Done Deal! Do Financial Advisors Create Value in Mergers & Acquisitions?

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Abstract: We study the role of financial advisors in M&A for different advisor engagement constellations. We observe positive effects of both target and acquirer advisors on deal completion and prices. The unexpected positive price effect of acquirer advisors is further supported by evidence for lower announcement bidder returns, indicating value destruction for their clients. We establish causality of pricing effects using matching and instrumental-variable approaches, making use of the impact of Lehman's collapse on former Lehman clients. We offer an explanation in terms of governance: advisors' and executives' incentives form a potential source of value destruction.

Highlights

- Acquirer financial advisor engagement leads to higher prices and lower announcement returns.
- Both target and acquirer advisors increase transaction completion rates.
- The unexpected effect of acquirer advisors can be explained by weak governance.

KEYWORDS: Mergers & Acquisitions, Financial Advisors, Transactions, Governance

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1. Introduction

The decision to engage an advisor is central in any mergers and acquisition (M&A) process and is affected by the different parties' expectations regarding advisors' effects on deal completion and the resulting prices and returns achieved. This paper sets out to identify the broad impact of financial advisors on value creation in M&A. Several scholars have studied the role of advisors in specific segments of the market (non-listed firms, the role of top-tier advisors), or in specific contexts (industry experience, cross-border transactions). We take a broader look at the role of advisors on both the buy- and the sell-side of the market, looking for general principles in how governance issues may translate into deal pricing and value creation. We provide evidence on how financial advisor engagement on both sides of the M&A transaction is associated with deal completion, relative deal pricing, and returns: do buy-side financial advisors achieve lower prices and higher returns for their clients? Do sell-side financial advisors help their clients to negotiate higher prices, optimizing valuation for their clients' exit? We establish a framework to discuss how client objectives to both secure transactions and optimize deal pricing might be a source of value destruction in terms of lower returns on the buy-side.

Aiming to identify general lessons about the effect of advisor engagement on the outcome of M&A deals, our analysis proceeds as follows. We first show that advisors on both side of a transaction correlate positively with prices and the likelihood of deal completion. We find evidence for a negative association of bidder returns with the presence of acquirer advisors. We next consider the potential causality problem arising from endogenous advisor engagement. We aim to partly overcome selection issues by applying a matching procedure to compare similar deals with and without advisors. We again find robust evidence for a positive relationship between acquirer advisor engagement and deal completion and prices. However,

we also find confirming evidence of a negative relationship between acquirer advisor presence with bidder returns, indicating a potential source of value destruction. The observation of negative bidder returns when a client engages an acquisition advisor is surprising, given that the main goal of advised M&A deals is to create value for the acquirer's shareholders.

We next apply an instrumental variable (IV) approach, using advisor clients affected by the Lehman failure to instrument for endogenous advisor engagement. The IV analysis confirms the causality of the unexpected positive effect of acquirer advisors on prices. We shed some light on the underlying mechanism of positive acquirer-advisor price effects by studying the effect of governance, comparing listed to non-listed firms.

The literature suggests that, despite many mergers being efficient, overpricing and value destruction from the acquirer shareholders' perspective is prevalent in M&A deals (Andrade et al., 2001; Moeller et al., 2004; Renneboog & Vansteenkiste, 2019). Executives' overconfidence and hubris have been shown to be an important cause of overpayment for acquisition targets (Hayward & Hambrick, 1997; John et al., 2011; Malmendier & Tate, 2005; Roll, 1986). We suggest an additional perspective by considering the rational self-interest of top executives to maximize their bonuses, which is then reflected in the contractual terms they close with advisors. Grinstein and Hribar (2003) find that approximately 39% of acquiring firms reward their CEOs with an M&A bonus for the successful completion of a M&A deal. Further, they indicate that CEOs receive higher M&A bonuses when deals are larger and observe that CEOs' effort and skills do not explain a significant amount of the variation in these bonuses. They also find that M&A bonuses do not appear to be linked to deal performance. Grinstein and Hribar (2003) conclude that this misalignment of incentives, allowing CEOs to extract rents from shareholders through additional bonuses, may lead to self-serving behavior at the cost of shareholders' equity. Jeongil et al.'s (2015) results point in a similar direction, showing that

CEOs with below-average pay engage more often in acquisition activity to realign their pay with that of their peers. The governance-problems based framework is further supported by recent insights into private versus public acquirers. Golubov and Xiong (2020) show that private acquirers pay lower prices for targets and have a better post-acquisition performance. They further show that the different governance arrangements in private firms contribute to the observed effects.

To better understand the incentive structure of financial advisors, McLaughlin (1990) studies the structure of investment banking contracts, observing that advisors are incentivized by a high share (about 80%) of the total advisor fee being conditional upon successful completion of the deal. He also documents that this feature is found among both sell-side and buy-side advisors. This is interesting in light of a missing contractual incentive for acquirer advisors to minimize the deal price, in the context of the general responsibility of senior executives to manage their shareholders' equity efficiently. Rau (2000) examined the determinants of the market share of investment banks acting as advisors, finding that it is positively related to the contingent fee payments charged by the bank and the completion rate of transactions. The pressure on financial advisors to gain market share might thus exacerbate the consequences of the missing incentive for lowering prices. Hunter and Jagtiani (2003) investigate deal completion in the context of top-tier advisors and find that top-tier advisors are more likely to complete deals and to do so in less time than lower-tier advisors, while synergistic gains realized by acquirers declined when top advisors were used. This observation can be interpreted in terms of clients sacrificing synergistic gains and thus shareholder value, for higher deal completion likelihood: buyers and their advisors seem to focus strongly on deal

completion.[1] Consistent with these results, Ismail (2010) finds in a sample of U.S. M&A deals that tier-one advisors destroy substantial value for their clients, while Hayward (2003) shows that financial advisors derive power over their clients from specialized expertise, leading them to complex solutions with potentially adverse outcomes.

There is strong evidence that advisor choice is an important strategic decision and has substantial effects on M&A outcomes.[2] In particular, advisor attributes have been shown to interact in several ways with firm attributes determining M&A outcomes. Given the complex pattern of interactions, we are interested whether more general patterns of advisor impact can be identified that hold broadly, and may help to understand merger (in)efficiency. While the literature typically focused on specific industries and countries and on either the seller or buyer side of the deal, we therefore zoom out and analyze transactions across various industries and countries. M&A is a global business, and the contractual incentives that we have described are highly homogenous across countries and industries. We study the effect of advisor engagement on both the buy-side and the sell-side in publicly and privately held targets, and examine both key dimensions of the M&A deal, pricing and completion rate, in the same sample in an effort to identify general principles for the effects of advisors on M&A outcomes. Showing negative

[1] We can only speculate whether top tier advisors can influence analyst opinions, which have been shown to be a powerful determinant of deal completion through their effect on target shareholders' willingness to accept a deal (Becher et al., 2015).

[2] Bao and Edmans (2011) show that investment banks matter for M&A outcomes. Wang et al. (2020) find that acquirers create higher shareholder returns when advised by investment banks with more experience in the target industry, while Chang et al. (2016a) report that acquirer advisor industry expertise is associated with higher deal completion, but not with pricing. In another study, Chang et al. (2016b) show that acquirers advised by target's ex-advisors pay lower takeover premiums and secure a larger proportion of merger synergies. Sleptsov et al. (2013) suggest that exclusive buy-side advisor engagement decreases expected acquisition performance. Agrawal et al. (2013) find that transactions with common advisors take longer to complete and provide lower premiums to sellers. They argue that common advisors are somewhat better for acquirers, because in such an engagement constellation the acquiring client is the "surviving" entity and could thus hire the advisor again. Agrawal et al. (2018) investigate the determinants and consequences of private sellers' choice of M&A advisors or top-tier advisors. They find that advisors, especially top top-tier advisors, can identify and negotiate better deals for sellers; this result is consistent with our findings for sell-side advisors.

effects on announcement returns for both acquirer and target advisors, we relate our findings to governance issues in the context of executives' financial incentives and career paths. We argue that top executives have strong financial incentives to secure potentially overpriced deals. Similarly, lower-tier executives may substantially benefit in career terms from pushing costly deals to completion: involvement in successful mergers has become a career accelerator (Botelho et al., 2018), if not a precondition for reaching the C-Suite (Groysberg et al., 2011).

In the following sections, we implement our identification strategy with regression, propensity score matching, and IV models. The different approaches provide converging evidence that there are robust general patterns of advisor impact, over and beyond any effects of specific advisor attributes and their interaction with potential acquirer and target attributes. Advisers cause increases in price on both the sell-side (as expected, creating value for owners) and the buy-side (and destroying value for acquirer shareholders). But advisor engagement on both sides also increases deal completion likelihood. In our sample, 55% of the transactions involve an acquirer advisor, and 62% a target advisor. Thus, from the perspective of acquirer shareholders, advisor engagement increases the risk that value is destroyed by an acquisition. From the perspective of the target shareholders, it is, by contrast, surprising that only 62% take up the opportunity to employ advisor support for a better and more secure deal. We provide further interpretations of these results in the concluding discussion.

2. Data and Methodology

2.1. Data

We use the Thomson Reuters SDC Platinum database on M&A transactions to gather all reported initiated M&A transactions between 1978 and 2020, including all types of transactions

conducted by strategic investors, such as corporations, and financial investors, such as private equity firms. Data is sourced through direct deal submissions from global banking and legal contributors, coupled with extensive research performed by a global research team that collected data from regulatory filings, corporate statements, media, and pricing wires. According to Thomson Reuters, more than 2,500 control validations occur at the point of data entry. We focus on transactions with a deal size above $0.5M and exclude transactions that do not report relative deal pricing (*EBITDA Multiple*) as well as deals with negative *EBITDA Margins* or *EBITDA Margins* larger than 1, and negative *Sales Absolute* (the variables are technically defined below),[3] but otherwise make use of the full data set. We selected this broad sample as a key focus is to investigate the impact of advisors on pricing (*EBITDA Multiple*).[4] Contracts with advisors in full-scope transactions are rather comparable to transactions of a partial set of assets. Moreover, the contract structure in terms of variable and fixed components is comparable across different client industries and countries (Lessem & Wright, 2019). We include additional data sets on stocks and indexes from the Center for Research in Security Prices (CRSP) to compute cumulative abnormal announcement returns. CRSP maintains the most comprehensive collection of security price, return, and volume data for the NYSE, AMEX and NASDAQ stock markets.

2.2. Variables

The key variables of interest in this study are the relative deal price, deal completion status, and bidder returns. To construct a measure of relative deal pricing, we make use of the *Deal Size*, i.e. the selling price, and the target's earnings forecast over the next 12 months, *EBITDA*

[3] Firms with a negative *EBITDA Margin* and negative *Sales Absolute* are excluded from our analysis because the *EBITDA Multiple* is not a robust valuation indicator for such assets. We exclude a total of 607 initiated transactions due to such indicators.
[4] Therefore, our sample size differs from other studies using the Thomson Reuters SDC Platinum data base.

Absolute, in the year of the transaction. *EBITDA Absolute* is a profitability indicator defined by the absolute amount of earnings before interest, tax, depreciation, and amortization (see Table A1 in the Appendix). *EBITDA Absolute* and *Deal Size* values are reported in U.S. dollars. We measure relative deal price using the *EBITDA Multiple*, defined as the ratio of *Deal Size* to *EBITDA Absolute* of the M&A target; this measure indicates relative deal pricing in transactions, which is widely used in M&A and valuing businesses in general (Damodaran, 2005; Koller, Goedhart, and Wessels, 2010; Loughran & Wellman, 2011). The *EBITDA Multiple* enables comparisons of negotiated deal terms regardless of the size of an M&A target. This is essential for our analysis because we observe a substantial variation in transactions and firm sizes in our data set. Because of the highly skewed distribution of the *EBITDA Multiple*, we transform it into its logarithm, indicated by the variable *EBITDA Multiple (Log)* in our analyses.

We measure bidder cumulative abnormal returns (*CARs*) with the variables *CAR(-1/+1)*, *CAR(-2/+2)*, *CAR(-3/+3), and CAR(-4/+4),* which measure CAR over a three-, five-,seven- and nine-day window. We use the CRSP database to model *CARs* and estimate the model over a 255-day window ending 46 days (standard specification) prior to the announcement date, using the CRSP Value-Weighted Index as our market proxy. Further, *Deal Status* is registered in the data set at five possible status levels: Deal completed, deal pending, deal intended, deal withdrawn, and other deal status. For our analysis, we create the dummy variable *Deal Completed*, which is coded one if *Deal Status* equals deal completed and zero otherwise.

The presence of target or acquirer advisors[5] is measured by binary indicators. The variable *Target Advisor* is one if a target advisor is reported and zero otherwise, and the variable

[5] As defined in Appendix A, acquirer (target) advisors are financial advisors to the acquiring (target) company, its management, or board of directors on a transaction, providing M&A consulting, and thus accompany the entire M&A

Acquirer Advisor is one if an acquirer advisor is reported and zero otherwise. The indicators of the presence of target and acquirer advisors are the key independent variables in our study. As McLaughlin (1990) reports, advisor contracts are typically structured with a fixed payment and a payment contingent on successful deal completion depending on deal size (the contingent portion is approximately 80% of the total advisor fee). Acquirer advisors, typically investment banks and management consultants, manage the buy-side process, which includes deal sourcing through the identification of M&A targets, target screening (the first filter of relevant M&A targets regarding strategic and financial fit), drafting indicative offers, due diligence, and support negotiating, signing and closing of deals. Specific demands vary by clients, so not all services described are contracted in every case. Contracts of buy-side advisors are also structured with a high variable payment contingent on deal completion, raising substantial governance concerns about the lack of incentive to negotiate prices down. Bidding processes vary between auction processes and exclusive negotiations between only two parties.[6]

Given the heterogeneity of our sample of transactions, we include a set of control variables. These include the size of the M&A target, defined by the variable *Sales Absolute, as* measured in U.S. dollars, which we transform into its logarithm, *Sales Absolute (Log),* because of its highly skewed distribution[7]. Further, we use the profitability of the M&A target, defined by the variable *EBITDA Margin,* which is calculated by annual *EBITDA Absolute* over annual *Sales Absolute*. We add further controls at the level of the deal: *Deal Attitude* (indicated by the dummy variables friendly, neutral or hostile attitude of the acquirer towards the seller), the *Form of the Transaction* (indicated by dummy variables acquisition, merger, or other form of

process (from initiation to closing). These types are to be differentiated from specialized consultants with regard to due diligence services which clients sometimes engage in addition to the financial advisor.

[6] The data sample does not provide information how many bidders submitted indicative or binding offers in each transaction.

[7] The data sample does not provide information on the sales of the acquirer.

transaction) and the *Target Public Status* (indicated by dummy variables public, private and other public status). To account for potential information asymmetry between acquirer and seller due to geographical distance or industry specialization (Uysal et al., 2008), we add the dummy variables *Same Country* (coded one if acquirer and seller headquarters are located in the same country and zero otherwise) and *Same Industry* (coded as one if the acquirer and seller operate in the same industry and zero else; Thomson classification Mid-Level Industries). Finally, we include target country, year, and industry fixed effects.

Table 1 provides descriptive statistics for the variables used in this study for two subsamples, *Completed Transactions* and *Incomplete Transactions*. It summarizes data on transaction financials, the status of the M&A targets, and deal properties along the time period, 1978 to 2020. For the entire sample, the average *EBITDA Multiple* equals 19.5. The average *Deal Size* is almost $ 719M and the average *Sales Absolute* is about $ 730M. 81% of the initiated transactions in our sample are completed.

< Table 1 >

Table 2 shows summary statistics of key variables of interest, segmented by the different advisor engagement constellations we consider: TA+AA+ (advisors engaged on both sides), TA-AA+ (only acquirer advisor is engaged), TA+AA- (only target advisor is engaged), and TA-AA- (no advisor is engaged). In the next section, we systematically assess these associations, after which we consider the causality underlying these relationships.

< Table 2 >

3. Basic Specification: Association of Advisor Engagement with Relative Deal Pricing, Cumulative Abnormal Returns and Deal Completion

In this section, we establish our main results regarding the association of advisor engagement with deal pricing, bidder returns, and likelihood of deal completion. We investigate advisor effects across industries and countries. Table 3 shows the results. Multivariate regression analysis with a full set of controls and country, year, and industry fixed effects of *EBITDA Multiples* on advisor dummies in model (1) shows a positive correlation of both target and acquirer advisor with pricing multiples. Models (2) to (5) show a significant negative association of the acquirer advisors with bidder returns for all 4 event windows; there is no clear evidence for an association of the presence of target advisor with bidder returns. Model (6) shows a positive association of both advisors with deal completion.

< Table 3 >

The economic significance of the associations of advisor engagement with *EBITDA Multiple* is substantial (29.7% and 33.9% larger *EBITDA Multiples* than in the absence of the target and acquirer advisor respectively). Further, we find 0.2%-0.7% lower bidder returns when an acquiring firm engages an acquisition advisor, which indicates a potential destruction of value driven by its agent. While the positive correlation of target advisors with prices is consistent with an interpretation of a positive advisor effect on value creation for the target owners, the positive association of prices with acquirer advisors is unexpected from a perspective that presumes that advisors add value for their clients. A potential interpretation suggesting that advisors help to identify better deals is not consistent with the observation of negative effect bidder returns for acquirer advisors. We therefore interpret the pricing effect in terms of value destruction, which is also consistent with the positive association with deal completion. To provide further support for an interpretation in terms of poor governance and

value destruction, we will next consider causality, showing that the observed associations are not simply due to (self-)selection of advisors into more or less profitable deals.

4. Investigating Causal Effects of Advisor Engagement: A Matching Approach

4.1. Matching Methodology

Having shown the presence of substantial positive associations of advisor engagement with pricing indicators and deal completion, we next aim to establish whether these correlations can be interpreted in terms of causal effects. Several selection issues may be important in this setting. Firms may be more likely to hire advisors, or advisors may more actively recruit engagements, on potentially larger or more likely deals. Advisors may also identify higher-synergy deals, which should not be interpreted as mere pricing effects. Given our large data set, we can use matching methodology (Caliendo & Kopeinig, 2008) to overcome some selection issues.[8] The idea is to compare similar deals (in terms of observable pre-deal target properties) with and without an advisor present. To draw inferences about the impact of advisor engagement on deal pricing and completion, we need to examine how the transaction outcome would differ had there been no advisor engagement. Because the counterfactual for a given transaction is not observed, we formalize the problem as the potential outcome approach or Roy-Rubin-model (Caliendo & Kopeining, 2008; Roy, 1951; Rubin, 1974). The fundamentals of the Roy-Rubin model are individuals (here: transactions), treatments (here: with or without advisor engagement), and outcomes (here: *EBITDA Multiple*, *CARs*, and *Deal Completion*).

[8] We also ran a Heckman selection model analysis. This analysis yields very similar estimates as the OLS model of Table 3. The results are available in the Online Appendix.

To estimate the treatment effects of advisors on relative deal pricing, deal completion and bidder returns, we apply propensity score matching. Our matching model assigns the data to two groups: the "treated" group, which includes those transactions with an advisor, and a control group that includes transactions without an advisor. Treatment *D* is a binary variable *D*=1 for treated observations and *D*=0 for control observations. In a first step, we estimate a logit model with D as a latent variable, for the propensity of transactions to be conducted with the support of an advisor. The vector of explanatory variables *x* includes the variables *Sales Absolute (Log)*, *EBITDA Margin*, *Industry of M&A Target*, *Country of M&A Target, Deal Attitude, Target Public Status, and Year of Transaction.* The propensity score *p(x)* is the predicted probability that an acquirer advisor will be engaged given the characteristics *x*:

$$p(x) = logit(D = 1|x) = E(D|x) \quad (1)$$

In a second step, the model matches transactions from the treated and control sub-samples based on their propensity scores. Following Caliendo and Kopeinig (2008), we choose the nearest neighbor matching estimator with replacement. Thus, our estimator selects those transactions without advisors as matching partners for a transaction with an advisor that is closest in terms of propensity score. Transactions from the control group can be used multiple times to match for a transaction in the treated sample, which increases matching quality and reduces model bias. In a third step, we calculate the *Average Treatment Effect* (ATE) for the dependent variable of interest y (e.g. *EBITDA Multiple (Log)*), which is the difference between outcomes y of the matched transactions with an advisor and those without an advisor.

$$ATE = E(y|\text{x}, D = 1) - E(y|\text{x}, D = 0) \quad (2)$$

We apply the matching model to both the entire sample and to a restricted sample of those transactions that include advisor engagement by the other side of the transaction (e.g., presence of target advisor when analyzing acquirer advisor effects). We expect these sub-

samples to allow for even more robust identification of causality as they focus on transactions that share unobserved features that lead to the engagement of an advisor on at least one side of the deal. ATE is only defined if the variables in *x* do not perfectly predict treatment D. The *region of common support* is defined by the overlap in propensity score between the treated and controlled observations. As Caliendo and Kopeinig (2008) suggest, we visualize the support of the treatment and control groups to confirm the common support assumption.[9]

4.2. Matching Analysis

Table 4 shows the results of the matching estimation for both acquirer and target advisors, for the dependent variables *EBITDA Multiple*, *Deal Completion*, and the *CARs (-1/+1, -2/+2, -3/+3, -4/+4)*. For acquirer advisors, we find substantial and significant treatment effects for both the whole sample (specification 1a) and the restricted sample (specification 1b) for Deal Completion (positive), EBITDA Multiples (positive), and bidder returns (negative), confirming the results reported in Section 3. For target advisors, in both samples we also confirm the results of Section 3 for Deal Completion (positive) and EBITDA Multiples (positive). We do not find evidence for a negative effect of target advisors on bidder returns in the matching approach though.

< Table 4 >

We assess the validity of the matching estimators using the visual inspection procedure recommended by Caliendo and Kopeinig (2008). Figures 1 to 6 (acquirer advisor) and 7 to 12 (target advisor) in the Online Appendix visualize the support of the propensity scores for treated

[9] In a linear probability model, approximately 26% of the variance in acquirer advisor engagement is explained by observable variables included in the model.

and control observations, and for treated and matched observations, for both the full and restricted sample. We see a full overlap of propensity scores for treated and controls in all cases, and that all scores between zero and one are covered, although the distribution of propensity scores is often quite different for treated and control observations. However, given our large data set and matching with replacement, we can achieve a nearly perfect overlap of the distributions (they are visually indistinguishable in most figures). There are no gaps in the supports. We conclude that the matching procedure has been executed efficiently. Sensitivity analysis following Becker and Caliendo (2007) shows that results are not sensitive to violations of the confoundedness assumption, namely unobserved joint influences on advisor selection and outcomes (available in the replication package).

Given the support for the validity of the propensity score matching approach presented here, we interpret the correlational results presented in Section 3 as causal effects of advisor engagement on relative deal prices and the likelihood of deal-completion, for both sell-side and buy-side advisors. Consistent with an interpretation in terms of value destruction of the unexpected price-increasing effect of acquirer advisors, we confirm a negative acquirer-advisor effect on bidder returns. Further, the evidence of price effects for target advisors then raises the question of why the management of target firms only engage advisors in about 62% of cases. Given the importance of establishing causality for the interpretation of the observed effects, we present yet another perspective on causality for the acquirer advisors, using an IV approach.

5. Instrumental Variable Approach: The Lehman Failure and Advisor Engagement

5.1. Instrument

In this section, we present a different approach to establishing a causal interpretation of the associations of advisor engagement with pricing and deal completion, using IV.[10] We introduce the instrument *Former Lehman Client Post Crisis*. The basic rationale is that we predict an exogenously induced change of advisor engagement behavior by a specific group (former Lehman clients) that was triggered by the collapse of Lehman Brothers on September 15, 2008.[11] The IV we construct represents the interaction between two variables: *Former Lehman Client*, referring to clients who engaged the investment bank Lehman Brothers as buy-side or sell-side advisor at least once in the two years prior to its collapse; and *Post Crisis*, which indicates the two years after the Lehman collapse. To identify a causal interpretation of behavioral change among this group of clients, we implement a fixed-effects model in which we test the effect of the interaction of *Former Lehman Clients* and the *Post Crisis* period. Table 5 shows that the interaction of these two variables is significantly negative correlated with the engagement of an acquirer advisor, indicating that this group of acquirers reduced its engagement of buy-side advisors after the crisis.[12] We interpret this observation as former Lehman clients partly losing trust in external financial advice in general, reducing any advisor engagement after the collapse of their once prestigious advisor.

< Table 5>

[10] Our sample does not provide sufficient data on CARs to implement these variables in our IV model, which needs to work with the substantially reduced sample of the post-Lehman-failure period.

[11] Testing for differences between the treatment group (Former Lehman Clients) and the control group (All Other Acquirers) in the pre-Lehman-failure period, we find that these groups are not significantly different from each other (see Online Appendix C).

[12] Testing the impact of the Lehman collapse on clients of other top investment bank clients (direct competitors, such as Goldman Sachs, J.P. Morgan, and Morgan Stanley), we do not observe a decrease in advisor engagement.

In the following, we use the variable *Former Lehman Clients Post Crisis* to instrument the presence of acquirer advisor to probe the robustness of the causal interpretation offered in Section 4. We replace the potentially endogenous variable *Acquirer Advisor* with predicted values from a regression on our instrument. Our model is given by a two-stage structure: (1) estimate the first stage by predicting the potentially endogenous variables with only exogenous regressors, and (2) calculate the predicted values $\hat{y}_2$ and substitute them in the model

$$y_2 = x_1'\gamma_1 + x_2'\gamma_2 + \varepsilon \quad (3)$$

$$y_1 = \hat{y}_2'\beta_1 + x_1'\beta_2 + u \quad (4)$$

where y_1 is the dependent variable *EBITDA Multiple or Deal Completed,* y_2 is the potentially endogenous variable *Acquirer Advisor*, and x_1 are the other control variables, *Sales Absolute (Log)* and *EBITDA Margin*, and the deal level controls. We use fixed effects variables for each acquirer, period (year), industry of the M&A target, and country of the target's headquarters.

5.2. IV Results

Instrumenting the presence of the acquirer advisor, we confirm the causal interpretation of our main results: a positive effect of acquirer advisor engagement on both deal completion likelihood and relative deal pricing (Table 6 and 7).

< Table 6>

< Table 7>

Effects for Multiples look surprisingly large. However, model tests do not signal problems with the instrument though. Testing for underidentification (Anderson canon. corr. N*CCEV LM statistic Chi-sq(1) p<0.001) and weak identification (Cragg-Donald F statistic: 11.197) does not cast doubt on the specification. Given the converging evidence from the matching and IV

approaches regarding in particular the direction of the pricing effect for acquirer advisors, we conclude that there is strong evidence for a causal interpretation of advisor effects. We next look in more detail at the interpretation of the advisor effect, assuming causality.

6. Price Effects for Acquirer Advisors: Interpretation

Having established a causal link between advisor engagement and higher prices, we now focus on the mechanism and interpretation of the effect. We argue that the institutional setting promotes a focus on deal completion, resulting in higher prices for both acquirer and target executives and advisors and, ultimately, in lower bidder returns for acquirers. The price-driving effect observed for acquirer advisors is therefore consistent with an interpretation of overpayment and negative advisor effects for acquirer shareholders. This interpretation is consistent with the broader literature showing that even with deals that are efficient overall, buy-side owners do not typically benefit from acquisitions, while target owners benefit strongly (Andrade et al., 2001; Moeller et al., 2004).

Our interpretation suggests an important role for governance structure and accountability on the effects of acquirer advisor. Several studies have argued that information asymmetries when acquiring a private versus a publicly listed target have powerful ramifications for the M&A process and the role of financial advisors (Agrawal et al., 2018; Custódio & Metzger, 2013; Golubov et al. 2012). Due to stricter accounting and reporting standards for listed firms, publicly listed M&A targets provide qualitatively and quantitatively better information. Deals with public targets are therefore easier to assess by both acquirers and the market, and are also followed more closely by the market. Consequently, there will be smaller discounts for public than for private targets (Agrawal et al., 2018), and the increased

market scrutiny will lead reputation-oriented acquirer financial advisors to cut better deals for their clients (Golubov et al., 2012).

Table 8 studies Multiples and bidder returns for public and private targets. We use a specification that restricts the sample to those deals with a target advisor present. We focus on the effect of acquirer advisors, listing status of the target, and the interaction of the two variables on prices and bidder returns. We replicate the positive effect of acquirer advisors on *EBITDA Multiples* and also replicate the negative effects of public targets on bidder returns, confirming evidence provided by Capron and Shen (2007). Further, consistent with the reputation argument of Golubov et al. (2012), the interaction between advisor engagement and public status is significant and substantially negative for *EBITDA Multiples*. That is, the price-driving effect of acquirer advisors is more severe in private deals where reputational concerns are reduced, compared to public deals. Note that even for public deals though, the overall effect of acquirer advisors is positive. Consistently with an overpayment perspective, bidder returns are negative for public targets, and there is negative interaction of acquirer advisor and public targets for all event windows larger than 3 days. That is, despite the reduced overpayment effect for acquirer advisors for public versus private targets, these deals still lead to a more negative market reaction.

< Table 8 >

7. Conclusion

M&A is the process of acquiring assets, an entire firm, or an operating business of a firm, from another party. Throughout the process of identifying, analyzing, and negotiating an M&A transaction as a buyer or seller, financial advisors can be hired to facilitate the process by providing services and technical expertise in valuation, negotiation, and industry-specific

knowledge. Advisor roles encompass M&A management, including the initiation and subsequent coordination of transaction parties' management meetings and negotiations, often as the counterpart to the advisors on the other side of transactions. In this role as orchestrator, the financial advisor usually also supports the coordination of other advisors, such as the client's legal, tax, and strategic advisors. On the sell-side, clients usually demand support in the identification of potential buyers, preparation of the key selling document, drafting the information memorandum, which includes a detailed description of the target's strategic and financial position, and, in particular, the projections of revenues, costs, and profits, ultimately free cash flows, that the management of the seller is expecting to achieve in the upcoming three to five years.

Projections are modeled based on assumptions for macroeconomic, volume, price, and cost drivers and impediments. Due to the sensitivity of discounted cash flow models concerning the assumptions for such financial line items, and to assumptions about the weighted average cost of capital and terminal growth rates, a thorough triangulation of the set of assumptions is one of the buyer's primary goals. Therefore, buy-side financial advisors support not only the identification of the M&A target but also deliver essential commercial and financial due diligence services, which refer to the validation of the seller's price expectation based on the management business case shared with the potential buyer.

Ultimately, firms acquiring an asset are obliged to create value for shareholders and thus to close transactions at a price that allows them to realize gains from potential synergies with the existing assets of the acquiring firm. This leads to the expectation that the engagement of an acquirer advisor is associated with comparatively lower prices and higher bidder returns. Similarly, the management of the target should hire a financial advisor to obtain services to optimize the transaction from their perspective, achieving comparatively higher prices by

negotiating higher selling prices. Both sides may be interested in improving the likelihood of deal completion.

Investigating the association of advisor engagement with relative deal pricing, bidder returns, and deal completion, we observe that both sell- and buy-side advisors positively correlate with deal prices and completion. At the same time, we find evidence for acquirer advisors being negatively associated with bidder returns. Matching estimators and an IV analysis using the impact of the Lehman failure on Lehman clients suggest a causal interpretation in terms of advisor effects, over and above any possible selection effects due to endogenous advisor engagement and identification of potential deals by advisors. While the direction of these effects is in line with the expectation that sell-side advisors negotiate higher prices for targets (Agrawal et al., 2018; Golubov et al., 2012), we find that buy-side advisors also increase prices and decrease bidder returns–which might be an additional explanation for the often discussed value destruction in mergers. Our analysis of deal completion similarly supports a causal effect, with both sell- and buy-side advisors improving the likelihood of deal completion. In several analyses zooming in on this question, the evidence points in the direction of value destruction by acquirer advisors due to weak governance. These findings are consistent with the broader M&A literature, which shows that even for ex-post efficient deals, acquirer shareholders do not typically benefit from acquisitions.

Our results support a critical perspective on incentive structures, advisor roles, and prioritization of deal objectives. Grinstein and Hribar (2003) show that top executives are incentivized by deal completion and high prices–even in the process of buying assets. They find that approximately 39% of acquiring firms reward their CEOs with an M&A bonus for successful completion of a deal. Further, the authors suggest that CEOs receive higher M&A bonuses when deals are larger, observing that CEOs' effort and skills do not explain a

significant amount of the variation in these bonuses. Grinstein and Hribar (2003) also find that M&A bonuses do not appear to be linked to deal performance,[13] and conclude that this misalignment of incentives, which allows CEOs to extract rents from shareholders through additional bonuses, may lead to self-serving behavior at the costs of shareholders' equity. Consistent with this perspective, McLaughlin (1990) shows that both target and acquirer advisors are contractually incentivized by a high variable payment linked to successful deal completion and deal size: the higher the negotiated deal price, the higher the payoff for the advisor. Work by Coffman and Real (2018) on the justifiability of difficult managerial decisions suggests that delegation to advisors plays an important role for executives. This is likely also the case in implementing and justifying M&A deals in the current governance structure. Recent work by Golubov and Xiong (2020) shows that private acquirers with less severe governance problems do indeed pay lower prices for targets.

As to target shareholders' interest in maximizing deal value by achieving high M&A selling prices, the contractual incentives of both top executives and sell-side advisors are closely aligned. However, incentive schemes for top executives and advisors on the buy-side run the risk of misalignment with shareholders' interests. Roll (1986), Hayward and Hambrick (1997), and Malmendier and Tate (2005) are prominent sources who suggest that buyers often overpay due to CEO hubris or overconfidence, destroying the value of shareholders' equity. Our findings contribute an additional explanation to overpayments in M&A. Both top buy-side executives and acquirer advisors maximize their payoffs, based on incentives provided by M&A bonus clauses and advisor contracts, respectively, by prioritizing deal completion and benefitting from

[13] Grinstein and Hribar (2003) use deal premium as a measure of deal performance and define it as the target price in the deal divided by the market value of the target four weeks before the deal. They obtain information on the number of board meetings from proxy statements, and on the number of advisors and the market premium from Thomson Reuters SDC.

high prices. More junior executives, meanwhile, obtain career benefits from playing along (Botelho et al., 2018).

A second notable perspective of our results regards the potential role of overconfidence on the sell-side of M&A transactions. Only 62% of the transactions involved a target advisor, which appears to be at odds with the unambiguously positive effects of target advisors on pricing and deal completion likelihood and the fact that a similar proportion of acquirers engages a buy-side advisor, even though such engagement is costly in terms of both fees and prices, as we have shown. Custódio and Metzger (2013) also show that CEOs with target-industry experience are less likely to engage an advisor in diversifying acquisitions. One interpretation for these results is provided by Malmendier and Tate (2005) and Roll (1986) in terms of evidence for overconfidence and hubris. While these authors focus on the buy-side, the current evidence suggests that these effects may also affect sell-side behavior.

Assuming the validity of our interpretations, stricter supervisory control in M&A projects may thus be warranted to improve decisions given the misaligned incentives described above. However, while Goranova et al. (2017) show that increased monitoring by supervisory boards helps to contain M&A losses, they also observe that tighter control reduces M&A gains. We conclude that the decision to engage an advisor and the subsequent effects of that advisor on transaction outcomes are likely influenced by both a potentially misaligned incentive structure and psychological aspects like executives' hubris and overconfidence.

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Table 1. Summary Statistics: Completed and Incompleted Transactions – 1978 to 2020

Period	1978 to 2020 – Completed Transactions					1978 to 2020 – Incompleted Transactions				
Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Obs.	Mean	Std. Dev.	Min.	Max.
Financials										
EBITDA Multiple	28947	19.883	54.907	.001	985.898	7032	17.906	51.234	.002	984.56
EBITDA Multiple (Log)	28947	2.232	1.133	-6.908	6.894	7032	2.095	1.154	-6.215	6.892
Sales Absolute ($M)	28827	693.281	1925.405	1.483	14426.23	6988	883.518	2263.747	1.483	14426.23
Sales Absolute (Log)	28827	4.737	1.941	.394	9.577	6988	4.997	1.976	.394	9.577
EBITDA Absolute ($M)	28577	100.001	288.542	-.146	2184.6	6954	128.644	340.512	-.146	2184.6
EBITDA Absolute (Log)	28246	2.645	2.103	-6.215	7.689	6881	2.877	2.144	-6.215	7.689
EBITDA Margin	28947	.184	.169	.001	1	7032	.175	.161	.001	.994
Deal Size ($M)	28947	688.873	1970.572	.505	15025.07	7032	842.902	2378.949	.505	15025.07
Deal Size (Log)	28947	4.524	2.123	-.683	9.617	7032	4.462	2.265	-.683	9.617
Target Advisor	28947	.649	.477	0	1	7032	.497	.5	0	1
Acquirer Advisor	28947	.578	.494	0	1	7032	.429	.495	0	1
CAR (-1/+1)	7323	.002	.04	-.132	.149	1108	-.002	.042	-.132	.149
CAR (-2/+2)	7323	.003	.08	-.233	.28	1108	-.007	.081	-.233	.28
CAR (-3/+3)	7323	.002	.088	-.259	.298	1108	-.01	.087	-.259	.298
CAR (-4/+4)	7323	.002	.094	-.269	.311	1108	-.013	.095	-.269	.311
Public Status of the Target										
Public	28947	.693	.461	0	1	7032	.887	.316	0	1
Subsidiary	28947	.122	.327	0	1	7032	.046	.21	0	1
Private	28947	.18	.384	0	1	7032	.064	.245	0	1
Other Status	28947	.002	.043	0	1	7032	.001	.029	0	1
Deal Attitude										
Friendly	28947	.93	.255	0	1	7032	.757	.429	0	1
Neutral	28947	.023	.148	0	1	7032	.017	.128	0	1
Hostile	28947	.011	.106	0	1	7032	.087	.282	0	1
Other Attitude	28947	.036	.186	0	1	7032	.14	.347	0	1

Notes: We use the Thomson Reuters SDC Platinum database on M&A transactions to gather all reported M&A transactions between 1978 and 2020. Data are sourced through direct deal submissions from global banking and legal contributors coupled with extensive research performed by a global research team that collected data from regulatory filings, corporate statements, media, and pricing wires. According to Thomson Reuters, more than 2,500 control validations occur at the point of data entry. We use the CRSP database to model CARs. We estimate the model over a 255-day window ending 46 days prior to the announcement date, using the CRSP Value-Weighted Index as our market proxy. We report CAR over three-, five-, seven-, and nine-day windows. To account for outliers, we winsorize CAR (-1/+1, -2/+2, -3/+3, -4/+4). Further, we focus on transactions with a deal size above $0.5M and exclude transactions with a negative EBITDA Margin, but otherwise make use of the full data set. This table summarizes all completed and incompleted transactions.

Table 2. Summary Statistics: Key Variables by Advisor Engagement Constellation

	All	TA+ AA+	TA+ AA-	TA- AA+	TA- AA-
Transactions	35979	15923	6347	3835	9874
Share of transactions (relative)	1	0.44	0.18	0.11	0.27
Financials					
EBITDA Multiple	19.497	19.388	18.789	20.198	19.853
EBITDA Multiple (Log)	2.205	2.337	2.169	2.201	2.017
Sales Absolute ($M)	730.399	1114.38	597.437	462.954	297.518
Sales Absolute (Log)	4.788	5.55	4.66	4.483	3.752
EBITDA Absolute ($M)	105.607	166.754	82.848	63.281	37.038
EBITDA Absolute (Log)	2.691	3.563	2.543	2.354	1.491
EBITDA Margin	.182	.192	.176	.18	.17
Deal Size ($M)	718.978	1301.04	514.756	223.014	104.235
Deal Size (Log)	4.512	5.661	4.471	3.878	2.931
Target Advisor	.619	1	1	0	0
Acquirer Advisor	.549	1	0	1	0
CAR (-1/+1)	.001	-.001	.002	.004	.006
CAR (-2/+2)	.001	-.008	.006	.017	.02
CAR (-3/+3)	.001	-.009	.006	.016	.018
CAR (-4/+4)	.001	-.009	.005	.021	.017
Public Status of the Target					
Public	.731	.878	.666	.681	.554
Subsidiary	.107	.062	.17	.11	.138
Private	.158	.057	.159	.207	.299
Other Status	.002	.001	.003	.001	.003
Deal Attitude					
Friendly	.896	.912	.822	.93	.906
Neutral	.021	.017	.012	.034	.029
Hostile	.026	.041	.023	.011	.011
Other Attitude	.056	.03	.143	.025	.055

Notes: TA+ (and TA-) indicate the engagement (non-engagement) of a target advisor in the transaction. AA+ (AA-) indicates the engagement (non-engagement) of an acquirer advisor in the transaction. Based on this definition, the four advisor engagement constellations TA+AA+ (advisors on sell and buy sides), TA+AA- (advisor only on sell side), TA-AA+ (advisor only on buy side), and TA-AA- (no advisor engaged on either side) are defined.

Table 3. OLS Regressions: Advisor Engagement and Pricing, Bidder Returns in Completed Deals: 1978–2020

	(1) EBITDA Multiple (log)	(2) CAR -4/+4	(3) CAR -3/+3	(4) CAR -2/+2	(5) CAR -1/+1	(6) Completed
Acquirer Advisor	0.339***	-0.005*	-0.007***	-0.007***	-0.002**	0.499***
	(0.016)	(0.003)	(0.003)	(0.002)	(0.001)	(0.022)
Target Advisor	0.297***	-0.005	-0.004	-0.005*	-0.001	0.522***
	(0.018)	(0.004)	(0.003)	(0.003)	(0.002)	(0.023)
Sales Absolute (Log)	-0.177***	-0.001	-0.001	-0.001	0.001	-0.040***
	(0.006)	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
EBITDA Margin	-2.137***	-0.012	-0.013	-0.017**	0.001	0.072
	(0.060)	(0.009)	(0.009)	(0.008)	(0.004)	(0.064)
Deal Level Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year, Industry and Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.075***	0.013***	0.014***	0.016***	0.003	-1.551
	(0.027)	(0.005)	(0.005)	(0.004)	(0.002)	(1.095)
Observations	28807	7274	7274	7274	7274	35746
R-squared	0.217	0.072	0.075	0.085	0.042	.z

Notes: Entries show coefficients of OLS regressions (Model 1 to 5) and probit regression (Model 6) . Standard errors are in parentheses. The dependent variables are *EBITDA Multiple (Log)*, *CARs (-1/+1*, *-2/+2*, *-3/+3*, *-4/+4), and Completed*, indicating the relative deal price of the transaction and CARs earned by the bidder in the various event windows, and completion of a deal. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and include the further deal-level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, other form). We use fixed effects variables for the period (year), the industry of the M&A target, and the country of the target's headquarters. We analyze the effect of buy- and sell-side advisor engagement on pricing (Model 1), CARs (Model 2 to 5) in the period from 1978 to 2020 in completed deals. Further, we analyze association of advisors on the buy-side and sell-side with deal completion (Model 6). ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Table 4. Propensity Score Matching: ATEs of Advisor Engagements on Relative Deal Pricing, Deal Completion, and Returns

	(1a) Acquirer Advisor	(1b) Acquirer Advisor (Target Advisor present)	(2a) Target Advisor	(2b) Target Advisor (Acquirer Advisor present)
	ATE	ATE	ATE	ATE
EBITDA Multiple (Log)	0.470***	0.368***	0.561***	0.611***
	(0.038)	(0.034)	(0.076)	(0.187)
Deal Completion	0.108***	0.111***	0.195***	0.148***
	(0.007)	(0.012)	(0.010)	(0.025)
CAR -1/+1	-0.005**	-0.005**	-0.004	-0.001
	(0.002)	(0.002)	(0.003)	(0.010)
CAR -2/+2	-0.010**	-0.017***	-0.008	0.001
	(0.004)	(0.007)	(0.005)	(0.014)
CAR -3/+3	-0.010**	-0.018**	-0.008	0.003
	(0.004)	(0.008)	(0.005)	(0.010)
CAR -4/+4	-0.010**	-0.014*	-0.011	-0.003
	(0.004)	(0.007)	(0.06)	(0.009)

Notes: The table shows propensity score matching models (nearest neighbor estimator with replacement) results. Models (1a) and (2a) include the full sample of transactions, while models (1b) and (2b) use samples restricted to transactions in which a target advisor and acquirer advisor, respectively, is present. ATE is defined as the average treatment effect of *EBITDA Multiple (Log)*, *Completed*, and *CAR (-1/+1*, *-2/+2*, *-3/+3*, *-4/+4)*, indicating the difference between outcomes of transactions with and without the presence of an advisor. Bootstrap standard errors are in parentheses. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and further include the deal-level controls *Deal Attitude* (friendly, neutral, hostile) and *Target Public Status* (public, private). We use fixed effects variables for the period (year), the industry of the M&A target, and the country of the target's headquarters. We analyze the causal effect of buy- and sell-side advisor engagement on relative deal pricing and deal completion likelihood. Further, we analyze the advisor engagement effect on CARs. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Table 5. Fixed Effects Model—Behavioral Change among Former Lehman Clients (Before and After the Lehman Crisis, September 15, 2008)

	Acquirer Advisor
Former Lehman Clients Post Crisis	-0.115***
	(0.035)
Sales Absolute (Log)	0.097***
	(0.003)
EBITDA Margin	0.216***
	(0.035)
Constant	0.148
	(0.146)
Further Deal Level Controls	Yes
Time, Industry, and Country Fixed Effects	Yes
Observations	5,403
R-squared	0.1645

Notes: The entries show coefficients of OLS regression; standard errors are in parentheses. The dependent variable is *Acquirer Advisor* and indicates the engagement of a buy-side advisor for a transaction. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and include further deal-level controls such *as Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, or other form). We use fixed effects variables for the acquirer, period (month), industry of the M&A target, and the country of the target's headquarters. We analyze behavioral changes among former Lehman clients after the crisis, which is dated September 15, 2008 two years prior and two years after the event. The *Former Lehman Clients Post Crisis* variable is our IV in the subsequent IV analyses. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Table 6. IVs 2SLS Model: Acquirer Advisor Effect on Deal Completion

	(1) Completed OLS	First Stage	(2) Completed 2SLS
Acquirer Advisor	0.041***		0.527**
	(0.012)		(0.273)
Sales Absolute (Log)	-0.013***	0.093***	-0.044*
	(0.003)	(0.003)	(0.026)
EBITDA Margin	0.005	0.206***	-0.075
	(0.029)	(0.034)	(0.064)
Former Lehman Clients Post Crisis		-0.113***	
		(0.034)	
Constant	1.101***		
	(0.116)		
Deal Level Controls	Yes	Yes	Yes
Year, Industry, Acquirer, and Country Fixed Effects	Yes	Yes	Yes
Observations	5,403	5,403	5,403

Notes: Column (1) shows coefficients of probit regression, and column (2) shows the coefficients of 2SLS regression; standard errors are in parentheses. The dependent variable is *Completed*, indicating the status of the transaction. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and include the further deal-level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, or other form). We use fixed effects variables for the acquirer, period (month), industry of the M&A target, and the country of the target's headquarters. We instrument the presence of the acquirer advisor with the instrument *Former Lehman Clients Post Crisis* as described in Table 5. In order to test whether the equation is identified thus that the excluded instruments are relevant, meaning correlated with the endogenous regressors, we implement the underidentification test (Anderson canon. corr. N*CCEV LM statistic Chi-sq(1)=11.19 P-val=0.0008). Further, we tested the model for weak identification thus whether the excluded instruments are correlated with the endogenous regressors (Cragg-Donald F statistic: 11.197; Chi-sq(1) P-val=0.0008). The test results reject the null hypothesis that our model is underidentified or weakly identified. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Table 7. IVs 2SLS: Acquirer Advisor Engagement Effect on Relative Deal Pricing

	(1) EBITDA Multiple (Log) OLS	 First Stage	(2) EBITDA Multiple (Log) 2SLS
Acquirer Advisor	0.525*** (0.034)		1.723** (0.848)
Sales Absolute (Log)	-0.175*** (0.009)	0.093*** (0.003)	-0.293*** (0.08)
EBITDA Margin	-1.649*** (0.088)	0.206*** (0.034)	-1.921*** (0.198)
Former Lehman Clients Post Crisis		-0.113*** (0.034)	
Constant	5.781*** (0.359)		5.374*** (0.504)
Further Deal Level Controls	Yes	Yes	Yes
Time, Industry, Acquirer, and Country Fixed Effects	Yes	Yes	Yes
Observations	5,403	5,403	5,403

Notes: Column (1) shows the coefficient of OLS regressions, while column (2) shows the coefficient of 2SLS regression; standard errors are in parentheses. The dependent variable is the *EBITDA Multiple (Log)* of the transaction of the acquisition. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and include the further deal-level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, or other form). We use fixed effects variables for the acquirer, period (month), industry of the M&A target, and the country of the target's headquarters. We instrument the presence of the acquirer advisor with the instrument *Former Lehman Clients Post Crisis*, as described in table 5. In order to test whether the equation is identified thus that the excluded instruments are relevant, meaning correlated with the endogenous regressors, we implement the underidentification test (Anderson canon. corr. N*CCEV LM statistic Chi-sq(1)=11.19 P-val=0.0008). Further, we tested the model for weak identification thus whether the excluded instruments are correlated with the endogenous regressors (Cragg-Donald F statistic: 11.197; Chi-sq(1) P-val=0.0008). The test results reject the null hypothesis that our model is underidentified or weakly identified. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Table 8. ***Deal Pricing: Differences in the degree of information asymmetries: listed vs. non-listed targets; TA present***

	(1) EBITDA Multiple (log)	(2) CAR -4/+4	(3) CAR -3/+3	(4) CAR -2/+2	(5) CAR -1/+1
Acquirer Advisor	0.382***	0.009	0.007	0.007	-0.001
	(0.036)	(0.006)	(0.006)	(0.005)	(0.003)
Public	0.035	-0.012**	-0.009*	-0.009**	-0.005**
	(0.035)	(0.006)	(0.005)	(0.005)	(0.002)
Acquirer Advisor x Public Target	-0.083**	-0.024***	-0.024***	-0.022***	-0.002
	(0.041)	(0.007)	(0.006)	(0.006)	(0.003)
Sales Absolute (Log)	-0.145***	-0.001	-0.001	-0.001	0.000
	(0.006)	(0.001)	(0.001)	(0.001)	(0.000)
EBITDA Margin	-1.943***	-0.013	-0.011	-0.018**	0.001
	(0.067)	(0.010)	(0.010)	(0.008)	(0.004)
Deal Level Controls	Yes	Yes	Yes	Yes	Yes
Time, Industry, Acquirer, and Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	3.187***	0.023***	0.020***	0.022***	0.005**
	(0.041)	(0.006)	(0.006)	(0.005)	(0.003)
Observations	18701	5506	5506	5506	5506
R-squared	0.238	0.080	0.081	0.093	0.047

Notes: Columns (1) and (2) show the coefficients of OLS regressions. The dependent variables are *EBITDA Multiple(log) and Cumulative Abnormal Returns (-1/+1, -2/+2, -3/+3, -4/+4),* indicating the relative deal price of the transaction and cumulative abnormal returns earned by the bidder in the respective event window. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin* and include the further deal-level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, or other form). We use fixed effects variables for the acquirer, period (month), industry of the M&A target, and the country of the target's headquarters. We estimate the interaction effect of the target's public status on relative deal pricing and returns in transactions with an acquirer advisor present. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.

Appendix A: Definition of Terms

Table A1. *Key Terms and Definitions*

Term	Definition
Target Advisor	Financial advisor(s) to the target company, its management, or board of directors on a transaction.
Acquirer Advisor	Financial advisor(s) to the acquirer company, its management, or board of directors on a transaction.
Deal Size	Value of Transaction (US$M): Total value of the consideration paid by the acquirer, excluding fees and expenses. The dollar value includes the amount paid for all common stock, common stock equivalents, preferred stock, debt, options, assets, warrants, and stake purchases made within six months of the announcement date of the transaction. Liabilities assumed are included in the value if they are publicly disclosed. Preferred stock is included only if it is being acquired as part of a 100% acquisition. If a portion of the consideration paid by the acquirer is common stock, the stock is valued using the closing price on the last full trading day prior to the announcement of the terms of the stock swap. If the exchange ratio of shares offered changes, the stock is valued based on its closing price on the last full trading date prior to the date of the exchange ratio change. For publicly listed targets in 100% acquisitions, the number of shares at the date of announcement is used.
EBITDA Multiple	The EBITDA Multiple is a financial ratio that compares the deal size to the company's (target) annual EBITDA; it is used to determine the value of a company and compare it to the value of similar businesses. A company's EBITDA Multiple provides a normalized ratio for differences in capital structure, taxation, and fixed assets and enables comparing disparate operations in different companies. The ratio takes a company's enterprise value (which represents market capitalization plus net debt) and compares it to the EBITDA for a given period.
Cumulative Abnormal Return (-1/+1)	Cumulative Abnormal Returns -1/+1 indicates the sum of the differences between the expected return (S&P 500 Index) on the acquirer's stock (for U.S. publicly listed firms) and the actual return during the event windows of one day prior and one day after the announcement of the acquisition.
Cumulative Abnormal Return (-2/+2)	Cumulative Abnormal Returns -2/+2 indicates the sum of the differences between the expected return (S&P 500 Index) on the acquirer's stock (for U.S. publicly listed firms) and the actual return during the event windows of two days prior and two days after the announcement of the acquisition.
Cumulative Abnormal Return (-3/+3)	Cumulative Abnormal Returns -3/+3 indicates the sum of the differences between the expected return (S&P 500 Index) on the acquirer's stock (for U.S. publicly listed firms) and the actual return during the event windows of three days prior and three days after the announcement of the acquisition.
Cumulative Abnormal Return (-4/+4)	Cumulative Abnormal Returns -4/+4 indicates the sum of the differences between the expected return (S&P 500 Index) on the acquirer's stock (for U.S. publicly listed firms) and the actual return during the event windows of four days prior and four days after the announcement of the acquisition.
Sales Absolute	Net sales represents sales receipts for products and services, net cash discounts, trade discounts, excise tax, and sales returns and allowances. Revenues are recognized according to applicable accounting principles.
EBITDA Absolute	Earnings before the deduction of interest, taxes, depreciation, and amortization; this is a non-GAAP calculation based on data from a company's income statement used to measure a company's operating profitability. Because EBITDA adds back to net income the non-cash accounting charges of depreciation and amortization and disregards interest paid on debt financing and income taxes on earnings, it is useful for measuring a company's operating cash flow and for comparing the profitability

	of companies with different capital structures and in different tax brackets. However, EBITDA does not measure and should not be confused with the actual cash flow of a company, which does account for interest paid on debt financing, income taxes, and other cash charges.
EBITDA Margin	EBITDA Absolute as a percentage of Sales Absolute.
Target Industry	Industry in which the M&A target operates.
Target Country	Country where the selling company has its headquarters.
Acquirer Industry	Industry in which the buying company operates.
Acquirer Country	Country where the buying company has its headquarters.

Online Appendix A. Figures - Propensity Score Matching Balance

Figure 1. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on EBITDA Multiple (Full vs. Restricted Sample)*

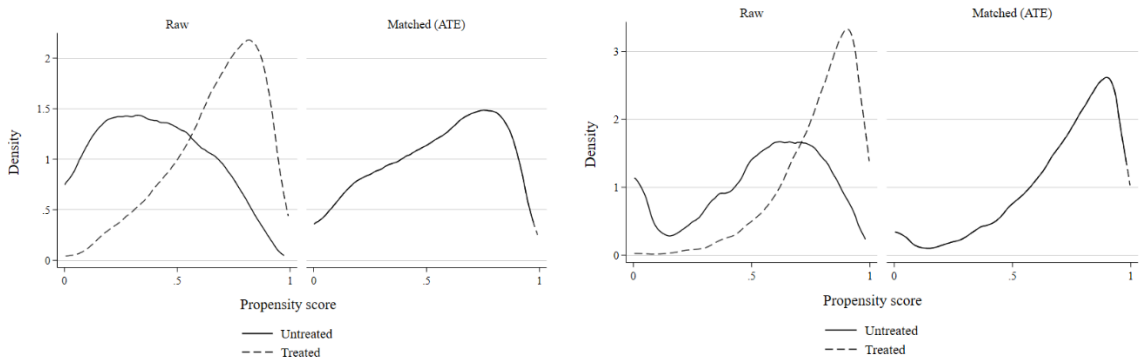


Figure 2. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on Deal Completion (Full vs. Restricted Sample)*

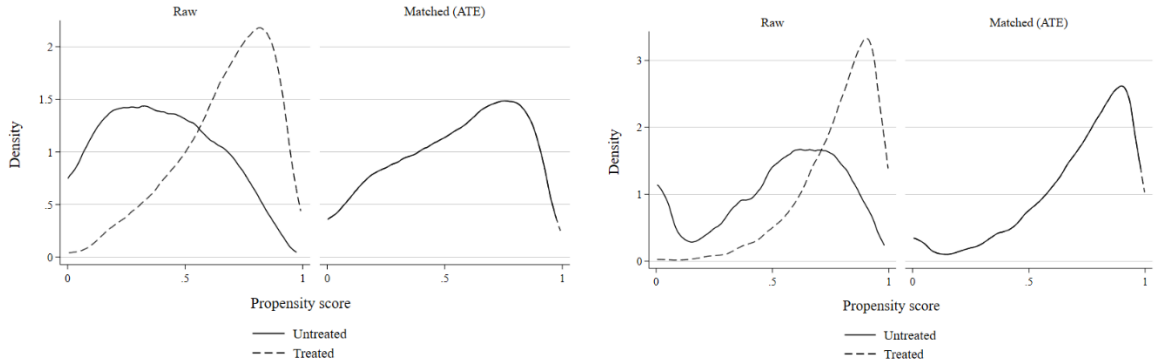


Figure 3. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on CAR1 (Full vs. Restricted Sample)*

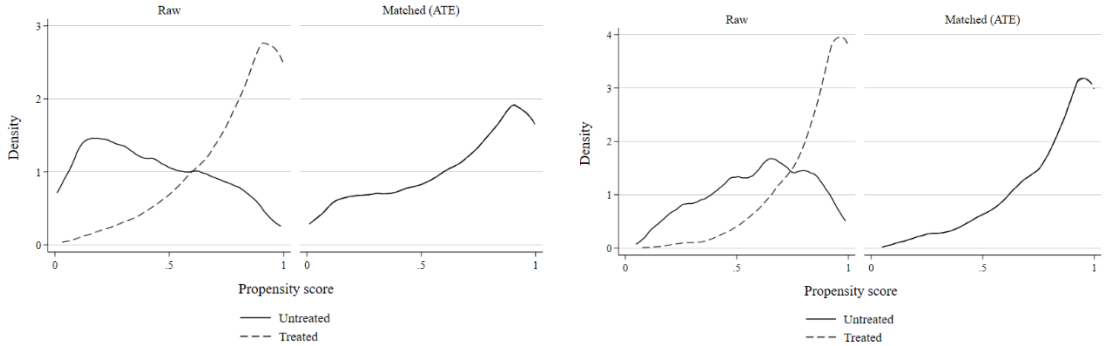


Figure 4. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on CAR2 (Full vs. Restricted Sample)*

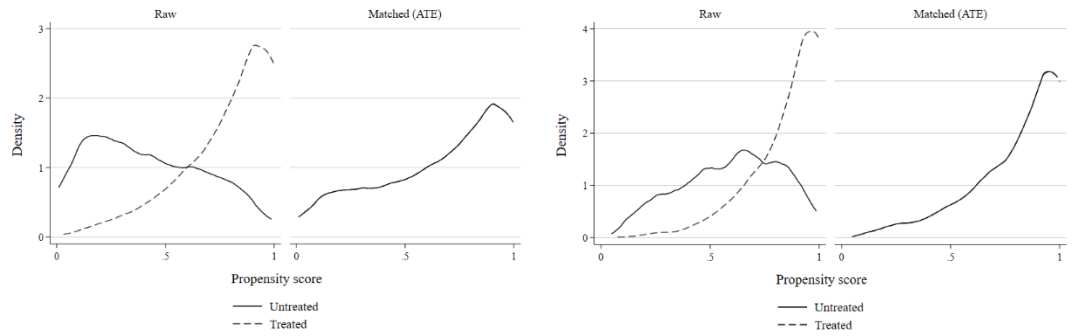


Figure 5. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on CAR3 (Full vs. Restricted Sample)*

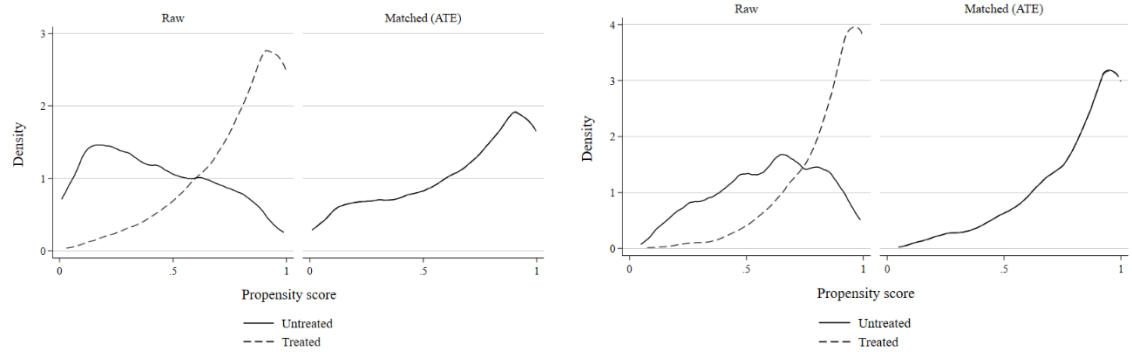


Figure 6. *Propensity Score Matching*: *Acquirer Advisor Engagement Common Support Assessment on CAR4 (Full vs. Restricted Sample)*

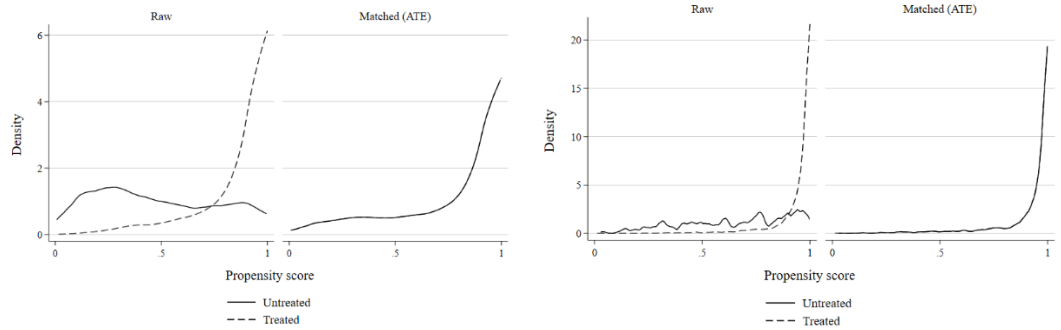


Figure 7. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on EBITDA Multiple (Full vs. Restricted Sample)*

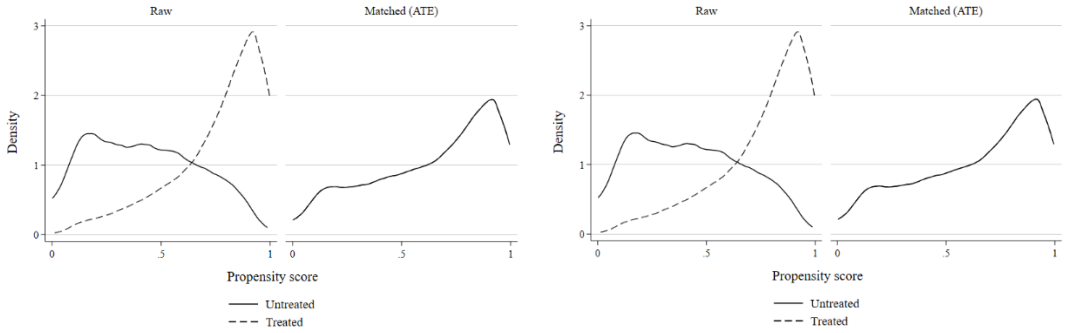


Figure 8. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on Deal Completion (Full vs. Restricted Sample)*

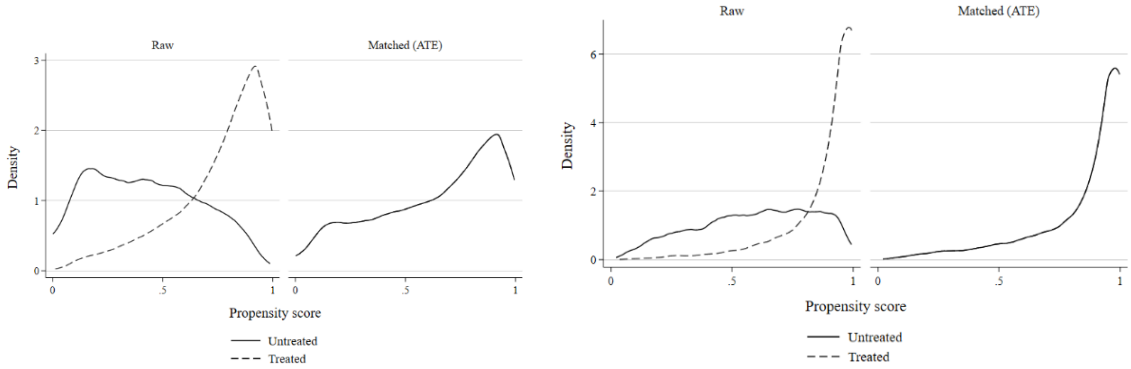


Figure 9. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on CAR1 (Full vs. Restricted Sample)*

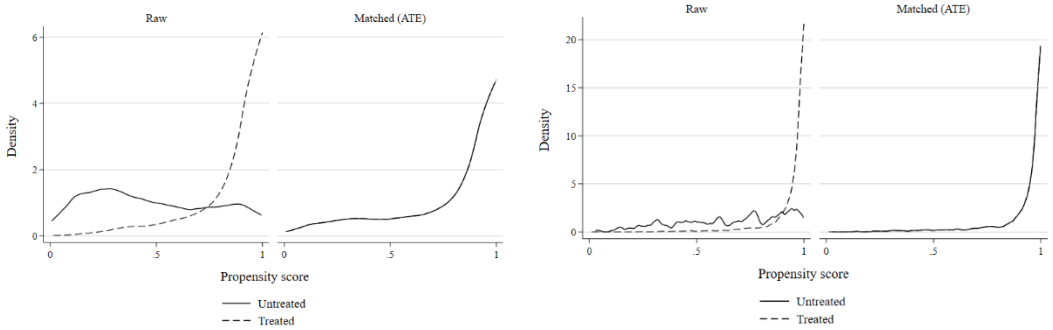


Figure 10. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on CAR2 (Full vs. Restricted Sample)*

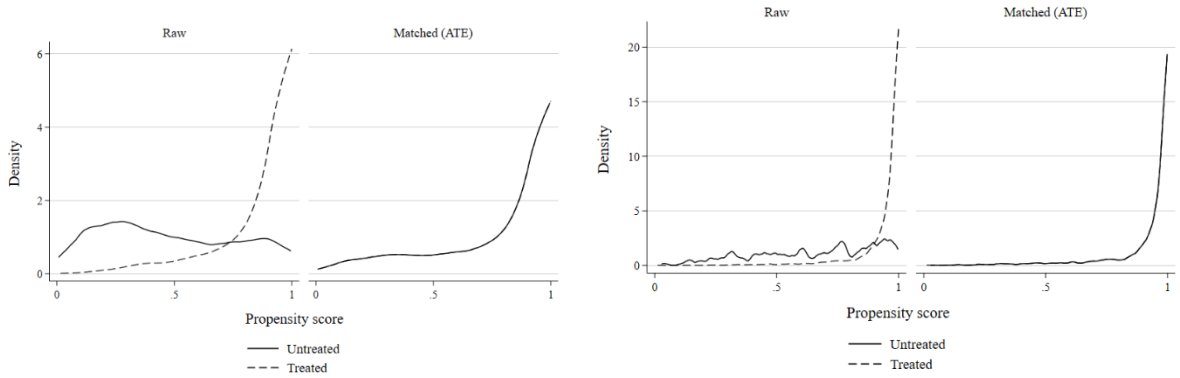


Figure 11. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on CAR3 (Full vs. Restricted Sample)*

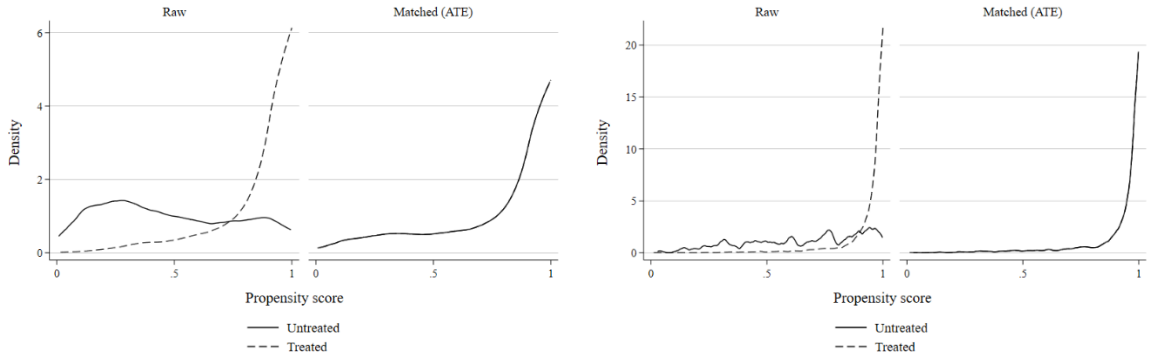
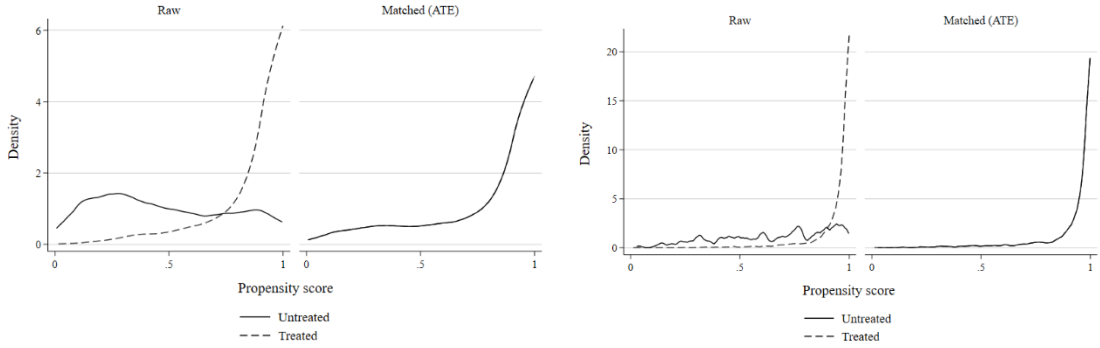


Figure 12. *Propensity Score Matching*: *Target Advisor Engagement Common Support Assessment on CAR4 (Full vs. Restricted Sample)*



Online Appendix B. Heckman Sample Selection Model

Table 1. *Heckman Sample Selection Model: Advisor Engagement on Relative Deal Pricing – 1978-2020*

	EBITDA Multiple (Log)
Acquirer Advisor	0.353***
	(0.023)
Target Advisor	0.341***
	(0.026)
Sales Absolute (Log)	-0.170***
	(0.004)
EBITDA Margin	-2.101***
	(0.041)
Deal Level Controls	Yes
Year, Industry and Country Fixed Effects	Yes
Constant	1.661
	(1.080)
Selection Model	
Acquirer Advisor	0.451***
	(0.020)
Target Advisor	0.571***
	(0.021)
Sales Absolute (Log)	-0.025***
	(0.005)
EBITDA Margin	0.071
	(0.059)
Deal Level Controls	Yes
Year, Industry and Country Fixed Effects	Yes
Constant	-0.401
	(1.062)
/mills:lambda	0.274**
	(0.113)
Observations	35815

Notes: Entries report results from Heckman treatment-effect model – time period 1978-2020 (all deals, different than in Table 3, we included here all transactions to be able to implement the Heckman model). The dependent variable is the *Ebitda Multiple(log)* of the transaction of the acquisition. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin;* also including further deal level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private) as well as *Form of the Transaction* (acquisition, merger, or other form of transaction). We use fixed effects variables for acquirer, time period (year), industry of the M&A target and country (headquarters) of the target. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level.

Online Appendix C. Properties of Lehman Clients vs. Non-Clients

Table 2. Difference between Groups – Group "Former Lehman Clients" versus Group "All Other Acquirers"

	Advisor Engagement	EBITDA Multiple (Log)	CAR -4/+4	CAR -3/+3	CAR -2/+2	CAR -1/+1	Deal Completed
Former Lehman Client	0.031	3.239	0.055	0.053	0.045	0.012	0.809
All other Acquirers	0.038	3.164	0.037	0.039	0.036	0.011	0.867
Difference between Groups	-0.008	0.075	0.018	0.013	0.009	0.001	-0.058***
	(0.023)	(0.059)	(0.014)	(0.013)	(0.012)	(0.006)	(0.020)

Notes: Entries show the difference between two groups *Former Lehman Clients* and the control group *All other Acquirers* in the period two years prior to the event until the collapse; standard errors are in parentheses. The dependent variables Advisor Engagement, EBITDA Multiple (Log) and CARs (1/+1, 2/+2, 3/+3, 4/+4). We define the time period two years prior and two years after the event. We use the covariates *Sales Absolute (Log)* and *EBITDA Margin, and Target Financial Advisor* and include the further deal-level controls *Deal Attitude* (friendly, neutral, hostile), *Target Public Status* (public, private), and *Form of the Transaction* (acquisition, merger, or other form). We analyze if there is a significant difference of treatment and control group before the event. ***, **, and * denote significance at the 0.01, 0.05, and 0.1 levels, respectively.