 advisors, our fixed effect logit versus 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 versus 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 (2011) require some explanation. First, for an acquisition to enter their sample, Bao and Edmans (2011) 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 as "free acquirers" in the sense that they are not bound by prior experience to any 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 (2011) 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 (2011) use the same sample in their choice regressions as they do in their persistence analysis, they 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's (2011).¹⁰ Further, as did Bao and Edmans (2011), we use only EWCARs. In this analysis, we measure prior client performance over a one-year interval. The results are reported in Table 8. With all eight dimensions adjusted to match Bao and Edmans's (2011), the coefficient of prior client performance is negative, statistically insignificant, and at -0.725 , similar in magnitude to that reported by Bao and Edmans (2011).

Having replicated Bao and Edmans's (2011) result, we seek to determine whether any of the eight differences in 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 than over the 365 calendar days prior to the current acquisition. In the other

¹⁰ One implementation that differs slightly from Bao and Edmans's is that we identify free acquirers by excluding acquirers involved in any advisor-assisted transaction or underwriter-assisted equity or debt issuance as reported by the *SDC Mergers and Acquisitions* and *New Issues* databases within five years prior to the current acquisition. Bao and Edmans (2011) also exclude clients with prior lending agreements. Our data do not allow for that restriction.

Table 8
Advisor choice model using the sample of free acquirers with stock returns data available

Variable	Regression description	
	Bao and Edmans' methodology	Our methodology free acquirers with stock returns available
	(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 (< 0.001)	5.489 (< 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^2	0.7%	6.9%

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 advised 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 a standard logistic model (as in Bao and Edmans) and using a logistic model with fixed effects at the acquisition level (as in our methodology). In both estimations, 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 the "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.

four, only a subsample of the original sample is used. Nevertheless, in each of the regressions, the coefficient of client performance is positive and statistically significant with all p -values being less than 0.039. Individually, therefore, none of the differences in 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 twenty-eight possible combinations of differences taken two at a time that give rise to twenty-eight 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 (2011), 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 (2011) conduct their analysis with an inadvertently idiosyncratic sample that appears to not be 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.

7.3 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 primarily due to small banks, we re-estimate the regressions of Table 6 separately for advisors with above-median and 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.

8. Simulation of the Market for Acquisition Advisory Services

The results of our analyses resolve one puzzle but open the door to a second. Specifically, 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 advisors, thereby resolving one puzzle. The new puzzle follows from Bao and Edmans’s (2011) evidence that advisors’ performance is persistent. If acquirers select their advisors on the basis of the acquisition performance of the advisor’s clients, and client performance is persistent, how can it be that the market for advisory services does not quickly converge to a single service provider as acquirers rush 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 from estimation of the advisor choice model estimated using 12 months of prior client CARs. We use the first 12 months of the simulation to generate a history of acquirer CARs, where the CARs are drawn from a normal distribution with a mean and standard deviation equal to those of empirically observed CARs in our sample. We then randomly assign acquirers to advisors with all advisors being assigned the same number of acquirers. The analysis begins with fifty banks. One hundred acquisitions occur each month. During the first 12 months, banks have equal market share with each bank advising 24 acquirers.

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.¹¹ We assign advisory relationships so 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 calculated and scaled so that the mean market share of the set of chosen advisors equals that observed in our sample.

Given all this information, in the 13th month each acquirer chooses an advisor 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. The CAR is 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 (2011, Table 6, panel A, 2,306). The procedure is repeated for the 14th month and so on for 600 months.

¹¹ The calibrations are required because the means and standard deviations from the simulation characterize the distributions of variables for all banks from which an acquirer chooses, whereas the simulation requires these statistics only for the subset of banks that are chosen as advisors.

Table 9
Actual and simulated market shares of acquisition advisors

	SDC sample		Simulations			
	Weighted equally	Client performance only	All coefficients			
			Coefficient of persistence			
			Zero (3)	Actual (4)	Actual*1.5 (5)	Actual*2 (6)
(1)	(2)					
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

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 from 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.

Table 9 shows the results of the simulations 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 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 in Table 3. In the 50th year, the largest five banks advise 44.2% of the acquisitions, the next five banks advise an additional 20.6% of the acquisitions, and the remaining 35.2% of the deals are allocated among the other forty banks. The result of this experiment resembles the advisory market that we observe in practice. As shown in the first column of Table 9, during 1984–2011, on an equal-weighted basis, in actuality, the top five banks serviced 51.8% of the market, the next five 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, that is, no persistence in performance. In the 50th year, the top five banks have 32.6% of the market and the next five have 17.7%. That is, client performance is transitory, and other

factors, randomly distributed among advisors, determine market share. Second, we increase the coefficient of persistence to double that of the level reported by Bao and Edmans (2011). In this experiment, the market again converges to a single advisor, but not until after 16 years.

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 choice of advisor, the market quickly devolves to a 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 to one service provider so long as persistence is not too high and so long as other factors play a role in advisor choice.

9. Summary and Conclusion

Using a comprehensive sample of corporate acquisitions that took place over the period 1984–2011, we find that prior client performance, measured as prior clients’ value-weighted and equal-weighted announcement periods CARs, is a positive and significant determinant of the likelihood that a bank will be chosen as the advisor by current acquirers. We further find that prior client performance is positively related to the changes in advisors’ market shares through time and that acquirers’ announcement period CARs are positively correlated with contemporaneous changes in advisors’ market values.

Our analysis addresses a fundamental question raised by McLaughlin’s (1990), who 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, but speculates that a 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 can manifest itself is in the gain of future clients. Our results are consistent with McLaughlin’s (1990) conjecture in that prior client performance is positively associated with the likelihood that a bank will be chosen by later acquirers, prior client performance is positively associated with changes in banks’ shares of the advisory market, and client acquisition performance is positively associated 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	
Value-weighted CAR (client performance VWCAR)	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 twenty-five 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 <i>SDC</i> 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 <i>SDC</i> .
Bank is prior advisor	Equals one 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 zero otherwise.
Bank is prior equity underwriter	Equals one 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 zero otherwise.
Bank is prior debt underwriter	Equals one 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 zero otherwise.
Bank's breadth of coverage	The proportion of firms listed in <i>Compustat</i> 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 one if the acquirer's primary two-digit SIC code is the same as that of the target of the current acquisition and zero otherwise.
Target is publicly traded	Equals one if the target of the current acquisition is publicly traded and zero 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 twenty-five 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.

Appendix A

Continued

Variable name	Definition
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 one if the value of the subsequent acquisition differs by more than 50% from that of the preceding acquisition and zero otherwise.
Advisor provided analyst coverage	Equals one if in the prior acquisition, the acquirer's advisor provided analyst coverage for the acquirer in 12 months prior to the acquisition announcement and zero 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 <i>SDC</i> .
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 one if the transaction is classified as hostile and zero otherwise.
Paid by cash	Equals one if cash is used as consideration in the acquisition and zero otherwise.

References

- Allen, L., J. Jagtiani, S. Peristiani, and A. Saunders. 2004. The role of bank advisors in mergers and acquisitions. *Journal of Money, Credit and Banking* 36:197–224.
- Bao, J., and A. Edmans. 2011. Do investment banks matter for M&A returns? *Review of Financial Studies* 24:2286–315.
- Bodnaruk, A., M. Massa, and A. Simonov. 2009. Investment banks as insiders and the market for corporate control. *Review of Financial Studies* 22:4989–5026.
- Cliff, M., and D. Denis. 2004. Do initial public offering firms purchase analyst coverage with underpricing? *Journal of Finance* 59:2871–901.
- Faccio, M., J. McConnell, and D. Stolin. 2006. Returns to acquirers of listed and unlisted targets. *Journal of Financial and Quantitative Analysis* 41:197–220.
- Fama, E., and K. French. 1992. The cross-section of expected stock returns. *Journal of Finance* 47:427–65.
- . 1995. Size and book-to-market factors in earnings and returns. *Journal of Finance* 50:131–56.

- Francis, B., I. Hasan, and X. Sun. 2008. How do firms choose financial advisors in mergers and acquisitions and why do they switch? Unpublished Working Paper, Rensselaer Polytechnic Institute.
- Fuller, K., J. Netter, and M. Stegemoller. 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *Journal of Finance* 57:1763–93.
- Golubov, A., D. Petmezas, and N. Travlos. 2012. It pays to pay your investment banker: New evidence on the role of financial advisors in M&As. *Journal of Finance* 67:271–312.
- Hosmer, D. W. Jr., and S. Lemeshow. 2000. *Applied logistic regression*, 2d ed. New York: Wiley.
- Kale, J., O. Kini, and H. Ryan. 2003. Financial advisors and shareholder wealth gains in corporate takeovers. *Journal of Financial and Quantitative Analysis* 38:475–501.
- Krigman, L., W. Shaw, and K. Womack. 2001. Why do firms switch underwriters? *Journal of Financial Economics* 60:245–84.
- McFadden, D. 1974. Conditional logit analysis of qualitative choice behavior. In *Frontiers in econometrics*, 105–42. Ed. P. Zarembka. New York: Academic Press.
- McLaughlin, R. 1990. Investment-banking contracts in tender offers. An empirical analysis. *Journal of Financial Economics* 28:209–32.
- Moeller, S., F. Schlingemann, and R. Stulz. 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics* 73:201–28.
- Mooney, T., and V. Sibilkov. 2012. Sealing the deal: Is an advisor's completion expertise in mergers & acquisitions value-destroying? Working Paper.
- Poirier, D. J. 1980. Partial observability in bivariate probit models. *Journal of Econometrics* 12:210–17.
- Rau, P., 2000. Investment bank market share, contingent fee payments and the post-acquisition performance of acquiring firms. *Journal of Financial Economics* 56:293–324.
- Servaes, H., and M. Zenner. 1996. The role of investment banks in acquisitions. *Review of Financial Studies* 9:787–815.
- Travlos, N. 1987. Corporate takeover bids, method of payment, and bidding firms' stock returns. *Journal of Finance* 42:943–63.