Do Stock Mergers Create Value for Acquirers?

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ABSTRACT

This paper finds support for the hypothesis that overvalued firms create value for long-term shareholders by using their equity as currency. Any approach centered on abnormal returns is complicated by the fact that the most overvalued firms have the greatest incentive to engage in stock acquisitions. We solve this endogeneity problem by creating a sample of mergers that fail for exogenous reasons. We find that unsuccessful stock bidders significantly underperform successful ones. Failure to consummate is costlier for richly priced firms, and the unrealized acquirer-target combination would have earned higher returns. None of these results hold for cash bids.

The late 1990s witnessed a large mergers and acquisitions wave. Many transactions involved equity as the mode of payment (Andrade, Mitchell, and Stafford (2001), Holmstrom and Kaplan (2001)), and this equity was usually very richly valued by historical standards. The positive correlation between market valuation and merger activity has also been documented in other periods (Martin (1996), Verter (2002)) and is especially strong for stock deals (Maksimovic and Phillips (2001)). One interpretation of this evidence is that managers try to time the market by paying with stock when they believe it is overvalued.

Recently, a number of papers formally recognized this link between possible mispricing and acquisition activity. Shleifer and Vishny (2003) propose that overvalued firms engage in stock-financed acquisitions in order to obtain hard assets at an effective discount. This discount comes at the expense of the target's long-term shareholders, so their theory relies on different stock price performance horizons for the managers of the two involved firms.[1] Rhodes-Kropf and Viswanathan (2004) develop another model in which misvaluation drives mergers. In their case, it is the inability of target managers to distinguish between marketwide and firm-specific valuation errors that leads them to rationally accept offers from overvalued acquirers. Jensen (2004) also argues that overvaluation influences firms' acquisition decisions, as managers of the affected firms attempt to prolong (or exacerbate) the mispricing. To do so, they have to maintain the market's perception of the firm's prospects, and in the process they engage in value-destroying activities, such as earnings management, unwarranted acquisitions, unprofitable investments, and even outright fraud. In contrast to the market-timing models of Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004), managers in this "market-fooling" model do not necessarily act in the interest of their long-term shareholders (and very possibly against it).

One of the primary empirical predictions of the market-timing theory of acquisitions is that the acquirer's long-term shareholders benefit from the bid, even though it might entail no real synergies. The only requirement is that the chosen target be less overvalued than the acquirer. A famous example of such a deal is America Online's (AOL) stock-financed acquisition of Time Warner, which was one of the defining moments of the Internet bubble. Despite the high premium paid by AOL (48% using the announcement day closing price) and the drop in its stock price upon announcement (17.5% measured over a three-day window), the deal is now almost universally regarded as beneficial to AOL's long-term shareholders, not for the synergies it delivered, but simply

because AOL's equity was overpriced at the time.

Of course, one example does not constitute real support for a theory. And, at first glance, the existing body of evidence does not support the hypothesis that stock acquisitions are in the interest of long-term shareholders. Loughran and Vijh (1997) and Rau and Vermaelen (1998) adopt the event-time portfolio approach and find that stock acquirers earn negative long-term abnormal returns.[2] Mitchell and Stafford (2000) obtain the same finding with the calendar-time portfolio approach. We document similar results for acquisitions announced in the 1978 to 2003 period. Moreover, these negative long-term abnormal returns accrue on top of negative announcement returns (Travlos (1987), Andrade, Mitchell, and Stafford (2001), Fuller, Netter, and Stegemoller (2002)). Moeller, Schlingemann, and Stulz (2005) report that between 1998 and 2001 the acquirer's shareholders lost 12 cents per every dollar spent on acquisitions. They trace this aggregate loss to a small number of so-called "large loss" deals, executed by firms with very high valuations. These firms not only have very negative announcement returns, but continue performing poorly afterwards. Stock acquirers thus appear to suffer negative performance both upon announcement and over longer horizons.

The main problem complicating any analysis is the endogeneity of the acquisition decision: it is exactly those firms that are most overvalued that have the greatest incentive to make an acquisition before the market discovers the mispricing. Once we take this into account, we would expect acquirers using stock financing to have negative abnormal returns, even if the deals ultimately benefited long-term shareholders. Simply put, the first-order prediction for an overvalued firm is that its stock price will eventually decline. Rather than disproving the market-timing theory, the underperformance of stock acquirers actually fits well with its predictions.

However, the existing evidence still does not resolve the issue of whether valuation-driven acquisitions benefit or hurt long-term shareholders. The principal question is how stock acquirers would have performed in the absence of the merger. In this paper we attempt to answer that question. In order to get around the endogeneity problem, we utilize a simple natural experiment. Not all attempted acquisitions are ultimately consummated. If, indeed, firms engage in acquisitions as a way of issuing overvalued equity, we would expect those that fail to underperform those that complete their deals. The unsuccessful acquirers represent a proxy for how the successful ones would have performed had they not managed to close their transactions.

Although this approach appears quite straightforward, the execution requires a great deal of care. The biggest complication is the possibility that the cause of bid termination was somehow related to the acquirer's valuation. If the overvaluation of an acquirer is positively correlated to the probability of failure, the average performance of failed acquirers should be worse than that of successful ones, even if market-timing had nothing to do with why the deal was proposed. This is not just a theoretical concern. For instance, sometimes deals are not consummated because of a decline in the acquirer's stock price or because the target ultimately decides not to accept the offer, both of which might be more likely outcomes for overvalued bidders. To alleviate this problem, we research every failed transaction in our sample and create a subsample of those that did not succeed for exogenous reasons. (In this context, exogenous means unrelated to the valuation of the acquirer.) The subsample includes bids that failed because of regulatory disapproval (mostly antitrust action), subsequent competing offers, or unexpected target developments. We also restrict this subsample to non-hostile bids, since hostile bids are more likely to fail and targets might be more inclined to resist offers by overvalued firms.

The results are quite striking. Failed stock-financed acquirers underperform successful ones in a statistically significant and economically meaningful way. Over a one-year horizon starting at bid announcement, buy-and-hold abnormal returns earned by the two groups diverge by 13.6%, and that number grows to 22.2% for a two-year horizon and 31.2% for a three-year horizon. When we adopt the calendar-time portfolio approach, acquirers that close deals outperform those that do not (measured as the abnormal return of the corresponding long-short portfolio) by 20.9%, 19.5%, and 25.2% over one-, two-, and three-year horizons, respectively. Unsuccessful acquirers continue suffering low abnormal returns even after bid termination is announced, which eases concerns that any difference between failed and successful acquirers reflects the developments that caused the deal to break down rather than the fact that the former do not consummate their deals. Indeed, while long-term performance is negative, the market greets bid termination with a positive reaction. Whatever events bring about deal failure, the market does not seem to interpret them as a negative signal about the acquirer's prospects.

If market-timing concerns really influence firms' M&A activity, we should expect any results to be more pronounced for richly valued bidders, which is exactly what we find in the data. Both successful and failed glamor stock acquirers substantially underperform value stock acquirers. Furthermore,

3

the disparity in performance between bidders that close their deals and those that do not is higher for glamor bidders, indicating that failure is more costly when a firm's stock price is high. This is exactly what we would predict if issuing overvalued equity is a motivating factor behind merger decisions.

The difference in abnormal returns between unsuccessful and successful acquirers could provide us with a rough estimate of the value transferred from the target's long-term shareholders to those of the acquirer. But this measure would include any synergies captured by successful acquirers, which could potentially bias it (as an estimate of market-timing gains). An alternative measure of benefits to long-term shareholders looks at how the failed acquirer would have done had the deal succeeded. In our sample, a hypothetical combination of the acquirer and a proxy for its target would have earned higher abnormal returns than the acquirer did by itself, with the difference going up to 11.8% for a three-year horizon. Importantly, this return differential does not reflect any synergies the deal might have yielded, thus focusing the analysis on market-timing benefits the acquirer forgoes by not closing the deal.

The market-timing theory posits different motivations for cash- and stock-financed acquirers. While cash acquirers create value for their shareholders only through synergies they extract from the combination with the target, stock acquirers benefit from both synergies and any difference between the market and fundamental value of their equity. Therefore, if the theory is correct, we would expect the difference in performance between successful and failed acquirers to be less pronounced for cash bids. This conjecture is confirmed in the data. Failed cash-financed acquirers do not underperform successful ones and enjoy positive abnormal returns subsequent to bid termination. (The latter result is generally not statistically significant, probably due to small sample size.)

The divergence between the performance of unsuccessful cash-financed and stock-financed acquirers is important for another reason: it enables us to distinguish between market-timing and neoclassical theories of mergers. The latter views merger activity as an efficiency-motivated response to technological, regulatory, or economic shocks (Mitchell and Mulherin (1996), Maksimovic and Phillips (2001), Jovanovic and Rousseau (2002), Harford (2005)). When a deal fails, the associated efficiency improvements are not realized, leading to worse operating performance of the involved firms. Bid failure might also indicate that the acquirer's management is incompetent or that the firm operates in a deteriorating regulatory or competitive environment. This gives us

an alternative explanation for why failed acquirers have lower returns than successful ones. The neoclassical perspective, though, counterfactually predicts the same effect for both cash and stock transactions (under the assumption that synergies are similar). Crucially, it also forecasts negative returns upon the announcement of deal failure, while the opposite is observed for stock acquirers.

Overall, our evidence suggests that stock acquisitions serve the interests of bidders' long-term shareholders. The comparison between successful and failed acquirers indicates that, despite the negative announcement and post-event returns for stock acquirers, their long-term shareholders are still better off than they would have been without these deals. In contrast, failure to consummate is not costly for shareholders of cash bidders. These findings are consistent with the hypothesis that overvalued firms engage in M&A activity as a means of issuing overpriced stock.

The remainder of the paper is organized as follows. Section I outlines how our data set is constructed, describes our methodology, and defines all the variables. Section II presents our findings. Section III relates them to the existing literature, and Section IV concludes.

I. Data and Methodology

A. Sample Construction

The core of the sample used in this paper comes from the Center for Research in Security Prices (CRSP) Merger Database and SDC Platinum, which we combine to create a comprehensive data set of M&A activity. CRSP Merger Database contains details on 12,578 merger bids for public companies made between January 1962 and December 2000. In addition to the identities of the involved parties, the data set provides information on whether the deal succeeded, whether it was friendly, hostile, or neutral, the mode of payment, and the relevant dates in the history of the transaction (announcement, preliminary agreement, revision, rejection, failure, and completion).[3] SDC Platinum is a widely used data set covering equity issuance, M&A, and syndicated loan activity. Its M&A coverage starts in 1978 and is updated constantly.

We obtain data on stock returns, firm size, and share type from CRSP. Annual accounting data are obtained from the CRSP/COMPUSTAT merged database. Factor returns and the New York Stock Exchange (NYSE) size breakpoints come from Kenneth French's website. We add this information to our merger data set. To be included in the final sample, a bid has to satisfy the following criteria:

i. The announcement date falls between 1978 and 2003. We choose the 2003 cutoff in order to provide at least three years of data for each firm after the initial announcement.

ii. The acquirer is a U.S. public firm.

iii. Relevant data on the acquirer are available from CRSP and CRSP/COMPUSTAT.

iv. The acquirer's market capitalization exceeds that of firms in the bottom decile using NYSE size breakpoints.

v. Pre-announcement market value of the target's equity is at least 5% of the acquirer's market value. The employment of such a screen is standard in the literature. It ensures that the proposed deal has a material impact on the acquirer's future. The inclusion of bids for very small firms would just add noise. In any case, none of the findings change with alternative thresholds, regardless of whether they are more or less restrictive.

vi. The mode of payment is all-cash or all-equity. We exclude more complicated transactions, because the market-timing hypothesis does not produce clear predictions for such cases.

vii. The acquirer has not engaged in another bid in the previous three years using the same merger consideration. This ensures no firm appears more than once in our portfolios at any point in time.

viii. The bid represents the first offer by a given acquirer for a given target in that bidding cycle. Otherwise, we would be overweighing contested (by competitors or regulators) deals, which account for a disproportionate number of failed bids, and in the process bias our t-statistics upwards.

All our findings are robust to different sample selection criteria: they do not change if we include American Depository Receipts, if we include acquirers in the bottom NYSE size decile, or if we include acquirers that have made a merger bid within the last three years.

The final sample consists of 1,773 (1,050 stock and 723 cash) consummated and 355 (187 stock and 168 cash) unconsummated deals. Figure 1 shows the time-series distribution of these merger bids. One can easily observe the equity-financed merger wave occurring in the second half of the 1990s.

B.   Failed Merger Bids

The main goal of this paper is to determine whether stock-financed bids create value for the acquirer's long-term shareholders. The most straightforward way to address this issue is to look at the acquiring firm's long-term abnormal returns. For example, one could assess acquirers' performance by comparing their returns to those of non-acquiring firms with similar relevant characteristics. However, if, as the market-timing theory argues, overvalued equity is one of the motivations behind the deal, this approach would produce misleading results. When the stock price of a firm exceeds its fundamental value, we expect it to eventually decline. An acquisition executed on favorable terms for the bidder might ameliorate this eventual fall, but is unlikely to reverse it. Even the most careful matching algorithm cannot resolve this endogeneity problem. In a scenario where two firms with the same characteristics are considering buying the same target firm, the more overvalued one will have a greater incentive to do so. Consequently, on average acquirers will be more overvalued than their matched firms.

The market-timing theory predicts that stock acquirers should have negative abnormal returns, but that those returns are higher than what would have been observed in the absence of the acquisition. The crucial problem therefore is to estimate the performance of the acquirer in the hypothetical scenario in which the deal had not taken place. One way to proceed would be to compute the fundamental value of the firm's equity (defined as the sum of the associated cash flows discounted at the appropriate rate). The conventional approach in the literature relies on price-to-value ratios and/or analyst forecasts for this calculation. Both of those inputs are potentially problematic. Accounting ratios might signal a firm's future growth rate or the riskiness of its cash flows rather than any mispricing. The same biases that skew the market's expectations might affect analyst forecasts, or those forecasts might just be catering to the market.

To avoid these problems with estimating fundamental value, we opt for a different methodology. The key to our research approach is the distinction between those acquirers that successfully complete their deals and those that do not. If mergers are indeed beneficial to the acquirer's shareholders, failed acquirers should on average underperform successful ones. By comparing post-event returns of the two groups, we can infer whether stock bids are in the interest of the acquirer's

shareholders.

Unfortunately, not all unconsummated deals are eligible for inclusion in the analysis. One essential assumption underlying our approach is that the cause of deal termination is unrelated to the valuation of an acquirer. If the acquirer's overvaluation is positively correlated to the probability of failure, the average performance of failed bidders should be worse than that of successful ones, even if market-timing had nothing to do with why the deal was proposed. This is by no means only a theoretical possibility. For example, some bids fail because the acquirer's stock price drops before the transaction is consummated. It is probable that there is a greater chance of this happening with more overvalued acquirers. It is also very plausible that targets tend to be less receptive to offers made by overvalued firms (i.e., the correlation between probability of rejection by the target and acquirer overvaluation is positive).[4] To address such concerns, before we proceed with the analysis we have to screen out any deals that fail for endogenous reasons.[5] (Here we define "endogenous" as "connected to the mispricing of the acquirer.") Otherwise, our results could be biased in favor of accepting the hypothesis that failed acquirers underperform successful ones.

We investigate every unsuccessful deal using LexisNexis and Factiva and attempt to determine why it did not close. This requires extensive research, since headlines sometimes obscure the real causes of deal failure. A good case in point is Mattel's bid for Hasbro in 1996, which was ostensibly blocked by antitrust issues. However, after a more careful examination, it becomes apparent that regulatory pressure was actually actively sought by Hasbro, as a way of stopping Mattel. We consequently choose to categorize the deal as a rejection by the target.

We employ this information to exclude any deal whose failure was endogenously caused (according to the above definition) from the sample containing all failed bids (All Failed Sample). The Exogenous Failed Sample contains only those bids that did not close because of objections by regulatory bodies, competing offers, or unexpected target developments. Regulator action usually takes the form of antitrust complaints (or threats thereof) by the Department of Justice, Federal Trade Commission, Federal Energy Regulatory Commission, Civil Aeronautics Board, European Union Commission, or local authorities. Other regulatory bodies that occasionally block mergers include the Securities and Exchange Commission, which sometimes did not approve transactions as a pooling of interests, the Food and Drug Administration, which in one instance started an audit that blocked the proposed deal, the Federal Communications Commission, which lowered ca-

ble television rates, and the Labor Department, which withheld approval for the Employee Stock Ownership Plan required to consummate one transaction. Competing offers are bids by rival firms for the same target made subsequent to the original acquirer's first offer. The unexpected target developments category mostly covers bids that fail because the target experiences problems subsequent to the announcement. These problems are usually revealed through earnings releases or pre-releases, restatements, rating agency downgrades, and/or due diligence.

There are two ways to view deals that are not consummated because of developments affecting the target firm. One perspective is that the prospective acquirer was merely unlucky in choosing an appropriate target. Given a number of candidates, the acquirer opted for the wrong one, but this choice was unrelated to the acquirer's misvaluation. Under this interpretation, those bids should also be considered in the analysis. The other perspective on these deals, however, might caution against their inclusion in the analysis. Maybe the only reason the target accepted a bid by an overvalued firm was because it foresaw the possibility of negative developments in its own future. In that case, the cause of deal termination would be, if only indirectly, related to the acquirer's valuation, which might potentially bias our results. The Restricted Exogenous Failed Sample excludes any transactions that did not close because of target-related matters. Due to the small number of observations in the Restricted Exogenous Failed Sample, we usually focus on the findings obtained from the Exogenous Failed Sample. Table I presents in detail how we construct this sample, which consists of 148 merger bids (72 stock and 76 cash). Table II shows how consummated and unconsummated bids are distributed over time.

[**TABLES I AND II ABOUT HERE**]

One prominent example of a deal that failed because of exogenous reasons is WorldCom's bid for Sprint. (The deal is actually not included in our sample, as WorldCom engaged in multiple stock bids prior to this event. We use it as an example here because most readers are likely to be at least somewhat familiar with the two firms). WorldCom's bid was announced in October 1999, but could not overcome opposition from U.S. and European regulators and was ultimately called off in July 2000. The market welcomed the abandonment news, bidding up WorldCom's stock by 10.7% over a three-day window around the announcement. Over the next two years, WorldCom collapsed in an accounting scandal, where it turned out it improperly classified expenses in order to meet earnings expectations. Its shareholders lost their entire investment. While it is hard to

speculate what would have happened to WorldCom had the deal gone through, it is clear Sprint's shareholders should be satisfied with the outcome. And it is certainly possible that, strengthened by the addition of Sprint, WorldCom could have survived. At the very least, the market seems to have misinterpreted deal termination as a positive event for the firm. It is worth remembering that AOL was also embroiled in a scandal regarding its accounting practices in 2000 and 2001, which resulted in a multi-million dollar settlement and indictments against its executives. But, thanks to the completion of its deal with Time Warner, the experience of its shareholders was far better than that of WorldCom's shareholders. Indeed, if inflated earnings were what made AOL's bid possible, one could argue they were beneficial to its long-term shareholders.[6]

Our analysis relies on the performance of failed acquirers as a proxy for the initial overvaluation of successful acquirers. There are two important assumptions underpinning this approach. First, making a bid has no impact on an acquirer's stand-alone fundamental value. Although involvement in an offer carries costs, such as legal and advisory fees or management time and effort, these expenses are usually not substantial enough to have a material effect (especially since many fees are contingent on success). A more serious concern is that deal failure signals an adverse industry shock. Maybe antitrust action means that the regulatory environment in which a firm operates has become less favorable. Or a rival bid portends a more competitive industry. We attempt to control for this possibility by measuring performance in industry-adjusted terms. We also use termination returns to examine whether the market interprets failure as a negative development (the opposite is true). Second, once a bidder fails, it cannot acquire another firm, at least not at the same terms as before. Given the negative announcement returns for stock acquirers documented both in this paper and in the literature, this appears to be a reasonable conjecture. The initial bid likely reveals to the market, if only partially, that the potential acquirer's stock is overvalued. Even if an acquirer manages to find a different target, a task complicated by the need to not reveal its mispricing to the market (a sequence of bids might raise suspicions about the motivation behind them), its equity would be less overvalued, so any market-timing benefits it derives from the deal would be lower. In the sample used here, failed acquirers rarely make offers for a different target within three years of the unsuccessful bid, suggesting the assumption is a well-grounded one. If we excluded from our sample failed acquirers that subsequently succeed in buying any firm, we would lose only 21 observations (11 stock and 10 cash bids) and all our findings would remain unaltered.

Book equity is computed as in Cohen, Polk, and Vuolteenaho (2003). We assume markets get access to financial statement information four months after the fiscal year ends.[7] All accounting values used always reflect the latest data available to the public. Firm size is calculated as the market value of its equity as of market close two trading days before the merger is announced, and book-to-market is computed as the ratio of the company's book equity and its market capitalization (as of the end of the previous month).

We measure the performance of firms by analyzing their long-term abnormal returns. The proper methodology for calculating these returns has been much debated in the literature. Barber and Lyon (1997) and Lyon, Barber, and Tsai (1999) propose the use of buy-and-hold abnormal returns, arguing that these most accurately capture investor experience. Fama (1998) instead advocates a calendar-time portfolio approach, on the grounds that the buy-and-hold methodology exacerbates any bad model problems through compounding and ignores potential cross-sectional correlation of event-firm abnormal returns. Mitchell and Stafford (2000) show that the latter issue can significantly bias test statistics calculated using buy-and-hold abnormal returns, especially when holding periods for different stocks overlap in calendar time. Loughran and Ritter (2000) worry that the calendar-time portfolio approach is not well suited for detecting abnormal performance associated with events, such as mergers, that are clustered across time. Given these strongly conflicting opinions, we utilize both the event-time and calendar-time methodologies.

Our buy-and-hold abnormal returns are adjusted for firm size, book-to-market ratio, and industry. The first two variables are well-known predictors of the cross-section of stock returns (Fama and French (1992), Fama and French (1993)). It has been extensively documented that, within a wave, mergers cluster by industry (Mitchell and Mulherin (1996), Mulherin and Boone (2000), Andrade, Mitchell, and Stafford (2001)). Moreover, merger bids in certain industries have a higher probability of failure (e.g., because those industries are subject to greater regulatory scrutiny or because they contain a high number of potential rival bidders). To ensure our results are not simply reflecting a difference in performance between various industries, which could plausibly stem from industry-specific economic shocks, we conduct our analysis with controls for industry.

The approach we adopt is as follows. We first identify all firms with the same two-digit SIC code and market value of equity between 50% and 150% of the market value of equity of the sample firm.

Those firms that were involved in a merger bid over the previous three years are excluded. We then pick the firm with the book-to-market ratio closest to that of the sample firm. This entire process is repeated 10 times to obtain 10 control firms. The matching portfolio is an equally weighted portfolio of these 10 control firms. If there are less than 10 matching firms (because there are not enough firms in the same industry that satisfy the size criterion), the matching portfolio contains less than 10 control firms. If one of the control firms disappears from CRSP before the end of the holding period, it is replaced by the next-best match. The buy-and-hold abnormal return ($BHAR$) for firm i is given by

$$BHAR^i_{-m,n} = BH^i_{-m,n} - BH^{ind\_match\_i}_{-m,n}, \tag{1}$$

where $BH^i_{-m,n}$ is the buy-and-hold return for firm i over a period starting m trading days before the reference date (usually the announcement of the bid) and ending n trading days after the reference date, and $BH^{ind\_match\_i}_{-m,n}$ is the corresponding return for firm i's industry-, size-, and book-to-market-matched portfolio. If firm i disappears from CRSP before the end of the holding period, the abnormal returns for the rest of the period are set to zero.

This approach is a modified version of the matching firm approach advocated by Barber and Lyon (1997). The main difference is that we use a portfolio of 10 firms rather than a single firm. Barber and Lyon (1997) argue for a single matching firm as a solution to what they term the skewness bias, which arises because long-term abnormal returns are positively skewed. In relatively small samples, such as some of the ones in this paper, the approach of matching to just one firm is very sensitive to possible mismatches. For example, if just a few of the sample firms are matched to firms that happened to experience very high returns, the mean return of the entire sample might be negative, even if all other sample firms have nonnegative abnormal returns. To alleviate the impact of such outliers, we opt for a portfolio approach. This means that the skewness bias could potentially influence our results, but, given the small size of the matching portfolio, we do not believe this to be a serious problem. In any case, all our results remain the same with the single matching firm approach.

[**TABLE III ABOUT HERE**]

The calendar-time portfolio approach we employ is the standard one used in the literature.

Each month we form portfolios consisting of all firms that initiated an eligible bid within the last n months (where n is the length of the holding period). The portfolios are rebalanced monthly, with those firms that reach the end of the holding period dropping out and new acquirers coming in. If a firm is delisted before the end of the holding period, we include its delisting return in computing the portfolio return. We then calculate the portfolio i mean monthly abnormal return (α^i) by regressing its excess return on the three Fama-French factors:

$$R_t^i - R_t^f = \alpha^i + \beta^i(R_t^{mar} - R_t^f) + \gamma^i SMB_t + \delta^i HML_t, \tag{2}$$

where R^i is the equal-weighted portfolio i return, R^f is the risk-free rate, R^{mar} is the CRSP value-weighted market portfolio return, SMB is the return of a portfolio of small stocks minus the return of a portfolio of large stocks (size factor), and HML is the return of a portfolio of high book-to-market stocks minus the return of a portfolio of low book-to-market stocks (book-to-market factor).

One potential problem with applying the calendar-time methodology in this paper is the relatively small number of failed acquirers, which means that portfolios containing these firms sometimes consist of very few stocks (e.g., the median number of stocks in the Exogenous Failed Sample three-year portfolio is five). The concern that the calendar-time approach overweights events that occur in periods with low activity and underweights events that occur in periods with high activity is well known, but is especially acute when the number of observations is small. We attempt to address this issue in two different ways. First, we create portfolios in which each stock's weight is limited to 25%. If there are fewer than four firms in the portfolio at any point in time, each stock will carry only a 25% weight and the rest will be invested in the market portfolio. Second, instead of running ordinary least squares (OLS) regressions, we use weighted least squares (WLS) regressions, where the weights are given by the number of stocks in the portfolio. The advantage of the WLS approach is that it gives more weight to those months in which there are more stocks in the analyzed portfolios. This methodology also addresses potential heteroskedasticity issues that might arise due to clustering of mergers across time. We always report results for all three calendar-time approaches: OLS and equally weighted portfolios, OLS and restricted weight portfolios, and WLS and equally weighted portfolios.

II. Results

A. Summary Statistics

Tables IV and V present summary statistics for stock- and cash-financed merger bids, respectively. Acquirers have lower book-to-market ratios than targets, and this difference appears much more pronounced for stock deals.[8] Stock bidders are also larger, engage in bigger transactions, and enjoy higher returns in the year prior to the deal compared to cash bidders. The announcement returns for stock acquirers are negative and statistically significant. Unsurprisingly, targets enjoy significantly positive announcement returns. These returns are higher for targets of cash bids.[9]

[**TABLES IV AND V ABOUT HERE**]

All of these findings are well documented in the literature and are consistent with the market-timing theory of acquisitions. As Shleifer and Vishny (2003) predict, stock acquirers are more overvalued than their targets, as reflected in lower book-to-market ratios and higher pre-announcement returns. They attempt to complete larger deals, since they have more motivation to do so than cash bidders. They suffer negative announcement returns because the attempted acquisition reveals, at least partly, their misvaluation to the market. More important for this paper are the differences across various samples. Our analysis depends on comparisons between successful and failed acquirers. If there are systematic differences between the two groups of bidders, our results could reflect those differences rather than any benefits of completing a merger. To assuage this concern, our measure of a firm's performance is based on returns adjusted for industry, size, and book-to-market. Although we believe such an approach significantly reduces any problems arising from potential differences between successful and failed bidders, we still find it reassuring that the two groups are relatively similar.

For stock bids, successful and failed acquirers have comparable announcement returns. We are especially encouraged by this similarity, which tells us that as of the announcement the market did not discriminate between successful and failed bids. Book-to-market ratios of successful acquirers are lower than those of failed ones. If book-to-market is a proxy for valuation, it seems that successful bidders are actually somewhat more highly priced than those that do not complete their deals. This is important for our analysis, as it suggests that, holding everything else constant, we should expect failed acquirers to enjoy higher returns than their successful counterparts. Thus, if anything, the difference in pre-announcement book-to-market ratios across our samples creates a

<center>14</center>

bias against documenting underperformance of firms that do not consummate their transactions relative to those that do.[10]

The two major differences between successful and failed stock acquirers are that the latter are larger and attempt to complete bigger deals. This is not surprising, since regulatory action is substantially more probable for such bids. Antitrust authorities focus on mergers that will result in significant market power for the combined firm, and this usually means the bidder is a large firm and is proposing to acquire another sizeable firm. Perhaps there is also a greater likelihood of a competing offer in large deals, as the fixed costs of making a bid are lower relative to deal size. Moreover, the difference in mean values is somewhat misleading, given the impact of a few very large failed bidders. When median values are considered, the difference in acquirer size completely disappears (the relationship is then reversed). The same disparity in transaction size is present in cash bids. For cash deals, the announcement returns for both failed acquirers and their targets appear to be a bit lower than for firms involved in consummated bids. In other respects, successful and failed cash bids look similar.

B. *Post-Announcement Performance of Successful and Failed Acquirers*

Table VI reports acquirer announcement and long-term buy-and-hold abnormal returns. The main focus is on the comparative performance of firms that complete their deals and those that do not. Successful stock-financed acquirers suffer significantly negative returns. Over the first 250 trading days (roughly one year) beginning with (and including) the announcement, the mean abnormal return for stock bidders in the Successful Sample is -7.0% (t-statistic=-5.01).[11] It then becomes steadily worse and falls to -13.1% (t-statistic=-3.88) for a three-year holding period. Such performance certainly does not suggest these transactions were beneficial to shareholders. However, failed stock acquirers do much worse. The mean abnormal return for stock bidders in the Exogenous Failed Sample declines from -20.6% (t-statistic=-3.60) for a one-year holding period to -31.9% (t-statistic=-4.44) for a two-year holding period and -44.2% (t-statistic=-5.08) for a three-year holding period. Despite their negative returns, successful stock acquirers outperform unsuccessful ones by a considerable margin, which widens with the horizon and is statistically significant at the 5% level for a one-year horizon and at the 1% level for two- and three-year horizons.[12] Importantly, this performance differential dwarfs the negative announcement returns, which means that the deals

created value for long-term shareholders even after we take the initial market reaction into account.

[**TABLE VI ABOUT HERE**]

The findings remain unaltered when we analyze the All Failed Sample, where unsuccessful stock acquirers underperform successful ones by 13.2% (t-statistic=3.44), 16.6% (t-statistic=3.17), and 20.7% (t-statistic=3.18) over one-, two-, and three-year horizons, respectively. This sample likely contains some deals whose failure was related to the acquirer's valuation, which makes it a biased proxy for acquirer performance without the merger. Nevertheless, the similarity between results obtained from the All Failed Sample and those obtained from a more restricted sample is a positive development, as it suggests that our main findings are robust to the choice of criteria for inclusion in the analysis. Furthermore, it might also indicate that the only difference between failed acquirers excluded from the Exogenous Failed Sample and those included is that the mispricing of the former group is revealed sooner than that of the latter group. The results also continue to hold in the Restricted Exogenous Failed Sample, where the performance differential between successful and failed bidders is statistically significant at the 5% level for all horizons except the shortest one, with point estimates that are about the same as in the previous two samples.

The relative underperformance of failed stock acquirers indicates that stock acquisitions benefit long-term shareholders. It thus supports the market-timing theory of acquisitions. But this result is also consistent with the neoclassical explanation for merger activity. If a firm's optimal response to a shock is an acquisition, and this response is for some reason blocked, it is perhaps not surprising that it lags its more successful rivals. A firm with poor growth opportunities might feel particularly pressured to boost its future performance and consequently engage in acquisitions that have a lower probability of success than those attempted by firms with better growth prospects. If nothing else, bid failure might represent an adverse signal about the competency of the acquirer's management or the outlook for its industry.

These neoclassical theories do not distinguish between cash- and stock-financed acquisitions, so the same negative relation between failure and subsequent returns should be detected for cash acquirers. In contrast, the market-timing theory makes no such prediction. That theory posits that, in the case of failure, stock acquirers forgo the opportunity to convert overpriced stock into hard assets, in addition to any gains they might have realized from synergies or target undervaluation.[13] Therefore, termination should have a more adverse effect on stock bidders than cash bidders (under

the assumption that synergies are similar for both types of deals). Their different perspective on the relation between mode of payment and consequences of failure provides us with an opportunity to discriminate between the two hypotheses.

In contrast to stock-financed acquirers, cash-financed bidders that complete their bids do not underperform (they actually outperform over shorter horizons). And, despite somewhat lower announcement returns, failed cash bidders do not suffer worse abnormal returns than successful ones. For cash acquirers in the Exogenous Failed Sample, the return differential between successful and failed acquirers is 5.7% (t-statistic=1.08), -2.6% (t-statistic=-0.34), and -7.6% (t-statistic=-0.66) over one-, two-, and three-year holding periods, respectively. Similar results hold in the All Failed Sample and the Restricted Exogenous Failed Sample, all showing that the performance of failed cash bidders does not lag that of successful cash bidders. This difference between cash- and stock-financed bids favors the market-timing theory and is not easily explained within the framework of the neoclassical theory.

These event-time results are quite robust. They still hold if we use a single firm to calculate the benchmark return instead of a 10-firm portfolio, if we omit industry controls from our matching algorithm, or if we rely on simple market-adjusted returns as our measure of performance (results available on request). This should lessen any concerns that our results stem from a particular method of adjusting returns rather than a fundamental difference in performance between the two groups of bidders. These findings are also not driven by the Internet bubble period (defined as years 1999 and 2000), as they remain the same if merger bids announced in those years are excluded from analysis.

All of the above findings also survive the switch to the calendar-time methodology. We focus our discussion on results obtained using WLS regressions and equally weighted portfolios, but nothing changes when we instead use OLS regressions and equally weighted or restricted weight portfolios. Stock-financed acquirers that consummate their deals have significantly negative calendar-time abnormal returns. When we employ the Fama-French three-factor model in Table VII, the mean annualized abnormal return for the successful stock acquirer portfolio is -6.3% (t-statistic=-3.26), -7.0% (t-statistic=-3.80), and -6.0% (t-statistic=-3.45%) for one-, two-, and three-year holding periods, respectively.[14] This suggests significant underperformance for successful stock bidders, but, as before, failed stock acquirers suffer substantially lower abnormal returns. Over one-, two-, and

three-year horizons, the portfolio containing firms in the Exogenous Failed Sample has a mean annualized abnormal return of -25.8% (t-statistic=-4.18), -16.6% (t-statistic=-3.45), and -14.2% (t-statistic=-3.44), respectively. The difference in performance between successful and failed acquirers (measured as the abnormal return of the corresponding long-short portfolio) is economically and statistically significant for all three horizons. These results do not change when we utilize the market model to adjust returns instead of the Fama-French three-factor model (results available on request), suggesting again that our findings are not driven purely by our choice of a particular asset pricing model.

The performance differential remains about the same when we study the All Failed Sample. Its statistical significance is even higher, which is not surprising given that this sample contains more than double the number of observations relative to the Exogenous Failed Sample. The small number of observations likely explains why the difference in performance between successful and failed bidders is only marginally significant for the Restricted Exogenous Failed Sample. Point estimates are very similar, but there are just not enough firms in the portfolio to always ensure statistical significance.

[**TABLE VII ABOUT HERE**]

Table VIII shows that the mean abnormal return for the successful cash acquirer portfolio is never statistically significant. Moreover, its sign switches with different horizons. Failed cash acquirers exhibit no underperformance compared to successful ones, regardless of the sample, horizon, or methodology. As with our analysis of buy-and-hold returns, the impact of failure to close the deal is different depending on the mode of payment, which is exactly what the market-timing theory predicts.

[**TABLE VIII ABOUT HERE**]

C. *Post-termination Performance of Failed Acquirers*

The disparity in performance between successful and failed stock bidders increases with the length of the holding period. This is a very important result, because it eases concerns that any difference between successful and failed acquirers reflects the developments that caused the deal to break down rather than the fact that the latter do not consummate their deals. In the former case, we would expect all of the underperformance to be concentrated in the months close to merger

announcement. Given that failed bidders exhibit poor returns for a prolonged period of time, it is less plausible to attribute those returns exclusively to the events that stopped these deals.

To address this same issue further, in Table IX we examine how unsuccessful acquirers fare after the announcement of bid termination. They suffer significantly negative long-term abnormal returns. Over a one-, two-, and three-year holding period starting after the termination announcement date, the mean buy-and-hold abnormal return for stock acquirers in the Exogenous Failed Sample equals -21.1% (t-statistic=-4.29), -28.8% (t-statistic=-4.15), and -37.2% (t-statistic=-4.96), respectively. The post-termination returns remain negative and significant in the Restricted Exogenous Failed Sample and the All Failed Sample. Even after the news concerning the failed stock bidders' intent to complete an acquisition (typically associated with a negative market reaction) and their failure to do so successfully comes out, it appears that these firms remain substantially overvalued. At the very least, the relative underperformance of failed stock acquirers does not stem solely from events associated with the merger, which validates one of the basic premises underlying our analysis. In contrast, unsuccessful cash bidders earn positive abnormal returns, although these are never statistically significant. Again, as the market-timing theory suggests, there is a fundamental difference between stock and cash acquirers.

[**TABLE IX ABOUT HERE**]

The announcement returns around bid termination are significantly positive for stock bidders. This bullish market reaction to bid termination does not support the hypothesis that acquisitions are optimal responses to economic shocks or that bid failure reveals negative information about the acquirer (such as incompetency of its management or poor growth opportunities), in which cases we would expect to see negative termination returns. This is of crucial importance for our analysis, which implicitly depends on the assumption that failure does not adversely affect the fundamental value of the acquiring firm's existing assets. If failure signaled some negative information about the intrinsic value of the acquirer, then our finding that unsuccessful stock bidders underperform successful ones does not necessarily imply that stock bids benefit shareholders.

One interpretation for the positive termination returns is that investors welcome the abandonment of the deal, despite the fact it actually serves their long-term interests. This is plausible: the same shareholders who are willing to hold overpriced stock might mistakenly oppose the bid, given their unrealistic expectations about the acquirer's stand-alone prospects. Another interpretation

is that merger arbitrageurs cover their short positions in the acquirer's stock and in the process push up its price (the usual trade in stock-financed mergers is to buy the target stock and sell short an appropriate amount of the acquirer stock, so that the investor's net exposure is hedged). This price pressure exerted by arbitrageurs can be considerable. Mitchell, Pulvino, and Stafford (2004) estimate that merger arbitrage short-selling causes almost half of the negative announcement return for acquirers in stock mergers. It is probable that the opposite happens upon merger termination. Finally, some theories based on managers' empire-building proclivities (Jensen (1986)) or their propensity towards hubris (Roll (1986)) predict that merger failure should be beneficial to the acquiring firm's shareholders (however, those theories do not explain why the reaction should be different for cash and stocks bids). Whatever the explanation for the price jump when the deal is terminated, it is hard to reconcile this finding with any theory claiming failure decreases the bidder's fundamental value.

A switch to the calendar-time approach does not influence our results. Table X shows that the portfolio containing stock bidders in the Exogenous Failed Sample exhibits a mean annualized abnormal return of -20.8% (t-statistic=-3.13), -14.4% (t-statistic=-3.05), and -12.0% (t-statistic=-2.79) for one-, two-, and three-year holding periods, respectively (starting one month after the announcement that the bid was terminated). And while stock acquirers that do not consummate their deals continue suffering poor performance even after they fail, unsuccessful cash acquirers do not. These findings are robust to different criteria for including failed acquirers in the analysis, to our choice of asset pricing model, and to the method we use for calculating and weighting portfolio returns.

[**TABLE X ABOUT HERE**]

D. Acquirer Valuation and Post-event Performance

Previous studies establish that valuation of acquiring firms impacts their post-announcement returns, with value acquirers performing substantially better than glamor acquirers (Rau and Vermaelen (1998)). This evidence is consistent with the market-timing hypothesis: richly valued stocks do worse than those that are more conservatively priced (assuming valuation ratios are correlated with mispricing). We expect to obtain the same result in our sample, but only for stock acquirers. The disparity between value and glamor stock bidders should be especially large for failed deals,

where the acquiring firm did not succeed in issuing new stock and thus did not manage to dilute the impact of a potential future revaluation of its assets by the market.

[**TABLES XI AND XII ABOUT HERE**]

We compare the performance of value and glamor acquirers in Tables XI and XII. We use a very rudimentary classification scheme to distinguish between the two groups: for a given mode of payment all acquirers with a book-to-market ratio above the sample median are defined as value acquirers and the rest are glamor. Given the relatively high valuations of stock acquirers, this approach might mean that some of the firms we classify as value acquirers are actually reasonably highly priced. But, since the main goal of our analysis here is to explore the relation between valuation and post-event returns, we do not believe this presents a problem. Glamor acquirers are still all more richly valued than value acquirers.[15]

As predicted, stock acquirers with highly priced equity substantially underperform those with lower valuations. For successful stock acquirers, the difference between value and glamor bidders grows from 5.3% (t-statistic=1.90) over a one-year horizon to 9.9% over a three-year horizon (t-statistic=1.46). For stock acquirers in the All Failed Sample, the corresponding performance differentials are 15.4% (t-statistic=2.18) and 25.2% (t-statistic=2.30). The disparity between value and glamor is also present in the Exogenous Failed and Restricted Exogenous Failed Samples. However, these differences are mostly not statistically significant, perhaps because of the small sample sizes. In contrast to the results for stock acquirers, valuation does not impact post-announcement returns for cash bidders. We find that in cash deals glamor mostly outperforms value over a three-year holding period, again confirming the crucial importance of consideration offered for how acquirers fare after the bid announcement.

E. *Hypothetical Failed Acquirer Performance*

Our findings so far indicate that stock-financed mergers create value for the acquirer's long-term shareholders. These results are based on a comparison between firms that successfully complete their bids and those that do not. Another test of the value creation hypothesis would attempt to directly estimate the performance of failed bidders had their deals been consummated. One obvious way to do this is to combine the returns of the acquirer with those of its target. (We exclude announcement returns, since those presumably include the bid premium the acquirer needs

to pay in order to complete the transaction). If acquisitions benefit shareholders, the (unrealized) acquirer-target combination should on average perform better than the failed acquirer did by itself.

Unfortunately, in its simplest form this approach is unsuitable for our analysis. The problem lies in the way we construct the samples containing failed bids. The classification schemes we employ often rely on events affecting target firms, which could systematically bias their realized performance. One possible criterion for inclusion in the Exogenous Failed Sample is a subsequent rival bid. Since those competing offers are made after the initial one by the ultimately unsuccessful bidder, they usually involve a price premium. The price paid by rival bidders reflects not only synergies they hope to enjoy from the merger, but also any mispricing affecting their own stock. Therefore, by design some targets in the Exogenous Failed Sample enjoy positive abnormal returns, which would naturally influence our findings. Furthermore, many deals fail because the target experiences problems, resulting in negative returns. This might balance out the previous positive bias, but it is hard, perhaps impossible, to determine the net effect.

Since using the target's own returns is problematic, we need a proxy for its performance had the merger bid and other following developments not taken place. We use the same portfolio of 10 firms matched on industry, size, and book-to-market that we use to compute buy-and-hold abnormal returns. Instead of the target's own returns, we combine the acquirer returns with those of this portfolio. Our measure of hypothetical acquirer performance (BH^{Hyp}) is the market capitalization-weighted average of the failed acquirer and proxy target portfolio return:

$$BH_{m,n}^{Hyp} = \frac{ME^A}{ME^A + ME^T} BH_{m,n}^A + \frac{ME^T}{ME^A + ME^T} BH_{m,n}^{T\_proxy}, \tag{3}$$

where $BH_{m,n}^A$ is the acquirer's realized buy-and-hold return over a period starting m trading days after the announcement of the bid and ending n trading days after the announcement of the bid, $BH_{m,n}^{T\_proxy}$ is the corresponding return for the target's proxy portfolio, ME^A is the acquirer's market equity value (calculated using its post-announcement stock price), and ME^T is the target's market equity value (calculated using its post-announcement stock price).

Importantly, this measure does not reflect any synergies from combining the operations of the two firms, since those were not realized. Assuming they are positive on average, combining returns underestimates failed acquirers' hypothetical performance and so represents a conservative

estimate.[16] Moreover, it also focuses the analysis on how much value the acquirer extracts by exchanging its overvalued stock for hard assets. Given the market-timing theory's emphasis on equity as a currency, overlooking synergies is therefore not necessarily a negative feature of our combining-returns approach. While our previous approach implicitly assumed synergies are similar for cash and stock deals, here there is no need for such an assumption.

As a trade-off, we have to rely on a proxy for the target's performance. This proxy-based approach might be problematic, since the same endogeneity argument that applies to an acquirer's decision to make a bid also applies to target selection. And it is not immediately obvious which way this effect should go. Acquirers might prefer undervalued targets, but targets could be more willing to accept a takeover offer if their own stock is highly valued.

Table XIII shows the difference between hypothetical and realized post-announcement returns for unsuccessful acquirers. (A positive number indicates that, even after the announcement of the bid, the acquirer's stock was more overvalued than that of the target.) In the Exogenous Failed Sample, failing to close the deal costs stock acquirers 2.6% (t-statistic=1.27), 6.2% (t-statistic=2.20), and 11.8% (t-statistic=3.59) over one-, two-, and three-year holding periods, respectively. Hypothetical returns of failed stock bidders are also higher than their realized returns in the Restricted Exogenous Failed Sample and the All Failed Sample, suggesting that this is a robust finding. The result differs for failed cash acquirers. For them, failure does not entail any adverse consequences (hypothetical returns of failed cash bidders are mostly lower than their realized returns). In accordance with the market-timing theory's predictions, the motivations of stock and cash bidders appear different. Whereas cash acquirers rely solely on synergies or target undervaluation to create value for their shareholders, stock acquirers enjoy an additional benefit of using overpriced equity as acquisition currency.

The findings here hold for both diversifying deals and deals between firms in the same industry, where industry is defined by a firm's two-digit SIC code (results available on request). This alleviates concerns that these results are driven purely by industry effects, where failed bidders that underperformed their industry would naturally have done better had they acquired firms that matched the industry's performance.

[**TABLE XIII ABOUT HERE**]

Considering our previous results, the point estimates for the difference between hypothetical

and realized acquirer performance are in the right ballpark. In the Exogenous Failed Sample, the mean ratio of target to acquirer size is 0.512, and the mean acquirer three-year abnormal return is -44.2%. Assuming the target's stock is correctly priced and there are no synergies, equation (3) gives the hypothetical acquirer return:

$$\frac{1}{0.512 + 1} * -44.2\% + \frac{0.512}{0.512 + 1} * 0.0\% = -29.2\%.$$

The typical acquirer's performance once its stock price falls back to its fundamental value would be 15.0% higher had it completed the deal. This is fairly close to the 11.8% estimate we get, validating our proxy-based approach.

III. Related Literature

This paper is a part of a fast-growing empirical literature exploring possible links between firm overvaluation and merger activity. Most of these papers rely on indirect estimates of the true fundamental value of a firm. Dong, Hirshleifer, Richardson, and Teoh (2006) use accounting information and analyst forecasts to calculate such a proxy, and find that richly valued bidders are much more likely to use stock to finance acquisitions, pay higher premia, and have lower announcement returns.[17] Ang and Cheng (2006) use similar inputs and report that, once overvaluation is taken into account, stock acquirers do not underperform comparable non-acquiring firms. Rhodes-Kropf, Robinson, and Viswanathan (2005) employ a regression-based approach utilizing accounting information as inputs and document that low long-run value to book firms buy high long-run value to book firms. While acquirers are more highly valued than targets when looking at their market-to-book ratios, it appears that this difference stems from deviations between market and fundamental asset values, exactly as the market-timing theory would predict. Friedman (2004) uses accounting information and pre-event abnormal returns, and shows that acquirer overvaluation predicts bid premia, but only in stock deals. Akbulut (2005) uses managerial insider trading, and finds that overvalued firms are more likely to engage in stock mergers and have high pre-announcement and low post-announcement long-term abnormal returns. Song (2007) also relies on insider trading patterns as a proxy for misvaluation, showing that acquirers whose managers sell experience negative financial and operating performance. While the combined weight of this evidence offers support

for the market-timing theory, all the employed proxies are potentially problematic and definitely imperfect. In contrast, we use only post-event long-term abnormal returns, which, under the assumption that any mispricing eventually dissipates over time, represent a more accurate estimate of initial overvaluation.

The reliance on long-term returns also enables us to calculate with more confidence the value-creation impact of a bid for shareholders. Many papers in the literature employ announcement returns as such a measure. This approach has the advantage of avoiding the many pitfalls associated with long-term abnormal returns computation, but it might not produce the best estimate in a world where stocks can be mispriced. If the market incorrectly values a firm, it is implausible to assume that announcement returns are not contaminated by bidder mispricing. For instance, perhaps the market reacts negatively to a bid announcement by an overvalued firm because shareholders think the acquirer, about whose prospects they are overoptimistic, is overpaying for the target, whose future they assess more realistically. Or perhaps the deal prompts a partial reassessment of the acquirer's valuation, which would have occurred anyway at some point in the future.[18]

The findings in this paper fit within a wide literature documenting how (and whether) market-timing affects corporate decision-making. A number of papers find that firms issuing equity earn low subsequent returns, both for initial public offerings (Ritter (1991), Loughran and Ritter (1995), Ritter and Welch (2002)) and seasoned equity offerings (Loughran and Ritter (1995), Spiess and Affleck-Graves (1995)), while the reverse is true for stock repurchases (Ikenberry, Josef Lakonishok, and Vermaelen (1995). However, others (Eckbo, Masulis, and Norli (2007)) do not document negative performance in the post-issuance period, and argue in favor of a risk-based explanation for the relatively low returns by equity issuers. Prior to issuance, firms seem to engage in earnings management, which tends to successfully inflate market expectations (Rangan (1998), Teoh, Welch, and Wong (1998a), Teoh, Welch, and Wong (1998b), Teoh, Wong, and Rao (1998)). Initial public offerings (IPOs) cluster in periods when analysts are optimistic about the prospects of recent IPOs (Rajan and Servaes (1997)) and are more likely in high market-to-book industries (Pagano, Panetta, and Zingales (1998)). High aggregate equity issues predict low market returns (Baker and Wurgler (2000)), and the maturity of debt issues forecasts excess bond returns (Baker, Greenwood, and Wurgler (2003)). Acquirers enjoy better announcement returns in "hot" market conditions, but perform worse in the long term (Rosen (2004)). Firms' market-timing activities have long-term

effects on their capital structure (Baker and Wurgler (2002)) and might also influence their investment levels (Baker, Stein, and Wurgler (2003)). Survey evidence confirms that managers actively consider market conditions, including the perceived valuation of their own stock, in making capital structure and budgeting decisions (Graham and Harvey (2001)). Managers also time their personal trades, selling own-company stock when it is richly valued (Jenter (2005)).

IV. Conclusion

The market-timing theory of acquisitions predicts that stock-financed mergers benefit the acquiring firm's long-term shareholders by converting overvalued equity into (less overvalued) hard assets. So far the literature has offered little support for this prediction. In this paper, we test the value creation hypothesis. Any conventional approach centered on long-term abnormal returns is complicated by the fact that it is precisely the most overvalued firms that have the greatest incentive to engage in stock acquisitions. This positive relation between a firm's valuation and its propensity to make stock bids means we should expect to see negative post-event returns for stock acquirers, even if their deals actually benefited their long-term shareholders. We solve this endogeneity problem by creating a sample of mergers that fail for exogenous reasons and using it as a natural experiment. We find that unsuccessful stock bidders underperform successful ones in an economically meaningful and statistically significant way. This underperformance increases with the length of the holding period. Over a one-year horizon, the mean abnormal return of failed acquirers is 13.6% lower than that of successful acquirers, and this differential grows to 22.2% for a two-year horizon and 31.2% for a three-year horizon. Moreover, unsuccessful acquirers continue performing poorly even after merger failure is announced, by which time any information related to the bid presumably became public. Despite the negative long-term performance associated with deal failure, the market greets bid termination with a positive reaction, suggesting investors do not view it as a negative signal about the acquirer's prospects. Glamor stock bidders perform worse than value stock bidders, and failure to consummate is more costly for richly priced firms, indicating that valuation does play a role in post-announcement performance. Finally, the unrealized acquirer-target combination would have earned higher returns than the acquirer did by itself, even without any synergies. All of these results are robust to different methodologies and to how strictly we set the criteria for inclusion into the unsuccessful acquirer group, and none of them hold for cash-financed bids.

The evidence presented is consistent with the hypothesis that stock-financed acquirers create value for their long-term shareholders and that one mechanism by which they do so is their use of overvalued equity to purchase hard assets at an effective discount. This opportunity to benefit long-term shareholders through market-timing should be considered when examining the motives behind and impact of various corporate managers' actions. First, it creates a strong incentive for firms to artificially boost their stock price, even though this effect might be costly and purely temporary. Some affected firms might ultimately not be successful in executing an acquisition, but this does not necessarily make the stock price manipulation irrational from an *ex-ante* perspective (with respect to the interests of long-term shareholders). Second, managers might pursue deals where the joint fundamental value of the acquirer's and target's assets is reduced by combining them in a single firm. As long as market-timing gains outweigh the costs of this inefficiency, long-term shareholders will profit from the merger. If researchers do not take into account possible initial overvaluation of the acquirer, their analysis might mistakenly ascribe such transactions to managers' empire-building tendencies or simple incompetence.

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Footnotes

[1]One way to shorten the horizon of the target firm's managers is to compensate them for deal success. Hartzell, Ofek, and Yermack (2004) report that targets receive lower acquisition premia when their chief executive officers enjoy extraordinary payouts. Another option is to choose as targets firms whose shareholders have short investment horizons. Gaspar, Massa, and Matos (2005) document that firms with short-term shareholders are more likely to get an offer, but earn lower premia.

[2]Other studies examining post-announcement acquirer performance include Mandelker (1974), Langetieg (1978), Jensen and Ruback (1983), Franks, Harris, and Titman (1991), Loderer and Martin (1992), and Agrawal, Jaffe, and Mandelker (1992).

[3]We manually make a small number of changes to the original version. These changes fall into one of three categories. First, the status of some late transactions was not resolved by the time the final version of the database was produced, so we augment it by looking up the missing information. Second, we occasionally find that a deal is misclassified as completed or failed. In those instances, we manually change the bid's status. Finally, in five cases the declared potential acquirer is not the real potential acquirer (which is usually a similarly named, but different company), and in one case the deal is not a merger, but instead a Dutch auction for own shares. We delete those transactions from our sample. We make no claim that our corrections are comprehensive. In general, the database appears quite accurate.

[4]When an offer is resisted by the target, the likelihood of merger success for the rejected acquirer decreases significantly. Baker and Savasoglu (2002) report that acquirer attitude is "the best single predictor of merger success," with only 38% of hostile deals succeeding compared to 82% of non-hostile ones (see also Walkling (1985) and Schwert (2000)).

[5]Dong, Hirshleifer, Richardson, and Teoh (2006) find that bidder valuation has no effect on the probability of deal success. This result would suggest there is no need for any screening, but considering the difficulty of measuring overvaluation we choose a more conservative approach. In any case, we always report findings obtained using all unsuccessful bids.

[6]Louis (2004) reports systematic evidence that stock acquirers overstate earnings prior to initiating a transaction.

[7]The Securities and Exchange Commission used to require that firms under its jurisdiction file their 10-K reports within 90 days of fiscal year-end. This rule changed recently (deadlines were shortened for most

firms), but was in effect during the entire period we study except for December 2003. We add an extra month to account for late filers.

[8]Andrade, Mitchell, and Stafford (2001), Ang and Cheng (2006), Dong, Hirshleifer, Richardson, and Teoh (2006), and Rhodes-Kropf, Robinson, and Viswanathan (2005) are recent papers reporting the same finding.

[9]Potential reasons include compensation for the immediate capital gains tax burden incurred by target shareholders, greater desirability of cash as a means of payment, or the lower mean transaction size (measured as the ratio of the target's market capitalization to that of the acquirer).

[10]Rhodes-Kropf, Robinson, and Viswanathan (2005) obtain the same result that successful acquirers on average have a lower book-to-market ratio than failed ones. Ang and Cheng (2006) also find that bidders are more overvalued in completed stock acquisitions than in withdrawn ones.

[11]Sometimes the recorded announcement date does not correspond to when the market learned of the transaction, either because there was significant information leakage or because of delayed press reporting. To ensure our performance measures reflect this, our event windows start one day before the official announcement date. This is standard in the literature.

[12]Given that successful and failed samples contain different numbers of observations and consequently have unequal variances, we use the Satterthwaite (1946) approximation to compute the t-statistic. Our results do not change with alternative treatments.

[13]Asquith (1983) finds that in unsuccessful merger bids announcement gains enjoyed by targets are completely reversed within a year after termination of the offer. This result suggests that target undervaluation is not an important factor in driving acquisitions. Agrawal and Jaffe (2003) analyze target operating and stock returns and document no evidence of underperformance prior to a bid.

[14]Abnormal returns are annualized by multiplying by 12 intercepts obtained from monthly regressions.

[15]When we apply more complex schemes, such as using Fama-French book-to-market break points, we find that most stock acquirers fall into the glamor category, leaving us with few value bidders. Therefore, we use the simple method described above. Our results stay the same with alternative approaches.

[16]Bradley, Desai, and Kim (1988), Andrade, Mitchell, and Stafford (2001), and Bhagat, Dong, Hirshleifer, and Noah (2005) report positive combined bidder-target announcement returns, which suggests that mergers on average create positive synergies. The associated gains appear to accrue primarily to the target's shareholders, so it is possible that realized synergies are not positive from the perspective of the acquirer's shareholders.

[17]For the pre-1990s period, Lang, Stulz, and Walkling (1989) and Servaes (1991) obtain the opposite result that highly valued bidders enjoy better announcement returns.

[18]Bhagat, Dong, Hirshleifer, and Noah (2005) is a recent paper discussing the signalling aspect of a stock-financed bid. See also Bradley, Desai, and Kim (1983), Jensen and Ruback (1983), Roll (1986), and Eckbo, Giammarino, and Heinkel (1990).
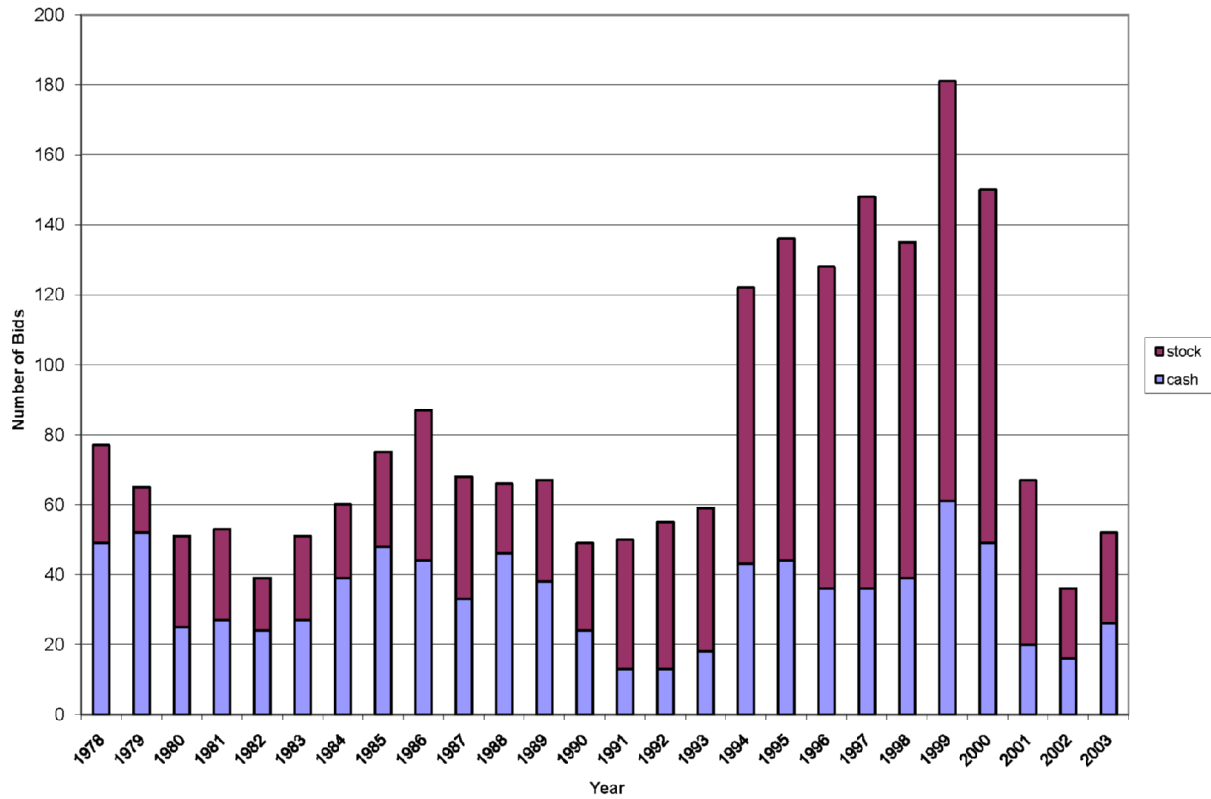
Figure 1. Merger bids by method of payment. The upper bar plots the number of stock-financed merger bids over time. The lower bar plots the number of cash-financed merger bids over time.

Table I
Sample Construction

Panel A: Construction of the Exogenous Failed Sample

355	*All Failed Sample*
-93	Target's refusal of the offer
-48	Inability to conclude negotiations/not enough information
-26	Fall in acquirer's stock price/problems in acquirer's operations
-2	Increase in acquirer's stock price
-10	Disagreement over price/target unreceptive
-9	Changing macroeconomic conditions
-7	Bad market reception/acquirer shareholder scepticism
-6	Acquisition of the bidder
-4	Management conflict over top positions/board composition
-2	Acquirer's inability to obtain financing/ financing too expensive
148	*Exogenous Failed Sample*

Panel B: Construction of the Restricted Exogenous Failed Sample

148	*Exogenous Failed Sample*
-12	Fall in target's stock price/worsening conditions in target's operations/rating agency downgrade of target
-11	Negative earnings (revenue) surprise at target
-10	Due diligence revelations about target
-4	Restatement of target's results
-1	Increase in target's valuation
-1	Developments in target's industry
109	*Restricted Exogenous Failed Sample*

Table II
Time-series Distribution of Successful and Failed Merger Bids

This table shows the time-series distribution of merger bids we study in the paper. The Successful Sample contains all bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful bids. The Exogenous Failed Sample contains only bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample.

| | Stock-financed Bids | | | | Cash-financed Bids | | | |
| | | Full | Exog. | Restricted | | Full | Exog. | Restricted |
Year	Successful	Failed	Failed	Ex. Failed	Successful	Failed	Failed	Ex. Failed
1978	20	8	3	2	31	18	11	11
1979	7	6	1	1	36	16	2	2
1980	18	8	1	1	17	8	3	3
1981	19	7	3	3	20	7	5	5
1982	12	3	1	0	18	6	0	0
1983	17	7	2	1	19	8	2	2
1984	15	6	4	1	30	10	2	2
1985	24	3	1	1	39	9	6	6
1986	33	10	0	0	35	9	5	5
1987	30	5	1	1	25	8	4	3
1988	15	5	3	2	33	13	9	8
1989	23	6	4	1	23	15	4	3
1990	19	6	0	0	21	3	1	1
1991	30	7	2	1	12	1	1	0
1992	35	7	2	1	12	1	0	0
1993	35	6	0	0	17	1	1	1
1994	73	6	1	0	36	7	5	3
1995	83	9	6	4	41	3	3	3
1996	86	6	5	4	36	0	0	0
1997	103	9	7	6	33	3	2	2
1998	86	10	3	1	36	3	1	1
1999	107	13	7	5	57	4	2	1
2000	83	18	10	5	42	7	5	3
2001	40	7	3	1	18	2	0	0
2002	16	4	0	0	13	3	1	0
2003	21	5	2	2	23	3	1	0
Total	1050	187	72	44	723	168	76	65

Table III
Variable Definitions

ME Firm size is calculated as the market value of its equity as of market close two trading days before the merger is announced (given in millions).

BE Book equity is computed as in Cohen, Polk, and Vuolteenaho (2003).

B/M Book-to-market is calculated as the ratio of the company's book equity and its market capitalization (as of the end of the previous month).

$Ratio$ Relative bid size is defined as the ratio of target's market capitalization to that of the acquirer.

Mom Momentum is calculated as the buy-and-hold return over the 12 months preceding bid announcement.

$AR_{-m,n}$ Abnormal returns over an $(-m, +n)$ event window around the announcement date are computed as the difference between the buy-and-hold return for the acquirer/target and the buy-and-hold return for a benchmark portfolio matched on size, book-to-market, and industry.

Table IV
Summary Statistics for Stock-financed Bids

This table provides summary statistics for acquirers and targets involved in stock-financed bids. The Successful Sample contains all stock-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful stock-financed bids. The Exogenous Failed Sample contains only stock-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. Variable definitions for firm size (ME), book-to-market (B/M), announcement abnormal return ($AR_{-1,+1}$), and momentum (Mom) are given in Table III.

Panel A: Successful Sample

| | Acquirer | | | | Target | | | | |
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	3,772.1	0.439	-0.033	0.475	1,157.3	0.527	0.129	0.282	0.440
Median	765.2	0.374	-0.029	0.274	196.5	0.447	0.101	0.198	0.257
N	1050	1050	1000	992	1050	928	926	974	1050

Panel B: All Failed Sample

| | Acquirer | | | | Target | | | | |
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	5,088.3	0.462	-0.044	0.331	984.1	0.653	0.090	0.109	0.485
Median	545.5	0.381	-0.034	0.184	155.7	0.551	0.058	0.035	0.333
N	187	187	182	180	187	163	161	176	187

Panel C: Exogenous Failed Sample

| | Acquirer | | | | Target | | | | |
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	10,907.0	0.499	-0.045	0.375	1,492.8	0.683	0.091	0.142	0.512
Median	688.4	0.389	-0.034	0.217	271.1	0.500	0.056	0.049	0.368
N	72	72	70	69	72	65	64	68	72

Panel D: Restricted Exogenous Failed Sample

| | Acquirer | | | | Target | | | | |
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	16,841.7	0.537	-0.035	0.421	1,867.1	0.697	0.109	0.223	0.543
Median	820.5	0.365	-0.027	0.258	355.6	0.574	0.073	0.093	0.439
N	44	44	42	44	44	41	40	42	44

Table V
Summary Statistics for Cash-financed Bids

This table provides summary statistics for acquirers and targets involved in cash-financed bids. The Successful Sample contains all cash-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful cash-financed bids. The Exogenous Failed Sample contains only cash-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. Variable definitions for firm size (ME), book-to-market (B/M), announcement abnormal return ($AR_{-1,+1}$), and momentum (Mom) are given in Table III.

Panel A: Successful Sample

	Acquirer				Target				
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	2,058.7	0.681	0.003	0.181	452.0	0.702	0.216	0.261	0.371
Median	545.5	0.578	0.003	0.125	111.3	0.633	0.167	0.188	0.177
N	722	722	688	685	722	632	616	693	722

Panel B: All Failed Sample

	Acquirer				Target				
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	1,537.5	0.757	-0.009	0.213	571.2	0.808	0.161	0.400	0.990
Median	415.2	0.653	-0.009	0.178	138.5	0.703	0.122	0.322	0.312
N	168	168	161	158	168	141	139	165	168

Panel C: Exogenous Failed Sample

	Acquirer				Target				
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	2,460.2	0.665	-0.007	0.269	761.7	0.738	0.198	0.357	0.550
Median	479.5	0.549	-0.006	0.217	145.2	0.676	0.168	0.250	0.283
N	76	76	71	72	76	66	66	76	76

Panel D: Restricted Exogenous Failed Sample

	Acquirer				Target				
	ME	B/M	$AR_{-1,+1}$	Mom	ME	B/M	$AR_{-1,+1}$	Mom	Ratio
Mean	2,375.0	0.701	-0.011	0.250	851.4	0.717	0.204	0.436	0.570
Median	599.4	0.574	-0.008	0.255	151.0	0.691	0.168	0.324	0.296
N	65	65	60	61	65	55	55	65	65

Table VI
Acquirer Announcement and Long-term Buy-and-Hold Abnormal Returns

This table reports announcement and long-term buy-and-hold abnormal returns for acquiring firms. The Successful Sample contains all bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful bids. The Exogenous Failed Sample contains only bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. Abnormal returns over an $(-m, +n)$ event window around the announcement date $(AR_{-m,+n})$ are defined in Table III. t-statistics are in brackets.

Panel A: Successful Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.033	-0.070	-0.098	-0.131	0.003	0.030	0.030	0.016
	[-11.70]	[-5.01]	[-4.25]	[-3.88]	[1.48]	[1.89]	[1.17]	[0.44]

Panel B: All Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.044	-0.202	-0.264	-0.338	-0.009	-0.037	0.008	0.052
	[-6.59]	[-5.64]	[-5.59]	[-6.07]	[-2.42]	[-1.13]	[0.16]	[0.78]
Diff. (B) - (A)	-0.011	-0.132	-0.166	-0.207	-0.012	-0.068	-0.022	0.036
	[-1.56]	[-3.44]	[-3.17]	[-3.18]	[-2.83]	[-1.85]	[-0.39]	[0.47]

Panel C: Exogenous Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.045	-0.206	-0.319	-0.442	-0.007	-0.027	0.056	0.093
	[-4.17]	[-3.60]	[-4.44]	[-5.08]	[-1.38]	[-0.53]	[0.76]	[0.84]
Diff. (C) - (A)	-0.013	-0.136	-0.222	-0.312	-0.011	-0.057	0.026	0.076
	[-1.15]	[-2.31]	[-2.94]	[-3.34]	[-1.87]	[-1.08]	[0.34]	[0.66]

Panel D: Restricted Exogenous Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.035	-0.152	-0.303	-0.401	-0.011	0.028	0.131	0.185
	[-4.18]	[-2.24]	[-3.43]	[-3.39]	[-2.06]	[0.57]	[2.11]	[1.60]
Diff. (D) - (A)	-0.003	-0.082	-0.205	-0.270	-0.015	-0.002	0.101	0.169
	[-0.33]	[-1.19]	[-2.25]	[-2.19]	[-2.48]	[-0.04]	[1.51]	[1.39]

Table VII

Calendar-time Fama-French Three-factor Model Abnormal Returns for Stock Acquirers

This table reports calendar-time abnormal returns for stock acquirers computed using the Fama-French three-factor model. The Successful Sample contains all stock-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful stock-financed bids. The Exogenous Failed Sample contains only stock-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes stock-financed bids that fail because of developments affecting the target from the Exogenous Failed Sample. Each month we form portfolios consisting of all firms that initiated an eligible bid within the last n years (where n is the length of the holding period). Portfolio returns are equally weighted, but in the restricted weight version the weight assigned to any single stock is limited to 25%. Abnormal returns are given by the intercept when excess portfolio returns are regressed on the three Fama-French factors. For equally weighted portfolios, we run both OLS and WLS regressions, where the weights are given by the number of stocks in the portfolio in a given month. t-statistics are in brackets.

	Restricted Weight Portfolio			Equally Weighted Portofolio			WLS		
	1-year	2-year	3-year	1-year	2-year	3-year	1-year	2-year	3-year
Successful (1)	-0.002	-0.004	-0.004	-0.002	-0.004	-0.004	-0.005	-0.006	-0.005
	[-1.37]	[-2.87]	[-2.90]	[-1.33]	[-2.81]	[-2.86]	[-3.26]	[-3.80]	[-3.45]
All Failed (2)	-0.023	-0.015	-0.012	-0.025	-0.015	-0.014	-0.022	-0.014	-0.012
	[-5.04]	[-3.82]	[-4.34]	[-5.18]	[-3.82]	[-4.70]	[-5.41]	[-4.04]	[-4.57]
Exogenous Failed (3)	-0.014	-0.011	-0.010	-0.028	-0.015	-0.011	-0.021	-0.014	-0.012
	[-4.47]	[-3.09]	[-3.29]	[-4.34]	[-2.85]	[-1.93]	[-4.18]	[-3.45]	[-3.44]
Restricted Ex. Failed (4)	-0.007	-0.009	-0.008	-0.016	-0.014	-0.010	-0.015	-0.014	-0.012
	[-2.77]	[-3.19]	[-2.93]	[-2.28]	[-2.58]	[-1.60]	[-2.63]	[-3.25]	[-3.00]
(1) - (2)	0.020	0.011	0.009	0.022	0.011	0.010	0.019	0.010	0.008
	[4.50]	[2.88]	[3.18]	[4.64]	[2.90]	[3.59]	[4.76]	[3.07]	[3.52]
(1) - (3)	0.011	0.007	0.007	0.025	0.011	0.008	0.017	0.008	0.007
	[3.16]	[1.87]	[2.12]	[3.73]	[2.07]	[1.30]	[3.30]	[2.04]	[2.07]
(1) - (4)	0.005	0.005	0.005	0.013	0.010	0.006	0.012	0.008	0.007
	[1.46]	[1.62]	[1.58]	[1.84]	[1.82]	[1.00]	[1.95]	[1.87]	[1.65]

Table VIII
Calendar-time Fama-French Three-factor Model Abnormal Returns for Cash Acquirers

This table reports calendar-time abnormal returns for cash acquirers computed using the Fama-French three-factor model. The Successful Sample contains all cash-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful cash-financed bids. The Exogenous Failed Sample contains only cash-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes cash-financed bids that fail because of developments affecting the target from the Exogenous Failed Sample. Each month we form portfolios consisting of all firms that initiated an eligible bid within the last n years (where n is the length of the holding period). Portfolio returns are equally weighted, but in the restricted weight version the weight assigned to any single stock is limited to 25%. Abnormal returns are given by the intercept when excess portfolio returns are regressed on the three Fama-French factors. For equally weighted portfolios, we run both OLS and WLS regressions, where the weights are given by the number of stocks in the portfolio in a given month. t-statistics are in brackets.

	Restricted Weight Portofolio			Equally Weighted Portofolio			WLS		
	1-year	2-year	3-year	1-year	2-year	3-year	1-year	2-year	3-year
Successful (1)	0.002	0.000	-0.001	0.002	0.000	-0.001	0.000	0.000	-0.001
	[1.15]	[.08]	[-.66]	[1.14]	[.08]	[-.71]	[.15]	[-.14]	[-.96]
All Failed (2)	-0.001	-0.001	0.002	-0.001	-0.001	0.003	-0.002	-0.002	-0.002
	[-.49]	[-.38]	[.88]	[-.16]	[-.39]	[1.16]	[-.60]	[-1.12]	[-.89]
Exogenous Failed (3)	0.000	-0.003	0.000	0.000	-0.004	0.002	-0.002	-0.005	-0.002
	[-.16]	[-1.36]	[-.01]	[-.04]	[-.96]	[.41]	[-.53]	[-1.53]	[-1.01]
Restricted Ex. Failed (4)	0.002	0.001	0.002	0.006	0.005	0.005	0.002	0.000	0.000
	[.84]	[.58]	[.91]	[1.16]	[1.34]	[1.47]	[.61]	[.06]	[.03]
(1) - (2)	0.003	0.001	-0.002	0.002	0.001	-0.003	0.004	0.003	0.001
	[1.07]	[.46]	[-1.18]	[.53]	[.45]	[-1.44]	[1.26]	[1.28]	[.69]
(1) - (3)	0.002	0.003	-0.001	0.002	0.004	-0.002	0.003	0.005	0.002
	[.63]	[1.35]	[-.24]	[.27]	[.96]	[-.58]	[.64]	[1.59]	[.78]
(1) - (4)	-0.003	-0.002	-0.002	-0.006	-0.006	-0.005	-0.002	0.000	-0.001
	[-.98]	[-.71]	[-1.03]	[-1.26]	[-1.42]	[-1.56]	[-.60]	[-.09]	[-.35]

Table IX

Acquirer Announcement and Long-term Abnormal Returns upon Merger Termination

This table reports announcement and long-term buy-and-hold abnormal returns for failed acquirers. The All Failed Sample contains all unsuccessful bids. The Exogenous Failed Sample contains only bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. Abnormal returns over an $(-m,+n)$ event window around the bid termination announcement date $(AR^F_{-m,n})$ are defined in Table III. t-statistics are in brackets.

Panel A: All Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$
Mean	0.018	-0.151	-0.214	-0.266	0.007	0.010	0.065	0.083
	[2.62]	[-4.39]	[-4.62]	[-4.77]	[1.01]	[0.29]	[1.25]	[1.32]

Panel B: Exogenous Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$
Mean	0.020	-0.211	-0.288	-0.372	0.008	-0.020	0.086	0.079
	[2.96]	[-4.29]	[-4.15]	[-4.96]	[1.40]	[-0.43]	[1.04]	[0.77]

Panel C: Restricted Exogenous Failed Sample

	Stock-financed Acquirers				Cash-financed Acquirers			
	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$	$AR^F_{-1,+1}$	$AR^F_{+2,+250}$	$AR^F_{+2,+500}$	$AR^F_{+2,+750}$
Mean	0.021	-0.191	-0.289	-0.306	0.007	0.038	0.163	0.169
	[2.72]	[-3.40]	[-3.37]	[-2.97]	[1.16]	[0.94]	[2.01]	[1.56]

Table X

Calendar-time Fama-French Three-factor Model Termination Abnormal Returns

This table reports calendar-time abnormal returns for failed acquirers computed using the Fama-French three-factor model. The All Failed Sample contains all unsuccessful bids. The Exogenous Failed Sample contains only bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. Each month we form portfolios consisting of all firms with an eligible bid that failed within the last n years (where n is the length of the holding period). Portfolio returns are equally weighted, but in the restricted weight version the weight assigned to any single stock is limited to 25%. Abnormal returns are given by the intercept when excess portfolio returns are regressed on the three Fama-French factors. For equally weighted portfolios, we run both OLS and WLS regressions, where the weights are given by the number of stocks in the portfolio in a given month. t-statistics are in brackets.

	Restricted Weight Portofolio			Equally Weighted Portofolio			WLS		
	1-year	2-year	3-year	1-year	2-year	3-year	1-year	2-year	3-year
Stock Deals									
All Failed	-0.016	-0.012	-0.011	-0.015	-0.011	-0.011	-0.015	-0.011	-0.010
	[-2.92]	[-3.50]	[-3.65]	[-2.24]	[-2.96]	[-3.42]	[-2.76]	[-3.11]	[-3.58]
Exogenous Failed	-0.012	-0.010	-0.008	-0.020	-0.016	-0.009	-0.017	-0.012	-0.010
	[-3.49]	[-2.91]	[-2.37]	[-3.02]	[-3.33]	[-1.47]	[-3.13]	[-3.05]	[-2.79]
Restricted Ex. Failed	-0.008	-0.008	-0.007	-0.015	-0.016	-0.008	-0.016	-0.014	-0.010
	[-2.75]	[-3.00]	[-2.28]	[-1.84]	[-3.18]	[-1.30]	[-2.45]	[-3.34]	[-2.49]
Cash Deals									
All Failed	0.000	-0.001	0.003	0.002	-0.001	0.003	-0.002	-0.002	-0.001
	[.04]	[-.31]	[1.20]	[.40]	[-.29]	[1.20]	[-.54]	[-1.00]	[-.43]
Exogenous Failed	0.000	-0.003	0.000	0.004	-0.003	0.002	-0.003	-0.005	-0.002
	[-.06]	[-1.07]	[.15]	[.73]	[-.70]	[.39]	[-.77]	[-1.60]	[-.50]
Restricted Ex. Failed	0.002	0.001	0.003	0.008	0.005	0.005	0.001	0.000	0.001
	[.70]	[.35]	[1.05]	[1.37]	[1.20]	[1.19]	[.18]	[-.16]	[.35]

Table XI

Stock Acquirer Announcement and Long-term Buy-and-Hold Abnormal Returns: Value vs. Glamor

This table reports announcement and long-term buy-and-hold abnormal returns for stock acquirers, based on whether they are classified as value or glamor firms. The Successful Sample contains all stock-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful stock-financed bids. The Exogenous Failed Sample contains only stock-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes stock-financed bids that fail because of developments affecting the target from the Exogenous Failed Sample. Value acquirers are all acquirers in a sample whose book-to-market ratio exceeds the sample median, and the rest are glamor acquirers. Abnormal returns over an $(-m,+n)$ event window around the announcement date $(AR_{-m,+n})$ are defined in Table III. t-statistics are in brackets.

Panel A: Successful Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.024	-0.043	-0.070	-0.082	-0.041	-0.096	-0.125	-0.180
	[-7.77]	[-2.89]	[-2.89]	[-2.05]	[-8.92]	[-4.10]	[-3.20]	[-3.32]

Panel B: All Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.038	-0.124	-0.162	-0.210	-0.050	-0.278	-0.364	-0.462
	[-4.47]	[-2.88]	[-2.88]	[-2.97]	[-4.85]	[-4.96]	[-4.90]	[-5.51]

Panel C: Exogenous Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.030	-0.160	-0.251	-0.388	-0.061	-0.255	-0.392	-0.500
	[-1.97]	[-2.44]	[-2.98]	[-3.79]	[-4.05]	[-2.67]	[-3.32]	[-3.47]

Panel D: Restricted Exogenous Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.034	-0.081	-0.202	-0.252	-0.037	-0.230	-0.413	-0.565
	[-2.41]	[-1.37]	[-2.18]	[-1.96]	[-4.07]	[-1.82]	[-2.69]	[-2.80]

Table XII

Cash Acquirer Announcement and Long-term Buy-and-Hold Abnormal Returns: Value vs. Glamor

This table reports announcement and long-term buy-and-hold abnormal returns for cash acquirers, based on whether they are classified as value or glamor firms. The Successful Sample contains all cash-financed bids that resulted in an acquisition. The All Failed Sample contains all unsuccessful cash-financed bids. The Exogenous Failed Sample contains only cash-financed bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes cash-financed bids that fail because of developments affecting the target from the Exogenous Failed Sample. Value acquirers are all acquirers in a sample whose book-to-market ratio exceeds the sample median, and the rest are glamor acquirers. Abnormal returns over an $(-m,+n)$ event window around the announcement date ($AR_{-m,+n}$) are defined in Table III. t-statistics are in brackets.

Panel A: Successful Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	0.002	0.019	0.023	0.029	0.005	0.042	0.036	0.003
	[0.63]	[1.01]	[0.68]	[0.57]	[1.46]	[1.61]	[0.97]	[0.06]

Panel B: All Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.011	-0.030	0.033	0.024	-0.006	-0.045	-0.018	0.080
	[-2.58]	[-0.70]	[0.48]	[0.31]	[-1.06]	[-0.89]	[-0.25]	[0.73]

Panel C: Exogenous Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.012	-0.009	0.105	0.116	-0.003	-0.044	0.008	0.070
	[-1.91]	[-0.18]	[1.19]	[1.01]	[-0.31]	[-0.50]	[0.07]	[0.37]

Panel D: Restricted Exogenous Failed Sample

	Value Acquirers				Glamor Acquirers			
	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$	$AR_{-1,+1}$	$AR_{-1,+250}$	$AR_{-1,+500}$	$AR_{-1,+750}$
Mean	-0.013	0.020	0.121	0.081	-0.010	0.037	0.141	0.289
	[-1.86]	[0.40]	[1.26]	[0.66]	[-1.15]	[0.42]	[1.76]	[1.48]

Table XIII

Hypothetical Failed Acquirer Long-term Returns

This table reports the difference between hypothetical and realized long-term buy-and-hold returns for failed acquirers. The All Failed Sample contains all unsuccessful bids. The Exogenous Failed Sample contains only bids that fail for exogenous reasons. The Restricted Exogenous Failed Sample excludes bids that fail because of developments affecting the target from the Exogenous Failed Sample. $\Delta BHR_{-m,+n}$ is the difference between the market capitalization-weighted average of the acquirer and proxy target portfolio buy-and-hold return and the acquirer buy-and-hold return. The proxy target portfolio is an equally weighted portfolio of 10 firms matched to the target on industry, size, and book-to-market. t-statistics are in brackets.

Panel A: All Failed Sample

| | Stock-financed Acquirers | | | Cash-financed Acquirers | | |
	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$
Mean	0.036	0.063	0.095	0.004	0.007	0.002
	[2.93]	[3.90]	[4.32]	[0.26]	[0.30]	[0.08]

Panel B: Exogenous Failed Sample

| | Stock-financed Acquirers | | | Cash-financed Acquirers | | |
	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$
Mean	0.026	0.062	0.118	-0.010	-0.032	-0.024
	[1.27]	[2.20]	[3.59]	[-0.63]	[-1.10]	[-0.67]

Panel C: Restricted Exogenous Failed Sample

| | Stock-financed Acquirers | | | Cash-financed Acquirers | | |
	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$	$\Delta BHR_{+2,+250}$	$\Delta BHR_{+2,+500}$	$\Delta BHR_{+2,+750}$
Mean	0.002	0.034	0.068	-0.034	-0.057	-0.051
	[0.09]	[1.14]	[1.80]	[-2.14]	[-1.86]	[-1.38]