

# **Prior Client Performance and the Choice of Investment Bank Advisors in Corporate Acquisitions<sup>\*</sup>**

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## **Abstract:**

Contrary to the implications and conclusions of earlier studies, we find that prior client performance is a significant determinant of the likelihood that an investment bank will be chosen as the advisor by future acquirers and that prior client performance is a significant determinant of the changes through time in investment banks' shares of the advisory business. Further, we find that the changes in the market values of acquirers at the announcement of acquisition attempts are positively correlated with contemporaneous changes in the market values of their advisors. These results imply that market forces align investment bankers' and clients' interests in the acquisition market.

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

## **1. Introduction**

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 insensitive as to whether the advisors created value for their prior clients in their prior clients' acquisitions. Bao and Edmans examine this implication directly by estimating a model of advisor choice in which the key independent variable is prior client performance (measured as 3-day announcement period cumulative abnormal return (CAR)) and the independent indicator variable is whether the bank is chosen as the advisor for a particular acquisition. They find no significant relation between the two variables. In commenting on their results, both Rau (2000) and Bao and Edmans (2011) characterize the absence of any apparent relation between prior client performance and the likelihood that the advisor will be chosen by future acquirers as "puzzling."

The results are puzzling only if prior client performance is informative of future client performance. On this point, Bao and Edmans find that client performance is persistent. That is, they find that advisors' clients' performance is positively correlated across transactions through time. Bao and Edmans reconcile these findings by concluding that clients "do not chase performance" when choosing their acquisition advisors. That conclusion is reassuring in that, if acquirers do chase performance, an unfortunate implication is that the market for advisory

services could quickly devolve into a market dominated by a single bank as clients rush to the advisor who created the greatest value for its clients in the prior period.

Offsetting this reassuring conclusion is a different unfortunate implication that in choosing their acquisition advisors, acquirers “leave money on the table” by ignoring advisors’ prior clients’ acquisition performance. In setting forth the results of their advisor choice model, Bao and Edmans do so conservatively, commenting that “these results are only suggestive, due to the difficulty of identifying ‘free’ clients ... and our small sample size” (Bao and Edmans (2011, p. 2311)).

In this study, we expand upon the analyses of Rau (2000) and Bao and Edmans (2011). In total, our analyses use 11,765 acquisition attempts (both successful and unsuccessful) that took place during 1984–2011. We begin by estimating a fixed-effects logit model of advisor choice. The key independent variable is prior clients’ performance measured as both prior clients’ equal-weighted average 5-day CARs and prior clients’ scaled aggregate 5-day announcement period market value changes. After controlling for other factors, we find that prior clients’ 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 upon which measure of prior client performance is used, a one standard deviation increase in prior client performance corresponds to an 11.3% or 12.8% increase in the likelihood of a bank being chosen as the advisor in later acquisition attempts.

As we describe below, our implementation of the advisor choice model differs from that used in Bao and Edmans on several dimensions. However, the key distinction appears to be sample size - - as we increase the sample size in steps from 1,224 (the size of the Bao and Edmans’ sample) to 5,000 (and beyond), the likelihood of rejecting the null hypothesis of no

relation in a sample for which we know the null is rejected increases from 50% to 100%. But prior client performance is not the only determinant of advisor choice. The advisor's prior market share, whether the advisor has had a prior relationship with the acquirer (as either a debt or equity underwriter or the advisor on an acquisition), and whether the advisor has had prior experience as the advisor for other acquisitions in the target firm's industry are also statistically significantly correlated with whether an advisor is chosen as the acquirer's advisor for a particular transaction. Thus, prior client performance is one of several factors that explain advisor choice.

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

After controlling for other factors, we find that the change in an advisor's market share is significantly positively correlated with the announcement period returns of its prior acquirer clients. Banks whose prior clients do well experience gains in market share. Depending upon which measure of prior client performance is used, a one standard deviation increase in prior client announcement period abnormal returns increases an advisor's market share by 9.5% or 10.2%.

Our findings imply that value-increasing takeovers by clients should be associated with an increase in the market value of their advisors' stock. To investigate this implication, we use a set of 435 acquisition attempts for which stock price data are available for both the advisor and the client. We inquire whether acquirers' announcement period abnormal market value changes are correlated with announcement period abnormal market value changes for acquirers' advisors. We find that they are. Specifically, on average, an investment bank's market value increases by \$0.082 for every dollar that an acquisition creates in value for its acquirer client. One interpretation of this piece of evidence is that the advisor's market value gain extends beyond the current transaction and incorporates the value of an increase in future market share.

Our results and interpretation of them naturally raise the question of why our results differ from those of Bao and Edmans. As do we, Bao and Edmans conduct their choice analysis by estimating logit models in which the dependent variable is zero/one depending on whether a specific investment bank is chosen as the advisor by an acquirer in a specific transaction and in which client performance is measured using equal-weighted average announcement period stock returns. However, Bao and Edmans restrict their sample to "free acquirers" where a free acquirer is an acquirer that has not undertaken a transaction of any sort that involved the use of an investment bank over the five years prior to the acquisition in question. This restriction has the virtue of creating a sample of acquirers untainted by prior experience with banks that might cloud their consideration of factors to weigh in choosing an advisor for their current acquisition attempts. The downside of this procedure is that the restriction considerably reduces the sample size and restricts the sample period to 1993–2007.

We re-estimate our choice model experimenting with (1) the time period for which the analyses are conducted (1984–2011 vs. 1993–2007), (2) the set of acquirers for which the models

are estimated (the full sample of potential acquirers vs. only free acquirers), and (3) measurement of client performance (clients' equal-weighted abnormal stock returns vs. clients' scaled aggregate market value changes). As with Bao and Edmans, when we use free acquirers over the time period of 1993–2007 and client performance measured using equal-weighted CARs, we are unable to reject the null hypothesis of no relation between prior client performance and the likelihood that subsequent potential acquirers will choose a specific bank as its advisor. However, this is the only permutation of time period, set of acquirers, and client performance measure for which the null is not rejected.

As a further experiment, we conduct tests to assess the sensitivity of the results to sample size recognizing that the use of only free acquirers has the downside of reducing the sample size by roughly 85%. We begin with random samples of the same size as Bao and Edmans. In steps, we increase the sample size using the universe of acquirers for which we know that the “true” relation between prior client performance and the likelihood that the bank will be chosen by later acquirers is statistically significant. When the sample size equals that used by Bao and Edmans, the likelihood of rejecting the null is 30%; when the sample reaches 5,000, the null is always rejected. This analysis points to sample size as being the likely explanation for the difference between our results and those of Bao and Edmans regarding advisor choice.

We then come to the question of how it can be that (1) client performance is persistent, (2) clients choose advisors on the basis of the advisor's prior client performance, and (3) the market for advisory services can exist without becoming dominated 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. In particular, we conduct a stochastic simulation analysis in which the market begins with 50 potential advisors. In the first period, we randomly assign

clients and CARs to advisors. In subsequent periods, we assign CARs to advisors/clients based on a persistence coefficient of the magnitude calculated by Bao and Edmans. We use the coefficients of our estimated choice model to assign clients to advisors. We then simulate the evolution of the advisory market through time. Our interest is in the share of the market garnered by banks through time.

When the coefficients of all variables except the coefficient of prior clients' CAR are set to zero, the market converges to a single advisory service provider in two periods. That is, if prior client performance is the only factor considered by potential acquirers when choosing their advisors, the market quickly devolves to a single provider. However, when we allow other factors to also be at work in the choice model, including prior relationships between the client and the advisor, the market does not "collapse." Rather, in the typical run, after 50 years, 10 advisors (out of 50) control 70% of the market and all other advisors each have a small market share. That is, after many periods, the market for advisory services looks much like the market for advisory services actually observed with a handful of "national" banks/advisors and a larger number of "regional" banks/advisors.

Arguably, the puzzling evidence regarding the choice of advisors by corporate acquirers begins with McLaughlin (1990) who reports that contracts between would-be corporate acquirers and their investment bank advisors specify that much, if not all, of the compensation to be paid to the advisor depends upon successful completion of the acquisition rather than whether or to what extent the acquisition creates value for the acquirer. He notes that such contracts appear to create a severe conflict of interest in which the advisor has an incentive to complete the acquisition regardless of the valuation consequences for the acquirer. He goes on to speculate, however, that market forces may work to curb the apparent conflict of interest in advisory

contracts. He proposes that value-creating acquisitions can generate reputational capital for advisors that becomes manifest when the banks are awarded future advisory mandates, and it is the promise of future mandates that helps to align acquirers' and their advisors' incentives. In this way, market forces can alleviate the potential conflict of interest.

The evidence set forth in this study can be interpreted as consistent with McLaughlin's conjecture in so far as we find that advisors are rewarded for providing value-increasing advice for their clients. The reward comes in the form of an increase in the advisor's market value when the value-increasing acquisitions are announced. The value increase for the advisor reflects the value associated with the service provided to its current client and the 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.

One unanswered question that remains is why acquirers that are presumably managed by value-maximizing managers consider factors, such as prior relationships, other than value enhancement when choosing their acquisition advisors. Resolution of that puzzle is beyond the scope of this paper. The best we can say is that the value created for prior clients is not ignored by managers of acquiring firms. We cannot explain why other factors also affect that choice.

The remainder of this paper is organized as follows. Section 2 provides certain further details of the studies by McLaughlin (1990), Rau (2000), and Bao and Edmans (2011). Section 3 identifies the sources of the data. Section 4 describes the measures of the acquirer's value created (or lost) in acquisition attempts. Section 5 presents the methodology used to identify the empirical determinants of acquirers' choices of advisors and reports the results of the analysis. Section 6 describes the tests used to determine whether client performance is a determinant of

changes in advisors' market shares and reports the empirical results. Section 7 describes the analysis of the relation between announcement period changes in the market value of acquirers and those of their advisors. Section 8 conducts experiments in an attempt to reconcile our findings with those of Bao and Edmans (2011). Section 9 presents certain robustness tests. Section 10 describes our simulation of the market for advisory services. Section 11 summarizes our findings and concludes.

## **2. Literature review**

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

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

Rau (2000) investigates the determinants of the aggregate market share of investment banks that advise acquirers in their merger and tender offer transactions over the period of 1980–1994. In light of McLaughlin's findings, he casts his analysis as a test of the *superior deal*

hypothesis versus the *deal completion* hypothesis. According to the superior deal hypothesis, advisors' market shares should be related to their prior clients' performance measured as the value added for acquirers' shareholders. According to the deal completion hypothesis, valuation of the deal is of secondary importance; rather it is the fraction of transactions completed that determines advisors' market shares.

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

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

Bao and Edmans also estimate a logit model in which the dependent variable is an indicator as to whether a specific bank is chosen as the advisor for an acquirer's current acquisition attempt. Their key independent variable is prior clients' 3-day announcement period

CARs. They estimate their model using only “free acquirers” where free acquirers include only acquirers that have not used an investment bank to assist in any type of transaction over the prior five years. Further, because of data limitations regarding the time period over which prior bank relationships can be identified, their sample of free acquirers is limited to the years 1993–2007. They report that prior clients’ performance is not a significant determinant of the acquirer’s choice of an advisor for its current takeover attempt.

However, to be fair to Bao and Edmans, the primary focus of their study is whether advisors’ contribution to clients’ performance is persistent through time. They conclude that it is. The choice of advisor analysis is of secondary concern. Nevertheless, like Rau, they find the lack of a “reward for good M&A advice” to be a puzzle. The puzzle has two components. First, why do acquirers ignore what appears to be valuable information when choosing their advisors? Second, how can the advisory market persist with multiple advisors if acquirers do make use of this information?

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

### **3. Data sources and sample**

#### *3.1. Data sources*

We use the *SDC Platinum Mergers and Acquisitions (SDC)* database to construct the sample of acquisition attempts. Data are available beginning with 1979. Our sample ends with December 2011. Because we use five years of data to measure prior client performance and prior client relations, in estimating the advisor choice and market share regressions we use only those announced over the interval of 1984–2011. The initial full sample encompasses 155,673 transactions classified as mergers or acquisitions, including both completed and non-completed transactions. We exclude acquisition attempts in which the acquirer owned more than 50% of

the target's stock prior to the acquisition attempt or was seeking to own less than 50% after the acquisition. We also impose a limit on the minimum value of the acquisition of \$10 million in constant 2005 dollars. As shown in panel A of table 1, in 11,765 of the remaining 34,109 acquisition attempts, the potential acquirer is identified by *SDC* as having used a financial advisor in its attempt. These 11,765 attempts constitute the focus of our analysis. Data describing the acquirer, the target, and characteristics of the transaction including the announcement date of the transaction are collected from *SDC*.

For each acquirer and for each acquirer's financial advisor for which such data are available, we obtain daily stock returns and market capitalizations from the *Center for Research in Security Prices (CRSP)* database. We collect information about each acquirer's equity and debt issuances and the lead underwriters for each offering from the *SDC's New Issues* database. Finally, we use *Institutional Brokers Estimate System (I/B/E/S)* to derive a measure of the advisor's security analyst coverage.<sup>1</sup>

### 3.2. *Identification of acquirers' financial advisors*

It is important for our analyses to track investment bank that served as the advisor through time and across acquisitions. *SDC* uses alpha codes to identify advisors. These are listed under the heading of "Acquiror Financial Advisors (Codes)." For target advisors, *SDC* also provides advisor names under the heading of "Financial Advisor Long Name," making it possible to match alpha codes with the names of advisor banks. In the great majority of instances these codes and long names are consistent with each other and through time. In some instances, however, due either to name changes, mergers, or coding errors, the codes and long names are not consistent and do change through time. For example, *SDC* sometimes identifies

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<sup>1</sup> 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.

Morgan Stanley as "MS", with the corresponding "Morgan Stanley & Co." long name, and sometimes as "MORGAN-STANLEY", with the "Morgan Stanley" long name.

In instances where there appears to be an inconsistency, we review the lists of codes and long names to identify whether the codes reflect the same entity. In the case of MS and MORGAN-STANLEY, we assume that these refer to the same bank as both begin in 1978/1979 and both end circa 2010/2011. To resolve further inconsistencies, we examine the history of investment bank acquisitions on *SDC*, we review the entries of banks in *Wikipedia*, and we review entries regarding bank mergers and acquisitions in *Lexis Nexis*. Through such efforts, we seek to resolve discrepancies when multiple codes appear to identify the same bank in the *SDC* database, and to consistently track banks through acquisitions and name changes among investment banks.

When one bank acquires another, we assume that the acquired bank ceases to exist. To the extent that the reputational capital of the acquired bank would have carried over to the acquiring bank, this procedure introduces noise into the analysis of the relation between advisors and their clients. Additionally, it is inevitable that we were not able to find information on all acquisitions and name changes among banks, particularly smaller ones. This may introduce additional noise into our analysis. However, such noise is likely to reduce the empirical significance of the relation between advisors and their clients' performance. Table 2 presents the number of unique banks, by year, over the period 1984–2011 that served as the financial advisor to at least one acquirer.

### 3.3. *The sample*

Panel B of table 1 presents selected summary statistics for the sample. On average, as measured by book value of assets, acquirers are roughly six times the size of targets, roughly

67% of acquirers and 50% of targets were publicly traded at the time of the acquisition attempt, in 35.4%, 27.8%, and 36.8% of the transactions the medium of payment was all cash, all stock or a combination of the two, respectively, and 89% of the attempts resulted in a completed transaction. In 14.0%, 7.5%, and 4.6% of the attempts, the acquirer had used the advisor in a prior takeover attempt, a prior equity offering, or prior debt offering, respectively, within five years of its current takeover attempt.

#### **4. Value created**

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

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

We refer to the first of these measures as the normalized net present value (NNPV) of the advisor's prior clients and the second as the equal-weighted CARs (EWCAR) of the advisor's prior clients. We refer to these measures collectively as prior client performance.

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

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

### *5.1. Choice of an advisor*

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

$$\Pr(\text{bank is chosen as advisor}) = f_I(\text{bank's prior clients' performance}, X_1), \quad (1)$$

where  $X_1$  is a matrix of control variables. We assume that an acquirer chooses from among all banks that are active in the advisory market at the time of its acquisition.

Because the banks that are not chosen are matched to the bank that is chosen as the advisor in a particular acquisition, we estimate a fixed-effects logistic regression with fixed effects at the individual acquisition level (Chamberlain, 1980; Hosmer and Lemeshow, 2000; McFadden, 1974). The fixed effects account for acquisition-specific effects and controls for varying unconditional probabilities of a bank being chosen as an advisor, as the number of active advisors varies through time.

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

$$\Pr(y_{ij} = 1) = \frac{\exp(\sum_{j=1}^{J_i} y_{ij} x_{ij} \beta)}{\sum_{d_i \in D_i} \exp(\sum_{j=1}^{J_i} d_{ij} x_{ij} \beta)} \quad (2)$$

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

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

The full sample of acquisition attempts begins with 1979. Because we measure prior clients' acquisition performance and prior client/advisor relations beginning three years or five years prior to the current acquisition announcement, the sample of acquisition attempts used to estimate advisor choice regressions encompasses the period of 1984–2011. We calculate both

NNPV and EWCAR over the one-year and three-year periods prior to the current acquisition attempt.

Control variables used in this and other analyses are defined in Appendix A. Each of the variables used in the advisor choice model is meant to capture a factor that could influence the acquirer's choice of its financial advisor. These include the investment bank's share of the advisory market over the three years prior to the current acquisition attempt ("Prior 3-year's bank market share"), fraction of attempted acquisitions completed by the bank's clients ("Fraction of acquisitions completed"), a dummy variable to indicate whether the bank served as an advisor for the current acquirer in a prior acquisition ("Bank is prior advisor"), a dummy variable to indicate whether the bank served as an underwriter on a prior equity offering by the acquirer ("Bank is prior equity underwriter"), a dummy variable to indicate whether the bank served as an underwriter on a prior debt offering by the acquirer ("Bank is prior debt underwriter"), breadth of analyst coverage by the bank of firms within the acquirer's industry ("Bank's breadth of coverage"), and fraction of acquisitions of targets within the current target's industry in which the bank advised the acquirer ("Bank's expertise in target industry").

The estimations that include three years of prior client performance encompass 10,246 acquisition attempts. Those that include one year of prior client performance encompass 8,758 acquisition attempts. For each acquisition, the number of observations that enters the estimation is the number of banks that are active in the advisory market at the time of announcement. These range from nine to 84. The number of observations in the four estimations ranges from 419,425 to 716,509.

The results of the four estimations are reported in table 3. In each case, the coefficient of prior clients' acquisition performance is positive and statistically significant with all p-values

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 advisor's prior client performance is a significant determinant of the likelihood that a specific bank is chosen as the advisor for the acquirer's current acquisition attempt. Thus, acquirers tend to choose banks that advised in acquisitions that created more value for their clients at the announcement of the clients' acquisition attempts.

To measure the economic significance of the bank's prior client performance on the acquirer's choice of an advisor, we estimate marginal effects using NNPV and EWCAR measured over the prior one-year period. These are 0.018 and 0.021. A one standard deviation increase in NNPV (i.e., 7.51%) or EWCAR (i.e., 7.30%) leads to a 0.135% or 0.153% increase in the probability that the bank will be chosen as the advisor by future acquirers. The appropriate way to consider the economic significance of the marginal effect of the bank's prior client performance is to compare the marginal effect with the unconditional likelihood of being chosen. As determined by the model, the unconditional probability of any bank being chosen is 1.2%. Thus, a one-standard-deviation increase in NNPV or EWCAR increases the bank's likelihood of being chosen by 11.3% or 12.8%.

Further, as shown in table 3, with the exception of the fraction of acquisitions completed, the coefficients of each of the control variables is positive and statistically significant. Thus, whether the bank was the advisor on a prior acquisition 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 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).<sup>2</sup> Nevertheless, after controlling for all of these factors, the bank's prior client performance is a statistically and economically significant determinant of the acquirer's choice of a financial advisor.

In undertaking these analyses, we made various choices with respect to the time periods over which certain variables are measured and with respect to the way in which the sample is constructed. In section 9, we describe robustness tests in which we use alternative measurement intervals and samples (including identification of whether the prior clients' targets were public or private and the method of payment used to complete the transactions). Suffice is to say that the bank's prior client performance is always a positive and statistically significant determinant of subsequent acquirers' choice of a financial advisor.

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

As a further consideration of whether prior client performance influences subsequent acquirers' choices of their advisors, we examine whether the likelihood of a serial acquirer retaining its prior advisor for a subsequent takeover attempt is correlated with the announcement period CAR associated with its prior acquisition.

We construct the sample for this analysis as follows. For each of the 11,765 takeover attempts in which the acquirer used an advisor, we search the *SDC* database to determine whether that acquirer attempted a subsequent acquisition within five years. If so, we include a paired observation of the takeover and a subsequent acquisition 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

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<sup>2</sup> This finding is consistent with evidence in Krigman, Shaw, and Womack (2001) and Cliff and Denis (2004) that firms compensate investment banks for their analyst coverage by choosing banks that provided coverage to service their other investment banking needs.

acquirer as of the announcement of the first acquisition attempt in the pair. These specifications yield a sample of 949 pairs of acquisitions.

For each pair of acquisitions, 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. However, the decision to retain or switch advisors has a third alternative - - which is to undertake an attempt without any advisor. Thus, the analysis of advisor retention is conditional on the decision to use an advisor for the subsequent acquisition attempt.

To account for all choices available to the acquirer, we explicitly incorporate the decision by the acquirer to use an advisor in the subsequent acquisition. Doing so requires that we estimate two equations. The first equation, the selection equation, has the form

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

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 or retention equation, has the form

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

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).<sup>3</sup>

The presumption of this analysis is that an acquirer who has used a specific advisor on a prior acquisition has information about whether the advisor contributed to the value created in

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<sup>3</sup> This model is similar to the Heckman (1979) selection model with the exception that the Heckman model requires a continuous dependent variable in the outcome equation.

the prior transaction. The results of this analysis can provide confirmation of (or raise questions about) the conclusions drawn from the analyses of section 5.1.

The control variables in the selection equation 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 surrounding the announcement of the preceding acquisition in the pair ("Preceding acquisition announcement CAR"), a dummy variable to indicate whether the acquirer and subsequent target have the same 2-digit SIC code ("Acquirer and subsequent target in similar industries"), the time period between the preceding and subsequent acquisition ("Time between acquisitions"), the number of acquisitions by the acquiring firm prior to the preceding acquisition in the pair ("Number of prior acquisitions by the acquirer"), the log of the change in the equity market value of the acquirer between the pair of acquisitions ("Log (Acquirer value change between acquisitions)"), the log of the book value of assets of the target in the subsequent acquisition to the book value of assets of the acquirer ("Log (Target size/acquirer size)"), and the number of concurrent bidders for the target in the subsequent acquisition ("Number of bidders"). All 949 pairs of acquisitions attempts are used in estimating of the selection equation.

In the retention equation, the variable of interest is the acquirer's CAR during the announcement of the preceding acquisition. The control variables represent factors that might affect the decision of whether to retain the acquirer's prior advisor in its subsequent acquisition. Specifically, the control variables include the proportion of the current acquirer's prior acquisitions in which the acquirer was assisted by the same advisor as used in its preceding acquisition attempt ("Fraction of prior acquisitions with advisor"), the market share of the preceding advisor ("Prior three-year's bank market share"), a measure of the preceding advisor's

experience in the subsequent target's industry ("Advisor experience in the subsequent target's industry"), a dummy to indicate whether the dollar amounts paid for the two acquisitions differ by more than 50% ("Values of the two acquisitions differ"), and the number of years between the two acquisitions ("Years between acquisitions"). Estimation of the retention equation includes 583 pairs of acquisition attempts.

The results of the estimation are reported in table 4. In the retention model, the coefficient of the acquirer's CAR at announcement of the preceding acquisition attempt is positive and statistically significant with a p-value of 0.034. Thus, the greater the value creation associated with the acquirer's prior acquisition attempt, the more likely is the acquirer to use that advisor in its subsequent attempt.

To measure the economic significance of the acquirer's CAR on the likelihood of the same advisor being chosen for the subsequent acquisition attempt, we calculate the marginal effect of the acquirer's CAR (i.e., 0.652). Given the standard deviation of the acquirer's CAR of 0.087 and the unconditional probability of advisor retention of 0.33, a one standard deviation increase in the acquirer's CAR increases the probability of advisor retention by 17.2% (i.e.,  $0.652 \times 0.087 / 0.33 = 0.172$ ).

## **6. Client performance and investment banks' future market share**

The analyses of the prior section demonstrate that prior client acquisition performance is a positive and significant determinant of the likelihood that an investment bank will be chosen as an advisor for subsequent acquisition attempts. These results are, or at least appear to be, inconsistent with the interpretation offered by Rau (2000) 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 acquisition performance determines the level of future market share, but rather whether prior client performance determines future changes in the advisor's market share. In this section, we examine whether changes in banks' market shares are related to their prior client acquisition performance. To do so, we consider two empirical specifications. First, we examine the relation between change in advisor's market share and the level of prior client performance ("change-on-level"). Second, we examine the relation between change in advisor's market share and change in prior client performance ("change-on-change").

Change-on-level specifications test whether superior client performance over some time period attracts new clients for the bank during the subsequent time period. Change-on-change specifications test whether relative improvement in client performance through time attracts new clients for the bank during the subsequent time period.

As a preliminary look at the data, we examine univariate statistics of the changes in advisors' market shares. We calculate changes in market shares over one-year (market share in calendar year  $i+1$  minus market share in calendar year  $i$ ) and three-year (market share during calendar years  $i+1$  through  $i+3$  minus market share in calendar year  $i$ ) periods. To examine whether the changes in banks' market shares are related to the level of prior client performance, we partition banks into those with positive client acquisition performance during calendar year  $i$  and those with negative client acquisition performance during calendar year  $i$ . To examine whether the changes in banks' market shares are related to the relative changes in prior client acquisition performance, we partition the banks into those with positive changes in client

acquisition performance over the interval of calendar year  $i-1$  through calendar  $i$  and those with negative changes in client acquisition performance over the interval of calendar year  $i-1$  through calendar  $i$ . We then calculate mean and median changes in market share for each set of banks. This analysis gives rise to 16 comparisons.

Table 5 reports these statistics. Panel A presents results based on the level of client performance. In general, the univariate statistics are consistent with the proposition that the relative level of prior client acquisition performance is positively related with changes in advisors' market shares.

For banks with positive NNPV, mean and median market shares increase over the subsequent one-year and three-year periods; for banks with negative NNPV, mean and median market shares decline over the subsequent one-year and three-year periods. The differences in changes in market shares between banks with positive NNPV and those with negative NNPV are all statistically significant with p-values 0.07 or less. For example, for the median bank with positive prior NNPV, the market share increases by 15.4% over the subsequent one year relative to its prior year's market share, while for the median bank with negative prior NNPV, its market share declines by 10.5% over the subsequent one year.

The results using EWCAR as the measure of client performance are similar but not quite as strong. In three of the four comparisons, banks with positive client EWCAR experience increases in their subsequent market shares. In all comparisons, banks with negative client EWCAR experience declines in market shares. In one instance, the banks with positive client EWCAR experience a modest decline in their subsequent market share.

Panel B of table 5 presents the results based on changes in prior acquirer client performance. The results here are also consistent with the proposition that prior client

acquisition performance is positively related with changes in advisors' market shares. In brief, in six of the eight comparisons in panel B, banks with relative improvements in prior client acquisition performance experience subsequent increases in their market shares, while those with relative degradation in prior client performance experience subsequent decreases in their market shares. In each of the six comparisons, the difference in subsequent changes in market share between banks with improvements in prior client performance and those with degradation in prior client performance is statistically significant, with p-values of 0.09 or less. In short, client performance appears to be a determinant of changes in banks' shares of the acquisition advisory market.

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

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

We estimate regressions using ordinary least squares (OLS) and allow for standard errors that are clustered at the investment bank level. For those specifications for which the explanatory variable of interest is the change in prior client performance, the explanatory variables are the same as those in specifications with the level of prior client performance as the explanatory variable of interest, except that the variables are measured as the change between calendar year  $i-1$  and calendar year  $i$ .

The results of the change-on-level regressions are reported in panel A of table 6 and the results of change-on-change regressions are reported in panel B. In each of the eight regressions, the coefficient of prior client performance (whether in level or change form) is positive and statistically significant. For six of the eight coefficients, the p-value is 0.05 or less and for the other two the p-values are 0.064 and 0.063. These results indicate that investment banks that advise in acquisitions that create more (less) value for acquirers subsequently experience increases (decreases) in their shares of the advisory market.

To examine the economic significance of these results, we use the coefficients of NNPV and EWCAR from the one-year change in market share regressions from panel A. A one

standard deviation increase in NNPV or EWCAR translates into a 10.2% or 9.5% increase in the bank's percentage share of the acquisition advisory market over the following one-year period.<sup>4</sup>

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

Our analyses to this point yield three findings: (1) prior client acquisition performance is positively related to the likelihood that an investment bank will be chosen as an advisor by future acquirers; (2) an acquirer's CAR during the announcement of a prior acquisition attempt is positively related to the likelihood that the acquirer will retain its advisor for its subsequent acquisition attempt; and (3) prior client acquisition performance is positively related to future changes in the advisor's market share. An implication that arises from these results is that a value-increasing acquisition attempt by an investment bank's client should increase value for the investment bank advisor at the time of the acquisition announcement. This implication arises for two reasons. One, when an advisor mandate is awarded to an investment bank, the mandate carries a possibility of a concurrent reward in the form of advisory fees. Two, when the announcement of the mandate gives rise to an increase in client's value, this should give rise to an increase in the expected number of future mandates for the bank with their associated rewards which should also increase the bank's value.

In this section, we empirically investigate this implication by examining the relation between the change in the market value of the acquirer's equity around the acquisition announcement and the change in the market value of its advisor's equity during the same interval. We focus on changes in market values rather than CARs to account for the likely differences in the sizes of the acquirers and their advisors. All else being the same, including the

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<sup>4</sup> A one standard deviation increase in NNPV (i.e., 8.1%) or EWCAR (i.e., 8.1%) relative to other advisors produces an increase of 0.097 or 0.091, respectively, in the dependent variable. Because the dependent variable is in log form, we take the exponent of the changes in the dependent variable to obtain the change in the ratio of the future market share to the current market share.

acquirer's CAR, an advisor mandate awarded by a larger acquirer may be associated with a higher dollar value reward to the advisor than one by a smaller acquirer. Furthermore, a reward associated with a particular mandate may produce a greater relative effect for a smaller advisor than for a larger one.

To examine the relation between the change in the market value of the advisor's equity and the change in the market value of the acquirer's equity, we estimate an OLS regression with the change in the market value of the advisor's equity as the dependent variable and the change in the market value of the acquirer's equity as the key explanatory variable. To compute changes in the acquirer's and the advisor's market values of equity, we multiply the announcement period CAR of the acquirer and the advisor by the market capitalization of their respective common equity as of 60 days prior to the acquisition announcement. To alleviate the effects of heteroskedasticity on regression results, the value changes of both the acquirer and the advisor are scaled by the acquirer's market capitalization as of 60 days prior to the acquisition announcement. Control variables include the log of the ratio of the total book value of assets of the target to the total book value of assets of the acquirer ("Log(target size/acquirer size)"), a dummy variable to indicate whether the acquirer and target have the same 2-digit SIC code ("Firms in similar industries"), a dummy variable to indicate whether the transaction is classified as hostile ("Hostile takeover"), a dummy variable to indicate whether cash was used as consideration ("Paid by cash"), the number of concurrent bidders for the target ("Number of bidders"), and a dummy variable to indicate whether the target is public ("Target is publicly traded"). The set of acquisitions used in this analysis includes all 435 for which stock price data are available from *CRSP* for the acquirer and the advisor over the 5-day interval surrounding the announcement of an acquisition by the advisor's client.

The results of the regression are reported in table 7. The coefficient of the change in client's equity market value of 0.082 is significantly different from zero with a p-value of 0.005. Thus, according to these results, for every dollar in market value created (or lost) for the acquirer, the investment bank, on average, gains (or loses) \$0.082 in market value. The evidence indicates that an acquisition attempt that creates value for the acquirer also creates value for its advisor.

#### **8. Exploring the differences between our findings and those of Bao and Edmans (2011)**

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 conduct similar advisor choice regressions, but do not find a statistically significant relation between prior client performance and the likelihood that an advisor will be chosen by future acquirers. In this section, we consider possible explanations for this difference.

In conducting their tests, Bao and Edmans require that an acquirer not have engaged in any acquisitions, equity issuances, debt issuances, or a lending relationship 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. They refer to these as “free acquirers” in the sense that they are not bound by prior experience to any specific bank. Bao and Edmans’ analysis encompasses the years 1993–2007. Because they restrict their sample to free acquirers, their sample consists of only 1,224 acquisitions. They conduct their tests using a logit model and EWCAR as their key explanatory variable with abnormal returns measured over a 3-day announcement period.

Their tests and methodology differ from ours on various dimensions, each of which could explain the difference in results. To eliminate one potential explanation, we re-estimate the

choice models of table 3 using a 3-day announcement period. The coefficient estimates of prior client performance from these regressions are reported in panel A of table 8. The coefficients of EWCAR and NNPV continue to be positive and each has a p-value of less than 0.01.

To determine whether it is the focus on free acquirers that causes the difference in results, we identify free acquirers over the time period of 1984–2011 by excluding acquirers involved in any advisor-assisted transaction reported in the *SDC Mergers and Acquisitions* database or acquirers that used an underwriter in an equity issuance or debt issuance as reported by the *SDC New Issues* database within five years prior to the current acquisition.<sup>5</sup> With this sample of 2,647 attempted acquisitions, we re-estimate the choice models (excluding the control variables “Bank is prior advisor,” “Bank is prior equity underwriter,” and “Bank is prior debt underwriter”) using a 5-day event interval to measure client performance. (Results are in panel A of table 8.) For this sample of free acquirers, the coefficients of EWCAR and NNPV are always positive and all have p-values of 0.04 or less. Thus, Bao and Edmans’ focus on free acquirers per se is unlikely to explain the difference in results.

To determine whether the difference in time periods studied causes the difference in results, we re-estimate the choice models for the full sample of potential acquirers over the shorter period of 1993–2007. The coefficients of EWCAR and NNPV are always positive and all have p-values of 0.01 or less. (Results are in panel A of table 8.) Thus, the difference in time periods is also unlikely to explain the difference in results.

It could be that it is the use of free acquirers over the shorter time period that explains the difference in results. We, thus, re-estimate the choice models using only free acquirers over the time period of 1993–2007. Here we do find a difference in results. Using NNPV as the measure

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<sup>5</sup> Bao and Edmans also exclude banks/clients with prior lending agreements. Our data do not allow for that restriction. However, if that factor is important, it should weaken any relationship between CAR and advisor choice.

of client performance, the coefficients of one-year and three-year NNPV are both positive with p-values of 0.027 and 0.033, respectively. (Results are in panel A of table 8.) Thus, the null hypothesis of no relation between prior client performance and the likelihood that a specific bank will be chosen as the advisor in current acquisitions is rejected. However, when EWCAR is the measure of client performance, the coefficients are positive but the p-values are 0.14 and 0.28, thus, we do not reject the null hypothesis. This latter set of tests methodologically resembles Bao and Edmans's most closely. This is the only permutation in which we would conclude that current acquirers do not consider prior client performance when choosing their advisors.

As Bao and Edmans note and we report above, one potential limitation of the use of free acquirers and the 1993–2007 time period is that doing so reduces the sample of potential acquirers (from 8,758 to 1,758 in our tests). The sample in Bao and Edmans comprises 1,224 acquisition attempts. It could be that reduction of the sample by 80% reduces the power of the tests to reject the null even when it is false. To examine the sensitivity of the analyses to sample size, we randomly select 20 samples of 1,224 acquisitions from our full set for the period of 1984–2011. For each of the 20 samples, we estimate the choice regressions of table 3 using prior client performance measured over the one-year period prior to the current acquisition. This yields 40 regressions, 20 with EWCAR and 20 with NNPV as the key explanatory variable.

The coefficient estimates of prior client performance from these 40 regressions are reported in panel B of table 8. Of the 20 coefficients using EWCAR as the measure of client performance, all are positive and nine of these have a p-value of 0.05 or less; of the 20 coefficients using NNPV as the measure of client performance, 19 are positive and only three have a p-value of 0.05 or less. We next increase the sample size to 2,500 acquisitions and repeat the procedure, randomly selecting 20 samples from our full set and estimating the choice

regressions for each of the 20 samples. In this experiment, of the 20 coefficients using EWCAR as the measure of client performance, all are positive and 13 have a p-value of 0.05 or less; of the 20 coefficients using NNPV as the measure of client performance, 19 are positive and 10 have a p-value of 0.05 or less. We then increase the sample size to 5,000 acquisitions and repeat the procedure. In each of these 40 regressions, the coefficient of prior client performance is positive and each has a p-value of 0.01 or less.

These findings indicate that analysis of the relation between advisor choice and prior client performance is sensitive to sample size. In the sample for which we know that the true relation between advisor choice and prior client performance is positive, regressions estimated using randomly selected subsamples in some instances fail to reject the null of no relation (and in some instances the coefficient has the “wrong” sign). The likelihood of rejecting the false null increases from 30% for samples of the size that Bao and Edmans use to 80% for the sample of twice that size, and to 100% for samples of four times that size. Our investigation indicates that sample size is the most likely explanation for the difference in findings between our analysis of advisor choice and that performed by Bao and Edmans.

## **9. Robustness tests**

### *9.1. The analysis of the choice of advisor: subsample tests, alternative methodologies, and alternative performance measures*

In this subsection, we perform a series of tests to examine the robustness of the relation between prior client performance and advisor choice. First, we examine whether the relation holds in subsamples of acquisitions. Because prior literature suggests that acquirer announcement returns differ depending on the method of payment for the target (Travlos, 1987; Moeller, Schlingemann, and Stulz, 2004) and whether the target is a public firm (Fuller, Netter, and Stegemoller, 2002; Faccio, McConnell, and Stolin, 2006), we partition our sample by the

method of payment and by the target's public/private status. We then test whether prior client acquisition performance in acquisitions of public targets affects the choice of an advisor for an acquisition of a public target. We also perform similar analyses for acquisitions of private targets, for acquisitions in which consideration is exclusively cash, and for acquisitions in which consideration is exclusively stock. The positive and significant relation between prior client performance and advisor choice remains in these subsamples with the only exception being the "cash-only" subsample (the number of observations drops by 90%).

Second, this and other analyses in our study involve a lead/lag relation between prior client performance and advisor mandates. Arguably, if potential acquirers consider the performance of an advisor's prior clients, these acquirers might be more interested in the bank's more recent acquisitions, and the importance of client performance should deteriorate over time. However, a counterargument might posit that information about the quality of an advisor's services spreads with a lag, such that the quality of more recent acquisitions does not immediately register with potential acquirers. Unfortunately, we lack a theory to guide our choice of an appropriate interval over which to search for a correlation between acquirers' performance and the effect of that performance on a subsequent acquirer's choice of advisor. Therefore, we conduct the analyses using a variety of lead/lag relations, ranging from one-year to five-year intervals. In every instance, the sign of the coefficient of interest is positive and has a p-value of 0.05 or less.

## *9.2. Analysis of the change in market share tests for banks of high and low market share*

Because it is possible that the market share results are due primarily to small banks, we re-estimate the regressions of table 6 separately for advisors with high (i.e., above median) and low (i.e., below median) market share. In each of these sixteen regressions, the coefficient of

prior client performance is positive. For small banks, four of the eight p-values are less than 0.05 with another having a p-value less than 0.10. For large banks, four of the eight p-values are less than 0.05 with another three having p-values less than 0.10. The market share results are clearly not only due to “small” banks. Indeed, arguably, the results are stronger for “large” banks. More accurately, though, it is the combination of small and large banks that is important. As with the comparison of our results with those of Bao and Edmans, sample size could play a role in these analyses. Or it could be that changes in market share reflect a jostling for position among advisors in which smaller banks sometimes displace larger banks and larger banks, in turn, slip. In any event, the market share results are not due only to small banks.

#### **10. Simulation of the market for acquisition advisory services**

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

To explicitly address the latter question (and implicitly the former) we conduct a stochastic simulation analysis of the market for advisory services. We base this analysis on the

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

The simulation calculates the average CAR of each advisor's clients over the first 12 months. In the 13<sup>th</sup> 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.<sup>6</sup>

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

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<sup>6</sup> The calibrations are required because the means and standard deviations characterize the distributions of variables for the set of all banks from which an acquirer chooses, while we need to match the statistics that we observe to the subset of banks that are chosen as advisors.

for our sample. The advisor's market share over the prior 12 months is scaled so that the mean of the market share of the set of chosen advisors is equal to that observed in our sample.

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

In an initial experiment, we set all coefficients of the advisor choice model equal to zero except for the coefficient of prior client performance. Reassuringly, the bank with the best client performance (i.e., highest average client CAR) in year 1 is chosen as the advisor by 92% of the acquirers in year 2, and is chosen by 100% of acquirers in all subsequent years. That is, when prior client performance is the only factor that acquirers consider, the advisory market quickly converges to a single "best" advisor.

In the second run, we set the advisor choice coefficients equal to their estimated values. In the 50<sup>th</sup> year, the largest five banks are chosen as the advisors for 31.6% of the acquisitions, the next five banks are chosen as the advisors for an additional 17.4% of the acquisitions, and the remaining 51% of the deals are allocated among the other 40 banks. The result of this experiment resembles the advisory market that we observe in practice: a handful of banks service

the majority of acquisitions, and a larger set of smaller banks each advise a modest fraction of the market.

In the final two experiments, we modify the coefficient of persistence of client CARs and assign all other coefficients of the choice model as in table 3. First, we set the coefficient of persistence to zero, simulating the advisory market with no persistence in performance. In the 50<sup>th</sup> year of this run, the top five banks garner 19.5% of the market and the second five banks service 15.0% of the market. That is, persistence in client performance does not attract clients, and it is other factors, randomly distributed among advisors, that determine market share. Second, we increase the coefficient of persistence to double that of the level reported by Bao and Edmans. In this experiment, the market again converges to a single advisor, but not until after 12 years of operation.

The simulation analysis shows that when the parameters of the model match those observed empirically, the market for advisory services evolves over time to resemble the actual market for advisory services. When other factors beyond prior client CARs, such as prior relationships, play no role in the acquirer's choice of its advisor, the market for advisory services quickly devolves into one dominated by the single "best" advisor. Further, when persistence in acquirer CARs becomes very high and other factors do play a role, the market again devolves, albeit not quickly, into one dominated by a single "best" advisor. However, when the other factors play a role (as we observe empirically) and persistence in acquirer CARs is at the level observed empirically, the market shares of advisors are similar to what we observe empirically. In sum, the market does not deteriorate into one with only one service provider so long as persistence is not too high and so long as other factors play a role in advisor choice.

## **11. Summary and conclusion**

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

When presenting the results of their model of advisor choice, Bao and Edmans do so modestly, commenting that "these results are only suggestive, due to the difficulty of identifying 'free' clients ... and our small sample size." We take up the implied challenge by estimating a fixed-effects logit model of advisor choice and find that prior client performance enters as a significant variable when clients choose their acquisition advisors. Our empirical analysis differs from Bao and Edmans on various dimensions. However, the dimension that appears to explain the difference in our result and theirs is sample size. When we expand the sample, we find that an advisor's prior clients' performance does enter as a significant variable when acquirers choose their acquisition advisors. We also find that prior client performance is positively associated with changes in advisors' market shares and that changes in clients' market values are positively associated with changes in advisors market values. These results indicate that advisors are rewarded for good acquisition advice.

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

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

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

Perhaps the most direct way in which the effect of good service on an advisor's reputation would manifest itself is in the gain of future clients. Consistent with McLaughlin's conjecture, we find that prior client acquisition performance is associated with changes in banks' shares of the advisory market and that client acquisition performance is positively related with

changes in advisors' market values. Market forces appear to align acquirers' and advisors' incentives, at least to some extent.

One question that remains is why do factors, such as prior relationships, affect acquirers' choice of advisors? A second is why advisory contracts are structured so as to link the bank's compensation to transaction completion rather than value created for the client in the first place? A third question is why investment banks are ranked according to their market shares rather than value created for clients? These, and undoubtedly many other questions which we have not considered regarding the role of acquisition advisors and the relation between advisors and their clients, await further investigation.

**Appendix A**  
**Variable definitions and construction**

Variable Name	Definition
<b>Common variables used throughout the paper</b>	
Normalized net present value (NNPV)	The aggregate abnormal changes in market value of an investment bank's acquirer clients in acquisitions announced over the relevant time period, normalized by the aggregate equity market capitalization of these acquirers. Aggregate abnormal changes in market value are computed by multiplying the acquirer's cumulative announcement period abnormal return (CAR) by the market capitalization of the acquirer's common equity as of 60 days prior to the announcement. Announcement period is the five trading day interval (-2; +2) centered on the announcement date of the acquisition attempt. The CAR is calculated as the acquirer's stock return minus the return on a corresponding benchmark portfolio over the announcement period. Benchmark portfolios are the 25 Fama-French value-weighted portfolios constructed by independently sorting stocks according to size and book-to-market.
Equal-weighted CAR (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 prior one or three years.
Bank is prior advisor	Equals 1 if the investment bank served as a merger and acquisition (M&A) advisor for the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
Bank is prior equity underwriter	Equals 1 if the investment bank served as a lead underwriter for an equity offering by the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
Bank is prior debt underwriter	Equals 1 if the investment bank served as a lead underwriter for a debt offering by the acquirer in the five years preceding the acquisition announcement in question and 0 otherwise.
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'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 book value of assets of the target to the book value of assets of the acquirer in the current acquisition.
Number of bidders	The number of concurrent bidders in the current acquisition.
Firms in similar industries	Equals 1 if the acquirer's primary two-digit SIC code is the same as that of the target of the current acquisition and 0 otherwise.

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

#### **Variables used in advisor retention regressions**

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

#### **Variables used in the analysis of the changes in market values**

Change in market value of the advisor	Abnormal change in market value of an investment bank during its acquirer client's acquisition attempt, normalized by the equity market capitalization of the acquirer. Abnormal change in market value is computed by multiplying the bank's cumulative announcement period abnormal return (CAR) by the market capitalization of the bank's common equity as of 60 days prior to the announcement.
Change in market value of the	The abnormal change in market value of an acquirer during acquisition

acquirer	attempt, normalized by the equity market capitalization of the acquirer. Abnormal change in market value is 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.
Hostile takeover	Equals 1 if the transaction is classified as hostile and 0 otherwise.
Paid by cash	Equals 1 if cash is used as consideration in the acquisition and 0 otherwise.

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**Table 1**  
**Descriptive statistics for acquirers, targets, acquisitions, and acquirer advisors in acquisition attempts**

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

Panel A		
Number of acquisitions		155,673
Number of acquisitions with at least one advisor		11,765
Number of acquisitions with more than one advisor		1,807
Maximum number of advisors in an acquisition		10
Number of unique investment banks that served as advisors		565

  

Panel B		
	Mean	Median
<b>Characteristics of acquirers and targets</b>		
Book value of assets of the acquirer, \$ millions	18,763	1,061
Book value of assets of the target, \$ millions	3,085	286
Value of the acquisition, \$ millions	1,060	161
Percentage of publicly traded acquirers	67.2	100
Percentage of publicly traded targets	50.4	100
<b>Characteristics of acquisitions</b>		
Percentage of consideration paid in cash	48.9	47.6
Percentage of all-cash acquisitions	35.4	0
Percentage of all-stock acquisitions	27.8	0
Percentage with hostile target attitude	2.8	0
Percentage with multiple bidders	6.3	0
Percentage of acquisitions completed	89.4	100
<b>Characteristics of acquirers' advisors</b>		
Percentage of advisors that are prior advisors to the same acquirer	14.0	0
Percentage of advisors that are prior equity underwriters	7.5	0
Percentage of advisors that are prior debt underwriters	4.6	0
NNPV, one year	-0.7%	-0.7%
EWCAR, one year	0.1%	-0.2%

**Table 2**  
**Annual number of unique advisors**

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

Year	Number of unique advisors	Year	Number of unique advisors
1984	48	1998	122
1985	45	1999	104
1986	64	2000	106
1987	69	2001	90
1988	83	2002	79
1989	84	2003	83
1990	62	2004	94
1991	64	2005	102
1992	71	2006	111
1993	72	2007	129
1994	95	2008	101
1995	96	2009	82
1996	119	2010	88
1997	130	2011	72

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

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

	Likelihood that Bank is Chosen as Advisor			
	(1)	(2)	(3)	(4)
NNPV, 1 year	1.051 (<0.001)			
EWCAR, 1 year		1.289 (<0.001)		
NNPV, 3 years			1.343 (<0.001)	
EWCAR, 3 years				1.573 (<0.001)
Fraction of acquisitions completed, 1 year	-0.102 (0.052)	-0.105 (0.044)		
Fraction of acquisitions completed, 3 years			-0.043 (0.398)	-0.044 (0.384)
Bank is prior advisor	2.745 (<0.001)	2.746 (<0.001)	2.904 (<0.001)	2.903 (<0.001)
Bank is prior equity underwriter	2.352 (<0.001)	2.347 (<0.001)	2.427 (<0.001)	2.428 (<0.001)
Bank is prior debt underwriter	1.275 (<0.001)	1.275 (<0.001)	1.251 (<0.001)	1.250 (<0.001)
Prior 3-year's bank market share	8.505 (<0.001)	8.495 (<0.001)	8.769 (<0.001)	8.803 (<0.001)
Bank's breadth of coverage	5.094 (<0.001)	5.079 (<0.001)	5.636 (<0.001)	5.577 (<0.001)
Bank's expertise in target industry	0.288 (<0.001)	0.278 (<0.001)	0.464 (<0.001)	0.461 (<0.001)
Observations	419,425	425,133	712,702	716,509
Pseudo R-squared	16.6%	16.6%	17.0%	16.9%

**Table 4****Acquirer performance and advisor retention in consecutive acquisitions**

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

	Model	
	Hire (1)	Retain (2)
Preceding acquisition announcement CAR	-1.103 (0.165)	1.803 (0.034)
Fraction of prior acquisitions with advisor		1.700 (<0.001)
Prior three-year's bank market share		0.066 (0.390)
Advisor experience in the subsequent target's industry		0.308 (0.091)
Values of the two acquisitions differ		-0.493 (0.004)
Advisor provided analyst coverage		-0.248 (0.132)
Years between acquisitions	-0.074 (0.007)	-0.024 (0.751)
Number of prior acquisitions by the acquirer	-0.039 (0.294)	
Log(firm value change between acquisitions)	0.372 (<0.001)	
Log (target size/acquirer size)	0.167 (<0.001)	
Number of bidders	-0.352 (0.012)	
Firms in similar industries	0.220 (0.003)	
Target is publicly traded	0.186 (0.030)	
Constant	0.071 (0.113)	-0.360 (0.430)
Wald test of equation independence		0.071 (0.851)
Observations	949	583

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

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

## Panel A

	NNPV		p-value	EWCAR		p-value
	Negative	Positive		Negative	Positive	
<b>Change in advisor's market share</b>						
One-year, median	-10.5%	15.4%	0.01	-6.1%	12.6%	0.06
One-year, mean	-8.8%	12.5%	0.03	-6.5%	9.1%	0.10
Three-year, median	-18.0%	9.6%	0.07	-18.5%	-4.0%	0.30
Three-year, mean	-16.9%	10.8%	0.07	-15.0%	10.2%	0.10

## Panel B

	Change in NNPV			Change in EWCAR		
	Negative	Positive	p-value	Negative	Positive	p-value
<b>Change in advisor's market share</b>						
One-year, median	-10.5%	12.2%	0.01	-11.0%	11.7%	0.01
One-year, mean	-9.8%	4.6%	0.09	-10.8%	6.1%	0.04
Three-year, median	-16.2%	-4.5%	0.38	-15.9%	-3.7%	0.36
Three-year, mean	-18.7%	6.1%	0.07	-17.5%	10.5%	0.05

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

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

Panel A				
	Dependent Variable: Change in Market Share			
	One-year		Three-year	
NNPV	1.198 (0.064)		2.242 (0.041)	
EWCAR		1.118 (0.063)		2.634 (0.017)
Prior market share	-0.024 (0.274)	-0.029 (0.170)	-0.044 (0.289)	-0.586 (0.145)
Change in market share from year $i-1$ to year $i$	-0.152 (0.003)	-0.153 (0.003)	-0.394 ( $<0.001$ )	-0.397 ( $<0.001$ )
Fraction of acquisitions completed	0.315 (0.471)	0.333 (0.433)	0.616 (0.266)	0.555 (0.297)
Fraction of hostile acquisitions	0.028 (0.937)	0.035 (0.919)	-0.289 (0.624)	-0.255 (0.654)
Fraction of contested acquisitions	-1.127 (0.059)	-1.029 (0.042)	0.005 (0.995)	-0.002 (0.997)
Fraction financed with cash	0.567 (0.013)	0.533 (0.013)	0.406 (0.147)	0.448 (0.122)
Calendar year indicators	Yes	Yes	Yes	Yes
Observations	423	428	440	445
Adjusted R-squared	9.2%	9.2%	14.5%	15.4%

**Table 6 – continued**

Panel B	Dependent Variable: Change in Market Share			
	One-year		Thee-year	
Change in NNPV	1.254 (0.010)		1.933 (0.014)	
Change in EWCAR		1.519 (0.002)		2.477 (0.003)
Prior market share	-0.042 (0.050)	-0.043 (0.040)	-0.051 (0.236)	-0.0638 (0.125)
Change in market share from year i-1 to year i	-0.143 (0.006)	-0.145 (0.004)	-0.392 (<0.001)	-0.396 (<0.001)
Change in fraction of acquisitions completed	-0.030 (0.935)	-0.042 (0.907)	0.233 (0.695)	0.141 (0.805)
Change in fraction of hostile acquisitions	-0.470 (0.063)	-0.476 (0.067)	0.171 (0.623)	0.138 (0.688)
Change in fraction of contested acquisitions	-0.172 (0.667)	-0.178 (0.641)	0.487 (0.372)	0.431 (0.433)
Change in fraction financed with cash	0.285 (0.176)	0.295 (0.144)	-0.233 (0.446)	-0.165 (0.598)
Calendar year indicators	Yes	Yes	Yes	Yes
Observations	423	428	440	445
Adjusted R-squared	7.9%	8.5%	14.3%	15.2%

**Table 7****Changes in market values of the acquirer and advisor**

This table reports the results of an OLS regression in which the dependent variable is the change in market value of the acquirer's advisor during the announcement of the acquisition attempt. Change in market value of the advisor and change in market value of the acquirer are normalized by the market capitalization of the acquirer's common equity as of 60 days prior to the acquisition announcement. Data on acquisitions are from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated for acquisitions announced during 1984–2011. Variables are defined in Appendix A. Statistical significance is computed using heteroskedasticity and autocorrelation robust standard errors. Coefficient estimates are reported with p-values in parentheses.

	Dependent Variable: Change in Advisor's Market Value
Change in market value of the acquirer	0.082 (0.005)
Log (target size/acquirer size)	-0.006 (0.243)
Firms in similar industries	-0.007 (0.658)
Hostile takeover	-0.009 (0.705)
Paid by cash	-0.017 (0.238)
Number of bidders	0.012 (0.457)
Target is publicly traded	0.010 (0.578)
Constant	-0.022 (0.470)
Observations	435
Adjusted R-squared	2.5%

**Table 8****Acquirer advisor choice model by subsamples**

This table reports the results of regressions that estimate the likelihood that a bank is chosen as an acquirer advisor versus the likelihood that the bank is not chosen. For each acquisition in the sample, the regression includes one observation for each investment bank that was active in the advisory market at the time of the acquisition announcement. A bank is active in the advisory market if it has been chosen for the current acquisition attempt and at least one acquisition attempt prior to the current acquisition attempt or if it has served as an advisor in at least one acquisition attempt announced before and at least one announced after the announcement of the current acquisition attempt. Data on acquisitions are taken from the *SDC Platinum Merger and Acquisition* database. Stock return data are from *CRSP*. Regressions are estimated using logistic models with fixed effects at the acquisition level. For each regression, only the coefficient on NNPV or EWCAR is reported. Unreported control variables include fraction of acquisitions completed, bank is prior advisor, bank is prior equity underwriter, bank is prior debt underwriter, prior 3-year's bank market share, bank's breadth of coverage, bank's expertise in target industry. Variables are defined in Appendix A. NNPV, EWCAR, and fraction of acquisitions completed are estimated over one-year and three-years prior to the announcement of the current acquisition. Other variables are estimated over the relevant periods before the announcement of the acquisition. In Panel A, regression description details are as follows. In 3-day period regressions, NNPV and EWCAR are estimated using the announcement period of the three trading days (-1; +1) centered on the announcement date of the acquisition attempt. In "Free Acquirers" regressions, the sample includes only acquisitions in which an acquirer has not engaged in any acquisitions, equity issuances, debt issuances, or a lending relationship 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. In "Free Acquirers" regressions, Bank is prior advisor, Bank is prior equity underwriter, and Bank is prior debt underwriter are excluded from the model. In Panel B, regressions are estimated using a sample of 1224 or 2500 acquisitions chosen at random from the full sample of all acquisitions over 1984-2011. Standard errors are clustered at the acquisition level. Coefficient estimates are reported with p-values in parentheses.

Panel A				
	Regression Description and Sample Period			
	3-day period 1984-2011	Free Acquirers 1984-2011	All Acquirers 1993-2007	Free Acquirers 1993-2007
NNPV, 1 year	0.807 (<0.001)	1.162 (0.004)	1.072 (<0.001)	1.083 (0.027)
NNPV, 3 years	1.182 (<0.001)	0.963 (0.014)	1.336 (<0.001)	0.834 (0.033)
EWCAR, 1 year	0.868 (<0.001)	0.904 (0.030)	1.301 (<0.001)	0.777 (0.143)
EWCAR, 3 years	1.249 (<0.001)	0.850 (0.035)	1.707 (<0.001)	0.475 (0.283)

**Table 8 - continued**

Panel B										
1224 acquisitions	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
NNPV, 1 year	0.168 (0.720)	0.732 (0.104)	0.915 (0.055)	0.948 (0.046)	0.781 (0.112)	0.679 (0.167)	0.062 (0.901)	0.864 (0.084)	0.481 (0.337)	0.965 (0.040)
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
NNPV, 1 year	0.126 (0.790)	0.69 (0.148)	0.406 (0.419)	0.738 (0.126)	0.522 (0.294)	0.783 (0.110)	0.621 (0.173)	-0.058 (0.900)	0.917 (0.050)	0.41 (0.414)
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
EWCAR, 1 year	0.42 (0.394)	1.319 (0.004)	1.176 (0.018)	1.051 (0.032)	0.883 (0.089)	1.008 (0.051)	0.547 (0.282)	0.969 (0.056)	1.358 (0.006)	1.097 (0.023)
	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
EWCAR, 1 year	0.482 (0.312)	1.052 (0.031)	0.967 (0.064)	1.478 (0.002)	1.133 (0.030)	0.964 (0.057)	0.827 (0.075)	0.54 (0.246)	1.312 (0.007)	0.757 (0.144)
2500 acquisitions	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
NNPV, 1 year	0.894 (0.006)	0.536 (0.117)	0.836 (0.015)	0.738 (0.025)	0.45 (0.170)	0.717 (0.032)	0.306 (0.342)	0.764 (0.023)	0.359 (0.285)	0.773 (0.022)
	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)
NNPV, 1 year	0.951 (0.004)	0.644 (0.054)	0.575 (0.077)	0.11 (0.745)	0.377 (0.261)	1.05 (0.002)	0.708 (0.040)	0.386 (0.261)	0.668 (0.044)	-0.103 (0.757)
	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)
EWCAR, 1 year	0.696 (0.048)	0.676 (0.051)	0.11 (0.751)	0.448 (0.212)	0.678 (0.045)	0.537 (0.113)	0.88 (0.011)	1.273 (0.000)	0.71 (0.037)	0.564 (0.098)
	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)
EWCAR, 1 year	0.425 (0.238)	0.448 (0.201)	1.146 (0.000)	1.426 (0.000)	0.904 (0.008)	0.839 (0.014)	1.026 (0.002)	1.191 (0.001)	1.04 (0.002)	1.389 (0.000)

**Table 9****Actual and simulated market shares of acquisition advisors**

This table compares the market shares that result from the stochastic simulation model of the market for acquirer advisors with actual market shares of acquirer advisors. The actual market shares given in columns (1) and (2) are average values of annual market shares during 1984-2011. The market shares are weighted by the value of the acquisitions or equally. The simulated market shares are given in columns (4)-(7) 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 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.

	<i>SDC</i> Sample		Client Performance Only (3)	Simulations			
	Weighted			All Coefficients			
	Value	Equally		Coefficient of Persistence			
	(1)	(2)		Zero (4)	Actual (5)	Actual*1.5 (6)	Actual*2 (7)
Percentage market share of top 5 banks	76.2	51.8	100.0	19.6	31.6	67.0	100.0
Percentage market share of second 5 banks	14.7	19.0	0.0	14.9	17.4	9.8	0.0
Percentage market share of the other banks	9.1	29.2	0.0	65.5	51.0	23.2	0.0