

What Drives Acquisition Premiums and Why do Targets Reject Offers? – Evidence from Failed Acquisition Offers

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Abstract

Using a hand-collected sample of 1,246 failed acquisition offers from 1979 to 2016, we investigate whether acquisition premiums are driven by the market's revaluation of the target (the information hypothesis) or potential synergies (the synergy hypothesis). Partitioning the sample into acquisition offers that fail due to the target's rejection (rejection group) and those that fail due to other reasons (non-rejection group), we find that the information hypothesis applies to both groups, reversing the interpretation of prior studies. Overall, our paper shows that identifying the failure reason is of prominent importance for research in mergers and acquisitions.

Keywords: Mergers and acquisitions; Failed acquisitions; Corporate governance.

1. Introduction

Prior research has documented positive target firm returns surrounding announcements of acquisition offers, consistent with the existence of an acquisition premium. Two possible explanations given in the literature for such a premium are the prospect of valuable synergies with the acquirer (hereafter termed the synergy hypothesis) and an assessment by the acquirer that the market has undervalued the target as a stand-alone firm (hereafter termed the information hypothesis).¹ It is not possible to distinguish between these explanations in the context of successful acquisitions since both post-acquisition returns and long-term financial performance are unavailable for target firms. Therefore, previous studies focus on failed acquisitions. Using small samples, they find evidence in support of the synergy hypothesis, but not the information hypothesis. In this paper, we construct a large, comprehensive sample of failed acquisition offers, and identify the reason behind the failure of each one. Using this sample, we extend prior literature by examining which of the two hypotheses is the source of the acquisition premium, conditional on the reason for the offer's failure.

To investigate our research question, we classify the failure reasons into two groups: those that fail due to rejection by either the target firm's board of directors or management (the "rejection group") and those that fail for other reasons (the "non-rejection group"). The rejection group consists of all failed

¹ The Synergy and information hypotheses are mostly documented in the context of successful acquisitions. For example, Gorbenko and Malenko (2014) use strategic and financial bidders to separate synergy from information hypotheses in a sample of 349 takeover auctions. Focusing only on undervaluation (the information hypothesis), Axelson, Jenkinson, Stömberg, and Weisbach (2013) investigate a sample of 1,157 leverage buyouts (LBO) by private equity firms in 25 different countries, while Guo, Hotchkiss, and Song (2011) do the same for 192 LBOs. Cummings, Siegel, and Wright (2007) provide a review of the LBO literature summarizing the reasons for undervaluation (information hypothesis) in LBOs. Similarly, Harford, Stanfield, and Zhang (2019) investigate undervaluation in the context of 518 management buyouts (MBO). Investigating strategic acquisitions (the synergy hypothesis), Healy, Palepu and Rubak (1992) document a positive post-acquisition performance for the 50 largest U.S. mergers. Similarly, Andrade, Mitchell and Starford (2001) find a positive announcement-period stock market response to mergers for the combined merging parties, supporting the synergy hypothesis, while Agrawal, Jaffe and Mandelker (1992) find a statistically significant loss of about 10% over the five-year post-merger period for the acquiring firms, contradicting the synergy hypothesis. Finally, all mergers and acquisition books compare the two hypotheses, usually using the term operating synergy and undervaluation (e.g., Gaughan (2010), Weston, Mitchell and Mulherin (2004), Agrawal and Jaffe (2000)). However, in the context of successful acquisitions, Bhagat, Dong, and Hirshleifer (2005) opine that "disentangling these non-exclusive sources is a first-order building block in estimating the real value created by mergers and acquisitions."

acquisition offers wherein the cited news article clearly identifies the target’s management or its board of directors as rejecting the offer. The non-rejection group includes all failed offers which the target did not explicitly express an objection to the acquisition offer.² We conjecture that if target firm undervaluation serves as a driver of the acquisition premium (the information hypothesis), we would more be likely to find corroborating evidence in the rejection group. This is because the target firm’s board or management generally has private information about its firm’s stand-alone value. In contrast, we would more likely find evidence of synergies as a driver of the premium in the non-rejection group. This is because the absence of evidence that rejection by the target’s board or management played a principal role in the failure of the acquisition offer suggests that the target firm’s management believes that the value of the firm is maximized by being successfully acquired, supporting the synergy hypothesis.

Our analysis is based on a hand-collected sample of 1,246 failed acquisition offers between 1979 and 2016. In keeping with previous studies of acquisition premiums, we first examine the “announcement period” target cumulative abnormal return (CAR) for the five days surrounding acquisition offer announcements. Second, we calculate the “proposal period” CAR starting 25 trading days prior to the announcement of the offer and ending 25 trading days following the termination announcement date. Consistent with previous studies, we find a significant positive mean announcement period CAR of 14.12 percent. However, when we extend the measurement to the proposal period, we find an insignificant negative mean proposal period CAR of -3.53 percent, implying a reversal of the announcement’s positive effect. The negative returns over the proposal period contrast with earlier findings of positive proposal period returns from studies employing much smaller samples.³

We also calculate the announcement and proposal period CARs separately for the rejection group and the non-rejection group. We find that the difference in the mean announcement period CAR between

² Section 2 details the categorization method.

³ Dodd (1980) reports a mean return of 4.36% from day -40 to day 40 around the termination announcement for 80 failed acquisition offers. Davidson et al. (1989) document a significant positive return of 7.15% for 163 canceled mergers from day -90 to day 90 around the termination announcement. We use a window from day -25 to day 25 as it is the standard in recent literature (see, for example, Schwert, 1996, and Malmendier et al., 2016).

the two groups is insignificant, indicating that the market is unable to distinguish between the two groups at the time of the announcement, and is thus unable to predict the eventual reason for the acquisition failure. More importantly, when focusing on the proposal period, we find a significant positive mean CAR of 7.34 percent for the rejection group and a significant negative mean CAR of -16.30 percent for the non-rejection group. These results are robust to the inclusion of a host of deal- and firm-characteristics that have been documented by prior literature as having a significant impact on announcement returns as well as whether the target firm remains independent or is subsequently acquired.

The significant positive market revaluation over the proposal period for the rejection group, regardless of subsequent acquisition, is consistent with investors' upward revision of their assessment of the target firm's stand-alone value, and supports the information hypothesis. This result is novel and contradicts prior literature that showed that only the synergy hypothesis is applicable in the context of failed acquisition offers.

The significant negative proposal period return for the non-rejection group, regardless of subsequent acquisition, stands in contrast to prior literature that documents significant positive (insignificant) return over the proposal period for failed acquisition offers in which the firms are subsequently acquired (remain independent). If the reaction to the failed acquisition is driven only by the loss of potential synergies, then the stock price should return to its pre-merger level. Indeed, in the period up to two days before the disclosure of the failure reason, we observe a reversal of the acquisition announcement returns. However, starting at the disclosure of the failure reason, we observe that prices fall below their pre-merger level. Our interpretation of this result is that the disclosure of the acquisition failure reason allows the market to learn new negative information about the target and to reassess its value, supporting the information hypothesis for the non-rejection group.

These results highlight the importance of conditioning on the failure reason in order to distinguish between the synergy and information hypotheses. The insignificant proposal period returns for the entire sample of failed acquisitions offers support the synergy hypothesis, consistent with prior literature.

However, the positive (negative) returns for the rejection (non-rejection) group provide strong evidence that the information hypothesis applies to both groups. Hence, examining the two groups together masks the true underlying driver of acquisition premiums.

We complement our analyses with an examination of long-term returns subsequent to the failure of the acquisition offer. A four-factor model is used to estimate abnormal returns over the five years starting one month following the termination date of an acquisition offer. We find that the mean abnormal return, measured by Jensen's alpha, is insignificant for each of the groups, consistent with market efficiency. The absence of a reversal of proposal period revaluations over the subsequent five years for both groups reinforces our conclusion that the information hypothesis applies to both groups.

We also examine financial performance measures over the subsequent five years. To do so, we employ a matched sample design based on industry, year, total assets, and return on assets as of the end of the fiscal year prior to the acquisition announcement year. For the rejection group, we observe gains in operating, investment, and financing efficiencies at the same time that the growth in profitability is sustained relative to its matched sample. These results corroborate the permanent positive revaluation we document in our return analysis, lending further support for our conclusion that the information hypothesis drives the acquisition premium for the rejection group. Our results are also consistent with the kick-in-the-pants hypothesis of Safieddine and Titman (1999), who conjecture that a failed acquisition provides an impetus for target firm management to improve firm performance so as to forestall future takeover bids. For the non-rejection group, we also document an improvement in operating, investment, and financing efficiencies but show a significant and consistent deterioration in profitability relative to a matched sample, suggesting that any increase in efficiencies is insufficient to prevent profitability deterioration. This finding is consistent with the permanent negative revaluation which we document using the return analysis, as it provides evidence that investors correctly lower their expectations regarding the firm's future profitability on a stand-alone basis. Specifically, this is consistent with the attempted acquisition revealing negative information about the target, lending further support for our conclusion that the information hypothesis

explains the negative revaluation for the non-rejection group.

Finally, in sensitivity analyses, we replicate our main analyses, where we address whether our results may also be driven by factors identified in the mergers and acquisition literature as affecting the acquisition premium. Specifically, we replicate our analyses for the following distinctive factors: hostile versus friendly acquisitions, cash versus stock, failed acquisition initiated by private equity versus that by corporations, acquisitions that are in the same industry versus those that are across industries. We also remove firms that were successfully acquired within 12 months of the failure date, split our sample into varying time periods, split our sample into various targets' market capitalization, and control for common corporate governance measures. Our results are robust to all of these factors, indicating that identifying the failure reason is of primary importance for mergers and acquisitions research.

Contribution to literature. Few studies have used failed acquisitions to examine the reasons for the positive acquisition premium.⁴ Bradley et al. (1983) find evidence of a positive revaluation for a sample of 112 failed tender offers, but just for those that were followed by a successful offer. They conclude that only the synergy hypothesis is consistent with the acquisition premium in their sample. Using a sample of 163 failed acquisitions, Davidson et al. (1989) reach a similar conclusion, observing no persistent revaluation for targets that were not subsequently acquired. We significantly expand on these studies by employing a much larger sample, using more recent data, and more importantly, by partitioning the sample according to the reason for the acquisition failure. We find that conditioning on the failure reason reverses the interpretation of prior studies. In a related paper, Malmendier et al. (2016) also find a new research setting (cash versus stock) that provides support for the information hypothesis in failed takeover bids, but only for all cash acquisitions. Specifically, they find that targets that receive all-cash offers are revalued on average by +15% after deal failure, whereas all stock targets return to their pre-announcement levels.

Malmendier et al. (2016) attribute their result to the observation that if the target is undervalued

⁴ Most of the mergers and acquisition literature concentrates on successful acquisitions to investigate the information versus synergy hypothesis as detailed in footnote 1.

then the acquirer would be more likely to use cash as the medium of payment. In addition, using a small sample of deal-failure reasons, they find that the positive revaluation of cash targets persists across all deal-failure reasons, including reasons that reflect target rejection. In contrast, our paper focuses on the target's private information regarding its firm value and finds that target firms are undervalued only when they reject an acquisition offer. Furthermore, our results are robust to controlling for the medium of payment, indicating that the rejection reason is the dominant explanation for the returns around acquisition failures. In stark contrast with prior studies, including Malmendier et al., we document a significant and negative revaluation around failed acquisitions for the non-rejection group. This result is new and robust and indicates that the disclosure of the acquisition failure reason permits new information about the target's prior overvaluation to come to light.

Finally, by carefully examining each failed acquisition from the SDC database using all press releases, we provide a clean and accurate sample of failed acquisitions that includes the reason for the acquisition failure. We believe that this sample, provided in an on-line appendix, will greatly benefit future research.

2. Data

Our sample construction method is detailed in Appendix 2. We begin with a sample of 63,082 acquisition offers identified by the SDC database. This sample includes firms whose merger or acquisition announcement falls between January 1, 1979 and December 31, 2016, and where the target is a publicly traded U.S. company. We exclude 56,928 observations that SDC identifies as successful acquisitions, leaving us with a potential sample of 6,154 failed acquisition offers. Then, using information provided by the SDC database, we exclude observations for which: (1) the acquirer sought to purchase less than 50 percent, (2) the target market value is less than \$10 million, (3) the status of the deal is "Seeking Buyer Withdrawn" or "Dis Rumor", (4) the target is missing a CRSP permanent number or a COMPUSTAT gvkey number, (5) the target is not traded as of 25 trading days prior to the acquisition announcement date, (6) the deal is classified as a share repurchase, (7) the acquirer and the target are the same firm, or (8) the target's

stock price is less than \$1. After applying these additional filters, we are left with 3,133 potential failed acquisition offers.

Addressing our research question necessitates identifying the reason and date for each failed acquisition offer. However, the SDC database does not specify the reason behind failed acquisition offers; rather, it only documents whether an acquisition offer is successful or not. To obtain this information, we manually download from the Factiva database all press releases and news articles for each of the 3,133 failed acquisition offers over a period starting six months prior to the SDC acquisition announcement date and ending one year after the SDC withdrawn date. Reading through these news articles allows us to first identify both the reason behind each failed acquisition offer and the party that disclosed the reason, and to then correct for mistakes in the SDC database.⁵ This extensive process results in a reduction of 478 observations that are misclassified by SDC and 195 observations for which we can find no press release from any source discussing the acquisition offer. Additionally, following Bates and Lemmon (2003) and Bates and Becher (2017), we combine multiple bidders that simultaneously seek to acquire the same target into one observation if all bidding parties fail in acquiring the target, resulting in the elimination of 241 observations. Further, we remove 627 failed acquisition offers with multiple bidders where one bidder successfully acquired the target while the other bidders were classified as failed acquisition offers by SDC. Finally, we exclude 105 observations for which neither COMPUSTAT nor CRSP information is available and 95 observations where the acquisition process exceeds one year. This reduced sample consists of 1,392 observations for which we are able to identify the announcement date, the medium of payment of the initial offer price, the amount and date of any revised offers, the date of and reason of any rejections, the party that disclosed the reason for the failure, and the final termination date.

Besides the misclassifications we found in SDC for firms categorized as failed acquisitions, we also document a difference between the SDC acquisition announcement data and press releases for 29.4% of the firms in our sample. However, for approximately 20% of the sample the difference between the SDC

⁵ SDC is found to be erroneous regarding information pertaining to acquirers (Barnes, Harp and Oler, 2014).

and press releases is within 4 days.

To address our research question, we categorize each failed acquisition offer into one of two groups. The first group consists of all failed acquisition offers whose news article clearly identifies the target's management or its board of directors as rejecting the offer (rejection group). The second group includes all other reasons where the target did not explicitly express an objection to the acquisition offer (non-rejection group). During this categorization process, we further remove 146 observations that contain multiple reasons for the failure and therefore could not be exclusively assigned to either group. This step yields a final sample of 1,246 observations. Table 1 provides the classification of the failure reason, and shows that the rejection group consists of 673 observations. Within this group, the main categories for rejection are (1) the target board rejected the offer stating that the offer price is too low (210 observations), (2) the target board rejected the offer without providing a specific reason (169 observations), and (3) the target board rejected the offer stating that the offer is not in shareholders' best interest (146 observations). Our non-rejection group is comprised of 573 observations and includes 194 failed acquisition offers where the acquirer withdrew the offer, 132 observations where the acquirer disclosed that there is mutual consent by the acquirer and the target to cease the acquisition process, 29 observations where the acquisition was terminated due to regulatory obstacles, and 218 observations where failure was due to miscellaneous reasons.

[Insert Table 1 about here.]

A potential concern with regard to our classification process is that we inadvertently assign observations into the non-rejection group. In particular, the 132 observations that we classify as mutual consent and assign to the non-rejection group might actually belong to the rejection group. We believe that our classification process is appropriate, as none of the news articles that we read pertaining to the acquisition process of these 132 observations indicated a rejection by the target. It is only at the termination date that the news article mentions a mutual consent as the reason for the acquisition failure, implying that during the acquisition process the target's board of directors did not reject the acquisition offer. We confirm

that our classification process is appropriate in the empirical analysis section.

3. Empirical analysis

Our analyses in sections 3.1 and 3.2 investigate two possible explanations for the positive returns to the shareholders of target firms around the announcement date (e.g., information versus synergy). In Section 3.1, we examine the revaluation during the proposal period for the rejection group and the non-rejection group. In section 3.2, we further test for the information versus synergy hypotheses for both groups using future stock returns and future financial performance. In Section 3.3, we examine whether our main results are robust to the different factors identified in prior mergers and acquisitions literature associated with acquisition premium.

3.1 Revaluation during the proposal period

In this sub-section, we investigate the returns during the proposal period for the rejection and non-rejection groups. Figure 1 plots the CAR for the proposal period for the entire sample of failed acquisition offers and for each of the two groups. For the rejection group, the failure date is defined as the last rejection date identified from newspaper articles and press releases. For the non-rejection group, we define the failure date as the first press release that provides information about the reason for the acquisition failure.⁶ To account for differences in the length of the proposal period across acquisition offers, we follow the procedure described in detail by Malmendier et al. (2016) and express trading days as a percentage of the proposal period. For example, the 50 percent mark in the figure reflects trading day 50 if a bid fails after 100 trading days and trading day 20 if a bid fails after 40 trading days. The pattern of returns over the proposal period reflects a continuous updating by investors of the probability of the failure, as well as changes in the valuation of the target conditional on success.

[Insert Figure 1 about here.]

⁶ For both groups we verify that there are no further events that are related to the acquisition process by reading news articles regarding the target firm dating up to one year following the failure date.

As shown in Figure 1, for our entire sample, the mean CAR is about 5 percent over the 25 trading days preceding the acquisition announcement date. This is consistent with prior literature documenting pre-announcement stock price run-ups. Also, consistent with prior research, we observe a mean CAR of about 15 percent at the acquisition announcement date. As time progresses, there is a gradual decline in the mean CAR, as investors lower the probability of the acquisition's success. By the failure date, the positive revaluation that takes place prior to and at the acquisition announcement date almost fully dissipates. In the 25 trading days following the acquisition failure date, there is an insignificant downward drift in the mean CAR. To sum, over the entire proposal period, the mean CAR for the full sample is insignificantly different than zero, supportive of the synergy hypothesis and consistent with prior literature conclusions.

Extending prior literature, we conduct an analysis based on the failure reason by separating our sample to rejection and non-rejection groups. This separation allows us to develop sharper insights into the source of the acquisition premium. During the pre-announcement and announcement periods, the mean CAR for the rejection group is only slightly higher than that of the non-rejection group. However, during the period between the acquisition announcement and failure dates, the positive revaluation completely reverses for the non-rejection group, while it decreases substantially less for the rejection group. Further, the stock price declines significantly for the non-rejection group around the failure date, but does not significantly decline for the rejection group. Overall, over the entire proposal period, we observe a positive and significant revaluation for the rejection group and a negative and significant revaluation for the non-rejection group.

Figure 2 plots the mean CAR over the proposal period for each of the two groups, conditioning on whether firms remain independent or are acquired within five years following the failure date. Panel A of Figure 2 shows a positive revaluation over the proposal period for firms in the rejection group irrespective of whether they are acquired. In untabulated results we find that the positive revaluation over the proposal period is a significant 6.55 percent for target firms that remain independent and a significant 9.43 percent

for target firms who are acquired within the next five years. The difference in means between these two sub-groups is significant at the 1 percent level, providing evidence that the market is able to discern which target firms will be attractive targets in the future. Our finding of a positive revaluation for target firms that rejected an acquisition offer and remain independent is consistent with investors revising upward their assessment of the target firm's stand-alone value, and supports the information hypothesis. This result is novel and contradicts prior literature that showed that only the synergy hypothesis is applicable in the context of failed acquisition offers.

Panel B of Figure 2 plots the mean CAR over the proposal period for the non-rejection group, conditioning on whether firms remain independent or are acquired within five years following the failure date. As shown in this panel, we find a negative revaluation over the proposal period for firms in the non-rejection group irrespective of whether they are acquired or not. In untabulated results, we find a negative permanent revaluation over the proposal period of -18.52 percent for target firms that remain independent and -10.19 percent for target firms that are subsequently acquired. The difference in means between these two sub-groups is significant at the 1 percent level. Our finding of a negative revaluation for target firms in the non-rejection group is consistent with investors reacting not only to the acquisition failure but also to new negative information about the target's value, supportive of the information hypothesis. This result is also novel as it contradicts prior literature that showed that only the synergy hypothesis is applicable in the context of failed acquisition offers.

Overall, our results indicate that inferences regarding whether the acquisition premium is driven by the information or the synergy hypothesis crucially depends on identifying the failure reason. Prior literature, not conditioning on failure reason, concluded that the acquisition premium is solely driven by the synergy hypothesis. Since the two groups are of relatively similar size and one exhibits significant positive returns and the other significant negative returns, combining the two groups yields insignificant proposal period returns. Hence, separating the sample into these two groups provides sharper inferences with regard to the acquisition premium. Specifically, documenting that the information hypothesis

dominates the synergy hypothesis.

[Insert Figure 2 about here.]

Since Figure 1 does not provide economic and statistical significance for the differences in CARs between the rejection and non-rejection groups, we report both univariate results (Table 2) and multivariate results (Table 3) for the mean CAR over different windows during the proposal period for each group and for the difference in returns between the groups.

[Insert Table 2 about here.]

Table 2 shows that during the period starting 25 trading days and ending 2 trading days prior to the acquisition announcement date (A-25, A-2), there is a significant positive CAR of 3.97 percent for the rejection group and 1.96 percent for the non-rejection group, consistent with a pre-announcement stock price run-up. The difference in the mean CAR between the two groups is significant with a 10% p-value. In addition, the mean CAR over the five-day window around the acquisition announcement date (A-2, A+2) is a significant 14.46 percent for the rejection group and a significant 13.73 percent for the non-rejection group; but the mean CARs insignificantly differ from one another (p-value of 0.52). Moreover, the offer premium for both groups is similar and is around 30 percent. These results highlight that within failed acquisition offers, investors, *a priori*, do not differentiate between the rejection and non-rejection groups.

Moving to the intermediate period starting 2 trading days following the acquisition announcement date and ending 2 trading days prior to the failure date (A+2, F-2), we find negative and significant CARs for both groups. Specifically, the mean CAR for the rejection group is -4.15 percent, maintaining an overall positive revaluation of 14.28 percent. In contrast, the mean CAR for the non-rejection group is -16.54 percent, completely reversing the positive revaluation at the acquisition announcement (total CAR of -0.85 percent). These results provide evidence that during the intermediate period investors continuously update the probability of the acquisition offer to be successful. Our conclusion that the reason for the acquisition failure is prominent is confirmed by observing the 5-day mean CAR around the failure date (F-2, F+2). In

particular, for the rejection group we observe an insignificant CAR of 0.52 percent, while for the non-rejection group, we observe a negative and significant CAR of -11.87 percent. These results cannot be explained by the observation that for the rejection group the rejection date is the last rejection date while for some of the observations in the non-rejection group it is the first press release date. This is because if investors updated the probability of failure only for the rejection group we should observe a higher negative return during the intermediate period for the rejection group versus the non-rejection group. However, we observe a higher negative return for the non-rejection group both in the intermediate period and at the release of the reason for the acquisition failure, indicating that the failure reason was not known or anticipated at the time of the offer announcement or later. Last, we observe that over the entire proposal period there is a significant positive revaluation of 7.34 percent for the rejection group and a significant negative revaluation of -16.30 percent for the non-rejection group.

The negative revaluation of -16.30 percent for the non-rejection group stems from the failure date and the post-failure date. Whereas the reversal of the positive revaluation at the announcement date is to be expected due to the loss of the synergetic value, the negative revaluation result is novel and supports the information hypothesis. In additional untabulated analysis within the non-rejection group, we find a similar CAR pattern for 25 out of the 26 reasons where the negative revaluation appears when the failure reason is revealed (except for reason 21). This analysis confirms that there is a negative revaluation in response to the disclosure of the failure reason regardless of the failure reason. These results support our previous conclusion that the information hypothesis dominates the synergy hypothesis when conditioning on the failure reason.

We complement our univariate results by estimating the following multivariate regression:

$$CAR_j(X_i) = Rejection_j + Cash_j + Stock_j + Mix_j + Target_size_j + Offer_premium_j + PE_j + \varepsilon_j, \quad (1)$$

where $CAR_j(X_i)$ is calculated for target firm j over six different return windows X_i ; the entire

proposal period (A-25,F+25), the pre-acquisition announcement period CAR(A-25,A-2), the acquisition announcement period CAR(A-2,A+2), the intermediate period CAR(A+2,F-2), the failure period CAR(F-2,F+2), and the post-failure period CAR(F+2,F+25). The indicator variable, *Rejection_j* takes the value 1 if target firm *j* belongs to the rejection group, and 0 otherwise. *Cash_j* (*Stock_j*) is an indicator variable equal to 1 if the consideration for the acquisition of target firm *j* consists of 100 percent cash (stock), and 0 otherwise. *Mix_j* is an indicator variable equal to 1 if the consideration for the acquisition of target *j* consists of both cash and stock, and 0 otherwise.⁷ *Target_size_j* is calculated as the logarithm of target *j*'s market value as of 26 trading days prior to the acquisition announcement date. *Offer_premium_j* is the ratio of the initial offer price to target *j*'s stock price as of 26 trading days prior to the acquisition announcement date, minus one. *PE_j* is a dummy variable equal to one if the acquisition offer to target firm *j* is by a private equity firm. All of our regressions include year- and industry-fixed effects (based on the Fama-French 48-industry classification). We provide descriptive statistics regarding our control variables in Table 2. As shown in the table, a target firm in the rejection group is significantly more (less) likely to receive an all-cash (all-stock) offer than is a target firm in the non-rejection group. In addition, target firms in the rejection group have similar mean market values, same likelihood of a PE acquirer, and a similar offer premium.

[Insert Table 3 about here.]

Table 3 panel A reports the results of estimating equation (1). The multivariate results are consistent with the univariate results in Table 2, indicating that deal characteristics and firm attributes do not impact our conclusion from the univariate results. In particular, as shown in columns 1 and 2 of Table 3 panel A, during the pre-announcement period and at the acquisition announcement date, the coefficient on the rejection indicator is insignificantly different from zero. These results are consistent with investor inability to differentiate between the two groups prior to and at the time of the acquisition announcement date. In columns 3 and 4, the coefficient on the rejection indicator is positive and significant, indicating a

⁷ We identify the medium of payment for only 60 percent of our sample. Hence, the remaining 40 percent are captured by the intercept.

divergence between the two groups conditional on the reason for the acquisition failure. In the post-failure period (column 5), the coefficient is insignificant, consistent with market efficiency. As shown in column 6, over the entire proposal period the mean CAR is a significant 21.2 percent higher for the rejection group relative to the non-rejection group. This compares to 23.64 percent found in our univariate results in Table 2.⁸

The results of Table 3 Panel A show that the difference in CAR between the two groups is only significant for windows that begin two days after the acquisition announcement date and end two days after the acquisition failure date (columns 3 and 4). In contrast, the difference in CAR between the two groups is insignificant in the pre-announcement period, during the five-days surrounding the announcement date, and during the post-failure period (columns 1, 2, and 5). Hence, columns 3 and 4 are responsible for the significant results we observe in column 6, which is the entire proposal period. If the rejection and non-rejection groups are fundamentally different in deal- or firm-characteristics, then the coefficient on rejection should be significant in all CAR windows. Therefore, the results of Table 3 Panel A are unlikely to be driven by correlated omitted variables. Nevertheless, to validate that our results are not sensitive to the inclusion of these variables, we include deal- and firm-characteristics, identified as significant in prior literature, and estimate the following multivariate regression:⁹

$$\begin{aligned} CAR_j(X_i) = & Rejection_j + Cash_j + Stock_j + Mix_j + Target_Size_j \\ & + Offer_premium_j + PE_j + Hostile_j + Tender_j + Time_j + Acq_MB_j + R_Size_j \\ & + Acq_CAR_j + Merton_j + MOM_j + ROA_j + HHI_j + LI_j + \varepsilon_j, \end{aligned} \quad (2)$$

Where $Hostile_j$ is an indicator variable equal to 1 if the acquisition of target firm j is classified as a

⁸ Removing the 132 observations classified as mutual consent from the non-rejection group does not change our results. Specifically, for the six return windows reported in Table 3, we find CARs of 1.7%, -1.0%, 12.0%, 12.5%, 2.1%, and 22.8%, respectively.

⁹ Due to a significant loss of observations, equation 1 does not include several significant factors that affect acquisition premium. The main reason for the loss of observations is that our research design does not require acquiring firms to be publically traded.

hostile takeover, and 0 otherwise. $Tender_j$ is an indicator variable equal to 1 if the acquisition of target j is a tender offer, and 0 otherwise. $Time_j$ is the length of the acquisition process of target j , measured in number of days between the acquisition announcement date and the failure date. Acq_MB_j is the acquirer's market value divided by its book-value as of 26 trading days prior to the acquisition announcement date of target j . R_size_j is the target firm j 's market value divided by the acquirer's market value as of 26 trading days prior to the acquisition announcement date. Acq_CAR_j is the acquirer's CAR over the five-day window centered on the acquisition failure date of target j . $Merton_j$ is the target j 's probability of default measured using the Merton model. MOM_j is target j 's CAR measured over the one-year window ending one month prior to the acquisition announcement date. ROA_j is defined as the net income divided by the total assets of target j , averaged over the three years prior to the acquisition announcement date. HHI_j is the Hirschman-Herfindahl index calculated as the mean of the sum of the squared sales (in percentage) of all firms within the industry of target j , calculated in the fiscal year prior to the acquisition announcement date. LI_j is the Lerner-Index, measured as target j 's operating profit margin minus the industry average profit margin as of the end of the fiscal year prior to the acquisition announcement date. All of our regressions include year- and industry-fixed effects (based on the Fama-French 48-industry classification).¹⁰

As expected and shown in Panel B of Table 3, our results are qualitatively unchanged. While the coefficient on $Rejection_j$ remains positive and significant in columns 3, 4, and 6, the t-statistics, as expected, are smaller due the significant reduction in sample size. Additionally, our results confirm prior research that documents that firm- and deal-characteristics have a major effect on acquisition returns. Specifically, including firm- and deal-characteristics significantly increases the adjusted R-squares only for the regression that looks at the five-day window CAR around the acquisition announcement date (Column 2). For the other CAR windows, the inclusion of these variables has no impact on the fit of the regression and

¹⁰ We obtain similar results if we control for the acquirer being private.

on the magnitude of the coefficient on $Rejection_j$, which is our main variable of interest.

Overall, our univariate and multivariate results are consistent with the information hypothesis being the dominant explanation for the premium offered to firms in both groups. One interpretation of the negative revaluation experienced by firms in the non-rejection group is that prior to the acquisition announcement date, investors considered these firms as attractive targets due to their synergetic value, which results in a higher market value relative to their stand-alone value. Therefore, when the acquisition fails due to reasons such as the acquirer deciding not to proceed with the acquisition, regulatory intervention, or exogenous deterioration in market conditions, this acquisition premium disappears and new information with regard to the target stand-alone value is revealed, resulting in a negative revaluation. The result of a positive revaluation documented for the rejection group also supports the information hypothesis. In the next sub-section, we substantiate our conclusion regarding the two groups.

3.2 Information hypothesis versus synergy hypothesis

In this sub-section we investigate both hypotheses using both long-term stock returns and long-term financial performance. We use long-term stock returns to establish whether positive (negative) revaluation for the rejection (non-rejection) group is permanent. The absence of reversal of the proposal period revaluation over subsequent years would provide further evidence that the information hypothesis is the main driver for acquisition premiums. We also provide additional insights into the drivers of the acquisition premium by examining firms' future financial performance. Observing gains in operating, investing, and financing efficiencies will be consistent with the kick-in-the-pants hypothesis of Safieddine and Titman (1999). They conjecture that a failed acquisition provides impetus for target firm management to improve firm performance so as to forestall future takeover bids.

3.2.1 Long-term stock returns

In this sub-section, we test whether the revaluation of the two groups during the proposal period persists over the long term. We estimate long-term abnormal returns using the Fama-French four-factor

model:

$$R_{p,t} - R_{f,t} = \alpha_j + \beta_j (R_{m,t} - R_{f,t}) + \delta_j SMB_t + \sigma_j HML_t + \phi_j UMD_t + \varepsilon_{j,t} \quad (3)$$

where $R_{p,t}$ is the return on an equally-weighted portfolio p formed for each of the groups in calendar time for each month t ; $R_{f,t}$ is the risk-free rate, measured as the one-month treasury bill rate; $R_{m,t}$ is the market portfolio return, measured using the CRSP value weighted index; SMB_t , HML_t , UMD_t are the size, market-to-book, and momentum factor returns, respectively. The intercept (Jensen's alpha) is the abnormal return unexplained by the four factors. Portfolio and factor returns are measured for the 12, 24, 36, 48, and 60 month periods starting one month after the failure date.¹¹

[Insert Table 4 about here.]

Table 4 reports the alphas from estimating the Fama-French four-factor regressions using monthly-time series regression from January 1979 to December 2016. For the rejection group, we do not find any significant alphas except in the 36-month window, where the alpha is significant (t-statistic of 2.08) but not economically meaningful (an average annual abnormal return of 3.6 percent). For the non-rejection group, none of the alphas are significantly different than zero.

Overall, our results indicate that the revaluations documented during the proposal period for both groups do not reverse over the long-term, consistent with market efficiency. According to the synergy hypothesis, a positive revaluation for the rejection group stems from the expectation that these firms will be acquired in the future. Since our long-term returns are calculated only for firms that remain independent during the various horizons (12, 24, 36, 48, and 60 months) and since the positive revaluation over the proposal period does not reverse for these firms, we find no support for the synergy hypothesis. Rather, our results support the information hypothesis. Similarly, the evidence that the negative revaluation for the

¹¹ For a small sample of failed acquisition offers that takes place in more recent years, where we do not have returns for the 60 month period starting one more after the failure date, we use the longest available return period window.

non-rejection group does not reverse in the long-term also supports the information hypothesis. Having established that the revaluations over the proposal period for both groups are permanent, we further investigate the information versus synergy hypotheses by testing for changes in the future financial performance of both groups.

3.2.2 Future financial performance

In this subsection we test for changes in future financial performance. In contrast to stock returns that are conditional on market efficiency, firms' future financial performance provides an additional insight for differentiating between the two hypotheses. Our tests pertain to firms that remain independent over various horizons (12, 24, 36, 48, and 60 months). Thus, for target firms in our rejection group, we expect financial performance to improve, consistent with the permanent positive revaluation and supportive of the information hypothesis. Furthermore, an improvement of the target's future operating, investing, and financing performance will offer support for the kick-in-the-pants hypothesis. In addition, for target firms in our non-rejection group, we expect financial performance to deteriorate, consistent with our finding of negative permanent revaluation, also supporting the information hypothesis.

[Insert Table 5 about here.]

To test these predictions, we measure the future changes in target firms' operating, investing, and financing policies. We proxy for the changes in these policies using net income, sum of short- and long-term debt, number of employees, capital expenditures, R&D expense, and logarithm of total assets. For each of these variables, we compute the cumulative change starting one fiscal year prior to the acquisition announcement year and up to five years after. All measures, except for logarithm of total assets, are scaled by the firm's total assets as of the end of the fiscal year prior to the acquisition announcement year. Using the Propensity Score Matching (PSM) process with replacement, we then match each target firm to its closest match based on industry (Fama-French 48 industry classification), year, total assets, and return on

assets.¹² We investigate the matched-adjusted changes in each of these variables for the rejection and non-rejection groups, separately.

Table 5, panel A reports the changes in the long-term financial performance for our rejection group compared to a matched sample. Focusing on changes in net income, we find that the rejection group performs similarly to a matched sample up to five years following the acquisition announcement year. However, as reported earlier, the rejection group exhibits a positive revaluation during the proposal period that does not reverse over the next five years. Our results demonstrate that investors consider firms in the rejection group to be undervalued irrespective of future improvement in their accounting performance, supporting the information hypothesis. Next, we find a significant decrease in the target firm's debt level starting two years and up to four years following the acquisition announcement year compared to a matched sample. We also observe a significant reduction in operating and investing activities. In particular, we observe for target firms a significant reduction in the number of employees up to four years following the acquisition announcement year, in capital expenditure up to two years following the acquisition announcement year, and in firm size for up to five years following the acquisition announcement year, all in comparison to their matched sample. Overall, these results support the kick-in-the-pants hypothesis, as firms improve their financing, operating, and investment decisions following a failed acquisition offer without experiencing a decrease in net income. Interestingly, the improvement in operating efficiency for the rejection group is mainly concentrated in variables that are under management control such as number of employees, debt level, and capital expenditures. This indicates that although the market's perception of the undervaluation over the proposal period is correct, the undervaluation is unlocked due to the acquisition attempt. Specifically, in response to the acquisition attempt, management aggressively acts to reduce costs and increase firm efficiency, justifying investors' positive revaluation during the proposal period.

Table 5, panel B reports the results for the non-rejection group. Focusing on changes in net income,

¹² The matched sample includes the entire COMPUSTAT database after excluding our final sample of 1,248 failed acquisition offers.

we find a significant and consistent deterioration in net income relative to a matched sample up to five years following the acquisition announcement year. This result provides strong support for the information hypothesis and strengthens our earlier finding that firms in the non-rejection group exhibit a negative revaluation during the proposal period that does not reverse over the next five years. Moreover, the result provides corroborating evidence that these firms are not attractive on a stand-alone basis. Next, we find no change in the target firm's total debt and R&D expense up to five years following the acquisition announcement year. We do, however, find a significant reduction in the number of employees (capital expenditure) for up to two years (one year) following the acquisition announcement year and firm size up to five years following the acquisition announcement year, all in comparison to their matched sample. Overall, while firms in the non-rejection group attempt to improve their operational efficiency, similar to target firms in the rejection group, they are unable to increase their earnings relative to a matched sample and in untabulated results to the rejection group.

To summarize, the results in Table 5 support our previous conclusion that only the information hypothesis is applicable to each of the two groups. With regard to the rejection group, our results are also consistent with the kick-in-the-pants explanation.

3.3 Additional analyses

3.3.1 Corporate governance

Prior literature has been unable to reach a consensus as to whether commonly used corporate governance measures promote managerial incentive alignment or rent extraction. Failed acquisition offers provide an ideal setting for potential conflicts of interest between managers and shareholders. Because an acquisition offer strongly impacts the CEO's career prospects and wealth, such an instance presents an opportunity to examine whether managers act with or against shareholders' best interests. We test whether four commonly applied corporate governance measures (i.e., staggered board, poison pill provision, CEO share ownership, and CEO option ownership) add to or subtract from the target firm value for different

windows over the acquisition proposal period.¹³

We obtain information on the four corporate governance measures from two sources. Using proxy statements, we manually obtain information on staggered board, CEO share ownership and CEO option ownership for 398 observations. We obtain information regarding the existence of a poison pill strategy using the Factset Shark Repellent Database. We find that 205 target firms (52 percent) have a staggered board and 149 target firms (37 percent) have a poison pill provision. With regard to CEO ownership (shares and options), we find that CEOs hold, on average, a significant ownership of their firm's outstanding shares (9.81 percent). Interestingly, CEO ownership is mainly comprised of shareholdings (7.41 percent) compared to option ownership (2.40 percent). Hence, our sample consists of CEOs who hold a significant amount of undiversified wealth.

We examine the consequences of corporate governance measures by estimating the following multivariate regression:

$$\begin{aligned} CAR_j(X_i) = & Rejection_j + Cash_j + Stock_j + Mix_j + Target_Size_j \\ & + Offer_premium_j + PE_j + ST_board_j + Ppil_j + Perc_share_j + Per_opt_j + \varepsilon_j, \end{aligned} \quad (4)$$

Where ST_Board_j is an indicator variable equal to 1 if target j has a staggered board in the year prior to the acquisition announcement date, and 0 otherwise. $Ppil_j$ is an indicator variable equal to 1 if target j has a poison pill provision in the year prior to the acquisition announcement date, and 0 otherwise. $Perc_share_j$ is the percentage of shares held by target j 's CEO divided by target j 's number of shares outstanding as of 25 trading days prior to the acquisition announcement date. $Perc_opt_j$ is the percentage of vested and unvested options held by target j 's CEO divided by target j 's number of shares outstanding as of 25 trading days prior to the acquisition announcement date.

[Insert Table 6 about here.]

¹³ Ideally, we would prefer commonly used comprehensive corporate governance measures (e.g., G-index and E-index); however, only a few of the firms in our sample are covered by these measures.

Overall, conditioning on the failure reason, we find no evidence that staggered board or CEO option holdings enhance shareholders value. Specifically, across all windows, the coefficient on staggered board is close to zero and insignificant. In contrast, both the existence of a poison pill provision and CEO shareholdings significantly enhance the target firm's shareholders value over the proposal period. These results indicate that investors ignore the possibility that poison pill provisions or large CEO shareholdings enhance management entrenchment, and that they perceive both measures to align the interest of management and shareholders more effectively. It is plausible that investors believe that these two measures increase the ability of management to extract concessions from the acquirer and to reject the acquisition if the target value is not maximized. More importantly, we find that our results from table 3 hold after controlling for corporate governance measures. Specifically, the coefficient on *Rejection_{it}* remains positive and significant in columns 3, 4, and 6, while the t-statistics are smaller due the significant reduction in sample size.

3.3.2 Financial buyers

Financial buyers are typically private equity firms that are seeking to acquire undervalued targets with a potential to generate high future cash flows. Following an acquisition, they often treat the target as a part of their financial portfolio, selling the target firm once exit opportunities become sufficiently appealing. Hence, these deals increase the likelihood that the proposal period returns reflect target revaluation rather than synergy gains (e.g., Gorbenko and Malenko (2014)). We proxy for financial buyers in two ways: the first method identifies whether the acquirer is a private equity firm, and the second method classifies an acquirer that is not in the target's same 3-digit SIC code as a financial buyer. We then replicate the analyses of Table 3 for these two groups.

[Insert Table 7 about here.]

Table 7, Panel A reports the results when private equity firms are used as a proxy for financial buyers, and Panel B reports the results when an acquirer that is not in the target's same 3-digit SIC code as a proxy for a financial buyer. As shown in the table, we find consistent results for both proxies.

Specifically, we find no difference both in the acquisition pre-announcement period and in the announcement period in CAR, similar to Table 3. For the five days surrounding the failure date and for the entire proposal period, for both specifications the rejection group has a significant higher CAR than the non-rejection group. For the PE specification, the CAR over the five days surrounding the failure date is 16.5% and 24.1% over the entire proposal period. Similarly, for the specification where the acquirer is not in the same 3-digit SIC code as the target the CAR over the five days surrounding the failure date is 17.5% and 24.1% over the entire proposal period. These results compare to the results in Table 3 wherein the CAR over the five days surrounding the failure date is 12.4% and 21.2% over the entire proposal period. The higher returns that we observe around the failure date window in the sub-samples where the acquirer is a financial buyer are consistent with our conjecture that targets should reflect high revaluations when they reject an acquisition offer.¹⁴

3.3.3 Sensitivity analyses

In this subsection, we run a battery of untabulated tests to validate our main results. Because our data requirement includes all acquisitions where the target market value is at least \$10 million, extremely small deals can affect the returns reported in Table 3. To alleviate concerns that our results are driven by small deals, we re-run Table 3 using only target firms with market capitalization of at least \$50 million and at least \$120 million (the median market capitalization in our sample). Our results remain qualitatively unchanged, indicating that small target market capitalizations are not driving our results. Specifically, for the six return windows reported in Table 3, we find CARs of 0.5% (-0.2%), -0.4% (-0.2%), 12.6% (12.8%), 11.0% (10.1%), 0.2% (-0.7%), 20.7% (19.7%) for market capitalizations above \$50 million (\$120 million).

Second, in the rejection group, 24.8% of the deals are classified as hostile by SDC. When we add unsolicited offers to that set, we observe that 56.9% of the attempted acquisitions are unfriendly. In comparison, in the non-rejection group only 1.4% of the deals are classified as hostile by SDC (9.3% when

¹⁴ Our Table 3 results are robust to removing both proxies of financial buyers.

we expand unfriendly to include both hostile and unsolicited). Therefore, to verify that our results are not due to hostile attempted takeovers, we limit ourselves to 782 friendly acquisition attempts. The six return windows are 0.3%, -4.3%, 7.9%, 10.7%, 3.1%, and 16.9%. This differs from Table 3 only in the five-day window around the announcement date, which is -4.3% (t-statistic of -2.71), compared to -0.11% (t-statistic of -1.02) reported in Table 3. All other CAR windows are similar, indicating that hostile takeovers are not driving our results.

Third, since research indicates that merger activity occurs in waves over time, it is plausible that our results are driven by a specific time period. Therefore, we re-run Table 3, splitting the sample into two and three equal periods. The results do not show influence by any specific time period. In addition, it is plausible that our results are affected by market participants who anticipate that the target will be acquired by another party down the line (future takeovers). Rerunning Table 3 and excluding any deals where the target is either acquired or is in play in the ensuing 12 months (73 observations) does not change our results. Finally, our results are robust to limiting our sample to all cash or all stock acquisitions, running our analysis for low and high market to book, and removing all LBOs deals.

4. Conclusion

In this paper we show that the revaluation of target firms in failed acquisition offers is fundamentally dependent on the reason for the acquisition failure. Specifically, we document a permanent positive revaluation if the failure is due to rejection by either the target's board of directors or by its management. In addition, we document a permanent negative revaluation if the failure is due to other reasons that are not under the direct control of the target. Prior literature, not conditioning on the failure reason, documents a positive revaluation (no revaluation) for firms that are subsequently acquired (remain independent), supporting the synergy hypothesis. In contrast, we find that, conditioning on the failure reason, the information hypothesis dominates the synergy hypothesis for each of the two groups irrespective of subsequent acquisitions.

Our results are limited to conclusions pertaining to our sample of failed acquisitions. We are

unable to conclude whether targets that were successfully acquired are purchased due to their synergetic value or because they are undervalued. Unfortunately, acquired target firms are rarely kept as a separate subsidiary with publicly available financial information, and hence, post-acquisition performance of successful acquisitions is impossible to evaluate. Despite this caveat, we believe that our comprehensive database of failed acquisition offers will generate future research on new topics and revisit and test prior literature.

References

- Agrawal, Anup, and Jeffrey Jaffe, 2000, The Post-Merger Performance Puzzle, *Advances in Mergers and Acquisitions*, 1, 7-41.
- Agrawal, Anup, Jeffrey F. Jaffe, and Gershon N. Mandelker, 1992, The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly, *The Journal of Finance*, 47, 1605-1621.
- Andrade, Gregor, Mark Mitchell, and Erik Stafford, 2001, New Evidence and Perspectives on Mergers?, *Journal of Economic Perspectives*, 103-120.
- Axelson, Ulf, Tim Jenkinson, Per Strömberg, Per., and Michael S. Weisbach, 2013. Borrow cheap, buy high? The determinants of leverage and pricing in buyouts. *The Journal of Finance* 68, 2223–2267.
- Barnes, Beau G., Nancy L. Harp, and Derek Oler, 2014, Evaluating the SDC Mergers and Acquisition Database, *Financial Review* 49, 793–821.
- Bates, Thomas W., and David A. Becher, 2017, Bid Resistance by Takeover Targets: Managerial Bargaining or Bad Faith?, *Journal of Financial and Quantitative Analysis* 52, 837–866.
- Bates, Thomas W., and Michael L. Lemmon, 2003, Breaking up is hard to do? An analysis of termination fee provisions and merger outcomes, *Journal of Financial Economics* 69, 469–504.
- Bhagat, Sanjai, Ming Dong, David Hirshleifer, and Robert Noah, 2005, Do tender offers create value? New methods and evidence, *Journal of Financial Economics* 76, 3–60.
- Bradley, Michael, Anand Desai, and E. Han Kim, 1983, The rationale behind interfirm tender offers. Information or synergy?, *Journal of Financial Economics* 11, 183–206.
- Cumming, Douglas, Donald S. Siegel, and Mike Wright, 2007, Private equity, leveraged buyouts and governance. *Journal of Corporate Finance*, 13, 439-460.
- Davidson, Wallace N., Dipa Dutia, and Louis Cheng, 1989, A Re-Examination of the Market Reaction to Failed Mergers, *The Journal of Finance* 44, 1077–1083.
- Dodd, Peter, 1980, Merger proposals, management discretion and stockholder wealth, *Journal of Financial Economics* 8, 105–137.
- Gaughan, Patrick A., 2010, *Mergers, Acquisitions, and Corporate Restructurings*, New York: Wiley.
- Gorbenko, Alexander S., and Andrey Malenko, 2014, Strategic and financial bidders in takeover auctions, *The Journal of Finance* 69, 2513–2555.
- Guo, Shourun, Edie S. Hotchkiss, and Weihong Song, 2011. Do buyouts (still) create value? *The Journal of Finance* 66, 479–517.
- Harford, Jarrad, Jared Stanfield, and Feng Zhang, 2019, Do insiders time management buyouts and freezeouts to buy undervalued targets?, *Journal of Financial Economics*, 131, 206–231.
- Healy, Paul M., Krishna G. Palepu, and Richard S. Ruback, 1992, Does Corporate Performance Improve after Mergers?, *Journal of Financial Economics*, 31, 135-75.
- Malmendier, Ulrike, Marcus M. Opp, and Farzad Saidi, 2016, Target revaluation after failed takeover attempts: Cash versus stock, *Journal of Financial Economics* 119, 92–106.
- Safieddine, Assem, and Sheridan Titman, 1999, Leverage and Corporate Performance: Evidence from

Unsuccessful Takeovers, *The Journal of Finance* 54, 547–580.

Schwert, G. William, 1996, Markup pricing in mergers and acquisitions, *Journal of Financial Economics* 41, 153–192.

Weston, J. Fred, Mark L. Mitchell, and J. Harold Mulherin, 2004, *Takeovers, Restructuring, and Corporate Governance*, New Jersey: Pearson Prentice Hall.

APPENDIX 1

Variable Definitions

Variable	Definition
Rejection	A indicator variable equal to 1 if an acquisition is rejected by either the target's board of directors or its management, and 0 otherwise
CAR [A-25, A-2]	CAR of the target starting 25 trading days and up to 2 trading days before the acquisition announcement date
CAR [A-2, A+2]	CAR of the target over the five-day acquisition announcement window (termed as announcement period)
CAR [A+2, F-2]	CAR of the target starting 2 trading days after the acquisition announcement date and ending 2 trading days before the acquisition failure date (acquisition failure date is defined as the first press release discussing the details of the acquisition failure)
CAR [F-2, F+2]	CAR returns of the target over the five-day acquisition failure window
CAR [F+2, F+25]	CAR of the target starting 2 trading days and up to 25 trading days following the acquisition failure date
CAR [A-25, F+25]	CAR of the target starting 25 trading days before the acquisition announcement date and ending 25 trading days after the acquisition failure date (termed as proposal period)
Cash	An indicator variable equal to 1 if the consideration for the acquisition consists of 100% cash, and 0 otherwise
Stock	An indicator variable equal to 1 if the consideration for the acquisition consists of 100% stock, and 0 otherwise
Mix	An indicator variable equal to 1 if the consideration for the acquisition consists of both stock and cash, and 0 otherwise
Target_size	Logarithm of the market value of equity of the target as of 26 trading days prior to the acquisitions announcement date
Offer premium	The ratio of the initial offer price to the stock price of the target as of 26 trading days prior to the acquisition announcement date, minus one. For acquisition offers with missing initial offer prices, the initial offer price is approximated as the target's stock price two trading days after the acquisition announcement date
PE	An indicator variable equal to 1 if the acquisition offer is by a private equity firm, and 0 otherwise.
Hostile	An indicator variable equal to 1 if the acquisition of the target is classified as a hostile takeover, and 0 otherwise
Tender	An indicator variable equal to 1 if the acquisition of the target is a tender offer, and 0 otherwise
Time	The length of the acquisition process, measured between the acquisition date and failure date
Acq_MB	The acquirer's market value divided by its book-value as of 26 trading days prior to the acquisition announcement date
Acq_CAR	The acquirer's CAR over the five-day window centered on the acquisition failure date

Variable	Definition
Merton	The target's probability of default measuring using the Merton model
Mom	The target's CAR measured over the one-year window ending one month prior to the acquisition announcement date.
ROA	The net income divided by the total assets of the target averaged over the three years prior to the acquisition announcement date
HHI	The mean of the sum of the squared sales (in percentage) of all firm with the industry of the target, calculated in the fiscal year prior to the acquisition announcement date
LI	The Lerner-Index is measured as the target's operating profit margin minus the industry average profit margin as of the end of the fiscal year prior to the acquisition announcement date
$\Delta_{y-1}^{y+k}(NI)/TA_{y-1}$	The cumulative change in the target's net income starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$
$\Delta_{T,M}\Delta_{y-1}^{y+k}(NI)/TA_{y-1}$	The difference between the cumulative change in the target T 's net income starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$ and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Debt)/TA_{y-1}$	The difference between the cumulative change in the target T 's sum of short- and long-term debt starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$ and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Emp)/TA_{y-1}$	The difference between the cumulative change in the target T 's number of employees starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$ and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.
$\Delta_{T,M}\Delta_{y-1}^{y+k}(CapEx)/TA_{y-1}$	The difference between the cumulative change in the target T 's capital expenditure starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$ and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.

Variable	Definition
$\Delta_{T,M}\Delta_{y-1}^{y+k}(R\&D)/TA_{y-1}$	The difference between the cumulative change in the target T 's R&D expense starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), scaled by the target's total assets as of $Year_{y-1}$ and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.
$\Delta_{T,M}\Delta_{y-1}^{y+k}\log(TA)$	The difference between the cumulative change in the target T 's logarithm of total assets starting in the fiscal year before the acquisition announcement year y ($Year_{y-1}$) and ending in the k^{th} fiscal year ($Year_{y+k}$) after the acquisition announcement (k is from +1 to +5), and the same variable calculated for a matched firm M . The matched firm is based on a Propensity Score Matching (PSM) with replacement based on industry (Fama-French 48 industry classification), year, total assets, and return on assets.
Staggered board	An indicator variable equal to 1 if the target has a staggered board in the year prior to the acquisition announcement date, and 0 otherwise
Poison pill provision	An indicator variable equal to 1 if the target has a poison pill provision in the year prior to the acquisition announcement date, and 0 otherwise
CEO share ownership	The percentage of shares held by the target's CEO divided by the target's number of shares outstanding as of 25 trading days prior to the acquisition announcement date
CEO option ownership	The percentage of vested and unvested options held by the target's CEO divided by the target's number of shares outstanding as of 25 trading days prior the acquisition announcement date

APPENDIX 2

Sample Construction

Step 1 –Filtering using SDC information	Number of observations
Thompson Reuters Securities Data Company (SDC) Mergers and Acquisitions database sample that satisfies the following criteria: (1) the merger or acquisition is announced between January 1, 1979 and December 31, 2016, (2) the target is a U.S. company, and (3) the target is a publicly traded company	63,082
Excluding successful acquisitions (keeping observations that have the status of withdrawn or non-missing withdrawn date)	-56,928
Excluding observations in which the acquirer sought to acquire less than 50% (keeping observations with missing values)	-767
Excluding observations whose target's market value is less than \$10 million as of 25 trading days prior to the acquisition announcement date	-422
Excluding observations that are classified by SDC as "Seeking Buyer Withdrawn" or "Dis Rumor"	-443
Excluding observations with missing CRSP permanent number	-397
Excluding observations in which the target is not traded as of 25 trading days prior to the acquisition announcement date	-385
Excluding observations with missing COMPUSTAT gvkey	-147
Excluding observations classified as share repurchase	-320
Excluding observations in which the target and the acquirer are the same firm	-72
Excluding observations in which the target's stock price is less than \$1 as of 25 trading days prior to the acquisition announcement date	-68
Total observations after filtering using SDC information	3,133
Step 2 - Manual Filtering using news articles information	
Excluding observations that we identified as acquirers seeking less than 50%	-105
Excluding observations that we identified as seeking buyer and their intention was withdrawn	-78
Excluding observations that we identified as delisted during the acquisition process	-71
Excluding observations that we identified as rumors	-63
Excluding observations that we identified as going through a recapitalization/spin off/restructuring	-57

Excluding observations that we identified as successful acquisitions	-35
Excluding observations that we identified as duplicates	-28
Excluding observations that we identified as no formal offer was made	-25
Excluding observations that we identified as the acquirer already owning more than 50% of target	-8
Excluding observations that we identified as sales between different shareholders	-6
Excluding observations that we identified as private targets	-2
Total observations that we identified as inconsistent with SDC	478
Excluding failed acquisition offers with multiple bidders where one bidder successfully acquired the target	-627
Combining multiple bidders for the same target into one observation if all bidding parties fail in acquiring the target	-241
Excluding observations where we could not find a press release regarding the acquisition process	-195
Excluding observations with missing information on COMPUSTAT or CRSP	-105
Excluding observations where the acquisition process exceeds one year	-95
Total observations with a failure reason	1,392
Excluding observations with multiple reasons for the acquisition failure	-146
Final sample	1,246

TABLE 1
Classification of failure reasons

Code	Reason	N
Rejection Group		
1	Target board rejected the offer stating that the offer price is too low	210
2	Target board rejected the offer without providing any specific reason	169
3	Target board rejected the offer stating it is not in shareholders' best interest	146
4	Target Board and target shareholders rejected the offer	80
5	Target board rejected the offer citing inability of the acquirer to get financing	33
6	Target board rejected the offer citing an anti-takeover mechanism	23
7	Target board rejected the offer citing regulation	8
8	Target board rejected the offer stating managers' concern for their personal fate	4
Total Rejection Group		673
Non-Rejection Group		
Acquirer withdrew offer due to:		
1	Acquirer's shareholders objected	43
2	Acquirer stated that the target has poor performance	43
3	Acquirer loss of interest	36
4	Acquirer stated that the target stock price became too high	20
5	Acquirer stated deterioration in industry conditions	19
6	Acquirer stated due diligence	11
7	The acquirer became a target	8
8	Acquirer stated that the acquisition is not in the acquirer shareholders' best interest	5
9	Acquirer was unable to receive a pooling treatment	5
10	Acquirer stated that the target is purchasing another firm	2
11	Acquirer's lenders objected	2
Total		194
Mutual consent of acquirer and target to terminate the offer:		
12	Mutual consent of termination (not citing specific reasons)	55
13	Disagreement over price	44
14	Recent stock market activity / decline in both companies' share prices	15
15	Acquirer and target offer differing views about the failure	9
16	Delay in regulation	4
17	Bad synergy	5
Total		132
Regulatory obstacles that led to the failure of the acquisition offer:		
18	Antitrust	16
19	Acquirer decided that regulation is excessive	5

Code	Reason	N
20	Other regulatory obstacles	8
	Total	29
	Miscellaneous reasons	
21	Chapter 11, capital infusion to prevent insolvency, restructuring agreement with creditors	47
22	News reports indicating that the acquirer is unable to obtain financing	35
23	News reports indicating that the acquirer withdrew due to poor performance	28
24	Other reasons	23
25	Unable to complete deal on time	9
26	No reason provided for withdrawal	76
	Total	218
Total Non- Rejection Group		573
Total number of failed proposed deals		1,246

This table presents the distribution of failure reasons for our sample of 1,246 failed acquisition offers. We identify the failure reason for each deal by reading related press releases and news articles using the Factiva database over the period starting six months prior to the SDC acquisition announcement date through one year after the SDC withdrawn date. We classify the 1,246 failed acquisitions into two groups – wither target board or management rejected the acquisition offer (rejection group), and failed acquisitions due to other reasons (non-rejection group).

TABLE 2
Descriptive statistics and univariate results

	Rejection group				Non-rejection group				Diff
	N	Mean	Median	STD	N	Mean	Median	STD	p-value
CAR [A-25, A-2]	673	3.97% ^{***}	2.53% ^{***}	17.64%	573	1.96% ^{**}	0.63% [*]	21.19%	0.07 [*]
CAR [A-2, A+2]	673	14.46% ^{***}	11.74% ^{***}	16.39%	573	13.73% ^{***}	10.66% ^{***}	22.78%	0.52
CAR [A+2, F-2]	673	-4.15% ^{***}	-2.62% ^{***}	19.99%	573	-16.54% ^{***}	-12.66% ^{***}	22.45%	0.00 ^{***}
CAR [F-2, F+2]	673	0.52%	-0.52%	14.29%	573	-11.87% ^{***}	-9.95% ^{***}	20.23%	0.00 ^{***}
CAR [F+2, F+25]	673	-4.26% ^{***}	-4.45% ^{***}	15.68%	573	-4.26% ^{***}	-4.54% ^{***}	25.53%	1.00
CAR [A-25, F+25]	673	7.34% ^{***}	5.56% ^{***}	31.70%	573	-16.30% ^{***}	-16.89% ^{***}	40.42%	0.00 ^{***}
$\Delta_{y-1}^{y+5}(NI)/TA_{y-1}$	387	0.037	0.014	0.297	292	0.022	0.014	0.416	0.03 ^{**}
$\Delta_{y-1}^{y+5}(Emp)/TA_{y-1}$	398	0.296	0.077	1.267	296	0.267	0.010	0.839	0.73
$\Delta_{y-1}^{y+5}(Debt)/TA_{y-1}$	374	0.003	0.000	0.020	281	0.005	0.000	0.020	0.10 [*]
$\Delta_{y-1}^{y+5}(CapEx)/TA_{y-1}$	368	0.029	0.000	0.200	275	0.050	0.002	0.203	0.18
$\Delta_{y-1}^{y+5}(R\&D)/TA_{y-1}$	164	0.039	0.000	0.248	113	0.069	0.005	0.257	0.33
$\Delta_{y-1}^{y+5}log(TA)$	401	0.181	0.208	0.822	301	0.186	0.251	0.980	0.94
Cash	673	43.39%	0.00%	49.60%	573	23.04%	0.00%	42.14%	0.00 ^{***}
Stock	673	9.06%	0.00%	28.73%	573	22.16%	0.00%	41.57%	0.00 ^{***}
Mix	673	13.08%	0.00%	33.74%	573	15.36%	0.00%	36.09%	0.25
Target MV in \$billions	673	1.04	0.12	4.05	573	0.92	0.09	4.45	0.62
Offer premium	673	32.76%	27.61%	40.08%	573	29.80%	25.00%	39.91%	0.19
Mom	673	9.62%	3.95%	56.96%	571	-2.43%	-8.32%	62.73%	0.00 ^{***}
PE	673	8.32%	0.00%	27.64%	573	10.47%	0.00%	30.64%	0.19

This table provides descriptive statistics for variables used in the paper for the rejection and non-rejection groups. All variables are defined in Appendix 1. The last column presents the p-value for difference in means between the two groups. The sample period spans 1979 through 2016. ^{***}, ^{**}, ^{*} denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

TABLE 3
Returns for different windows during the proposal period for
the rejection and non-rejection groups

Panel A	(1) CAR [A-25, A-2]	(2) CAR [A-2, A+2]	(3) CAR [A+2, F-2]	(4) CAR [F-2, F+2]	(5) CAR [F+2, F+25]	(6) CAR [A- 25, F+25]
Rejection	0.008 [0.74]	-0.011 [-1.02]	0.109*** [7.48]	0.124*** [11.70]	0.015 [1.15]	0.212*** [10.18]
Cash	-0.005 [-0.36]	0.040*** [2.93]	0.016 [0.87]	-0.051*** [-3.90]	-0.009 [-0.57]	0.001 [0.04]
Stock	-0.012 [-0.72]	-0.014 [-0.80]	-0.044** [-2.00]	-0.036** [-2.16]	0.049** [2.40]	-0.085*** [-2.62]
Mix	-0.001 [-0.06]	-0.012 [-0.68]	-0.013 [-0.60]	-0.042*** [-2.59]	-0.004 [-0.23]	-0.088*** [-2.77]
Target_size	0.003 [1.07]	0.001 [0.35]	0.015*** [3.33]	0.011*** [3.43]	0.003 [0.88]	0.030*** [4.73]
Offer premium	0.232*** [18.19]	0.188*** [13.96]	-0.025 [-1.37]	-0.005 [-0.43]	0.006 [0.38]	0.248*** [9.85]
PE	-0.018 [-1.02]	-0.016 [-0.86]	0.001 [0.05]	-0.019 [-1.09]	0.027 [1.24]	-0.047 [-1.38]
Constant	-0.058*** [-3.11]	0.074*** [3.76]	-0.219*** [-8.06]	-0.141*** [-7.47]	-0.076*** [-3.28]	-0.344*** [-9.33]
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Adjusted R ²	23.7%	16.5%	14.6%	12.8%	-1.1%	21.7%

Panel A of this table reports the estimated coefficients for regression: $CAR_j(X_i) = Rejection_j + Cash_j + Stock_j + Mix_j + Target_size_j + Offer_premium_j + PE_j + \varepsilon_j$, while Panel B reports the estimated coefficients for regression: $CAR_j(X_i) = Rejection_j + Cash_j + Stock_j + Mix_j + Target_size_j + Offer_premium_j + PE_j + Hostile_j + Tender_j + Time_j + Acq_MB_j + R_Size_j + Merton_j + Mom_j + ROA_j + HHI_j + Ll_j + \varepsilon_j$, where $CAR_j(X_i)$ covers the six different return windows for firm j , detailed in the column headings and described in Appendix 1. All other variables are also defined in Appendix 1. The sample includes 1,246 observations in Panel A and 475 observations in Panel B, from 1979 through 2016. All regressions include Fama and French 48-industry dummies and year dummies. Below each coefficient value is the corresponding t-statistic. ***, **, * denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

Panel B	(1) CAR [A-25, A-2]	(2) CAR [A-2, A+2]	(3) CAR [A+2, F-2]	(4) CAR [F-2, F+2]	(5) CAR [F+2, F+25]	(6) CAR [A- 25, F+25]
Rejection	0.003 [0.15]	-0.020 [-0.90]	0.101*** [3.26]	0.151*** [6.05]	-0.005 [-0.17]	0.182*** [3.79]
Cash	-0.044* [-1.69]	0.046 [1.55]	-0.005 [-0.12]	-0.078** [-2.36]	0.007 [0.18]	-0.085 [-1.33]
Stock	-0.044* [-1.84]	-0.017 [-0.62]	-0.059 [-1.57]	-0.04 [-1.33]	0.056 [1.51]	-0.129** [-2.23]
Mix	-0.019 [-0.72]	-0.026 [-0.89]	0.001 [0.03]	-0.038 [-1.17]	0.003 [0.07]	-0.096 [-1.52]
Target_size	-0.008 [-1.51]	0.011* [1.78]	0.011 [1.29]	0.017** [2.48]	0.008 [0.89]	0.024* [1.78]
Offer premium	0.293*** [11.19]	0.347*** [11.67]	0.033 [0.81]	0.023 [0.70]	0.029 [0.70]	0.445*** [7.00]
PE	0.140 [1.38]	-0.055 [-0.48]	0.089 [0.63]	-0.042 [-0.33]	-0.025 [-0.16]	0.046 [0.19]
Hostile	0.016 [0.52]	0.015 [0.44]	-0.004 [-0.09]	-0.054 [-1.42]	-0.004 [-0.09]	-0.011 [-0.15]
Tender	-0.014 [-0.41]	0.079** [2.12]	-0.021 [-0.42]	0.040 [0.98]	-0.042 [-0.81]	0.079 [1.00]
Time	0.000 [1.33]	0.000 [0.17]	-0.001*** [-3.24]	0.000 [-1.58]	0.000 [1.22]	0.000 [-1.04]
Acq_MB	-0.001 [-0.21]	0.004 [1.26]	-0.005 [-1.08]	0.004 [1.18]	0.001 [0.17]	0.006 [0.83]
R_Size	0.005 [1.01]	-0.018*** [-3.07]	0.016* [1.83]	0.007 [1.05]	0.001 [0.11]	0.017 [1.36]
Acq_CAR	-0.161* [-1.68]	0.173 [1.59]	-0.049 [-0.32]	-0.057 [-0.47]	-0.356** [-2.36]	-0.371 [-1.60]
Merton	0.071*** [4.63]	0.007 [0.39]	0.052** [2.20]	-0.021 [-1.07]	0.018 [0.76]	0.100*** [2.69]
Mom	-0.001 [-0.02]	0.032 [0.40]	0.169 [1.60]	-0.164* [-1.85]	-0.607*** [-5.52]	-0.406** [-2.37]
ROA	-0.134 [-0.42]	-0.067 [-0.19]	-0.183 [-0.37]	-0.751* [-1.90]	-0.472 [-0.95]	-1.595** [-2.09]
HHI	0.000 [-0.17]	-0.003 [-1.21]	-0.002 [-0.51]	-0.002 [-0.52]	-0.007* [-1.81]	-0.010* [-1.67]
LI				0.124 [1.39]		0.337* [1.96]
Constant	0.003 [0.06]	0.004 [0.08]	-0.127* [-1.90]	-0.127** [-2.34]	-0.053 [-0.79]	-0.176* [-1.69]
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Adjusted R ²	27.8%	34.4%	14.6%	12.0%	4.8%	24.6%

TABLE 4
Long-run abnormal returns following the acquisition failure date

	(1)	(2)
	Rejection group	Non-rejection group
12-months		
Alpha	0.001 [0.58]	-0.003 [-0.58]
Adjusted R ²	57.0%	30.5%
24-months		
Alpha	0.002 [1.23]	-0.001 [-0.41]
Adjusted R ²	64.4%	53.5%
36-months		
Alpha	0.003** [2.08]	0.000 [0.10]
Adjusted R ²	70.4%	63.3%
48-months		
Alpha	0.002 [1.47]	-0.000 [-0.13]
Adjusted R²	74.4%	68.0%
60-months		
Alpha	0.002 [1.52]	0.002 [1.23]
Adjusted R ²	75.6%	64.4%

This table reports the alphas of estimating the monthly time-series regression (444 observations) of a four-factor Fama-French model: $R_{p,t} - R_{f,t} = \alpha_j + \beta_j(R_{m,t} - R_{f,t}) + \delta_j SMB_t + \sigma_j HML_t + \phi_j UMD_t + \varepsilon_{j,t}$, where $R_{p,t}$ is the return of an equally-weighted portfolio p formed for each month t between January 1979 and December 2016; $R_{f,t}$ is the risk free rate, measured as the one-month treasury bill rate; $R_{m,t}$ is the market portfolio return, measured using CRSP value weighted index; SMB_t , HML_t , UMD_t are the size, market-to-book, and momentum factor returns, respectively. For brevity, the coefficient estimates of these variables are not tabulated. The intercept (Jensen's alpha) is the abnormal return unexplained by the four factors. Portfolio and factor returns are measured for the 12, 24, 36, 48, and 60 month periods starting one month after the failure date. Column 1 reports the results for the rejection group, while column 2 reports the results for the non-rejection group. Below each alpha value is the corresponding t-statistic. ***, **, * denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

TABLE 5

Long-term changes in the financial performance of the rejection and non-rejection groups

Panel A: Rejection group

	Match-adjusted change in operating metrics from Year $y-1$ to Year $y+k$					
	-1 to 0	-1 to 1	-1 to 2	-1 to 3	-1 to 4	-1 to 5
$\Delta_{T,M}\Delta_{y-1}^{y+k}(NI)/A_{y-1}$	0.005 [0.64]	0.001 [0.05]	0.018 [0.98]	0.012 [0.65]	0.015 [0.63]	-0.004 [-0.18]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Debt)/A_{y-1}$	0.004 [0.35]	-0.012 [-0.57]	-0.058* [-1.84]	-0.087** [-2.33]	-0.101* [-1.89]	-0.091 [-1.41]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Emp)/A_{y-1}$	-0.001*** [-4.60]	-0.001*** [-3.47]	-0.002*** [-2.92]	-0.002** [-2.55]	-0.002* [-1.95]	-0.003 [-1.58]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(CapEx)/A_{y-1}$	-0.009** [-2.37]	-0.013** [-2.22]	-0.016** [-1.99]	-0.014 [-1.36]	-0.018 [-1.33]	-0.025* [-1.67]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(R\&D)/A_{y-1}$	-0.005 [-1.01]	-0.006 [-0.83]	0.01 [1.21]	-0.008 [-0.59]	-0.027 [-1.17]	-0.049 [-1.42]
$\Delta_{T,M}\Delta_{y-1}^{y+k}\log(A)$	-0.059*** [-3.75]	-0.103*** [-3.71]	-0.128*** [-3.42]	-0.171*** [-3.58]	-0.185*** [-3.25]	-0.261*** [-3.96]

Panel B: Non-rejection group

	Match-adjusted change in operating metrics from Year $y-1$ to Year $y+k$					
	-1 to 0	-1 to 1	-1 to 2	-1 to 3	-1 to 4	-1 to 5
$\Delta_{T,M}\Delta_{y-1}^{y+k}(NI)/A_{y-1}$	-0.037*** [-3.27]	-0.014 [-0.94]	-0.007 [-0.42]	-0.057** [-2.36]	-0.041 [-1.19]	-0.065* [-1.69]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Debt)/A_{y-1}$	-0.014 [-1.11]	-0.02 [-0.75]	-0.005 [-0.13]	-0.016 [-0.29]	-0.078 [-1.13]	-0.156* [-1.66]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(Emp)/A_{y-1}$	-0.001*** [-3.28]	-0.001** [-2.21]	-0.002*** [-2.80]	-0.001 [-1.42]	-0.002 [-1.34]	-0.002 [-0.90]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(CapEx)/A_{y-1}$	-0.012*** [-2.72]	-0.026*** [-3.92]	-0.013 [-1.25]	-0.008 [-0.55]	-0.019 [-1.08]	-0.037 [-1.51]
$\Delta_{T,M}\Delta_{y-1}^{y+k}(R\&D)/A_{y-1}$	-0.011* [-1.85]	-0.033** [-2.26]	-0.031 [-1.32]	-0.02 [-0.97]	-0.041 [-0.91]	-0.034 [-0.44]
$\Delta_{T,M}\Delta_{y-1}^{y+k}\log(A)$	-0.088*** [-4.39]	-0.125*** [-3.73]	-0.143*** [-2.98]	-0.178*** [-2.81]	-0.277*** [-3.48]	-0.276*** [-2.84]

This table presents the mean of the cumulative match-adjusted changes of six financial performance measures. Panel A reports the long-term changes for the rejection group, while panel B reports them for the non-rejection group. All variables are defined in Appendix 1. The sample period spans 1979 through 2016. Below each coefficient value is the corresponding t-statistic. ***, **, * denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

TABLE 6
Corporate governance and the returns for different windows during the proposal period
for the rejection and non-rejection groups

	(1) CAR [A-25, A-2]	(2) CAR [A-2, A+2]	(3) CAR [A+2, F-2]	(4) CAR [F-2, F+2]	(5) CAR [F+2, F+25]	(6) CAR [A- 25, F+25]
Rejection	-0.021 [-0.92]	-0.012 [-0.45]	0.078*** [2.62]	0.172*** [7.45]	0.019 [0.52]	0.207*** [3.93]
Cash	0.064** [2.41]	0.071** [2.36]	0.007 [0.21]	-0.04 [-1.48]	0.001 [0.02]	0.033 [0.54]
Stock	0.044 [1.43]	0.018 [0.50]	-0.045 [-1.12]	-0.04 [-1.29]	0.088* [1.77]	0.002 [0.03]
Mix	0.083*** [2.78]	0.025 [0.72]	-0.009 [-0.24]	-0.032 [-1.06]	0.021 [0.43]	0.015 [0.21]
Target_size	-0.007 [-1.11]	0.003 [0.50]	0.007 [0.82]	0.014** [2.19]	-0.005 [-0.48]	0.006 [0.40]
Offer premium	0.216*** [9.08]	0.194*** [7.13]	-0.002 [-0.06]	-0.027 [-1.12]	-0.008 [-0.21]	0.210*** [3.82]
PE	0.01 [0.25]	0.014 [0.31]	0.048 [0.97]	-0.03 [-0.77]	-0.012 [-0.20]	-0.018 [-0.21]
ST_board	0.003 [0.14]	0.002 [0.08]	0.034 [1.32]	-0.003 [-0.18]	-0.003 [-0.10]	-0.005 [-0.11]
Ppil	0.02 [0.91]	-0.003 [-0.10]	0.075** [2.55]	0.007 [0.30]	0.077** [2.15]	0.193*** [3.75]
Perc_share	-0.086 [-1.33]	0.169** [2.30]	0.066 [0.84]	0.174*** [2.65]	0.035 [0.33]	0.320** [2.14]
Perc_opt	-0.31 [-1.63]	-0.206 [-0.95]	0.308 [1.35]	-0.081 [-0.42]	-0.286 [-0.93]	-0.383 [-0.87]
Constant	-0.063 [-1.40]	0.033 [0.65]	-0.263*** [-4.43]	-0.209*** [-4.60]	-0.069 [-0.95]	-0.389*** [-3.75]
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Adjusted R ²	23.3%	16.5%	19.8%	20.4%	-2.9%	22.2%

This table reports the estimated coefficients for regression: $CAR_j(X_i) = Rejection_j + Cash_j + Stock_j + Mix_j + Target_Size_j + Offer_premium_j + PE_j + ST_board_j + Ppil_j + Perc_share_j + Perc_opt_j + \varepsilon_j$, where $CAR_j(X_i)$ covers the six different return windows for firm j , detailed in the column headings and described in Appendix 1. All other variables are also defined in Appendix 1. The sample includes 398 observations from 1979 through 2016. All regressions include Fama and French 48-industry dummies and year dummies. Below each coefficient value is the corresponding t-statistic. ***, **, * denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

TABLE 7
Returns for different windows during the proposal period for
the rejection and non-rejection groups conditioning on financial bidder

Panel A

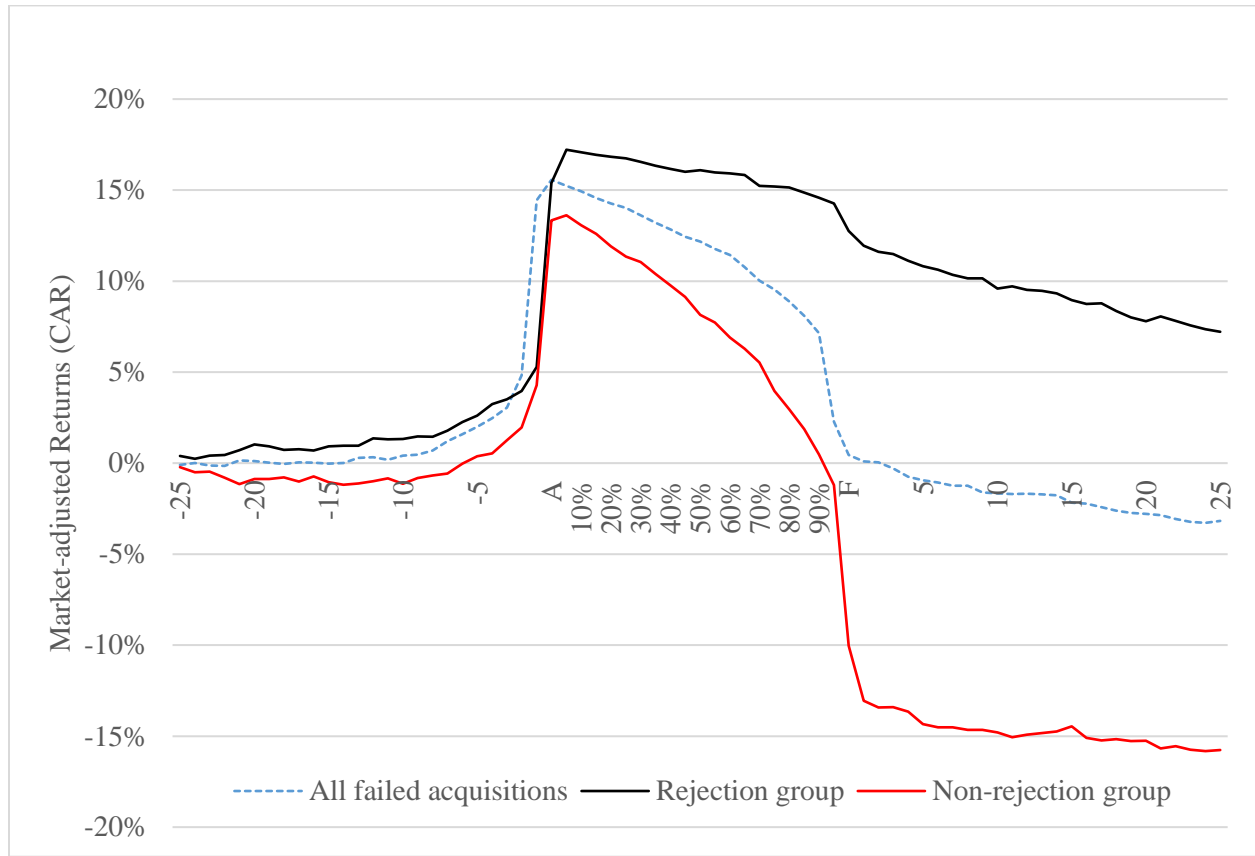
	(1) CAR [A-25, A-2]	(2) CAR [A-2, A+2]	(3) CAR [A+2, F-2]	(4) CAR [F-2, F+2]	(5) CAR [F+2, F+25]	(6) CAR [A- 25, F+25]
Rejection	0.034 [0.97]	-0.074 [-1.57]	0.078 [1.52]	0.165*** [3.15]	-0.036 [-0.82]	0.241*** [4.28]
Cash	-0.013 [-0.29]	-0.013 [-0.21]	-0.078 [-1.22]	-0.061 [-0.91]	-0.084 [-1.49]	-0.173** [-2.42]
Mix	-0.032 [-0.65]	-0.053 [-0.79]	-0.125* [-1.87]	-0.027 [-0.36]	-0.056 [-0.88]	-0.332*** [-4.13]
Target_size	-0.003 [-0.28]	0.007 [0.51]	0.030** [2.08]	-0.007 [-0.42]	0.027* [1.97]	0.040** [2.25]
Offer premium	0.226*** [5.06]	0.188*** [3.11]	-0.138 [-1.61]	0.017 [0.25]	0.099* [1.74]	0.361*** [5.00]
Constant	-0.033 [-0.56]	0.077 [0.98]	-0.167** [-2.04]	-0.092 [-1.06]	-0.132* [-1.79]	-0.358*** [-3.83]
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Adjusted R ²	35.1%	18.5%	47.2%	8.4%	22.5%	65.2%

Panel B

	(1) CAR [A-25, A-2]	(2) CAR [A-2, A+2]	(3) CAR [A+2, F-2]	(4) CAR [F-2, F+2]	(5) CAR [F+2, F+25]	(6) CAR [A- 25, F+25]
Rejection	0.019 [0.76]	-0.036 [-1.24]	0.136*** [3.63]	0.175*** [6.14]	0.038 [0.77]	0.241*** [3.55]
Cash	-0.055 [-1.50]	0.053 [1.26]	0.052 [1.00]	-0.114*** [-2.77]	-0.029 [-0.41]	-0.091 [-0.93]
Stock	-0.028 [-0.83]	-0.025 [-0.64]	0.002 [0.03]	-0.032 [-0.84]	0.109* [1.68]	-0.007 [-0.08]
Mix	0.014 [0.38]	-0.057 [-1.31]	-0.044 [-0.83]	-0.092** [-2.16]	0.023 [0.31]	-0.155 [-1.53]
Target_size	-0.009 [-1.19]	0.013 [1.50]	0.012 [1.15]	0.015* [1.74]	-0.001 [-0.08]	0.017 [0.81]
Offer premium	0.328*** [9.50]	0.335*** [8.37]	0.031 [0.62]	-0.034 [-0.88]	0.093 [1.38]	0.384*** [4.14]
Constant	-0.020 [-0.41]	-0.004 [-0.07]	-0.265*** [-4.06]	-0.165*** [-3.07]	-0.119 [-1.28]	-0.353*** [-2.75]
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Adjusted R ²	27.9%	30.5%	15.2%	19.0%	-8.8%	7.7%

This table reports the estimated coefficients for regression: $CAR_j(X_i) = Rejection_j + Cash_j + Stock_j + Mix_j + Target_size_j + Offer_premium_j + \varepsilon_j$. Panel A details results for private equity acquirers and Panel B details results for public firms acquirers that are not in the same 3-digit SIC code as the target. $CAR_j(X_i)$ covers the six different return windows for firm j , detailed in the column headings and described in Appendix 1. All other variables are also defined in Appendix 1. The sample includes 100 observations in Panel A and 253 observations in Panel B, from 1979 through 2016. All regressions include Fama and French 48-industry dummies and year dummies. Below each coefficient value is the corresponding t-statistic. ***, **, * denote significance at the 1%, 5%, and 10% level for a two-tailed test, respectively.

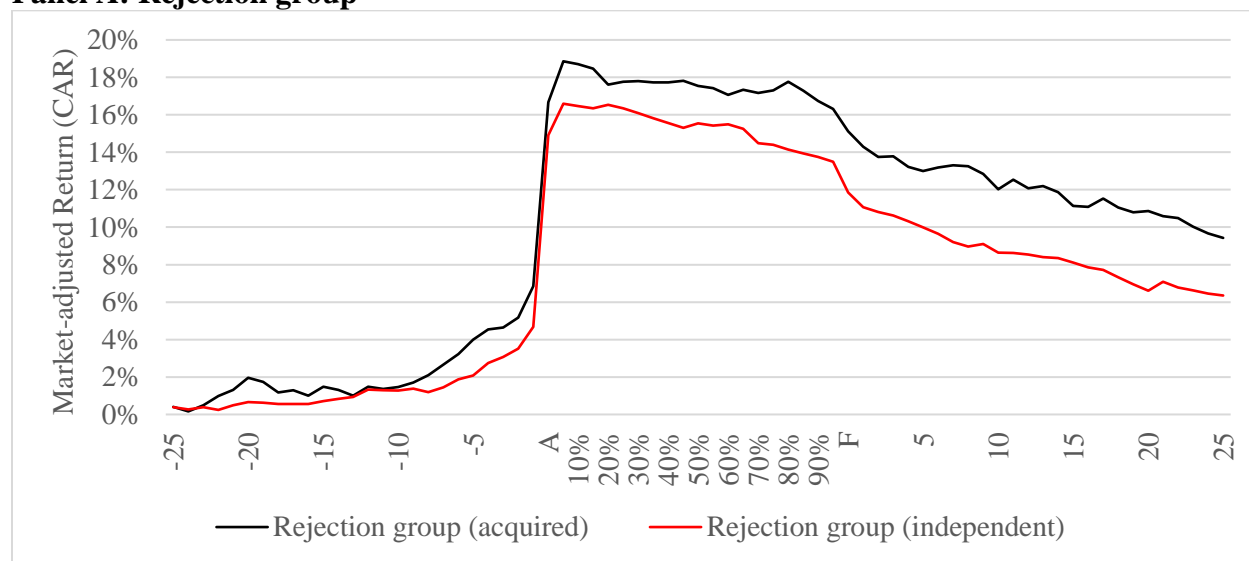
FIGURE 1
Revaluation of targets firms in failed acquisition offers



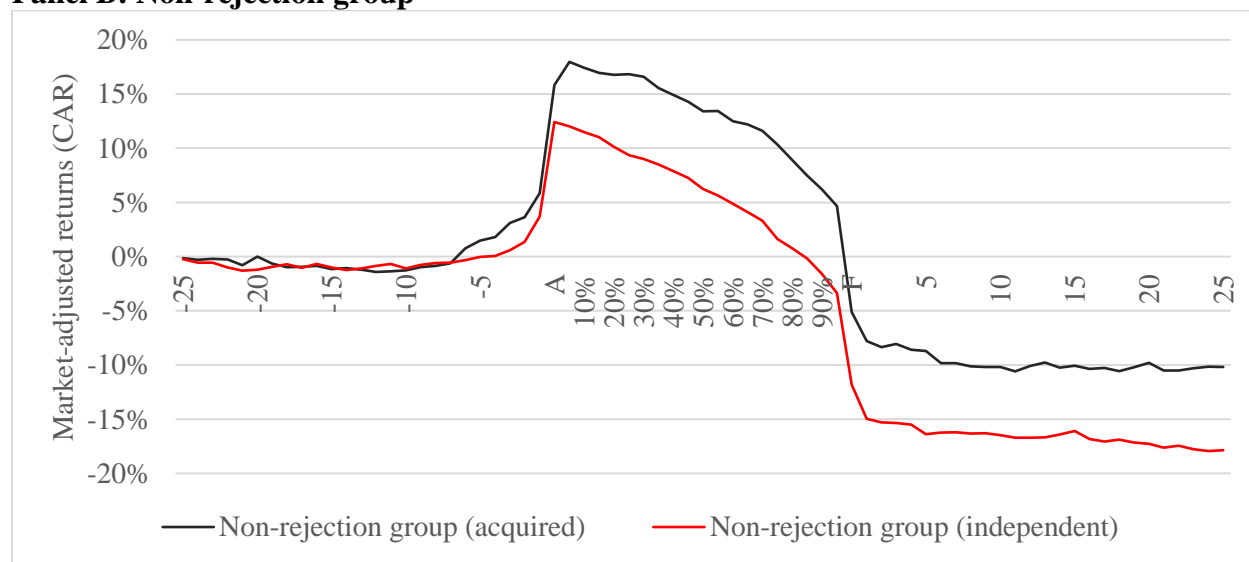
This figure plots the CAR for failed acquisition offers starting 25 trading days prior to the announcement of the acquisition offer date (A) and ending 25 trading days after the acquisition failure date (F). The sample consists of 1,246 failed acquisition offers, including 673 rejected offers (rejection group) and 573 acquisition offers that fail due to other reasons (non-rejection group). The intermediate period between the deal announcement and failure date is normalized (in percent) since it varies across deals.

FIGURE 2
Revaluation of targets firms in failed acquisition offers for the rejection and non-rejection groups conditional on future acquisition activity

Panel A: Rejection group



Panel B: Non-rejection group



This figure plots the CAR for failed acquisition offers starting 25 trading days prior to the announcement of the acquisition offer date (A) and ending 25 trading days after the acquisition failure date (F). The intermediate period between the deal announcement and failure date is normalized (in percent) as it varies across deals. Panel A plots the returns for the rejection group and includes 186 observations (487 observations) that are acquired (remain independent) during the five-year period starting half a year after the deal failure date. Panel B plots the returns for the non-rejection group and includes 153 observations (420 observations) that are acquired (remain independent) during the five-year period starting half a year after the deal failure date. We identify firms that were subsequently acquired using CRSP codes 200 through 300.