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Once Bitten, Twice Shy: Failed Deals and Subsequent M&A Cautiousness

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ABSTRACT

Companies occasionally are unable to finalize publicly announced M&A bids—a phenomenon we refer to as failed deals. Despite their commonality, the implications of failed deals for bidding firms are not well understood. We thus theorize about and empirically investigate the relationship between failed deals and subsequent M&A behavior. In doing so, we present multiple reasons for what we term "the once bitten, twice shy effect," whereby firms act more cautiously in the M&A context following failed deals. In a sample of M&As across North American and European firms, we find empirical support consistent with our theorizing suggesting the cautiousness following failed deals results in a longer time-period between M&A bids, smaller target firm size, and a greater likelihood of advisor usage.

Keywords: mergers and acquisitions, corporate strategy, failed deals, risk and decision making, M&A activity

Once Bitten, Twice Shy: Failed Deals and Subsequent M&A Cautiousness

Companies occasionally are unable to finalize publicly announced merger and acquisition (M&A) bids—a phenomenon we refer to as failed deals. In fact, a 2019 McKinsey report suggests that "about 10 percent of all large mergers and acquisitions are canceled—a significant number when you consider that about 450 such deals are announced each year" (Bahreini et al., 2019: 1). As examples, Microsoft was not able to close a deal to acquire Yahoo in 2008 (Merced, 2013), and Community Health was unable to finalize an acquisition of Tenet Healthcare in 2011 (Dealbook, 2011). Similarly, in 2014, Pfizer was unable to settle its acquisition of AstraZeneca nor was Publicis able to wrap up the purchase of Omnicon (Economist, 2014). Failed deals are therefore a crucial part of the M&A landscape.

Despite their commonality, the implications of failed deals are not well understood, especially in terms of a potential relationship with future M&As. Instead, the overwhelming focus of scholars and practitioners alike is completed M&As (e.g., Chen, 2020; Devers et al., 2020). When creating acquisition samples, for instance, scholars commonly focus on "completed acquisitions whereby the acquirer assumed 100% of the target's equity" (Busenbark et al., 2017: 2493), thereby excluding failed deals entirely. However, given that a large share of firms act repeatedly in the M&A market (e.g., Ahern, 2008; Aktas et al., 2013; Billett & Qian, 2008; Haleblian & Finkelstein, 1999), and therefore, may eventually experience failed deals, it is important to understand how deal failure experience relates to the way firms approach future M&As.[1] In fact, firms (and their managers) tend to "learn more from their failures than their successes" (Shepherd et al., 2011, p. 1230), making it imperative to study corporate failure experiences. In this regard, failed M&As constitute significant failure experiences given that

[1] The majority of M&As are conducted by firms with acquisition experience. For example, studying almost 13,000 M&As between 1980 and 2004, Ahern (2008) finds that only 38% of all deals are made by first-time acquirers.

preparing an M&A bid is a lengthy process that consumes many resources (Flanagan et al., 1998). Further, M&As typically constitute the largest investments firms make (Custódio & Metzger, 2013; Haleblian et al., 2009). Hence, understanding how failed deals relate to subsequent M&As is crucial as the failure to complete a deal might shed light on critical, yet unexplained, variance in M&A behavior.

With this in mind, we theorize about and empirically investigate the relationship between failed deals and subsequent M&A behavior. In doing so, we present multiple potential reasons for what we term "*the once bitten, twice shy effect,*" whereby firms act more cautiously in the M&A context following failed deals. Our theorizing for this cautiousness builds on research related to corporate failure experiences (e.g., Amore et al., 2021; Baum et al., 2000) and acquisition-specific confidence (e.g., Devers et al., 2013; Gamache et al., 2019), as well as work on reputations for being able to create value through planning and managing large investments (e.g., Birkinshaw et al., 2000; Devers et al., 2013) and fears about being acquired (Gorton et al., 2009). Ultimately, we argue that the cautiousness following failed deals is associated with a longer time-period between acquisition bids (i.e., learning and more meticulous deal preparation), smaller target firm size (i.e., less risk of not consuming the deal), and a greater likelihood of advisor usage (i.e., hiring expert experience or a scapegoat).

In a sample of approximately 14,000 M&As across North American and European firms, we find empirical support largely in accordance with our theorizing. These results are economically meaningful: firms that failed their last deal are associated with a 13% longer time period until they announce their next deal, are 19% (12%) more likely to bid for a target firm that is smaller than the target they failed to acquire (than the average size of the targets they bid for over the past five years), and are 4% more likely to hire at least one financial advisor. Also,

conditional upon hiring a financial advisor, firms with failed deals hire more advisors. The results withstand numerous robustness tests, such as tests of alternative measures of our dependent variables and alternative estimation methods, as well as several endogeneity tests.

Our study makes several contributions. First, we contribute to the M&A literature by helping shift scholarly conversation from completed deals to failed deals (similar to Fabozzi et al., 1988; Malmendier et al., 2016 among others). Indeed, our research implies that M&A work should include—not exclude—failed deals when studying various acquisition topics. Second, we add to the limited literature on the implications of failed deals. In particular, while this small research stream has highlighted some strategic implications of failed deals for target firms (e.g., Chatterjee et al., 2003; Safieddine & Titman, 1999), our study is the first, to our knowledge, to illustrate the relationship between failed deals and bidding firm strategy—specifically future M&A strategy. Third, we add to research on corporate learning experiences, by providing new evidence in support of the logic that firms will act cautiously following corporate failures (Friesen et al., 2021; Madsen & Desai, 2010). Finally, we contribute to the literature on the determinants of M&A strategy (e.g., Faccio & Masulis, 2005; Servaes & Zenner, 1996), in terms of deal structure and timing, by highlighting that prior deal failure is a significant predictor of time between deals, target size, and advisor usage.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Failed deals

In contrast to the prevalence of research on completed M&As, there is still only a small literature on the implications of failed deals, even though such deals are common. This literature primarily focuses on two aspects. First, scholars examine the financial implications of failed deals for target and bidding firms. Studying at a sample of target firms that did not receive another offer

following a failed deal, Fabozzi et al. (1988) find that any stock price premium that might have accumulated to the target firm following an initial offer disappears in the year post failure. In contrast, Malmendier et al. (2016) find that the impact of failed deals on target firms' stock prices depends on the type of bid, whereby "targets of cash offers are revalued on average by +15% after deal failure" whereas "stock targets return to their pre-announcement levels" (Malmendier et al., 2016: 92). This finding is consistent with cash bids implying the target firm was previously undervalued.

Regarding the financial performance implications of failed deals for bidding firms, researchers find that failed deals are associated with considerable costs. These costs include the time spent identifying targets as well as negotiating, planning, structuring and executing acquisitions (Flanagan et al., 1998). In this regard, Savor and Lu (2009) discover that failure to complete a deal is especially costly for overvalued firms trying to use their equity as currency to create shareholder value. They show that, in terms of buy-and-hold returns, overvalued firms that fail to close a deal underperform overvalued firms that do finalize their deal in the years following the bid announcements.

Second, research examines the implications of failed deals for the future strategy of the target firm. Safieddine and Titman (1999) find that target firms that terminate takeover offers increase their leverage ratios and their focus, while they decrease their capital expenditures and employment. Similarly, Liu (2016) finds that failed deals are associated with more restructuring for target firms. Chatterjee et al. (2003) look at a sample of firms that were targets of failed hostile takeover attempts—a subset of failed deals. They find that board characteristics predict changes in strategy following the failed hostile takeover, such that firms with independent boards are more likely to refocus the firm's strategy as opposed to firms with non-independent boards.

Overall, while research has resulted in initial advances in our understanding of failed deals, especially for target firms, much more is to be understood. In particular, virtually nothing is known about the potential implications of failed deals for the future M&A strategy of the bidding firms. In what follows, we thus develop theory along these lines.

Failed Deals and M&A Cautiousness

Following a failed deal, we expect bidding firms to act more cautiously in the M&A context moving forward. We argue that there are several potential reasons for why bidding firms that experience a failed deal will proceed cautiously in subsequent M&A activity—what we again term the "*once bitten, twice shy effect."* First, we theorize that bidding firms will act cautiously following failed deals as a result of learning from this failure experience. The literature on corporate failure experiences indicates that firms adapt to accumulated experiences (e.g., Amore et al., 2021; Baum et al., 2000; Cyert & March, 1963), especially negative or failure experiences (e.g., Madsen & Desai, 2010; Shepherd et al., 2011). Indeed, Sitkin (1992) argues that learning from prior failures leads to recognition of risk and motivates changes in future activities that would otherwise not have manifested. Along these lines, and specific to learning from failed acquisitions, A.G. Lafley, former Chairman and CEO of Procter & Gamble was quoted in an interview saying: "My experience is that we learn much more from failure than we do from success…acquisitions are risky and have high failure rates…We studied the failures in detail. We pinpointed the problems and discovered the patterns in our mistakes" (Dillon, 2011: 3-4).

Specifically, this line of work on learning from corporate failure experience appears to indicate—although not yet definitively—that firms act more cautiously following failure experiences to reduce the likelihood of repeat failure. For instance, Friesen et al. (2021: 1) find that managers "are less likely to repurchase stocks when they lose money on past stock

repurchases." Thus, in the context of stock repurchases (i.e., another major corporate capital allocation decision), managers are cautious in their subsequent behaviors. Similarly, and more directly related to the reduction of repeat failure, Madsen and Desai (2010) find that organizational failure experience reduces the likelihood of future organizational failure (even more so than prior success). Thus, the literature on corporate failure experiences seems to imply that bidding firms will proceed cautiously following failed deals.

A related reason why firms will act more cautiously after deal failure builds on the theoretical "eat or be eaten" model by Gorton et al. (2009). Specifically, firms and their managers are aware that if they are not successful in growing the company, they themselves may become the targets of M&A bids. As a result, failing to acquire may lead to more cautious subsequent deals because failure to grow may increase the risk of being taken over. We provide empirical evidence in support of this reasoning in a supplemental analysis.

A third reason why bidding firms may act cautiously following failed deals is reduced acquisition-specific confidence. Scholars have identified that a central aspect of the acquisition process is acquisition-specific confidence (Devers et al., 2013; Gamache et al., 2019). In fact, when announcing acquisitions, acquiring firms tend to publicly declare their confidence in the potential of the deals (Devers et al., 2013: 1679). Extending this notion of acquisition-specific confidence, we expect that a failed deal will reduce acquisition-specific confidence in terms of making acquisitions, resulting in more cautious behavior following failed deals. That is, while scholars traditionally focused on acquisition-specific confidence related to the performance potential of finalized deals (Devers et al., 2013; Gamache et al., 2019), we suggest that acquisition-specific confidence is also relevant as it relates to planning and finalizing deals, and specifically will be reduced following failed deals. This reasoning is consistent with extant

evidence that confidence plays an important role in acquisition decisions and performance (Malmendier & Tate, 2008) and that confidence increases with successful deals (Billett & Qian, 2008).

A fourth reason we argue that bidding firms will act cautiously following failed deals is concerns about damaging their reputations for being able to create value through planning and managing large investments. Through observing firms' public investment activities, stakeholders (particularly investors) draw inferences about firms' abilities to consummate large investment opportunities and create value, including through acquisitions (Birkinshaw et al., 2000; Devers et al., 2013; Seth, 1990). Indeed, M&As are typically the largest investments firms make (Custódio & Metzger, 2013; Haleblian et al., 2009), and while they are notorious for sometimes—but not always—diminishing firm value (Alexandridis et al., 2017; Haleblian et al., 2009; King et al., 2004), M&As can contribute to revenue and growth—and thus value creation—more quickly than organic expansion (Nolop, 2007).

While scholarship has not specifically focused, to our knowledge, on the relationship between failed deals and perceptions of firms' abilities to create value, we argue that following failed deals, firms will be concerned about the potential negative repercussions should they incur repeat deal failure. That said, while failing once may be more easily attributed to factors beyond the firm's control, such as unforeseeable changes in market conditions, or may even be interpreted as a signal of strict target selection, failing repeatedly is arguably a signal of a lack of ability to consume large investment opportunities and create value. In fact, repeat deal failure may indicate insufficient selection and screening criteria or lacking capabilities in timing, funding, or negotiating takeover offers, which would impair the firms' reputation (Muehlfeld et al., 2012). Therefore, concerns about damaging reputations also imply cautiousness following failed deals.

Ultimately, we theorize that this cautiousness will be demonstrated through multiple M&A aspects. First, we argue cautiousness will be reflected through the time between deals. Specifically, we expect that the time between acquisition bids will be longer for firms that experience failed deals prior to the focal deal. We argue this will be the case because firms may plan and approach their future acquisition attempts more meticulously (trying to avoid mistakes) and because firms may need sufficient time to learn from prior deals. Indeed, while scholars have suggested this idea as it relates to completed deals (Hayward, 2002; Shi et al., 2012), we theorize this notion especially extends to failed deals. Firms will want to ensure that their screening and selection criteria are refined to ensure that repeat deal failure does not happen again and that they do not waste firm resources on planning a takeover that does not come to fruition. We therefore posit hypothesis 1 (H1):

> ***H1:*** *The time between acquisition bids is longer if the acquirer experienced a failed deal prior to the focal deal.*

Second, we posit that this cautiousness will be illustrated through the size of subsequent deals. We expect acquirers with failure experience to reduce the size of their next acquisitions and, hence, the risk of problems of assessing, planning, financing, and implementing deals as well as the risk of repeating deal failure. This expectation is consistent with studies suggesting that larger deals are more complex and more likely to face antitrust challenges (Krishnan & Masulis, 2013; Servaes & Zenner, 1996). This conjecture is also in line with research noting that "managers and shareholders of" larger "firms are more concerned about losing ownership and control, which would make deals more likely to fail" (Attah-Boakye et al., 2021: 4737; Bajo et al., 2013). Further, this argument is in accordance with existing studies documenting a negative relation between deal consummation probability and deal size (Attah-Boakye et al., 2021; Bao & Edmans, 2011; Malmendier et al., 2016), as well as with anecdotal evidence. As an example,

Merced (2013) in discussing Microsoft's 2008 failed bid for Yahoo states: "The shadow of that failed bid lingered for years, and Microsoft never again tried a conquest of that magnitude." Thus, we state our second hypothesis (H2):

> ***H2:*** *The size of the focal deal is smaller (in comparison to prior firm deals) if the acquirer experienced a failed deal prior to the focal deal.*

Third, we argue that the employment of M&A financial advisors will reflect acquirers' cautiousness following failed deals. One reason for this suggestion is that firms, after exhibiting deal failure, may generally attempt to hire more expertise to shift assessments of their M&A deals as well as decision-making and negotiation competence to external advisors who tend to find it easier to assess deal risks given their deal advisory experience. In this regard, the M&A literature provides evidence that hiring advisors is associated with fewer withdrawn M&A offers and higher synergies (e.g., Golubov et al., 2012; Krishnan & Masulis, 2013). Yet, another reason for our argument is that firms may be more likely to employ advisors to share the blame in case problems in the M&A process reoccur or deals fail again. This latter reasoning may also imply that firms with failure experience hire more M&A advisors. The strategy of hiring many advisors is not uncommon in M&A practice, particularly in transactions for which target resistance is more likely (e.g., large or hostile deals). Bidding firms frequently hire many advisors at once to avoid facing them on the target's side.[2] Consequently, we present our third hypothesis (H3):

> ***H3:*** *The likelihood of employing a financial advisor in the focal deal is higher if the acquirer experienced a failed deal prior to the focal deal.*

METHODS

Sample

[2] See "Continental on advisor hiring spree to ward off bid" regarding the bid for German Continental AG by private company Schaeffler in *The Wall Street Journal (*08/08/2008). It states:*"German tire maker Continental AG is employing a novel defense to ward off a hostile bid [...] - it's hiring as many advisers as possible."*

To examine how failed deals relate to future M&As, we inherently need a sample of firms that act repeatedly in the M&A market (i.e., have at least two announced M&A bids). Therefore, we follow research on repeat acquirers to construct our sample (e.g., Bao & Edmans, 2011; Billett & Qian, 2008). Specifically, we use Standard & Poor's Capital IQ (CIQ) as our primary source of M&A data to construct our dataset of (ex post) completed and failed M&A deals (e.g., Hawn, 2021). We check and complement our sample using data on M&A deals available in Bloomberg. To be included in the initial sample, all announced transactions must satisfy the following criteria:

1. The announcement date of the M&A deal is between 01/01/1991 and 12/31/2011;
2. The deal status is either completed/successful or terminated/unsuccessful/withdrawn (i.e., failed);
3. The bidder is a publicly listed North American or European[3] non-financial firm (i.e., SIC codes 6,000 to 6,999 are excluded from the sample) for which stock price data is available
4. The target firm is a public, private, or subsidiary firm;
5. Total transaction value (i.e., the total consideration bid/paid by the acquirer) is at least 5 million U.S. dollars;
6. The bid is for a majority stake (i.e., at least 50%) of the target firm.

We then use our initial sample to construct a sample of repeat acquirers that includes each acquirer's M&A deal history. For this purpose, we define a firm's M&A deal history as the five-year period prior to each focal deal and define repeat acquirers as firms announcing at least two deals within five years, consistent with the literature (e.g., Bao & Edmans, 2011; Billett & Qian, 2008). In particular, the term "focal deal" denotes all deals we examine in our analyses (i.e., the deals in our final sample). Using each deal's announcement date, we determine each acquiring firm's M&A deal history as the five-year backward-looking, rolling window which

[3] We retrieve data on the bidding firm's headquarter country from Capital IQ. The European countries are Austria, Belgium, Channel Islands, Cyprus, Denmark, Finland, France, Germany, Gibraltar, Greece, Iceland, Ireland, Isle of Man, Italy, Liechtenstein, Luxembourg, Monaco, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, the Netherlands, and the United Kingdom.

starts with the announcement date of the focal deal. Instead of using an approach based on fiscal years, we define the deal history as the five-year window calculated as the focal deal's announcement date minus exactly five years (or five times 365 days). Using the aforementioned approach, we apply the exact same period of deal history for each acquirer and deal in our sample and are able to identify repeat acquirers with and without deal failure experience over their five-year deal history.

In a final step, we impose the following additional restrictions on the M&A transactions remaining after the data screens described above:

1. For the focal deals, we use the sample period 1996-2011 (to have a five-year M&A deal history available for all firms in the initial sample) and define repeat acquirers as firms that announce at least two M&A bids within exactly five years;
2. We exclude all deals from non-repeat acquirers from the sample (because, by definition, these acquirers cannot have experienced deal failure);
3. We exclude all deals for which relevant deal or bidder information is not available;[4]
4. We check the remaining deals for duplicates and exclude them where appropriate.

Applying the aforementioned screening criteria to our data leaves us with a final sample of 13,805 M&A transactions announced between 01/01/1996 and 12/31/2011 by 3,919 acquirers from Europe and North America (which accounts for 56% of the full sample). These are the focal deals we analyze.

Dependent Variables

To examine the time between deals, we create the variable *Days to previous deal*, which is equal to the number of days between the focal deal and the previous deal (Aktas et al., 2013; Hayward, 2002). As this variable is skewed, in our analyses we specifically measure time between deals with the natural log of the number of days between the focal deal and the prior deal. To measure

[4] Stock price and accounting data is from Datastream and Worldscope, respectively. Other studies with European (or international) M&A data, such as Faccio and Masulis (2005) and Fieberg et al. (2021), use the same databases. Accounting data is for the fiscal year prior to deal announcement.

deal size, we create two indicator variables. First, the variable *Focal deal < last deal* is equal to one if the size (i.e., the transaction value) of the focal deal is less than the size of the previous deal, and zero otherwise. Second, the variable *Focal deal < 5 year avrg* is set to one if the size of the focal deal is smaller than the acquirer's average deal size over the last five years prior to the focal deal, and zero otherwise. We examine the decision to hire a financial advisor using the indicator variable *Financial advisor*, which is set to one if the acquiring firm employs at least one financial M&A advisor, and zero otherwise (Hayward, 2002; Servaes & Zenner, 1996). If no advisor is reported for an M&A deal, we set the variable to zero. In addition to these measures, we test alternative operationalizations, particularly continuous instead of binary variables, in the supplemental analyses section.

Independent Variables

In our primary analyses, we assess whether a firm experienced a failed deal before the focal deal in two different ways. First, we create an indicator variable, *Failed last deal*, which is set to one if the last deal (i.e., the deal right before the focal deal we examine) was a failed deal, and zero otherwise. Second, we create a variable, *# Failed deals last five years,* which is a count of the number of failed deal attempts a firm was involved in as the bidding party in the five years preceding the focal deal. Given that this variable's distribution is skewed, we specifically use the natural log of the count in our analyses. In addition to these measures, we also assess failed deals via a binary variable set to one if an acquirer in our sample was the bidder in a failed M&A deal attempt in the five years preceding the focal deal. Our results are largely consistent using this additional measure. For brevity, we do not tabulate the respective supplemental analyses.

Control Variables

We control for multiple variables that might serve as alternative explanations at both the

acquisition level and the acquirer level (i.e., the bidding firm). At the acquisition level, we control for several aspects that have been shown to be important in the acquisition context. In particular, we control for the acquirer's number of M&A transactions in the five years before the focal deal with the variable *# Deals before focal deal*. The five-year period is, as noted previously, calculated using the announcement dates of the focal deal and an acquirer's other deals. We also control for the squared version of this variable to allow for a potential nonlinear relation. We account for the days to the previous deal with the variable *Days to previous deal* (Aktas et al., 2013). Specifically, we use the natural logarithm of the number of days between the focal M&A deal and the acquirer's last M&A deal (using announcement dates of the deals). Again, we also include the squared version of this variable to allow for a potential non-linear relation (Hayward, 2002). Note that we investigate the length between deals in our first hypothesis, and so, we only account for days between deals in the other models. *Public target* is an indicator variable set to one if the target firm in the focal M&A deal is a listed company, and zero otherwise (Capron & Shen, 2007).

Continuing with the acquisition-level controls, we account for whether the acquirer holds less than 5% of the target firm's stock prior to the announcement date of the focal M&A transaction. We create the indicator variable *Toehold < 5%,* which is set to one when this is the case, and zero otherwise (Choi, 1991). Whether or not the acquisition is a cross-border deal is controlled for with an indicator variable, *Cross-border*, set to one if the focal M&A deal is a cross-border deal and zero if it is a domestic deal. We also account for whether the target firm is in the same industry with the variable *Same industry*, which is set to one for M&A transactions within the same two-digit SIC code industry and zero for cross-industry transactions (Busenbark et al., 2017). We control for whether the deal is hostile with an indicator variable, *Hostile*, which

is set to one for deals defined as hostile in Capital IQ, and zero otherwise (Gamache et al., 2019). *Payment includes stock* is an indicator variable set to one for deals in which the consideration includes some stock, and zero otherwise (Hayward, 2002). Our final acquisition-level control is the variable *Avrg CAR last 5yrs.* This variable assesses prior M&A performance defined as the average three-day cumulative abnormal return over each deal in the acquirers' five-year M&A deal history. This approach is consistent with research that assesses acquisition performance with cumulative abnormal returns (King et al., 2021).

In terms of acquirer-level controls, we control for firm size with the variable *Total assets acquirer*. In the analyses, this variable is specifically the natural logarithm of an acquiring firm's total assets (in US$ million) as of the end of the fiscal year prior to the announcement of the focal M&A deal (Gamache et al., 2019). We also control for the acquirer's debt levels with the variable *Net debt acquirer.* This variable is equal to the acquiring firm's net debt (defined as total debt minus cash and short-term investments) divided by total assets as of the end of the fiscal year prior the announcement of the focal M&A deal. *BTM acquirer* is a control that measures the acquiring firm's book-to-market ratio, defined as the acquirer's common equity as of the end of the fiscal year prior to the announcement of the focal M&A deal divided by the acquirer's market capitalization 20 trading days prior to deal announcement.

In addition to these acquirer-level controls, all regressions shown in the paper include acquirer country dummies, as well as industry and year controls to rule out that unobserved time-invariant country, industry, or macroeconomic heterogeneity drive the results. In terms of the industry controls, we use two-digit SIC codes. In unreported analyses, we repeat the regressions using Fama-French 48 industry dummies and results do not considerably change.

Estimation Technique

Our sample consists of a cross-section of M&As where we examine how firms' acquisition history in the previous five years, including whether they had failed deals, impacts acquisition aspects related to the focal deals. With this in mind, we use OLS regression as our primary estimation technique and employ robust standard errors clustered at the (two-digit SIC) industry level to take into account that M&A outcomes will likely be correlated across firms in one industry (Petersen, 2009). For example, the time between two M&A deals and the size of deals are likely to depend on the number and size, respectively, of the firms operating in the same industry. We note that while some of our dependent variables are binary variables, we use OLS regressions (i.e., the linear probability model) for ease of interpreting our results and because logit and probit regressions with a large number of fixed effects suffer from the problem of separation (Zorn, 2005) as well as other problems (e.g., the incidental parameter problem) of maximum likelihood estimation in the presence of multiple fixed effects (Greene, 2004). OLS produces similar results and allows estimating causal effects when used to explain binary dependent variables (Angrist & Pischke, 2008). However, in unreported supplemental analyses, we find consistent results to those reported when we run probit models predicting our binary dependent variables.

RESULTS

Table 1 presents correlations and descriptive statistics for our sample. There are a few summary statistics we think are worth pointing out. Specifically, we consider it important to note that in terms of failed deals, we find that about 4% (or 538) of the focal deals directly succeed a failed deal in our sample, while for 13% of all focal deals, a failed deal took place in the previous five years (not tabulated). In terms of the number of failed deals in the five years prior to the focal deal, we see that the mean number of failed deals is 0.16 for the sample. However, when we

consider the sample of firms who had at least one failed deal, the mean number of failed deals is 1.235 with a maximum of 6 failed deals. We also note that our sample compares favorably to prior research on repeat acquirers. For instance, regarding M&A deal experience, we find a mean of 4.54 for the variable # *Deals before focal deal* indicating that the typical repeat acquirer makes 4.54 deal attempts before the focal deal. This corresponds to a mean deal number of 5.54 (i.e., the deals prior to the focal deal plus the focal deal), similar to the 5.8 deals reported in Fuller et al. (2002).

[Insert Tables 1 & 2 about here]

Table 2 provides the results of our tests of Hypothesis 1, which predicts that the time between acquisition bids is longer if the acquirer experienced a failed deal prior to the focal deal. The results of Model 1 indicate that the coefficient on *Failed last deal* is positive and that there is a strong likelihood that its value differs from zero (B=0.129; p=0.019). Given that the dependent variable is log transformed and the regression model is OLS, we can directly interpret the economic magnitude of the coefficient as the percentage change in the dependent variable. Hence, holding all control variables at their means, firms that failed their last deal take 13% longer between deals. The results of Model 2 indicate that the coefficient on *Ln (# failed deals last 5yrs)* does not differ from zero (B=0.027; p=0.593). Therefore, the results imply that there does not appear to be a lingering effect of prior deal failure experience on the time between acquisition bids, whereas failing the most recent deal seems to have a significant impact.

Table 3 illustrates the results of the models testing Hypotheses 2. With this hypothesis, we theorize that the size of the focal deal is smaller if the acquirer experienced a failed deal prior to the focal deal. The results of Models 1 and 2 show that the coefficients on *Failed last deal* are positive and significant in both models and that there is a strong likelihood that the values differ

from zero. More specifically, we see that *Failed last deal* appears to be a significant predictor of the focal deal being smaller (in terms of transaction value) than the last deal (B=0.186; p=0.000) and of the focal deal being smaller than the five-year average deal size (B=0.124; p=0.000). Given that these models represent linear probability models, we can directly interpret the coefficients as marginal effects. Doing so, we can conclude that failing the deal right before the focal deal is associated with an 18.6% higher likelihood of the focal deal being smaller than the last (Model 1) and a 12.4% higher likelihood of the focal deal being smaller than the five-year average deal size (Model 2).

Continuing with the tests of Hypothesis 2, the results of Models 3 and 4 show that the coefficients on *Ln (# failed deals last 5yrs)* are positive and significant in both models and that there is a strong likelihood that the values differ from zero. In particular, we find that the variable *Ln (# failed deals last 5yrs)* appears to be a significant predictor of the focal deal being smaller than the last deal (B=0.079; p=0.000) and of the focal deal being smaller than the five-year average deal size (B=0.141; p=0.000). In terms of practical effects, these coefficients imply that a one-unit increase in the variable *Ln (# failed deals last 5yrs)* is associated with an increase in the likelihood of the focal deal being smaller than the last deal of about 8% and an increase in the likelihood of the focal deal being smaller than the five-year average deal size of 14.1%. Taken together, our empirical results thus imply that there is a strong likelihood that the size of the focal deal is smaller if the acquirer experienced a failed deal prior to the focal deal.

Table 4 contains the results of the analyses testing our third hypothesis. In Hypothesis 3, we predict that the likelihood of employing a financial advisor is higher if the acquirer experienced a failed deal prior to the focal deal. The results in Models 1 and 2 indicate that there is a strong likelihood that having a failed deal is a significant predictor of employing a financial

advisor for the focal deal. Indeed, we see the following coefficients—*Failed last deal* (B=0.037; p=0.040) and *Ln (# failed deals last 5yrs)* (B=0.038; p=0.002). In practical terms, these results suggest that failing the prior deal increases the likelihood of employing a financial advisor by almost 4%, as compared to the unconditional sample mean of 27%. The results also imply that a one-unit increase in the variable *Ln (# failed deals last 5yrs)* increases the likelihood of employing a financial advisor by 3.8%.

Taken together, the results overall are largely consistent with our hypotheses. Failing the most recent deal, however, appears to be a somewhat more salient factor in the outcomes predicted—as compared to the number of failed deals in the prior five years—given that the results imply that failing the most recent deal is a significant predictor in all cases, whereas the number of failed deals in the prior five years does not appear to predict the time between deals. This result is consistent with the importance of salience for economic decision making (Bordalo et al., Forthcoming).

[Insert Tables 3 and 4 about here]

SUPPLEMENTAL ANALYSES

We conduct multiple supplemental analyses to further illustrate the robustness of our results, to further help alleviate endogeneity concerns, and to provide some additional insights into the potential consequences of failed deals.

Alternative Measures and Estimation Methods

To illustrate the robustness of our results, we conduct additional analyses where we use an alternative measure of each of our dependent variables. In terms of the alternative measure for the time between bids, we run an analysis where we measure the time between bids as the count of the number of days between bids rather than the natural logarithm of this count. Given the

count variable, we use a negative binomial regression. As shown in Models 1 and 2 of Table 5, our results remain qualitatively unchanged with this alternative measure and estimation method.

Regarding deal size, we also assess deal size with a continuous variable equal to the size of the focal deal minus the acquirer's average deal size in the five years prior to the focal deal's announcement date. Adjusting for an acquirer's average deal size reduces heterogeneity and accounts for systematic differences with respect to deal size between acquirers with and without prior deal failure. As shown in Models 3 and 4 of Table 5, our results remain statistically significant with this continuous measure.

For an alternative measure of employing financial advisors, we conduct an analysis where we examine the number of financial advisors, which we assess with the natural logarithm of the variable as it is skewed. We limit our sample to deals for which at least one M&A advisor is reported, which also alleviates endogeneity concerns related to the endogenous decision to hire financial advisors and re-estimate our OLS regression analyses (note our results are also significant if we use the count of the number of financial advisors and a negative binomial regression). Using this measure, we again find consistent results to those reported, as shown in Models 5 and 6 of Table 5. In particular, the results suggest that, conditional upon hiring at least one financial advisor, firms that previously experienced deal failure hire significantly more financial advisors.

Finally, we re-estimate the regressions shown in Table 3 and Table 4 using probit (instead of OLS) regressions. We exclude country fixed effects and restrict industry fixed effects to one-digit SIC codes to limit the problems of separation and multiple fixed effects in maximum likelihood estimations. All of our results are confirmed, with the coefficients on the variables *Failed last deal* and *Ln (# failed deals last 5yrs)* being statistically significant at the 1% level

throughout all regressions.

[Insert Table 5 about here]

Addressing Endogeneity Concerns

To help alleviate endogeneity concerns, particularly the potential for omitted variable bias, we carry out four additional steps (which we do not fully tabulate for brevity). In the first step, we calculate the robustness of inference to replacement (RIR) for each of our primary analyses where we appeared to find statistical support. The RIR provides insight into the percentage of a parameter estimate, specifically the coefficient for the independent variable, that would need to be biased in order to invalidate causal inference (Busenbark et al., 2022). It appears that a fairly large percentage of our parameter estimates would have to be biased to invalidate the causal inferences suggested. Nevertheless, as a second step, we re-estimate our primary analyses employing acquirer fixed effects (instead of industry fixed effects), which rule out that any unobserved, time-invariant acquirer characteristics drive our results. As shown in Table 6, the results of these analyses are largely consistent with our primary analyses. Indeed, only the relationship between Ln (# failed deals last 5yrs) and Focal deal < last deal is no longer significant in the expected direction (thus not displayed), which further helps alleviate endogeneity concerns.

As a third step to alleviate endogeneity concerns, we restrict the sample to those firms that experienced a failed deal during their five-year deal history. In this way, we reduce the heterogeneity in our data by isolating the group of firms with deal failure experience (i.e., the treatment group). Doing so mitigates concerns that our results occur merely because the treatment group shares any unobserved characteristics we are unable to control for. Focusing on the treatment group, we regress our dependent variables on *Ln (# failed deals last 5yrs)* along

with the same controls we use in our main analyses. This way, we can test whether the M&A strategies of the acquirers in the treatment group are indeed sensitive to experiencing deal failure. The results again remain largely consistent to our primary analyses, with the coefficient on the variable *Ln (# failed deals last 5yrs)* being statistically significant in all regressions.

Lastly, we employ a two-stage least squares (2SLS) technique. Owing to the challenges associated with locating appropriate instrumental variables, we adopt a novel method that employs the heteroskedastic identified approach that generates instruments/exclusion restrictions using the available regressors (Baum & Lewbel, 2019; Lewbel, 2012, 2018). This approach (utilizing Stata's ivreg2h command) has recently been adopted in strategy research (Campbell et al., 2021; Um et al., 2021). Table 7 contains the results of the second stage models, which incorporate the heteroskedastic instruments. As shown in this table, the results once again remain consistent with our primary analyses when employing this approach. In fact, all of the relationships remain significant except for the relationship between Ln (# failed deals last 5yrs) and the time between deals, which was also not significant in the primary analyses.

[Insert Tables 6 and 7 about here]

Additional Consequences of Failed Deals

In the following, we attempt to provide some additional insights into the consequences of failed deals. One might wonder why—after experiencing deal failure—firms even pursue additional acquisitions, and why they structure them in the way we theorize in order to reduce the risk of failing again. One potential reason, we argue, is that firms that have failed to acquire a target are likely concerned about the potential to be acquired themselves if they do not pursue firm growth (e.g., via additional M&A opportunities). This reasoning aligns with the "eat or be eaten" logic presented in the model by Gorton et al. (2009), which suggests that firms want to acquire to

prevent being acquired themselves. With this in mind, we model the (in-sample) likelihood of an acquiring firm subsequently being acquired with linear probability models. The results in Table 8 indicate that these potential concerns are valid, as there appears to be strong statistical likelihood that having failed to acquire a target firm in the past is associated with an increased likelihood of being subsequently acquired. Therefore, these results, at least to some extent, may explain why firms structure future deals more cautiously—they want to make sure they grow via completed deals and avoid being eaten. Put differently, these results provide some evidence in support of one of our proposed mechanisms for cautiousness following failed deals.

[Insert Table 8 about here]

In untabulated regressions, we also find some evidence that firms with deal failure are marginally more likely to acquire significant toeholds (of at least 5% of the target firm's stock). In light of the results on the takeover susceptibility of firms with failed deals, such toeholds may be interpreted as signals of being able to acquire another firm (and hence grow and be more difficult to be taken over) should firms with failed deals become targets in M&A bids.

DISCUSSION

In this study, we theorize about and empirically examine the association between failed deals and bidding firms' future M&A strategy. Across numerous analyses, we consistently find that firms that experience a failed deal prior to the focal deal take longer between deals, choose smaller targets compared to their prior deals, and are more likely to hire advisors (and more of them). Our study makes multiple contributions and sets the stage for future research.

Contributions

One critical contribution of this study is that we attempt to shift the M&A literature's focus from completed deals to failed deals (similar to Fabozzi et al., 1988; Malmendier et al.,

2016 among others). We do so by illustrating that failed deals are not just a common phenomenon (Bahreini et al., 2019), but also an impactful one in terms of the future M&A strategy of bidding firms. So far, empirical M&A work, even the work on repeat acquirers and learning via repeat acquisitions, excludes failed deals (Aktas et al., 2011, 2013; Billett & Qian, 2008; Fuller et al., 2002; Haleblian & Finkelstein, 1999). Our study, however, illustrates that failure experience—via failed deals—constitutes an important aspect for research on M&As as it is related to future M&A strategy in our sample. Therefore, our paper helps establish that it is important for future M&A work to include not just finalized deals but also failed deals in theory and analyses.

Another contribution of this study is that we advance the limited existing literature on failed deals, especially the work on the strategic consequences of these deals. We specifically add to this domain by illustrating how failed deals may affect bidding firms and their future strategies—as opposed to influencing target firms and their future strategies, which has been the focus of research to date on the strategic impact of failed deals (e.g., Chatterjee et al., 2003; Safieddine & Titman, 1999). Notably, we find support for the *"once bitten, twice shy effect*" we theorize, as failed deals are associated with longer time periods between deals, smaller target firm size, and more advisor usage. Our study thus implies that the strategic consequences of failed deals for bidding firms has been problematically overlooked. In fact, as we elaborate on in the future research section, we anticipate that failed deals may have important implications for firms, including in terms of outcomes other than future M&A strategy.

We also contribute to research by advancing the literature on corporate failure experiences (e.g., Madsen & Desai, 2010; Shepherd et al., 2011). Specifically, we add to this body of work by providing additional evidence in support of the notion that firms will act

cautiously following failures. While there is a growing consensus that firms act cautiously following corporate failures (Friesen et al., 2021; Madsen & Desai, 2010), not all studies on this topic find this result. Our research does, however, as we see that firms act cautiously following a specific failure experience—failed deals. In fact, our results suggest, in line with anecdotal evidence, that firms do not quickly forget failed deals—as while the effects we document are strongest for M&A bids directly succeeding failed deals, they tend to linger over time. As we theorize, this cautiousness could be due to learning from failure, as well as due to reduced acquisition-specific confidence, concerns about damaging the firm's reputation for being able to create value through planning and managing large investments, and fear of being "eaten."

Finally, we advance the literature on the determinants of M&A strategy, in terms of deal structure and timing. Specifically, while this research finds that multiple deal and target firm characteristics are associated with M&A deal structure (Faccio & Masulis, 2005; Servaes & Zenner, 1996), our study indicates that another aspect entirely impacts deal structure (in terms of target size and advisor usage)—whether or not a firm had a failed deal prior to the focal deal. This finding is important as it indicates another factor that scholars should be accounting for in theorizing about and empirically analyzing deal structure antecedents. In terms of timing, we answer calls to understand more about the temporal aspects related to M&As (Shi et al., 2012). Specifically, we contribute to a limited body of research focused on the time between deals (Aktas et al., 2013; Hayward, 2002), by showing that having a failed deal leads to a significantly longer time between deals.

Future Research

There are natural extensions of this research that directly build on our contributions, as well as the limitations of this study. One promising line of inquiry, in our opinion, is to further

investigate the impact of incorporating and accounting for failed deals in the broader M&A literature. In particular, there is potential for failed deals to have an impact on some of the oft-studied questions in the M&A literature. For instance, one of the most studied factors in M&A work is the performance implications of M&As (e.g., King et al., 2004; King et al., 2021). It is possible that having failed deals prior to a focal deal might explain variance in cumulative abnormal returns around focal deals or in longer-term performance measures following failed deals. For example, firms may trade off deal failure risk and expected returns. It is also feasible that failed deals might be a moderator of some of the established determinants of M&A performance.

Another fruitful direction for future research may be to further investigate the implications of failed deals in terms of their consequences for bidding firms. Besides being related to future M&As, failed deals might be associated with other firm strategies, like how failed deals influence various aspects of bidding firms' strategies (Chatterjee, 1992; Liu, 2016). For instance, it might be possible that the cautiousness following failed deals that we find evidence for will carry over to other corporate decisions, such as other capital allocation decisions or alliance formation, not just to future M&A strategy. Future research would therefore benefit from looking into the potential spillover effects of failed deals.

We also think that future research could attempt to further probe the mechanisms that we theorize drive the relationships we find. Indeed, while we theorize that cautiousness following failed deals could be due to several mechanisms, a limitation of this study is that we are not able to pinpoint which mechanisms are relevant. That said, we are able to provide some evidence in a supplemental analysis that concerns of being acquired may drive cautiousness, given that we find that firms that have failed deals are more likely to be subsequently acquired. With this in mind,

inductive studies, or even experimental studies (e.g., Agarwal et al., 2012) or interviews (e.g., Zorn et al., 2020), on the topic of failed deals could be informative in terms of how firms specifically learn from these failure experiences and incorporate them into future strategy. This approach is similar to how inductive studies have looked at learning in the context of post-acquisition integration (Heimeriks et al., 2012).

Finally, while we find consistent results across both the North American and European contexts, it might be fruitful to see if the same relationships we document exist or vary in other contexts. Scholars have noted that countries differ in the extent to which their cultures might be tolerant of risk and uncertainty avoidance (Hofstede, 2011), factors that might lead to firms in certain countries acting less cautiously following unconsummated deals. Overall, though, there seem to be numerous opportunities for research to further advance theory related to failed deals.

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TABLES

Table 1. Correlations and Descriptive Statistics

	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	# Deals before focal deal	4.54	4.37																	
2	# Failed deals last 5yrs	0.16	0.46	0.28																
3	Avrg CAR 5yrs	0.01	0.07	-0.05	-0.03															
4	BTM acquirer	0.50	0.66	-0.06	0.01	-0.03														
5	Cross-border	0.38	0.48	0.04	0.01	-0.02	-0.03													
6	Days to previous deal	398.91	415.04	-0.36	-0.09	0.02	0.10	0.00												
7	Failed last deal	0.04	0.19	-0.04	0.46	0.02	0.04	0.00	0.02											
8	Financial advisor	0.27	0.44	-0.04	0.01	-0.01	-0.03	0.02	0.03	0.02										
9	Focal deal < 5yr avrg deal	0.60	0.49	0.13	0.09	0.01	0.05	0.04	-0.04	0.03	-0.31									
10	Focal deal < last deal	0.49	0.50	0.01	0.04	0.02	0.04	0.03	0.04	0.06	-0.25	0.64								
11	Hostile	0.01	0.07	0.00	0.01	-0.01	0.01	0.00	-0.01	0.03	0.04	-0.05	-0.04							
12	Net debt acquirer	0.11	0.25	0.06	0.05	0.06	0.02	-0.06	-0.02	0.01	-0.03	0.02	0.01	0.01						
13	Payment includes stock	0.18	0.38	-0.10	-0.02	0.05	0.00	-0.09	0.01	0.02	0.13	-0.18	-0.11	0.00	-0.08					
14	Public target	0.23	0.42	0.08	0.07	-0.03	-0.07	0.01	-0.10	0.01	0.25	-0.19	-0.17	0.11	-0.01	0.12				
15	Relative deal size	0.18	0.95	-0.07	0.04	0.06	0.10	-0.03	0.02	0.07	0.07	-0.14	-0.10	0.03	0.04	0.11	0.09			
16	Same industry	0.26	0.44	-0.05	-0.02	-0.01	-0.02	0.00	0.01	-0.01	0.19	-0.15	-0.12	0.06	-0.01	0.10	0.36	0.04		
17	Toehold < 5%	0.90	0.30	-0.01	-0.03	0.01	-0.02	-0.14	-0.01	-0.02	0.00	-0.03	-0.02	-0.02	-0.02	0.03	-0.03	0.02	-0.01	
18	Total assets acquirer	10533.00	41686.00	0.45	0.20	-0.04	-0.03	0.05	-0.09	0.00	-0.01	0.06	0.01	0.00	0.08	-0.06	0.15	-0.03	-0.03	-0.03

Notes: n=13,805; some variables ultimately transformed in analyses as described

Table 2. Results of OLS Models Testing Hypothesis 1

	Model 1	Model 2
Dependent variable	Ln (Days to previous deal)	
Independent variables		
Failed last deal	**0.129**	
	(0.019)	
Ln (# failed deals last 5yrs)		**0.027**
		(0.593)
Controls		
Avrg CAR last 5 yrs	-0.098	-0.099
	(0.557)	(0.552)
Relative deal size	0.011	0.012
	(0.058)	(0.038)
Ln (# Deals before focal deal)	-0.722	-0.722
	(0.000)	(0.000)
Ln (# Deals before focal deal)^2	-0.031	-0.032
	(0.092)	(0.082)
Public target	-0.438	-0.438
	(0.000)	(0.000)
Cross-border	0.051	0.052
	(0.079)	(0.075)
Same industry	0.042	0.042
	(0.108)	(0.102)
Hostile	-0.114	-0.109
	(0.547)	(0.565)
Payment includes stock	0.022	0.022
	(0.522)	(0.525)
Toehold < 5%	-0.003	-0.004
	(0.941)	(0.927)
Ln (Total assets acquirer)	0.055	0.054
	(0.000)	(0.000)
Net debt acquirer	0.254	0.253
	(0.000)	(0.000)
BTM acquirer	0.082	0.083
	(0.002)	(0.002)
Constant	6.907	6.882
	(0.000)	(0.000)
Country FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Model statistics		
Observations	13,805	13,805
Adjusted R-squared	0.205	0.205

Notes: Robust p-values in parentheses

Table 3. Results of OLS Models Testing Hypothesis 2

Dependent variables	Model 1 Focal deal < last deal	Model 2 Focal deal < 5yr avrg	Model 3 Focal deal < last deal	Model 4 Focal deal < 5yr avrg
Independent variables				
Failed last deal	**0.186**	**0.124**		
	(0.000)	**(0.000)**		
Ln (# failed deals last 5yrs)			**0.079**	**0.141**
			(0.000)	**(0.000)**
Controls				
Avrg CAR last 5yrs	0.218	0.175	0.219	0.181
	(0.018)	(0.048)	(0.020)	(0.038)
Ln (# Deals before focal deal)	-0.007	0.078	-0.008	0.078
	(0.600)	(0.000)	(0.558)	(0.000)
Ln (# Deals before focal deal)^2	-0.003	-0.014	-0.005	-0.019
	(0.612)	(0.008)	(0.306)	(0.000)
Ln (Days to previous deal)	-0.034	0.007	-0.031	0.009
	(0.001)	(0.485)	(0.004)	(0.378)
Ln (Days to previous deal)^2	0.004	-0.001	0.004	-0.002
	(0.001)	(0.273)	(0.003)	(0.211)
Public target	-0.192	-0.225	-0.192	-0.227
	(0.000)	(0.000)	(0.000)	(0.000)
Cross-border	-0.012	-0.013	-0.011	-0.013
	(0.189)	(0.162)	(0.183)	(0.147)
Same industry	-0.079	-0.091	-0.078	-0.090
	(0.000)	(0.000)	(0.000)	(0.000)
Hostile	-0.137	-0.232	-0.130	-0.229
	(0.010)	(0.000)	(0.015)	(0.000)
Payment includes stock	-0.095	-0.136	-0.095	-0.136
	(0.000)	(0.000)	(0.000)	(0.000)
Toehold < 5%	-0.057	-0.057	-0.057	-0.055
	(0.000)	(0.001)	(0.000)	(0.001)
Ln (Total assets acquirer)	0.019	0.032	0.019	0.032
	(0.000)	(0.000)	(0.000)	(0.000)
Net debt acquirer	0.030	0.021	0.028	0.019
	(0.026)	(0.242)	(0.038)	(0.271)
BTM acquirer	0.020	0.027	0.020	0.026
	(0.001)	(0.002)	(0.001)	(0.002)
Constant	0.509	0.351	0.404	0.343
	(0.000)	(0.000)	(0.000)	(0.000)
Country FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Model statistics				
Observations	13,805	13,802	13,805	13,802
Adjusted R-squared	0.051	0.110	0.048	0.114

Notes: Robust p-values in parentheses; the reduction in the number of observations (13,802 instead of 13,805) in Models 2 and 4 is due to the exclusion of an explanatory variable (a year dummy) which causes separation.

Table 4. Results of OLS Models Testing Hypothesis 3

	Model 1	Model 2
Dependent variable	Financial advisor	
Independent variables		
Failed last deal	**0.037**	
	(0.040)	
Ln (# failed deals last 5yrs)		**0.038**
		(0.002)
Controls		
Avrg CAR last 5yrs	0.052	0.053
	(0.441)	(0.431)
Relative deal size	0.027	0.027
	(0.192)	(0.193)
Ln (# Deals before focal deal)	0.037	0.037
	(0.055)	(0.061)
Ln (# Deals before focal deal)^2	-0.023	-0.024
	(0.009)	(0.006)
Ln (Days to previous deal)	0.007	0.007
	(0.521)	(0.487)
Ln (Days to previous deal)^2	0.001	0.001
	(0.455)	(0.492)
Public target	0.256	0.255
	(0.000)	(0.000)
Cross-border	0.034	0.034
	(0.000)	(0.000)
Same industry	0.093	0.093
	(0.000)	(0.000)
Hostile	0.057	0.058
	(0.351)	(0.341)
Payment includes stock	0.114	0.114
	(0.000)	(0.000)
Toehold < 5%	0.030	0.030
	(0.024)	(0.022)
Ln (Total assets acquirer)	0.016	0.016
	(0.000)	(0.000)
Net debt acquirer	-0.053	-0.053
	(0.039)	(0.037)
BTM acquirer	-0.005	-0.005
	(0.202)	(0.189)
Constant	0.104	0.049
	(0.248)	(0.593)
Country FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Model statistics		
Observations	13,805	13,805
Adjusted R-squared	0.128	0.128

Notes: Robust p-values in parentheses

Table 5. Results of Models Testing Alternative DV Measures

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent variables	Days to previous deal		Adjusted deal size 5yrs	Adjusted deal size 5yrs	Ln (# fin. advisors)	
Model type	Negative binomial		OLS		OLS	
					Conditional on financial advisor = 1	
Independent variables						
Failed last deal	**0.026**		**-331.706**		**0.030**	
	(0.005)		**(0.089)**		**(0.074)**	
Ln (# failed deals last 5yrs)		**0.005**		**-437.530**		**0.004**
		(0.615)		**(0.004)**		**(0.735)**
Controls						
Controls from primary analyses	Yes	Yes	Yes	Yes	Yes	Yes
Model statistics						
Observations	13,805	13,805	13,802	13,802	3,664	3,664
Pseudo/Adjusted R-squared	0.027	0.027	0.041	0.042	0.116	0.115

Notes: Robust p-values in parentheses; Models 5 and 6 only include observations where at least one advisor is employed; the reduction in the number of observations (13,802 instead of 13,805) in Models 3 and 4 is due to the exclusion of an explanatory variable (a year dummy) which causes separation.

Table 6. Re-estimation of OLS Models with Acquirer Fixed Effects

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Dependent variables	Ln (Days To previous deal)		Focal deal < last deal	Focal deal < 5yr avrg		Financial advisor	
Independent variables							
Failed last deal	**0.220**		**0.177**	**0.057**		**0.046**	
	(0.002)		**(0.000)**	**(0.011)**		**(0.038)**	
Ln (# failed deals last 5yrs)		**0.135**			**0.116**		**0.059**
		(0.066)			**(0.000)**		**(0.003)**
Controls							
Controls from primary analyses	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model statistics							
Observations	13,805	13,805	13,805	13,802	13,802	13,805	13,805
Adjusted R-squared	0.104	0.104	0.072	0.133	0.129	0.112	0.113

Notes: Robust p-values in parentheses; the relationship between Ln (# failed deals last 5yrs) and Focal deal < last deal is no longer significant in the expected direction and thus not displayed; the reduction in the number of observations (13,802 instead of 13,805) in Models 4 and 5 is due to the exclusion of an explanatory variable (a year dummy) which causes separation.

Table 7. Results of Heteroskedastic 2SLS Models

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Dependent variables	Ln (Days To previous deal)		Focal deal < last deal		Focal deal < 5yr avrg		Financial advisor	
Independent variables								
Failed last deal	**0.129**		**0.194**		**0.137**		**0.038**	
	(0.015)		**(0.000)**		**(0.000)**		**(0.026)**	
Ln (# failed deals last 5yrs)		**0.027**		**0.086**		**0.149**		**0.038**
		(0.586)		**(0.000)**		**(0.000)**		**(0.001)**
Controls								
Controls from primary analyses	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Heteroskedastic instruments	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model statistics								
Observations	13,805	13,805	13,805	13,805	13,802	13,802	13,805	13,805
Adjusted R-squared	0.212	0.212	0.066	0.063	0.129	0.132	0.133	0.133

Notes: Robust p-values in parentheses; the reduction in the number of observations (13,802 instead of 13,805) in Models 5 and 6 is due to the exclusion of an explanatory variable (a year dummy) which causes separation.

Table 8. Results of OLS Models Predicting Acquirer as Target

	Model 1	Model 2
Dependent variable	Acquirer as target	
Independent variables		
Failed last deal	**0.038**	
	(0.013)	
Ln (# failed deals last 5yrs)		**0.053**
		(0.008)
Controls		
Avrg CAR 5yrs	0.104	0.106
	(0.099)	(0.093)
Ln (Total assets acquirer)	0.013	0.012
	(0.001)	(0.001)
Net debt acquirer	-0.034	-0.036
	(0.132)	(0.115)
BTM acquirer	0.003	0.003
	(0.556)	(0.597)
Constant	-0.038	-0.105
	(0.453)	(0.101)
Country FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Model statistics		
Observations	13,805	13,805
Adjusted R-squared	0.056	0.057

Notes: Robust p-values in parentheses

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