Media Attention, News Sentiment, and Target Selection Choices in Mergers and Acquisitions

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ABSTRACT

News sentiment alters investors' perceptions of companies and stock prices, which can affect managerial decisions. We analyze such influence on acquirers' target selection decisions in corporate acquisitions. We theorize how changes in news sentiment about potential targets may affect target selection and test our hypotheses using a novel instrument based on exogenous events that shift media attention thereby biasing news coverage. Results show that less positive news sentiment diminishes a potential target's valuation and increases the probability that it is selected. Acquirers with long-term orientation are less sensitive to these news-induced price distortions when selecting their target. We also find that when these distortions encourage myopic acquirers to select an undervalued but suboptimal target from a synergistic point of view, the acquisition's long-run performance drops.

Keywords: Mergers and acquisitions; target selection; news sentiment; media attention; long-term orientation

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INTRODUCTION

Mergers and acquisitions (M&As) are an important tool firms use to expand their scale and scope (e.g., Villalonga & McGahan, 2005; Wang & Zajac, 2007). These transactions can create value by allowing merging firms to realize synergistic benefits (Chatterjee, 1986; Chen, Kaul, & Wu, 2019; Feldman & Hernandez, 2021; Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Research in strategy has shown that the profitability of M&As critically relies on the acquirer's ability to select an acquisition target with a good strategic fit (Ahuja & Katila, 2001; Hernandez & Shaver, 2018; Kaul & Wu, 2016; Larsson & Finkelstein, 1999; Rogan & Sorenson, 2014). While the acquirer's target selection choice may be driven by the prospective long-term synergistic benefits of the acquisition, fluctuations of potential targets' stock price can create acquisition opportunities and affect the selection choice. Information intermediaries, such as the media, may play an important role in the market for corporate control by purveying information on potential targets that impact their stock market valuation. The goal of this paper is to examine how biases in news coverage may affect target selection decisions in M&As.

Media channels disseminate information to market participants. Well established literature in finance has shown that news content affects stock prices by influencing investors' perception of companies (Bhattacharya, Galpin, Ray, & Yu, 2009; Tetlock, Saar-Tsechansky, & Macskassy, 2008). The sentiment of news about a company usually is a function of its underlying fundamental characteristics (Tetlock *et al.*, 2008) and firms with better prospects are likely to be reported more positively in the news (e.g., Yang, Sun, Guo, & Fu, 2019). However, there can be exogenous factors—independent of the company's underlying characteristics—that bias the news coverage of the company. When such distortions of news coverage occur, investors' perception of the company may also be affected, which can cause the stock market to

misprice the company (Engelberg & Parsons, 2011; Gurun & Butler, 2012; Tetlock, 2007). While exogenous shocks to news coverage that change sentiments can cause inefficiencies in the stock market, such inefficiencies may also affect the market for corporate control and therefore have a material impact on firms' corporate strategies. In this paper, we examine how price distortions due to potentially biased news coverage affect the target selection process in M&As.

We theorize that an exogenous shock that shifts media attention and reduces the coverage of positive vis-à-vis negative news about a potential target will deflate its price and consequently increase the probability that the potential target is eventually selected by the acquirer. We expect such exogenous shocks to media coverage to have a particularly strong effect on investors' perceptions and stock prices of firms that appear rarely in the news, while they should have a less significant effect on firms that receive more frequent media coverage. Intuitively, a lower coverage of one specific event is unlikely to significantly change investors' overall assessment of the company when investors have acquired extensive information about the company over time. Instead, the marginal effect of new information should be greater when investors know less about the company. Therefore, we hypothesize that the effect of an exogenous shock that shifts media attention and affects news sentiment about a potential target on the potential target's stock price will be moderated by the overall level of media coverage of the potential target.

Further, we explore which acquirers' characteristic moderates the relationship between such short-term price distortions due to changed sentiment and target selection decisions. To do so, we build on recent literature in strategy that has highlighted the heterogeneity of firms' long-term orientation in their decision making (Flammer & Bansal, 2017; Martin, Wiseman, & Gomez-Mejia, 2016; Souder & Bromiley, 2012). We contend that acquirers with a long-term

orientation will be less susceptible to short-term price distortions due to changes in news sentiment when selecting targets.

Specifically, we note that while stock market mispricing affects the upfront cost of the acquisition, the synergistic benefits of the acquisition emerge in the long run and distinct potential targets are expected to have different degrees of potential synergistic fit with the acquirer (Capron & Pistre, 2002; Hernandez & Shaver, 2018; Hoberg & Phillips, 2010; Larsson & Finkelstein, 1999). An acquirer facing alternative potential targets will evaluate the long-term synergistic potential and the upfront cost of the acquisition of each prospective target when making its selection decision. A long-term oriented acquirer should put more weight on the long-term synergistic potential of the acquisition when selecting the target and will therefore be less sensitive to fluctuations in the upfront cost induced by news coverage. Indeed, if changes in sentiment due to biased news coverage are independent of potential targets' underlying characteristics, the potential target that ends up being the most undervalued due to the biased news coverage, and hence the most attractive from a short-term price perspective, is not necessarily the one with the best synergistic potential with the acquirer. Hence, the effect of news sentiment on acquirers' target selection decisions ultimately hinges on the acquirers' trading off changes in the upfront cost of the acquisition induced by biased news coverage with its potential long-term synergistic benefits. Having a more long-term focus, long-term oriented acquirers are less likely to trade long-term synergistic benefits with short-term price incentives.

We test our theory on a cross-industry sample of M&A announcements from 2006 to 2019 in the United States. Since we are interested in target selection, we follow a case-control design, by defining a risk set of alternative potential targets for each announced deal (e.g., Bena & Li, 2014; Chakrabarti & Mitchell, 2013; Rogan & Sorenson, 2014). We measure exogenous

shocks to news coverage of potential targets that are induced by unrelated events which are unanticipated and exogenous to firms (defined as events related to natural disasters, crime, conflicts, security, civil unrest, and pollution). When such exogenous events occur, the media focus on these exogenous events and lower the coverage of events about a company. When the timing of such exogenous events overlaps with positive (negative) events about the company, fewer articles about positive (negative) events about the company are published, which may affect negatively (positively) investors' perception of the company and therefore its stock price. Intuitively, such timing can be more favorable for certain potential targets than others. While exogenous events may affect the economic outlook and therefore expectations of future profitability of potential targets, we account for such effects with deal-specific fixed effects, which control for the economic outlook that all potential targets in the risk set are facing. Hence, our analysis focuses on the relative undervaluation of potential targets in the same risk set that is due to differences in news sentiment induced by different overlaps of exogenous events with positive vis-à-vis negative events about the companies.

The empirical results are in line with our hypotheses. In ex post analyses, we further explore the implications of price distortions induced by biased news coverage for the long-run performance of M&As. We find that when news coverage induced price distortions encourage short-term oriented acquirers to select an undervalued but suboptimal target from a synergistic point of view, the long-run performance of the acquisition drops.

Our contributions are both theoretical and empirical. Theoretically, we conceptualize how shifts in media attention that change news sentiment may affect M&A decisions. We further posit that the effects of media-induced price fluctuations on managerial decisions may be mitigated when myopic managers operate in firms that address time-based agency problems,

contributing to the existing literature emphasizing the importance of firms' long-term orientation in decision making (Flammer & Bansal, 2017; Martin *et al.*, 2016; Souder & Bromiley, 2012). Empirically, we introduce two innovations. First, to assess the causal impact of news sentiment on potential targets' price and selection, we develop a novel instrument using the disturbance to company news coverage induced by unrelated events that are unanticipated and exogenous to firms. Second, we propose a methodology to assess to what extent news coverage induced price distortions are expected to worsen target-selection decisions of myopic managers and negatively affect M&A long-run performance.

Overall, this paper provides evidence of how shifts in media attention can affect the market for corporate control. In recent years, we have witnessed how big events that are exogenous to firms—including natural disasters, the pandemic, and wars—can attract disproportionate media attention in detriment to other events. Given the occurrence of such shifts in media attention, a better understanding of how they can affect managerial decisions is an important area of inquiry. We believe that providing insights on how shifts in media attention can impact firm's M&A decisions is an important contribution to research in corporate strategy.

THEORY

Efficient market hypothesis and price distortions induced by biased news coverage

The efficient market hypothesis (EMH) posits that share prices fully reflect all information available to the market. Hence, at any point in time, companies should be priced at their fair value. However, multiple studies have shown that market mispricing does occur and companies may be over or underpriced at some points in time (e.g., Feldman, Gilson, & Villalonga, 2014; Rhodes-Kropf & Viswanathan, 2004; Savor & Lu, 2009). For the stock market to operate efficiently, information about companies should be disseminated to investors without distortions.

Therefore, information intermediaries play a pivotal role in determining market efficiency. Indeed, news media has been shown to affect asset pricing in different contexts, such as IPOs (Cook, Kieschnick, & Van Ness, 2006), equity offerings (Sun, Zhou, Wang, & Guo, 2020), bubbles (Bhattacharya *et al.*, 2009), recessions (Garcia, 2013), and earnings announcements (Peress, 2008). Tetlock *et al.* (2008) provide evidence that financial news transmit new, fundamental information to investors. Green and Jame (2013) find that increased investor recognition and positive sentiment improve firm value, while Gurun and Butler (2012) confirm that news content influences investors' sentiment and valuation of a stock.

The sentiment of news about a company is a function of its underlying fundamental characteristics (Tetlock *et al.*, 2008). Ceteris paribus, a higher-quality firm with better prospects is likely to be reported more positively in the news. However, there can be factors independent of the company's underlying characteristics that bias the news coverage of the company (e.g., Engelberg & Parsons, 2011; Gurun & Butler, 2012). When such news distortions occur, investors' perception of the company is also affected which can cause the stock market to misprice the company (Tetlock, 2007). While changes in news sentiment that are independent of the firm's characteristics can cause inefficiencies in the stock market, they may also affect firms' strategic decisions and therefore have an impact on other markets as well. Since market prices can affect acquisition and divesture decisions (Edmans, Goldstein, & Jiang, 2012), media-induced price distortions can have a material impact on the market for corporate control and firms' corporate strategies. Next, we develop hypotheses on how target selection is affected by such price distortions induced by biased news coverage.

Price distortions induced by biased news coverage and target selection

Growing through M&As implies the selection of a suitable target often among different options (Capron & Shen, 2007; Chakrabarti & Mitchell, 2013; Kaul & Wu, 2016; Rogan & Sorenson, 2014). The gains from an acquisition are given by the difference between the total value of the acquisition to the acquirer and the price the acquirer pays for it. The total value of the acquisition to the acquirer is given by the sum of the value of the target as a standalone entity and the synergistic gains achievable by combining the two companies (net of the integration costs) (e.g., Chatterjee, 1986; Chen *et al.*, 2019; Dickler & Folta, 2020; Feldman & Hernandez, 2021; Rawley, 2010). The price is given by the target's pre-acquisition market value and the premium the acquirer has to offer to convince the target to cede control of the company. Assuming the EMH holds, the stock market should price each potential target as a standalone company at its fair value.

However, as described earlier, news media are conduits for information dissemination about companies (Tetlock *et al.*, 2008; Yang *et al.*, 2019) and therefore they may affect investors' perception of the value of a potential target. The market value of a potential target should over time reflect the sentiments in the media about the company, with more positive news associated with higher stock market valuation. Yet, the news coverage and consequently the sentiments about a potential target could be biased in the short-term due to factors that are independent of the firm's underlying characteristics. Specifically, exogenous shocks may shift media attention and reduce the coverage of news about a company. When the news coverage about a positive (negative) event concerning the firm drops due to such exogenous shocks, investors' perception of the firm may also be affected. As a consequence of these shocks to news coverage, a potential target's stock price could deviate from its correct value, causing

undervaluation (overvaluation) of the potential target. In sum, we expect an exogenous shift in media attention that reduces the coverage of positive news vis-à-vis negative news about a potential target to deflate its stock market valuation. Hence, we predict:

Hypothesis 1: An exogenous shock that shifts media attention and makes the news sentiment about a potential target less positive reduces the potential target's stock price.

The effect of a shift in media attention on the stock price of a potential target is likely to depend on the overall level of media coverage of the company. Arguably, biases in the coverage of positive vis-à-vis negative events about the company are likely to affect investors' perceptions less strongly if the company appears in the news very often. If the company receives extensive media coverage, lower coverage of one specific event is unlikely to significantly change investors' overall assessment of the company, since investors should have acquired extensive information about the company over time. Instead, lower coverage of an event is likely to have a more significant impact on companies that appear in the news rarely, since the marginal effect of new information should be greater when investors know less about the company. Hence, we predict:

Hypothesis 2: The negative effect of an exogenous shock that shifts media attention and makes the news sentiment about a potential target less positive on the potential target's stock price is stronger on potential targets that receive media coverage rarely than on those with frequent media coverage.

While the stock market may react to exogenous changes in news sentiment, we posit that such changes will not have a *direct* effect on acquirers' target selection. Specifically, we argue that acquirers are unlikely to select an acquisition target simply by looking at the news, since they may have superior industry expertise to find and select potential targets (e.g., Laamanen,

2007; Nary & Kaul, 2021; Schijven & Hitt, 2012) and will obtain additional information about potential targets during the due diligence process (e.g., Chakrabarti & Mitchell, 2013, 2016). However, material changes in stock prices can affect the upfront cost of an acquisition. When such news-induced price distortions occur, an acquirer may find that some of the firms that it could potentially acquire are undervalued by the market. Hence, it may decide to acquire a potential target to take advantage of the stock market's mispricing and pay a lower price for the acquisition.[1] Importantly, because we are assuming that the news-induced price fluctuations are independent of the potential target's underlying characteristics, the greater propensity to acquire a potential target affected by the shock is due to a drop in the potential target's price rather than to an increase in the expected synergistic gains from the acquisition. Overall, we expect less positive news sentiment to increase the probability that the potential target is selected, with the effect being mediated by the potential target's stock price.[2] Thus, we predict:

Hypothesis 3: An exogenous shock that shifts media attention and makes the news sentiment about a potential target less positive, increases the probability that the potential target is selected by the acquirer, with the effect being mediated by the potential target's stock price.

While stock market mispricing affects the upfront cost of the acquisition, the synergistic benefits of the acquisition emerge in the long run. Different potential targets are likely to have varying strategic fit and synergies possibilities with the acquirer (e.g., Capron & Pistre, 2002; Feldman & Hernandez, 2021; Hoberg & Phillips, 2010; Larsson & Finkelstein, 1999). Because we are assuming that shocks to news sentiment are independent of the potential target's

[1] Potentially, the target may be aware of being mispriced by the stock market and may demand a higher acquisition premium to compensate for the stock market undervaluation. However, as long as a lower stock market valuation weakens the bargaining power of the target in price negotiations with the acquirer, the acquirer should be better off when the target is relatively undervalued (Ahern & Sosyura, 2014; Edmans *et al.*, 2012; Yang *et al.*, 2019).
[2] While our theory focuses on the mediation effect of the potential target's stock price, in the empirical analysis we include a test for the presence of a direct effect of news sentiment on the acquirer's selection.

underlying characteristics, the long-run synergistic benefits of the acquisition should not be affected by these changes in news sentiment.

Recent work in strategy has highlighted that managers have different time horizons when making strategic decisions (e.g., Martin *et al.*, 2016; Souder & Bromiley, 2012). Differences in managers' time horizons can be due to their psychological attitudes. Moreover, the system of incentives and bonuses within an organization can alter managers' orientation toward short-term vis-à-vis long-term gains (Asker, Farre-Mensa, & Ljungqvist, 2015; Graham, Harvey, & Rajgopal, 2005; Valentini, 2012). Flammer and Bansal (2017), in particular, report evidence of a causal impact of management long-term orientation on firm value. Building on this literature, we conjecture that acquirers that are more long-term oriented will be less prone to trade off short-term price effects with the long-term synergistic benefits of the acquisition. Specifically, we expect the decision to select a potential target to be a function of the upfront cost of the acquisition (which is affected by the potential target's pre-acquisition stock price) and the long-term expected synergistic benefits. If time horizons vary among acquirers, long-term oriented acquirers should apply a different discount rate to the future synergistic benefits than short-term oriented acquirers. In particular, long-term oriented acquirers should assign more value to the long-term synergistic benefits and therefore should be less likely to change their selection decision due to fluctuations in the upfront cost of potential targets.[3] Overall, we predict:

Hypothesis 4: The effect of an exogenous shock that shifts media attention and changes the news sentiment about a potential target on the probability that the potential target is selected is weaker among acquirers with a long-term orientation.

[3] A simple theoretical model considering acquirers with different discount rates is included in Online Appendix C.

METHODS

To test our theory on the role of news sentiment on target selection, we collected data from various sources, including Thomson SDC Platinum for M&A data, Compustat-CRSP for financial data, and RavenPack for news sentiment and financially relevant events. Below, we start by defining our focal sample of M&A announcements and the set of potential targets for each acquisition deal to implement our case-control research design. Then, we define our key variables and finally describe our econometric models.

Data on M&A announcements and potential target sets

M&A data are sourced from the Thomson SDC Platinum database. We consider majority-stake acquisition announcements, in which the acquirer held less than 50% of the target at the acquisition announcement and sought to own more than 50% of the target after the transaction. Our sample covers announcements of acquisitions in the period 2006–2019[4] between U.S. public companies present in CRSP-Compustat, excluding financial acquirers (standard industrial classification (SIC) codes 62 and 67).

Since we are interested in target selection, we follow a matched case-control design, by defining a risk set of alternative potential targets for each announced deal (e.g., Bena & Li, 2014; Chakrabarti & Mitchell, 2013; Rogan & Sorenson, 2014). For each actual target, we match a set of alternative potential targets as follows. First, we consider all the companies in CRSP-Compustat with a market value of equity that is within 50% and 150% of the market value of equity of the actual target in the fiscal year before the announcement (e.g., see Savor & Lu, 2009). Second, we find the 10 firms with the most similar products to the target. We define

[4] The RavenPack database that we use to create our news sentiment variables includes news data from 2000. We exclude the first few years due to the poorer coverage of company news in RavenPack. However, results are similar considering M&A announcements from the 2001–2019 period and news data starting from 2000.

product similarity using Hoberg and Phillips's (2010; 2016) text similarity measure of the product descriptions contained in firms' annual 10-Ks. Data are sourced from the Text-based Network Industry Classifications 3 (TNIC-3) dataset. Hoberg and Phillips (2010) highlight that this text-based measure is a valid proxy of product market synergies in M&As. The authors find that M&As are more likely between firms that use similar product market language, and that product description text-similarity positively affects post-merger outcomes. With this procedure, each target is matched with 10 alternative potential targets, or less if there are fewer firms of comparable size with non-zero product similarity to the target. Deals with targets that are not matched with any alternative potential target are excluded. Our sample includes 9,472 potential targets for 1,378 observed acquisition announcements. The median number of matched alternative potential targets for each observed target is 7.5. In Online Appendix A, we provide tables describing the number of deals that are included at each step of the sample selection (Table S1) and how the sample composition changes at each step (Table S2).

Measures

Our data structure consists of the observed M&A deals (the cases) as well as counterfactual deals consisting of the potential targets with the same acquirer (the controls). To test our hypotheses, the unit of analysis is an acquirer-potential target pair. Below, we describe our key measures. Table 1 provides a summary of the definitions of our key variables as well as the definitions of the control variables that are included in the regressions.

—Insert Table 1 about here—

Price change. Our first dependent variable, relevant for hypotheses 1 and 2 is the increase in the price of the potential target in the pre-announcement period. We sourced stock prices from CRSP. The variable *price change* is defined as the logarithm of the ratio of the

company's market value of equity 20 calendar days before the acquisition announcement to the market value of equity one year earlier, expressed as a percentage. We measure the price change up to 20 days before the announcement for two reasons. First, there is likely a lag between the acquirer's selection decision (which is expected to be a function of the potential target's stock price) and the acquisition announcement. Second, we want to avoid capturing possible runups in the target's stock price due to the anticipation of the acquisition (in case of acquisition rumors). Since the choice of the window over which we compute price changes is arbitrary, we verified the robustness of our analysis considering alternative windows, such as from 270, 260, or 240 trading days to 50, 15, or one trading day before the announcement, and we find similar results. To mitigate the effect of extreme observations, *price change* is winsorized at the 1st and 99th percentiles.

Selected target. Our second dependent variable, relevant for hypotheses 3 and 4, is a dummy variable indicating whether the potential target is selected by the acquirer. The variable equals one if the potential target is the observed target of the focal deal and zero otherwise.

Positive sentiment. We collected data on news about potential targets from RavenPack. RavenPack analyzes unstructured content from thousands of news publications to extract information on named entities, financially relevant events, and news sentiment. For each potential target, we collected data about the number and sentiment of business news articles about firms over a window of 365 calendar days ending 20 days before the announcement of the focal acquisition (we obtain similar results using alternative windows, such as one-year windows ending 10, 30, or 40 days before the announcement). We avoid considering articles appearing in the days right before the announcement to reduce the chances of including media attention triggered by the anticipation of an acquisition announcement. For the same reason, we also

exclude all articles that refer to M&As.[5] Next, we create an index measuring the extent to which news about the company is positive. RavenPack rates the sentiment of a news story from zero to 100, as measured by the "event sentiment score", where 50 indicates neutral sentiment, values above 50 indicate positive sentiment, and values below 50 indicate negative sentiment. We classify an article as positive if the event sentiment score is above 50. We then define the variable *positive sentiment* as the total number of articles about the company with positive sentiment divided by the total number of articles about the company plus one.[6]

Sentiment shock. The sentiment of news about a potential target is likely to be a function of the firm's underlying characteristics. As will be discussed in more detail in the econometric model section, to isolate the effect of news sentiment from that of the firm's underlying quality, we create an instrument for *positive sentiment*. The instrument captures exogenous shocks to the news coverage of positive vis-à-vis neutral or negative stories about the company, which are induced by important, non-company-specific events that are unanticipated and exogenous to firms. To provide the intuition, consider an example with two firms: A and B. Both firms have a total of n days with novel events to be reported by the news, including n_p days with positive events and n_n days with neutral or negative events. The n_p days with positive events of firm A occur on regular days and therefore receive full coverage. Firm B is less lucky: in days in which positive events occur, the media is distracted by large unanticipated non-company-specific events (e.g., natural disasters). As a consequence, positive events about firm B receive less media attention relative to firm A, and fewer articles are written about positive events of B. Therefore, in the aggregate, firm B will have fewer positive news articles than firm A.

[5] We use the "category" field in the RavenPack database to identify articles that refer to mergers or acquisitions.
[6] We add one to the denominator to account for companies with no news over the considered time window. Results equally hold if we remove these companies (86 observations).

To measure such shocks to *positive sentiment*, we collected from RavenPack news data about important and unanticipated events that are exogenous to companies and that do not refer to them. We define such events as follows. First, we consider global news or news specific to the United States whose topic is the economy, the environment, politics, or society and exclude news about companies. RavenPack also specifies whether the event reported by the news was scheduled and therefore could be predicted in advance. We exclude all scheduled events, thus focusing on events that happened as a "surprise". Next, we focus on "important" events, including only events that are in the top decile in terms of the daily number of news articles for each year. Finally, we limit our list to events that are likely to be exogenous to firms and include the following topics: natural-disasters, pollution, crime, war-conflict, security, and civil-unrest.[7]

A positive (or a negative) event about a company is expected to receive less news coverage if it happens on a day with such exogenous events. In the Appendix (Table A1), we report regressions showing that the number of news articles about companies indeed drops on days with news about exogenous events. Based on this finding, we create an instrument for the variable *positive sentiment* using the disturbance to positive news coverage induced by exogenous events. Considering the window of 365 calendar days ending 20 days before the announcement of the focal acquisition, we define the variable *sentiment shock* as:

$$\frac{n_p^{ex}-n_p}{n_p+1} - \frac{n_n^{ex}-n_n}{n_n+1},$$

where n_p (n_n) is the number of days with novel positive (neutral or negative) stories about the company, and $n_p^{ex}(n_n^{ex})$ is the number of days with novel positive (neutral or negative) stories

[7] The topic of the news is defined using the "group" field in the RavenPack database.

about the company *and* an exogenous event.[8] The first ratio in the formula measures the extent to which the media are distracted by exogenous events on days with positive company stories, while the second measures the extent to which the media are distracted by exogenous events on days with neutral or negative company stories. Intuitively, *sentiment shock* is closer to one when the disturbance induced by exogenous news biases company news coverage more toward neutral or negative news and closer to minus one when such disturbance biases coverage more toward positive news. Additional details on our identification strategy are included in the econometric models section.

Potential targets' media coverage. To measure the overall media coverage of a potential target, we recorded the total number of news articles that refer to the company over a window of 365 calendar days ending 20 days before the announcement of the focal acquisition.

Acquirers' long-term orientation. For each acquisition announcement, we create a proxy for the long-term orientation of the focal acquirer. We create our measure with text analysis of firms' 10-K filings as in Flammer and Bansal (2017). As these authors argue, the long-term orientation of top management is likely to be reflected in their discourse, as reported in public disclosures. We obtain the 10-K filings of the acquiring companies in the year before the acquisition announcement from the Securities and Exchange Commission's (SEC) EDGAR database. In each 10-K, we count the number of keywords referring to the short term ("short run," "short-run," "short term," "short-term") and long term ("long run," "long-run," "long term," "long-term"). We then create the *long-term orientation (LT) index*, defined as the ratio of the number of long-term keywords to the sum of the number of long- and short-term keywords.

[8] The novelty of an event reported in the news is measured with the "event novelty score" (ENS) in RavenPack. We consider as novel, events with maximum ENS (100).

We also used alternative measures of long term orientation in robustness analyses, as will be described in the results section.

Econometric models

The unit of analysis in our regressions is an acquirer-potential target pair. We start by testing whether positive sentiment about a potential target increases the potential target's stock price (Hypothesis 1). We test this relationship with a two-stage least squares (2SLS) regression, whose second stage is:

$$Price\ change_{ij} = \alpha_j + \beta\ Positive\ sentiment_{ij} + \delta\ X_{ij} + \varepsilon_{ij}, \quad (1)$$

where *price change* is the change in the stock price of potential target *i* of observed deal *j* during the pre-acquisition period, α_j is a fixed effect specific to deal *j*, *positive sentiment*$_{ij}$ is the positive sentiment index of *i* at the time of deal *j*, X_{ij} is a vector of control variables for the characteristics of *i* at the time of deal *j*, and ε_{ij} is the error term. Since news sentiment can reflect firms' fundamental characteristics, we identify the effect of *positive sentiment* by instrumenting it with the *sentiment shock* variable. As described earlier, *sentiment shock* captures exogenous shocks to the news coverage of positive vis-à-vis neutral or negative stories about the company, which are induced by important, non-company-specific events that are unanticipated and exogenous to firms. These events are expected to divert media attention and therefore reduce coverage of stories about companies. It is important to note that while these events may affect companies in a number of ways (e.g., natural disasters or civil unrests may worsen the economic outlook), the instrument focuses on how the timing of such events overlaps with positive vis-à-vis neutral or negative stories about the potential targets in the decision set. Intuitively, such timing can be more favorable for certain potential targets than others. While the economic outlook may affect investors' expectations and therefore stock prices, these idiosyncratic effects are accounted for

by the fixed effect α_j, which controls for the economic outlook that all potential targets in the risk set are facing. Hence, our regression focuses on the relative undervaluation of potential targets in the same risk set that is due to differences in news sentiment induced by different overlaps of exogenous events with positive vis-à-vis neutral or negative company events. Since the errors of the model may not be independent across potential targets for the same observed deal, the regression model is estimated clustering standard errors at the deal level.

To test whether the effect of news sentiment on a potential target's stock price depends on the overall level of media coverage of the potential target (Hypothesis 2), we estimate equation (1) separately for targets in different percentiles of the number of news articles that refer to the company over a one-year window ending 20 days before the announcement of the focal acquisition.

Second, we test whether positive news sentiment affects the probability that a potential target is eventually selected by the acquirer (Hypothesis 3). The key dependent variable is a dummy variable (*selected target*) that equals one if the potential target is the selected target and zero otherwise. We estimate an instrumental-variable (IV) probit model, in which we instrument *positive sentiment* with *sentiment shock*. The IV probit model includes control variables and accounts for idiosyncratic effects of periods and industries, respectively, with fixed effects for the year and the acquirer's industry, defined at the two-digit SIC code level. In the IV probit model we do not include deal fixed effects to avoid the incidental parameters bias, which may arise when including a high number of fixed effects in non-linear models (Greene, 2004).[9] As before, the model is estimated with standard errors clustered at the deal level. The control

[9] As a robustness test, we also estimated a conditional logit model that includes deal fixed effects and where the key independent variable is the instrument *sentiment shock*. We obtain similar results in this alternative regression. The results are reported in Online Appendix B (Table S3).

variables (see Table 1 for the definitions) include different features of potential targets which may affect the acquirer's preference, including the market synergy potential, geographic proximity, relative size, and its financial characteristics. To test whether the effect of news sentiment depends on the acquirer's long-term orientation (Hypothesis 4), we estimate the IV probit model separately for acquirers in different percentiles of the *LT index*.

RESULTS

Table 2 reports descriptive statistics of our variables. We note that while the raw correlation between *sentiment shock* and *positive sentiment* is negative (–0.23), the correlation between *sentiment shock* and the control variables and moderators is close to zero. This pattern is consistent with our underlying assumption that *sentiment shock* can be considered as random.

—Insert Table 2 about here—

Table 3 reports the regressions testing the effect of news sentiment on potential target's price (hypotheses 1 and 2). Models (1) and (2) report OLS regressions, where the dependent variable is *positive sentiment*. Model (1) includes deal fixed effects with controls for the potential target's characteristics, while model (2) adds the instrument *sentiment shock*. Model (2) indicates that the instrument has a negative effect on *positive sentiment* (*p*-value = .000). In other words, the more the disturbance induced by exogenous events biases company news coverage towards neutral or negative news, the less positive the sentiment of news about the potential target. In particular, when the *sentiment shock* moves from its minimum (–1) to its maximum (+1), the *positive sentiment* index drops by 0.42.

Model (3) reports the 2SLS regression where the dependent variable is the change in the stock price of the potential target in the pre-announcement period. The *positive sentiment* variable is instrumented with *sentiment shock*, where the first stage regression is model (2). In

line with Hypothesis 1, model (3) indicates that positive news sentiment increases the price of the potential target (*p*-value = .009). When *positive sentiment* increases from zero (no positive news) to one (100% positive sentiment news), the price of the potential target in the pre-acquisition period increases by about 43.6 percentage points.

Next, we explore whether the effect of news sentiment on the stock price of potential targets depends on the overall level of media coverage of the company, as predicted in Hypothesis 2. We split the sample of potential targets into groups, based on percentiles of the total number of news articles that refer to the company over a one-year window ending 20 days before the announcement of the focal acquisition. Models (4) and (5) replicate the 2SLS regression for potential targets with the number of news articles less than or equal to the first tercile and less than the median, respectively. Models (6) and (7) include potential targets with number of articles greater or equal to the median and greater or equal to the second tercile, respectively. The regressions show that *positive sentiment* has a positive effect on *price change* for potential targets with low media coverage (*p*-value =.002 in model (4) and =.007 in model (5)), but does not appear to affect the price of potential targets with high coverage (*p*-value = .654 in model (6) and = .791 in model (7)). Overall, this pattern is aligned with Hypothesis 2 and suggests that shifts in media attention that alter news sentiment about a company do not significantly change investors' overall assessment of the company when investors have acquired extensive information about the company over time.

—Insert Table 3 about here—

Table 4 reports the first and the second stages of the IV probit regressions for the probability that the potential target is selected by the acquirer (hypotheses 3 and 4). Each model controls for the potential target's characteristics and for year and acquirer's industry (two-digit

SIC code) fixed effects. Models (1) and (2) consider the full sample. Model (1) reports the first stage showing the negative effect of *sentiment shock* on *positive sentiment* (*p*-value = .000). Model (2) shows the second stage, where *positive sentiment* is instrumented with *sentiment shock*. In line with Hypothesis 3, the regression indicates that potential targets that receive more positive news are less likely to be selected by the acquirer (*p*-value = .054). The average marginal effect of *positive sentiment* indicates that for each standard-deviation increase in the sentiment index, the probability that the potential target is selected drops by 0.15.

Next, we test whether acquirers that are more long-term oriented are less sensitive to news sentiment when selecting their acquisition target (Hypothesis 4). To test this hypothesis, we re-run the IV probit model, distinguishing between short- and long-term oriented acquirers based on percentiles of the acquirer's *LT index*. Models (3)–(4) and (5)–(6) define short-term oriented acquirers as those with *LT index* less than or equal to the first tercile and less than the median, respectively. Models (7)–(8) and (9)–(10) define long-term oriented acquirers as those with *LT index* greater than or equal to the median and greater than or equal to the second tercile, respectively. Odd-numbered models report the first stage regressions confirming that in each subsample *sentiment shock* has a negative effect on *positive sentiment* (*p*-value = .000 in models (3), (5), (7), and (9)). Even-numbered models report the second stage regression for the probability of target selection in each subsample. In each case, the regressions indicate that the negative effect of news sentiment on the probability of selection is evident in the subset of short-term oriented acquirers (*p*-value of *positive sentiment* = .004 in model (4) and .001 in model (6)), while it is not evident in the subset of long-term oriented acquirers (*p*-value of *positive sentiment* = .451 in model (8) and .859 in model (10)), which is consistent with Hypothesis 4. For short-term oriented acquirers, the average marginal effect of one standard-deviation increase of

positive sentiment on the probability of selection is –0.25 in model (4) and –0.27 in model (6). The table also indicates that *market synergy potential* increases the probability of selection more strongly for long-term oriented acquirers than for short-term oriented acquirers. Overall, this pattern confirms the intuition that long-term oriented acquirers are more concerned with the long-run synergistic gains of the acquisition than with its upfront cost.

—Insert Table 4 about here—

We tested the robustness of these findings with alternative regressions. As an alternative to the IV probit models of Table 4, we run conditional-logit regressions for the probability of target selection with acquirer, acquirer × year, or deal fixed effects. These regressions are reported in Online Appendix B (Table S3) and show that results continue to hold in these alternative specifications. We also replicated the analysis of Table 4 using alternative proxies for the long-term orientation of acquirer (regressions available from the authors upon request). First, we create an alternative text-based measure built from acquirers' 10-K forms for robustness. The *LIWC-LT index* is built using the Linguistic Inquiry Word Count (LIWC) software's time orientation words (Nadkarni & Chen, 2014; Pennebaker, Francis, & Booth, 2001; Tausczik & Pennebaker, 2010). The LIWC software package analyzes text data and calculates the degree to which various categories of words are used in a text. We define the *LIWC-LT index* as the number of words with a future focus divided by the sum of the number of words with a future and present focus. Second, more indebted acquirers may have stronger incentives to minimize the upfront price of M&As and maximize the short-run returns given their greater bankruptcy risk. Hence, we use the acquirers' net leverage (as defined in Table 1) as an alternative proxy for long-term orientation, predicting that more indebted acquirers will be less long-term oriented. Third, we assess acquirers' long-term orientation from their propensity to invest in durable assets

(Martin *et al.*, 2016; Souder & Bromiley, 2012). Since the benefits of durable assets accrue over time, the propensity to invest in these assets should be greater for long-term oriented managers. *Asset durability* is measured as gross property, plant, and equipment (PP&E) divided by depreciation expense. As in Table 4, we run the IV probit regressions predicting whether a potential target is selected for the subsamples of short- and long-term oriented acquirers, where we use either the acquirer's net leverage or asset durability as alternative proxies for long-term orientation and split the sample at the median. In each case, we find that the negative effect of *positive sentiment* on the probability of selection is significantly weaker in the subset of long-term-oriented acquirers.

Overall, Table 3 indicates that positive news sentiment about a potential target increases the potential target's price and Table 4 shows that positive news sentiment reduces the probability that the potential target is selected by the acquirer. In Table 5, we verify whether the effect of *positive sentiment* on the probability of selection is fully mediated by the increase in the potential target's price. While in our theory we predict that news sentiment affects acquirers' M&A decisions mostly by influencing stock prices, sentiment may also have an unmediated, direct effect on the acquirer's selection. Indeed, similar to investors, acquirers may be themselves influenced by media sentiment about a potential target. Hence, in Table 5 we report the regression estimates from a linear instrumental variable mediation analysis (Dippel, Gold, Heblich, & Pinto, 2019). The dependent variable is the dummy indicating whether the potential target is selected; the treatment variable is *positive sentiment*; the mediator is *price change*; and the instrument is *sentiment shock*. The model includes the same controls for the potential target's characteristics included in Tables 3 and 4 and deal fixed effects. The model estimates do not provide evidence of a direct effect of *positive sentiment* on the probability of selection (the

coefficient of the direct effect is positive and its *p*-value is .578). Instead, the model suggests that the effect of news sentiment on acquirers' decisions is entirely mediated by the effect on potential targets' price.

—Insert Table 5 about here—

Table 6 compares the selection choices of short- and long-term oriented acquirers. In Panel A, short- and long-term oriented acquirers are defined based on whether their *LT index* is below and above the median, respectively. In Panel B, short- and long-term oriented acquirers are defined based on whether their *LT index* is in the bottom and the top terciles, respectively. The table shows the average acquisition premium offered by the acquirer to acquire the selected target and the fraction of times the selected target is the potential target with the highest *market synergy potential* among the available alternatives in the risk set. *Acquisition premium* is defined as the logarithm of the ratio of the acquisition offer price to the market value of equity of the target one year and 20 days before the acquisition announcement (for consistency with the *price change* variable) and is expressed as a percentage. The acquisition offer is from SDC and the pre-acquisition market value of equity is from CRSP. The variable is winsorized at the 1st and 99th percentiles. The last columns of Table 6 report the *t*-test of difference in means for the continuous *acquisition premium* variable and the *z*-test of difference in proportions for the fraction of times the potential target with the highest *market synergy potential* is selected. The table confirms that long-term oriented acquirers are willing to pay a significantly greater price for their target and are more likely to select a synergy-maximizing target.

—Insert Table 6 about here—

IMPLICATIONS FOR LONG-RUN ACQUISITION PERFORMANCE

Overall, the results indicate that when news sentiment deflates a potential target's stock price, acquirers are more likely to select the potential target and this effect on acquirers' selection mostly affects short-term oriented acquirers. A related question to be addressed is what are the implications of such influence on selection decisions for the long-run performance of M&As. Since a complete answer to this question requires a different methodology, we summarize the analysis here and report the details in Online Appendix C. Intuitively, in some cases news-induced price distortions may prompt a short-term oriented acquirer to select a potential target that is suboptimal from a synergistic point of view instead of a potential target with higher synergistic benefits. Specifically, when random shocks to news sentiment of potential targets occur, in some cases an acquirer may face a tradeoff between selecting a relatively undervalued target (due to news-induced price distortions) with lower synergies and a relatively overvalued target with higher synergies. When this tradeoff arises, a short-term oriented acquirer may be tempted to select the potential target with lower synergy potential, with detrimental effects on the long-run acquisition performance. In Online Appendix C, we provide a simple theoretical model and a simulation to describe this tradeoff and a methodology to empirically measure it. We further measure the long-term performance of the acquisition with the twelve-month buy-and-hold abnormal returns (BHAR) on the acquirer's stock starting one trading day before the acquisition announcement. The regression results indicate that the greater this tradeoff, the lower the long-term acquisition performance of short-term oriented acquirers. Instead, this tradeoff does not significantly affect the returns of long-term oriented acquirers.

DISCUSSION AND CONCLUSIONS

News sentiment can shape investors' perceptions and alter stock prices, which may affect managerial decision making. In this paper, we analyze such influence in the context of M&As.

We find that an exogenous shock that shifts media attention and makes the news sentiment of a potential target less positive deflates its stock price and therefore increases the probability that the target is selected by the acquirer. The effect of news sentiment on the probability of selection is fully mediated by the decrease in stock price and we do not find evidence of a direct effect of sentiment on selection. This pattern indicates that while news sentiment may affect investors' perceptions of companies (Bhattacharya *et al.*, 2009; Tetlock *et al.*, 2008), acquirers are unlikely to select an acquisition target simply by looking at the news, since they may have superior industry knowledge about potential targets (e.g., Laamanen, 2007; Nary & Kaul, 2021; Schijven & Hitt, 2012) and may obtain additional information during the due diligence (e.g., Chakrabarti & Mitchell, 2013, 2016).

Our instrument for news sentiment captures shocks to the news coverage of positive vis-à-vis neutral or negative stories about the company, which are induced by important, non-company-specific events that are unanticipated and exogenous to firms. These exogenous shifts in news coverage impact investors' perceptions and stock prices of firms that appear rarely in the news, while they have a less significant effect on firms that receive more frequent media coverage. Indeed, lower coverage of one specific event is unlikely to significantly change investors' overall assessment of the company when investors have acquired extensive information about the company over time. Instead, the marginal effect of new information should be greater when investors know less about the company.

We further posit and find that acquirers with a more long-term orientation are less sensitive to news-induced price distortions when selecting their targets. These acquirers appear to be more concerned with the long-run synergistic potential of the acquisition than with its upfront price. Moreover, we find that when news-induced price distortions create a tradeoff

between selecting an undervalued target that is suboptimal from a synergistic point of view and a synergy maximizing target that is comparatively less undervalued, the long-run acquisition performance of myopic acquirers drops. Yet, this undervaluation-synergy tradeoff does not significantly impact long-run oriented acquirers. Overall, these findings contribute to the growing body of literature emphasizing the importance of firms' long-term orientation in decision making (Flammer & Bansal, 2017; Martin *et al.*, 2016; Souder & Bromiley, 2012).

While our study contributes to the existing literature, it is not without limitations. First, while we theorize and show that managers' long-term orientation moderates the relationship between news sentiment and target selection, we do not uncover the determinants of such long-term attitude. Managers may be more long-term oriented due to their firm's culture and incentive schemes. Alternatively, it may be their own psychological attitude. While beyond the scope of our study, a deeper understanding of the sources of such time horizon may shed additional light on how firms can improve their long-term orientation (e.g., by improving the organizational context and incentive schemes versus hiring better managers). Second, our study focuses on the traditional media. Future studies could also examine the effect of social media channels such as Twitter or Reddit, which are increasingly important given the increasing relevance of retail investors. Finally, in line with previous literature, our paper classifies media content relative to a single dimension: positive versus negative sentiment. Future research could provide a more fine-grained characterization of news content (e.g., with topic modeling) to broaden our understanding of the effect of news on stock prices and firms' decision making.

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APPENDIX

The effect of exogenous events on coverage of news about companies

As described in the methodology section, an important assumption underlying our econometric models is that we can correctly identify the effect of *positive sentiment* using the variable *sentiment shock* as an instrument. The intuition is that important exogenous events could "distract" the media and thus reduce the coverage of events about a company. We verify this assumption in Table A1. The table reports OLS regressions showing how the number of news articles about a firm changes on days with exogenous events. We consider all Compustat firms and news articles over the period 2006–2019. The dependent variable is the logarithm of the number of news articles about a company on a given day.[10] Hence, in these regressions, observations are defined at the company × calendar day level. We include only companies and

[10] We exclude news about M&As, for consistency with the news sentiment variables described in the main text.

days with at least one novel story[11] about the company. The independent variable is a dummy variable that equals one if there are news about important exogenous events (as defined in the methodology section) on that day. Since the number of news articles may change depending on the day of the week (e.g., weekend versus week days), model (1) includes fixed effects for the day of the week. To account for the possible increase in news coverage over time, model (2) adds fixed effects for month-year. Finally, model (3) adds fixed effects for firm × month-year. Each regression shows that the number of news articles about a company (on days with novel stories about the company) drops when there are news about important exogenous events (*p*-value < .01 in each model). Based on this finding, the variable *sentiment shock* described in the main text is built to measure how the timing of exogenous events overlaps with positive vis-à-vis neutral or negative events.

—Insert Table A1 about here—

[11] We consider as novel, events with maximum "event novelty score" (ENS) in RavenPack (=100). The same definition was used to create the *sentiment shock* variable, as mentioned in the methodology section.

Table 1. Variables definitions

Variable	Description
Price change (%)	Logarithm of the ratio of the potential target's market value of equity 20 calendar days before the acquisition announcement to the market value of equity one year earlier, expressed as a percentage (we obtain similar results using alternative windows, such as from 270, 260, or 240 trading days to 50, 15, or 1 trading day before the announcement). The variable is winsorized at the 1st and 99th percentiles.
Selected target	A dummy variable that equals 1 if the potential target is selected by the acquirer and 0 otherwise.
Positive sentiment	Total number of articles about the potential target with positive sentiment divided by the total number of articles about the potential target plus 1, considering a window of 365 calendar days ending 20 days before the announcement of the focal acquisition (we obtain similar results using alternative windows, such as one-year windows ending 10, 30, or 40 days before the announcement).
Sentiment shock	Considering a window of 365 calendar days ending 20 days before the announcement of the focal acquisition, it is defined as: $\frac{n_p^{ex}-n_p}{n_p+1} - \frac{n_n^{ex}-n_n}{n_n+1}$, where n_p (n_n) is the number of days with novel positive (neutral or negative) stories about the potential target, and $n_p^{ex}(n_n^{ex})$ is the number of days with novel positive (neutral or negative) stories about the potential target *and* an exogenous event.
Market synergy potential	Following Hoberg and Phillips (2010), we measure synergy potential with the text similarity in the product descriptions included in the potential target's and the acquirer's 10-Ks. The measure is from Hoberg and Phillips's (2010, 2016) TNIC-3 dataset. The variable ranges between 0 and 1, with 1 indicating identical product descriptions.
Geographic proximity	A dummy variable that equals 1 if the acquirer and the potential target are within 100 miles of each other, where distance is computed as a straight-line distance between their headquartes' zip codes. Zip codes' coordinates are from U.S. Census Gazetteer Files.
Relative size	Ratio of the market value of equity of the potential target to the sum of the market value of equity of the acquirer and the potential target. Market value of equity is from Compustat and measured before the acquisition announcement.
Target net leverage	The ratio of total liabilities minus cash and equivalents to total assets. The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Target R&D intensity	The ratio of R&D expenses to total assets.[12] The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Target ROA	Net income as a percentage of total assets. The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Target Tobin's Q	The market value of assets divided by the book value of assets, computed as in Kaplan and Zingales (1997). The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.

[12] In our sample of potential targets, 5,070 of potential or actual targets have missing R&D expenses in Compustat. When R&D expenses are missing, we set them to 0 (e.g., see Markovitch, Huang, & Ye, 2020; Peters & Taylor, 2017). As a robustness test, we re-run all regressions adding as controls dummy variables indicating whether R&D expenses of targets are missing and results do not change.

Table 2. Descriptive statistics

	N	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) *Selected target*	9,472	0.13	0.34	0	1												
(2) *Price change (%)*	9,472	4.45	49.79	-159.69	146.11	-.03											
(3) *Positive sentiment*	9,472	0.41	0.14	0.00	0.96	.00	.07										
(4) *Sentiment shock*	9,472	0.01	0.13	-0.94	0.95	.02	-.03	-.23									
(5) *Market synergy potential*	9,472	0.07	0.08	0.00	0.83	.08	.00	-.04	-.01								
(6) *Geographic proximity*	9,472	0.16	0.36	0	1	.15	-.01	.00	-.01	.07							
(7) *Relative size*	9,472	0.19	0.18	0.00	1.00	.04	.00	.03	.00	.13	.04						
(8) *Target net leverage*	9,472	0.39	0.46	-0.75	1.12	.00	.03	.03	-.02	.36	-.07	.16					
(9) *Target R&D intensity*	9,472	0.07	0.13	0.00	0.73	-.02	-.09	.02	.00	-.21	.06	-.20	-.53				
(10) *Target ROA*	9,472	-3.74	19.69	-104.72	23.27	.01	.13	.03	-.01	.09	-.02	.19	.24	-.67			
(11) *Target Tobin's Q*	9,472	1.81	1.38	0.72	8.59	-.01	.12	.00	-.01	-.23	.04	-.09	-.43	.47	-.25		
(12) *LT index*	9,472	0.68	0.18	0.09	1.00	.03	.05	-.03	.03	-.24	.00	.05	-.22	.08	-.03	.16	
(13) *Number of news articles*	9,472	284.86	406.22	0	8,877	.07	-.04	.11	.00	-.09	.02	.16	-.01	-.01	.07	.09	.12

Table 3. News sentiment and potential target's price

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample:	Full sample	Full sample	Full sample	Number of news articles ≤ 1st tercile	Number of news articles < median	Number of news articles ≥ median	Number of news articles ≥ 2nd tercile
Model:	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS
Dependent variable:	*Positive sentiment*		*Price change (%)*				
Positive sentiment			43.63***	42.03***	39.47***	44.16	77.35
			(16.74)	(13.58)	(14.69)	(98.50)	(291.03)
Sentiment shock		-0.21***					
		(0.02)					
Market synergy potential	0.03	0.02	-9.68	-11.32	-26.66	1.09	0.85
	(0.03)	(0.03)	(8.80)	(19.82)	(16.29)	(10.77)	(14.61)
Geographic proximity	0.00	0.00	0.53	3.68*	2.31	-1.50	-2.30
	(0.00)	(0.00)	(1.34)	(2.23)	(1.97)	(1.89)	(2.27)
Relative size	0.09***	0.09***	-7.55	6.17	-14.01	-3.57	-9.30
	(0.03)	(0.03)	(9.81)	(20.62)	(15.51)	(18.59)	(49.30)
Target net leverage	0.03***	0.03***	1.77	4.25	4.30	-1.54	0.56
	(0.01)	(0.01)	(2.30)	(4.76)	(3.68)	(3.71)	(6.36)
Target R&D intensity	0.03	0.03	-15.26	-18.82	-26.56*	-4.25	2.43
	(0.02)	(0.02)	(10.68)	(23.28)	(14.81)	(15.84)	(20.33)
Target ROA	-0.00	-0.00	0.22***	0.33**	0.25***	0.19**	0.20**
	(0.00)	(0.00)	(0.06)	(0.13)	(0.09)	(0.08)	(0.09)
Target Tobin's Q	-0.00***	-0.00***	5.88***	5.31***	6.25***	5.30***	5.81**
	(0.00)	(0.00)	(0.62)	(1.49)	(1.14)	(0.99)	(2.52)
Deal fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,472	9,472	9,472	3,175	4,716	4,756	3,172
R^2	0.278	0.310					
F test of excluded instrument			177.603	203.575	190.324	18.397	1.987
p-value			0.000	0.000	0.000	0.000	0.159

Notes. Standard errors (in parentheses) are clustered by deal. In the 2SLS models, *positive sentiment* is instrumented with sentiment shock. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4. News sentiment and target selection.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Sample:	Full sample		Short-term oriented acquirers (*LT index* ≤ 1st tercile)		Short-term oriented acquirers (*LT index* < median)		Long-term oriented acquirers (*LT index* ≥ median)		Long-term oriented acquirers (*LT index* ≥ 2nd tercile)	
Model:	IV probit		IV probit		IV probit		IV probit		IV probit	
Dependent variable:	*Positive sentiment*	*1 = selected 0 = not selected*	*Positive sentiment*	*1 = selected 0 = not selected*	*Positive sentiment*	*1 = selected 0 = not selected*	*Positive sentiment*	*1 = selected 0 = not selected*	*Positive sentiment*	*1 = selected 0 = not selected*
Positive sentiment		-1.04*		-1.75***		-1.87***		0.95		-0.25
		(0.54)		(0.60)		(0.56)		(1.27)		(1.40)
Sentiment shock	-0.23***		-0.28***		-0.27***		-0.17***		-0.19***	
	(0.02)		(0.02)		(0.02)		(0.02)		(0.03)	
Market synergy potential	-0.05**	2.68***	0.00	1.99***	-0.05	2.35***	-0.05	3.23***	-0.10***	3.32***
	(0.03)	(0.25)	(0.04)	(0.43)	(0.04)	(0.37)	(0.03)	(0.35)	(0.04)	(0.48)
Geographic proximity	0.00	0.58***	-0.01*	0.87***	-0.01	0.70***	0.01**	0.43***	0.01*	0.46***
	(0.00)	(0.04)	(0.01)	(0.08)	(0.01)	(0.06)	(0.01)	(0.06)	(0.01)	(0.07)
Relative size	0.05***	0.17**	0.02	0.25*	0.02	0.12	0.08***	0.07	0.08***	0.22
	(0.01)	(0.07)	(0.02)	(0.13)	(0.02)	(0.10)	(0.02)	(0.14)	(0.02)	(0.16)
Target net leverage	0.03***	0.13**	0.03**	0.30**	0.03***	0.22**	0.03***	0.02	0.04***	-0.06
	(0.00)	(0.06)	(0.01)	(0.13)	(0.01)	(0.09)	(0.01)	(0.08)	(0.01)	(0.11)
Target R&D intensity	0.07***	-0.44**	0.00	-0.52	0.05	-0.49	0.08***	-0.58**	0.09***	-1.17***
	(0.02)	(0.21)	(0.04)	(0.41)	(0.03)	(0.34)	(0.03)	(0.29)	(0.03)	(0.36)
Target ROA	0.00***	0.00	-0.00	-0.00	0.00	-0.00	0.00**	0.00	0.00**	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Target Tobin's Q	-0.00	-0.03**	0.00	-0.00	0.00	-0.05**	-0.00*	-0.02	-0.00	-0.03
	(0.00)	(0.01)	(0.00)	(0.03)	(0.00)	(0.02)	(0.00)	(0.02)	(0.00)	(0.02)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,462	9,462	3,163	3,163	4,635	4,635	4,837	4,837	3,184	3,184
Wald χ^2 test of exogeneity	3.45	3.45	6.21	6.21	9.12	9.12	0.46	0.46	0.01	0.01
p-value	0.063	0.063	0.013	0.013	0.003	0.003	0.498	0.498	0.938	0.938

Notes. The table reports conditional maximum-likelihood IV probit models. Standard errors (in parentheses) are clustered by deal. In even-numbered models, *positive sentiment* is instrumented with *sentiment shock*. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Linear instrumental variable mediation analysis

Dependent variable:	*1 = selected 0 = not selected*
Treatment:	*Positive sentiment*
Mediator:	*Price change (%)*
Instrument:	*Sentiment shock*
Total effect	-0.21*
	(0.12)
Direct effect	0.63
	(1.14)
Indirect effect	-0.84
	(1.48)
Control variables	Yes
Deal fixed effects	Yes
% of total effect explained by mediator	406.91
Observations	9,472

Notes. The table reports the estimates from the causal mediation analysis for linear instrumental variable models, as introduced by Dippel *et al.* (2019). The effects on the probability of selection are estimated with a linear probability model. The model includes the same control variables included in tables 3 and 4. Robust standard errors are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6. Choice outcomes of short-term versus long-term oriented acquirers

Panel A. Sample split at the median of the acquirers' LT index.

Sample:	Short-term oriented acquirers (*LT index* < median)		Long-term oriented acquirers (*LT index* ≥ median)				
	N	Mean	N	Mean	Difference	S.E.	*t*-test / *z*-test *p*-value
Acquisition premium (%)	571	27.67	572	41.71	-14.05	3.41	0.000
Fraction of times potential target with highest market synergy potential is selected	571	0.41	572	0.53	-0.11	0.03	0.000

Panel B. Sample split at the bottom and top terciles of the acquirers' LT index.

Sample:	Short-term oriented acquirers (*LT index* ≤ 1st tercile)		Long-term oriented acquirers (*LT index* ≥ 2nd tercile)				
	N	Mean	N	Mean	Difference	S.E.	*t*-test / *z*-test *p*-value
Acquisition premium (%)	382	24.19	385	39.60	-15.41	4.17	0.000
Fraction of times potential target with highest market synergy potential is selected	382	0.40	385	0.54	-0.14	0.04	0.000

Notes. Observations are observed deals with known acquisition offer (see filter #6 in Table S1 of Online Appendix A). In Panel A, short-term (long-term) oriented acquirers are acquirers with *LT index* < (≥) the sample median. In Panel B, short-term (long-term) oriented acquirers are acquirers with *LT index* ≤ (≥) the first (second) tercile. The test statistic column reports the *t*-test of difference in means for continuous *acquisition premium* variable and the *z*-test of difference in proportions for the second variable.

Table A1. The effect of exogenous events on the number of news articles about a firm

	(1)	(2)	(3)
	Log(number of news articles)		
Day with exogenous event	-0.03***	-0.02***	-0.02***
	(0.01)	(0.01)	(0.01)
Fixed effects:			
Day of the week	Yes	Yes	Yes
Month-year	-	Yes	-
Firm × month-year	-	-	Yes
Observations	4,280,191	4,280,191	4,280,191
R^2	0.032	0.043	0.301

Notes. The table reports linear regressions. Standard errors (in parentheses) are two-way clustered by month-year and firm (Cameron, Gelbach, & Miller, 2011). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

ONLINE APPENDIX

A. DETAILS ON SAMPLE SELECTION AND COMPOSITION

In this Online Appendix, we provide additional details on the composition of our sample at each step of the sample selection. Table S1 reports the number of deals we obtain at each step. As described in the main text, M&A data are sourced from the Thomson SDC Platinum database. We consider majority-stake acquisition announcements, in which the acquirer held less than 50% of the target at the acquisition announcement and sought to own more than 50% of the target after the transaction. Our sample covers announcements of acquisitions in the period 2006–2019 between U.S. public companies present in CRSP-Compustat, excluding financial acquirers (i.e., acquirers with primary standard industrial classification code (SIC) 62 or 67). At this step (filter #1 in Table S1), the sample includes 1,610 deals.

To implement our matched-case-control design, for each actual target, we match a set of alternative potential targets as follows. First, we consider all the companies in Compustat with market value of equity that is within 50% and 150% of the market value of equity of the actual target in the fiscal year before the announcement (e.g., see Savor & Lu, 2009). Second, we find the 10 firms with most similar products to the target. We define product similarity using Hoberg and Phillips's (2010, 2016) text similarity measure of the product descriptions contained in firms' annual 10-Ks. Data are sourced from the TNIC-3 dataset. With this procedure, each target is matched with 10 alternative potential targets, or less if there are fewer firms of comparable size with non-zero product similarity to the target.

If we exclude selected targets with no available market value of equity in Compustat or that are not present in the TNIC-3 in the year before the acquisition announcement, we obtain

1,575 deals (filter #2). After we remove targets that are not matched with any alternative potential target (with non-missing values on control variables), we obtain 1,388 deals (filter #3).

After we exclude selected and unselected targets that are not found in RavenPack (filter #4), we have 1,386 deals. Excluding cases with missing control variables for the acquirer, we have 1,378 deals (filter #5).

In Online Appendix B, we provide complementary analyses on the long-run acquisition performance of the observed acquisitions. For this analysis, we need some additional control variables specific to the deal, including the acquisition offer, which we need to compute the acquisition premium. After excluding missing values on these variables, we obtain 1,143 deals (filter #6). The *undervaluation-synergy tradeoff* variable (see Online Appendix C) cannot be computed for cases with no within-deal variation in *sentiment shock* or *market synergy potential*, since the variable is based on the correlation between these two measures among the potential targets of the focal deal. After removing cases with no within-deal variation in *sentiment shock* or *market synergy potential*, we have 943 deals (filter #7). Finally, the acquirer's buy-and-hold abnormal returns (BHAR) cannot be computed for acquirers with missing returns in the 12 months following the acquisition announcement. After removing cases with missing acquirer's BHAR, we have a final sample of 713 deals (filter #8).

—Insert Table S1 about here—

Table S2 shows how the median deal value and the composition of the sample by two-digit SIC codes changes from filter #1 to #8. As the table shows, both the typical deal size and the composition of the sample do not change substantially after removing missing values on our key variables.

—Insert Table S2 about here—

B. CONDITIONAL LOGIT REGRESSIONS FOR THE PROBABILITY OF TARGET SELECTION

In the main body, we test whether positive news sentiment affects the probability that a potential target is selected by the acquirer with instrumental-variable (IV) probit models, in which we instrument *positive sentiment* with *sentiment shock*. In the IV probit regressions, we do not include deal fixed effects to avoid the incidental parameters bias, which may arise when including a high number of fixed effects in non-linear models (Greene, 2004). To test whether the effects reported in the main text are partly driven by acquirer or deal-specific idiosyncrasies, here we report conditional logit regressions including acquirer, acquirer × year, or deal fixed effects. Table S3 reports the regression results. The dependent variable is a dummy indicating whether the potential target is selected by the acquirer and the key independent variable is the instrument *sentiment shock*. Models (1) and (2) include acquirer fixed effects, models (3) and (4) add acquirer × year fixed effects, and models (5) and (6) include deal fixed effects. Odd-numbered models are estimated on the subset of short-term oriented acquirers, while even-numbered models are estimated on the subset of long-term oriented acquirers. Short-term (long-term) oriented acquirers are defined as those with an *LT index* lower than (greater than or equal to) the sample median (results equally hold when splitting the sample between the top and bottom terciles of the *LT index*). The results are in line with those reported in the main text: *sentiment shock* significantly increases the probability that the potential target is selected among short-term oriented acquirers (*p*-value = .012, .015, and .016 in models (1), (3), and (5), respectively), while it does not significantly affect the probability of selection among long-term oriented acquirers (*p*-value = .885, .787, and .736 in models (2), (4), and (6), respectively). The average marginal effects in the regressions on short-term oriented acquirers indicate that when *sentiment shock* goes from its

minimum (–1) to its maximum (+1), the probability of selection increases by 0.22 in model (1), 0.16 in model (3), and 0.13 in model (5).

—Insert Table S3 about here—

C. IMPLICATIONS FOR LONG-RUN ACQUISITION PERFORMANCE

The results reported in the main text indicate that when news sentiment deflates a potential target's stock price, acquirers are more likely to select the target and this effect on acquirers' selection mostly affects short-term oriented acquirers. A related question to be addressed is what are the implications of such influence on selection decisions for the long-run performance of M&As. In this Online Appendix, we describe our methodology to answer this question.

Intuitively, in some cases news-induced price distortions may induce a short-term oriented acquirer to select a potential target that is suboptimal from a synergistic point of view instead of a potential target with higher synergistic benefit. Specifically, when news sentiment shocks occur, in some cases an acquirer may face a tradeoff between selecting a relatively undervalued target (due to news-induced price distortions) with lower synergies and a relatively overvalued target with higher synergies. When this tradeoff arises, a short-term oriented acquirer may be tempted to select the potential target with lower synergy potential, with detrimental effects on the long-run acquisition performance.

Below we first provide a simple theoretical model to describe this mechanism. We then describe the methodology to empirically test the effect of this tradeoff on the long-run acquisition performance and present the results.

Theoretical model

Assume that at time 0, an acquirer j has N available potential targets. Each potential target i is subject to a random shock, measured by element s_i of vector $S_j = (s_1,\ldots, s_N)_j$, that makes the news sentiment about i less positive. Because news sentiment is likely to affect investors' perception of potential target i, we expect s_i to diminish i's market price at time 0 (as described in Hypothesis 1 in the main text).

Each potential target i that can be acquired at time 0 can provide gains to the acquirer j at time 1 equal to f_i due to synergies (net of integration costs), where f_i is the i-th element of vector $F_j = (f_1,\ldots, f_N)_j$. The acquirer discounts the synergistic gains at time 1 at rate δ_j and selects the potential target i that maximizes the expected value of the acquisition:

$$\delta_j \times f_i + v_i - \pi \times p(s_i),$$

where v_i is the standalone value of i, p is i's market price at time 0 (a decreasing function of s_i by Hypothesis 1), and π is the multiplier of the target's pre-announcement price that the acquirer has to offer to gain control over the target. Because the shock s_i reduces the upfront cost of acquiring potential target i, it increases the probability that i is selected (as described in Hypothesis 3 in the main text).

Let's further assume that there are two types of acquirers: short-term oriented acquirers with discount rate $\delta_j = \delta^{ST}$ and long-term oriented acquirers with discount rate $\delta_j = \delta^{LT}$, where $\delta^{ST} < \delta^{LT}$. Because long-term oriented acquirers assign more weight to prospective synergies when making their target selection decision, they will be less sensitive to the fluctuations in the upfront price of the acquisition at time 0 due to shock s_i (as described in Hypothesis 4).

Because we assume news-sentiment shocks to be random, they are independent of the potential target's underlying characteristics and therefore of its synergistic potential with the acquirer. Hence, for any given set of potential targets available to the acquirer, each potential

target in the set is as likely to be subject to an exogenous shock that affects its news sentiment. While such shocks are random, in some instances they will disproportionally affect targets with the lowest (or highest) synergistic fit with the acquirer. When news-induced undervaluation disproportionally affects lower-synergy potential targets in the set, the acquirer can be tempted to select lower-synergy targets due to the drop in the upfront cost of the acquisition. In such a case, the news-induced price distortions encourage the acquirer to select a suboptimal target from a synergistic point of view. This distortion in the target-selection choice may then have detrimental effects on the long-run performance of the acquisition since lower synergistic gains will materialize over time. Conversely, when news-induced undervaluation disproportionally affects higher-synergy potential targets, the acquirer should be further pushed to select a synergy-maximizing target.

In our model, we measure the long-run performance of the acquisition with the average synergistic gains to the acquirer at time 1: the average $f_{i=c}$, where $i = c$ is the chosen target. Intuitively, while random shocks to news sentiment cause some potential targets to be comparatively undervalued relative to other potential targets available to *j*, such potential targets are not necessarily those that maximize the synergistic value of the acquisition (i.e., those with highest f_i). In some cases, random shocks will disproportionally affect lower-synergy potential targets, which incentivizes the acquirer to select a relatively undervalued potential target that is nevertheless suboptimal from a synergistic point of view. In other cases, random shocks will disproportionally affect higher-synergy potential targets, which further incentivizes the acquirer to select synergy-maximizing targets. We expect that when acquirers face a tradeoff between selecting a relatively undervalued target due to news sentiment shocks and a synergy-maximizing target, the average long-term performance of the observed acquisition ($f_{i=c}$) will

drop. To measure this tradeoff for each acquirer *j*, we define the *undervaluation-synergy tradeoff* index as the opposite of the correlation between vectors S_j and F_j (i.e., the correlation multiplied by –1). The more positive this index, the more acquirer *j* faces a tradeoff between selecting a comparatively undervalued target (due to the shock to news sentiment) and a synergy-maximizing target. The more negative this index, the more price incentives and synergy-maximization incentives are aligned.

Because long-term oriented acquirers are less sensitive to price fluctuations when selecting their target, they are less likely to select suboptimal targets from a synergistic point of view when facing this tradeoff. Hence, their average gains at time 1 will drop less with the tradeoff.

To exemplify how this tradeoff is expected to affect the average gains to the acquirer at time 1, we run simulations. For simplicity, assume $p_i = -s_i$ (target *i*'s market price is entirely defined by s_i), $\pi = 1$ (the acquirer can buy the target at its market price), and $v_i = 0 \; \forall \; i$ (target *i*'s standalone value is normalized to zero). Let's also assume $s_i \sim Normal(0,1)$ and $f_i \sim Normal(0,1)$.[1] Figure S1 shows the results of a simulation with 1,000 short-term oriented acquirers with $\delta^{ST} = 0.5$ and 1,000 long-term oriented acquirers with $\delta^{LT} = 5$, each with 10 available potential targets ($N = 10$). The figure plots the average gains at time 1 of the observed acquisition (i.e., the average $f_{i=c}$) as a function of the *undervaluation-synergy tradeoff* index. Markers represent the mean of equally-sized bins of observations. The figure shows that the long-term gains of acquisitions drop with the *undervaluation-synergy tradeoff*, although the effect is mitigated for long-term oriented acquirers.

—Insert Figure S1 about here—

[1] We allow f_i to take on negative values, considering that for some targets the expected integration costs may be greater than the expected benefits of the acquisition (e.g., Larsson & Finkelstein, 1999).

Measures

To test these conjectures, the relevant unit of analysis is an observed acquisition announcement. We measure the long-run performance of the acquisition with the 12-month buy-and-hold abnormal returns (BHAR) on the acquirer's stock starting from one trading day before the acquisition announcement (see Table S4 for details). Below, we describe our methodology to empirically define the *undervaluation-synergy tradeoff*. Table S4 provides the definitions of the other deal-level variables included in the regressions. The variables specific to targets are as defined in Table 1 of the main text.

—Insert Table S4 about here—

***Undervaluation-synergy tradeoff*.** The long-run performance of the acquisition is expected to be lower when the acquirer faces a tradeoff between acquiring an undervalued target (due to news-induced price distortions) that is suboptimal from a synergistic point of view and a less undervalued (or more overvalued) target with higher synergistic potential. As described, this tradeoff emerges when news-induced undervaluation disproportionally affects lower-synergy potential targets vis-à-vis higher-synergy potential targets. Hence, we measure this tradeoff with the opposite of the correlation between the *sentiment shock* variable and a proxy for the synergy potential among the potential targets of the focal deal. To measure the potential for synergies between a potential target and the focal acquirer, we follow Hoberg and Phillips (2010) and use the text-based similarity in the product descriptions in the firms' 10-Ks. Indeed, these authors show that this text-based similarity measure positively affects post-merger outcomes, including long-term profitability, sales growth, and new product introductions. We source this variable from Hoberg and Phillips's (2010, 2016) TNIC-3 dataset and label it as *market synergy potential*. Finally, we define the *undervaluation-synergy tradeoff* variable for each observed acquisition *j*

as the correlation between vectors S_j and F_j multiplied by –1, where S_j is the vector including the *sentiment shock* index for each potential target *i* of the focal acquisition *j*, and F_j is the vector representing the *market synergy potential* for each potential target *i* of the focal acquisition *j*.

Results

Unlike the analysis reported in the main text, the unit of analysis here is an observed acquisition announcement. Excluding observations with missing returns in the 12 months following the acquisition announcement and missing values on other deal-level variables (see sample selection filters in Table S1 of Online Appendix A), the sample includes 713 acquisition announcements. Table S5 reports the descriptive statistics of the variables at the observed-acquisition level. The table shows that the average of the *undervaluation-synergy tradeoff* variable is close to zero. Recalling that this variable is the opposite of the correlation between the *sentiment shock* and the *market synergy potential* variables among the potential targets of the focal deal, a close-to-zero correlation further corroborates the assumption that shocks to news sentiment can be considered random.

—Insert Table S5 about here—

Table S6 reports the OLS regressions estimating the effect of *undervaluation-synergy tradeoff* on the acquirer's 12-month BHAR. We control for the mean of *sentiment shock* and the mean of *market synergy potential* among the potential targets of the focal deal to account for possible idiosyncratic effects of deals at different *levels* of these two variables (while the *undervaluation-synergy tradeoff* measures their correlation). Since we are interested in the long-term synergistic gains of the acquisition (consistent with the simulation in Figure S1), we control for the price of the acquisition with the premium offered by the acquirer. The regressions also include control variables for the acquirer's, target's, and deal's characteristics, and fixed effects

for the acquirer's industry (two-digit SIC code) and year. We estimate these regressions with White-Huber robust standard errors to allow for potential model misspecification.

Model (1) includes the control variables and the fixed effects in the full sample of deals and model (2) adds the *undervaluation-synergy tradeoff* measure. In line with the theoretical model, the *undervaluation-synergy tradeoff* index negatively affects the long-run performance of the acquisition (*p*-value = .039): as the index moves from its minimum (−1) to its maximum (+1), the 12-month BHAR drops by 11.1 percentage points. Models (3)–(6) test whether this effect differs among short- and long-term oriented acquirers. In model (3) (model (6)) short-term (long-term) oriented acquirers are defined as acquirers with the *LT index* ≤ (≥) the first (second) tercile. In model (4) (model (5)) short-term (long-term) oriented acquirers are defined as acquirers with the *LT index* < (≥) the median. In line with the theoretical model, the regressions show that *undervaluation-synergy tradeoff* negatively affects the long-run performance of the acquisition among short-term oriented acquirers (*p*-value = .008 in model (3) and .000 in model (4)), but not among long-term oriented acquirers (*p*-value = .985 in model (5) and .999 in model (6)).

—Insert Table S6 about here—

As a final test, we report additional regressions on a short-term measure of acquisition performance. Specifically, we use the cumulative abnormal returns (CAR) on the acquirer's stock over a five-day window starting two trading days before the acquisition announcement and ending two trading days after (see Table S4 for details). Table S7 replicates models (1) and (2) of Table S6 using this alternative dependent variable (results do not change in the subsamples of short- and long-term oriented acquirers). Model (2) shows that *undervaluation-synergy tradeoff* does not significantly affect the acquirer's CAR (*p*-value = .863). Hence, while Table S6

indicates that the presence of a tradeoff between undervaluation and synergy potential reduces the returns of the acquirer over time, Table S7 indicates that investors do not immediately react to this tradeoff. On the other hand, Table S7 shows that the acquisition premium has a significantly negative effect on the acquirer's CAR (*p*-value = .045 in models (1) and (2)). Interestingly, the effect of acquisition premium on performance is close to null in the longer run. Indeed, in Table S6, the effect of *acquisition premium* is not significant (*p*-value = .718 and .708 in models (1) and (2), respectively). Overall, these results indicate that while news-induced price distortions may deflate a target's price and benefit the short-run performance of the acquisition, the distortions in target selection induced by media are more detrimental to performance in the longer run.

—Insert Table S7 about here—

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Table S1. Sample selection filters

#	Filter	Number of deals
1	M&A announcements in SDC between 2006-2019 between public companies in CRSP-Compustat, excluding financial acquirers (SIC codes 62 and 67)	1,610
2	Target with available market value of equity in Compustat and present in TNIC-3 dataset in the year before the announcement	1,575
3	At least one alternative potential target based on market value of equity and product similarity criteria, excluding potential targets with missing control variables	1,388
4	Excluding selected and unselected targets not found in RavenPack	1,386
5	Excluding cases with missing control variables for acquirer	1,378
6	Excluding cases with missing acquisition offer (needed to compute premium control) and control variables for selected targets	1,143
7	Excluding cases with no within-deal variation in *sentiment shock* or *market synergy potential* (the *undervaluation-synergy tradeoff* variable cannot be computed)	943
8	Excluding cases with missing acquirer's 12-month BHAR	713

Table S2. Sample composition at each sample selection step

Filter #	1	2	3	4	5	6	7	8
Number of deals	1,610	1,575	1,388	1,386	1,378	1,143	943	713
Median deal value (million US$)	681	684	735	730	735	813	813	735
% of deals by SIC code								
01 - Agricultural production: crops	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
07 - Agricultural services	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
08 - Forestry	0.06	0.06	0.07	0.07	0.07	0.09	0.00	0.00
10 - Metal mining	0.31	0.32	0.36	0.36	0.36	0.44	0.32	0.42
12 - Coal mining	0.31	0.32	0.36	0.36	0.36	0.44	0.53	0.56
13 - Oil and gas extraction	4.35	4.44	4.90	4.91	4.86	4.72	5.20	4.77
14 - Mining of nonmetallic minerals	0.12	0.13	0.07	0.07	0.07	0.09	0.00	0.00
15 - Building construction	0.62	0.63	0.65	0.65	0.65	0.70	0.85	0.70
16 - Heavy construction	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
17 - Construction: special trade contractors	0.37	0.38	0.14	0.14	0.15	0.17	0.11	0.14
20 - Food and kindred products	1.55	1.46	1.01	1.01	1.02	1.14	0.85	1.12
21 - Tobacco products	0.19	0.19	0.07	0.07	0.07	0.00	0.00	0.00
22 - Textile mill products	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
23 - Apparel	0.50	0.51	0.58	0.58	0.58	0.35	0.42	0.42
24 - Lumber and wood products	0.12	0.13	0.00	0.00	0.00	0.00	0.00	0.00
25 - Furniture and fixtures	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
26 - Paper and allied products	0.50	0.51	0.43	0.43	0.44	0.35	0.21	0.28
27 - Printing and publishing	1.37	1.40	1.08	1.08	1.09	1.14	1.06	0.84
28 - Chemicals and allied products	8.82	8.89	9.22	9.09	9.14	9.10	9.12	9.96
29 - Petroleum refining	0.43	0.44	0.43	0.43	0.44	0.35	0.42	0.28
30 - Rubber and plastics	0.31	0.32	0.00	0.00	0.00	0.00	0.00	0.00
31 - Leather	0.19	0.19	0.22	0.22	0.22	0.17	0.21	0.28
32 - Stone, clay, and glass	0.19	0.19	0.14	0.14	0.15	0.17	0.11	0.14
33 - Primary metal	0.62	0.63	0.58	0.58	0.58	0.61	0.32	0.14
34 - Fabricated metals	0.43	0.44	0.14	0.14	0.15	0.17	0.11	0.00
35 - Industrial machinery	4.29	4.32	3.82	3.82	3.85	3.94	3.39	3.93
36 - Electronical machinery	8.07	8.06	8.50	8.51	8.49	8.75	9.12	9.54
37 - Transportation equipment	1.30	1.33	1.30	1.30	1.31	1.31	1.06	0.84
38 - Instruments	6.52	6.67	6.63	6.64	6.68	7.17	6.04	6.31
39 - Miscellaneous manufacturing	0.37	0.38	0.14	0.14	0.15	0.17	0.21	0.28
40 - Railroad transportation	0.19	0.19	0.14	0.14	0.15	0.17	0.11	0.14
42 - Motor freight transportation	0.19	0.19	0.22	0.22	0.22	0.17	0.21	0.28
44 - Water transportation	0.12	0.13	0.14	0.14	0.15	0.17	0.11	0.14
45 - Transportation by air	0.50	0.51	0.58	0.58	0.58	0.52	0.64	0.70
46 - Pipelines	0.37	0.38	0.29	0.29	0.29	0.35	0.42	0.28
47 - Transportation services	0.25	0.25	0.22	0.22	0.22	0.09	0.11	0.14
48 - Communications	4.78	4.89	4.61	4.62	4.64	4.20	4.45	3.93
49 - Electric, gas, and sanitary services	4.35	4.32	4.76	4.76	4.72	4.46	4.98	4.35
50 - Wholesale trade: durable goods	0.93	0.95	0.58	0.58	0.58	0.61	0.53	0.56
51 - Wholesale trade: nondurable goods	0.56	0.57	0.43	0.43	0.44	0.44	0.21	0.28
53 - General merchandise stores	0.19	0.13	0.14	0.14	0.15	0.17	0.00	0.00
54 - Food stores	0.56	0.44	0.43	0.43	0.44	0.52	0.42	0.56
56 - Apparel and accessory stores	0.43	0.44	0.50	0.51	0.51	0.52	0.53	0.56
57 - Home furniture	0.31	0.32	0.36	0.36	0.36	0.35	0.42	0.42
58 - Eating and drinking places	0.37	0.38	0.36	0.36	0.36	0.35	0.42	0.28
59 - Miscellaneous retail	1.30	1.21	1.15	1.15	1.16	1.14	0.95	0.98
60 - Depository institutions	17.33	16.89	19.02	19.05	19.16	19.51	22.06	22.02
61 - Nondepository credit institutions	0.68	0.63	0.65	0.65	0.65	0.44	0.42	0.56
62 - Security and commodity services	0.68	0.70	0.79	0.79	0.80	0.70	0.53	0.56
63 - Insurance carriers	1.86	1.90	2.09	2.09	2.10	2.10	2.44	2.38
64 - Insurance agents	0.19	0.19	0.22	0.22	0.22	0.17	0.00	0.00
65 - Real estate	0.25	0.25	0.22	0.22	0.22	0.26	0.21	0.14
67 - Holding	2.36	2.41	2.74	2.74	2.76	2.89	3.08	3.23
70 - Hotels and rooming houses	0.62	0.63	0.50	0.51	0.51	0.61	0.53	0.56
72 - Personal services	0.31	0.32	0.14	0.14	0.15	0.17	0.11	0.14
73 - Business services	13.11	13.02	12.61	12.63	12.34	11.81	11.03	10.38
75 - Automotive repair	0.31	0.32	0.36	0.36	0.36	0.44	0.42	0.56
78 - Motion pictures	0.75	0.76	0.72	0.72	0.73	0.52	0.32	0.14
79 - Amusement	0.56	0.57	0.58	0.58	0.58	0.52	0.42	0.28
80 - Health services	1.86	1.90	2.16	2.16	2.18	2.45	2.76	3.23
82 - Educational services	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
87 - Engineering and related services	1.43	1.46	1.44	1.44	1.45	1.57	1.48	1.26

Table S3. Conditional logit regressions for the probability of target selection

	(1)	(2)	(3)	(4)	(5)	(6)
Acquirer orientation:	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
Model:	Conditional logit					
Dependent variable:	*1 = selected* *0 = not selected*					
Sentiment shock	0.73**	0.06	0.74**	-0.11	0.73**	-0.14
	(0.29)	(0.40)	(0.30)	(0.42)	(0.30)	(0.42)
Market synergy potential	8.33***	10.58***	10.42***	12.33***	10.64***	12.52***
	(1.36)	(1.72)	(1.54)	(2.20)	(1.60)	(2.29)
Geographic proximity	1.58***	0.92***	1.63***	0.92***	1.64***	0.91***
	(0.16)	(0.13)	(0.16)	(0.13)	(0.16)	(0.13)
Relative size	2.71***	1.68***	7.04***	5.96***	9.44***	9.39***
	(0.45)	(0.33)	(0.86)	(0.82)	(0.73)	(0.72)
Target net leverage	0.33	0.08	0.38*	0.08	0.41*	0.15
	(0.21)	(0.14)	(0.21)	(0.15)	(0.21)	(0.15)
Target R&D intensity	-0.70	-0.81	-0.51	-0.32	-0.53	-0.39
	(0.77)	(0.64)	(0.81)	(0.65)	(0.80)	(0.66)
Target ROA	-0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Target Tobin's Q	-0.13**	-0.02	-0.14**	-0.04	-0.13**	-0.01
	(0.06)	(0.04)	(0.06)	(0.04)	(0.07)	(0.04)
Year dummies	Yes	Yes				
Acquirer FE	Yes	Yes	-	-	-	-
Acquirer × year FE	-	-	Yes	Yes	-	-
Deal FE	-	-	-	-	Yes	Yes
Observations	4,635	4,837	4,635	4,837	4,635	4,837
Wald χ^2	250.91	160.67	241.38	131.49	305.99	218.80
Pseudo R^2	0.120	0.089	0.153	0.118	0.163	0.131

Notes. The table reports conditional logit regressions. Standard errors (in parentheses) are clustered by acquirer. Short-term (long-term) oriented acquirers are those with an *LT index* < (≥) the sample median. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. FE = fixed effects of the conditional logit model.

Table S4. Definitions of variables specific to the observed acquisition announcements

Variable	Description
12-month BHAR (%)	Buy-and-hold abnormal returns (BHARs) of acquirers computed from 1 trading day before the acquisition announcement up to 12 months after, expressed as a percentage. BHARs are computed following the methodology described in Barber and Lyon (1997). We consider the buy-and-hold returns relative to an equally-weighted portfolio of returns, with annual rebalancing, allowing newly listed firms to enter the portfolio. The variable is winsorized at the 1st and 99th percentiles.
CAR [-2, +2] (%)	The percentage CAR on the acquirer's stock is computed over a five-day window starting two trading days before the acquisition announcement and ending two trading days after. CAR is computed using the event study method described in Brown and Warner (1985), using the CRSP value-weighted index as the market return and estimating the market model parameters over a period of 250 trading days ending 42 trading days before the deal announcement. We require at least 100 days with nonmissing returns during the model estimation period and nonmissing returns in all five days of the event window. CAR is winsorized at the 1st and 99th percentiles to mitigate the effect of extreme observations.
Undervaluation-synergy tradeoff	Correlation between the *sentiment shock* and the *market synergy potential* variables among the potential targets of the focal deal (including the selected target) multiplied by –1.
Mean sentiment shock	Average of the *sentiment shock* variable among the potential targets of the focal deal (including the selected target).
Mean market synergy potential	Average of the *market synergy potential* variable among the potential targets of the focal deal (including the selected target).
Acquisition premium (%)	Logarithm of the ratio of the acquisition offer price to the market value of equity of the target 1 year and 20 days before the acquisition announcement (for consistency with the *price change* variable), expressed as a percentage. The acquisition offer is from SDC and the pre-acquisition market value of equity is from CRSP. The variable is winsorized at the 1st and 99th percentiles.
Stock payment	A dummy variable that equals 1 if the acquisition is entirely paid in stock.
Defense tactic	A dummy variable that equals 1 if the target implements a defensive tactic.
Toehold	A dummy variable that equals 1 if the acquirer has a stake in the target before the deal.
Competing bidders	A dummy variable that equals 1 if the target has more than one bidder.
Acquirer log(assets)	The logarithm of total assets before the acquisition announcement.
Acquirer net leverage	The ratio of total liabilities minus cash and equivalents to total assets. The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Acquirer R&D intensity	The ratio of R&D expenses to total assets. The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Acquirer ROA	Net income as a percentage of total assets. The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.
Acquirer Tobin's Q	The market value of assets divided by the book value of assets, computed as in Kaplan and Zingales (1997). The variable is measured before the acquisition announcement and winsorized at the 1st and 99th percentiles.

Table S5. Descriptive statistics for observed acquisition announcements

	N	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) *12-month BHAR (%)*	713	-2.64	32.46	-84.74	112.10								
(2) *CAR [-2, +2] (%)*	713	-0.86	7.52	-22.73	19.72	0.09							
(3) *Undervaluation-synergy tradeoff*	713	0.00	0.48	-1.00	1.00	-0.08	0.02						
(4) *Mean market synergy potential*	713	0.07	0.06	0.00	0.42	-0.05	-0.03	0.03					
(5) *Mean sentiment shock*	713	0.00	0.06	-0.39	0.22	0.02	0.01	0.01	-0.06				
(6) *Acquisition premium (%)*	713	33.54	58.82	-181.39	196.56	0.02	0.03	-0.02	-0.03	-0.04			
(7) *Geographic proximity*	713	0.33	0.47	0	1	-0.02	0.01	0.01	0.27	-0.04	-0.03		
(8) *Relative size*	713	0.21	0.18	0.00	0.83	0.04	-0.04	-0.02	0.12	0.00	-0.18	0.09	
(9) *Stock payment*	713	0.22	0.41	0	1	-0.08	-0.01	0.03	0.25	-0.06	-0.13	0.17	0.16
(10) *Defense tactic*	713	0.04	0.18	0	1	0.02	0.01	0.01	-0.06	-0.05	0.03	-0.09	0.06
(11) *Toehold*	713	0.04	0.18	0	1	0.08	0.00	0.00	0.04	0.06	-0.11	0.03	0.05
(12) *Competing bidders*	713	0.08	0.27	0	1	0.11	0.02	-0.08	-0.07	-0.06	0.08	-0.06	0.13
(13) *Target net leverage*	713	0.40	0.44	-0.67	1.00	-0.08	0.01	0.03	0.47	-0.05	0.00	0.15	0.08
(14) *Target R&D intensity*	713	0.07	0.12	0.00	0.61	0.06	-0.06	-0.07	-0.25	0.03	-0.08	-0.09	-0.21
(15) *Target ROA*	713	-2.84	18.36	-92.69	22.30	0.01	0.05	0.03	0.05	-0.02	0.11	0.07	0.23
(16) *Target Tobin's Q*	713	1.68	1.06	0.74	6.69	0.02	-0.04	-0.07	-0.27	0.01	0.16	-0.10	-0.11
(17) *Acquirer log(assets)*	713	8.57	1.89	2.64	14.45	-0.05	0.02	0.00	0.03	-0.01	0.14	-0.02	-0.35
(18) *Acquirer net leverage*	713	0.47	0.36	-0.46	0.93	-0.07	0.05	0.01	0.45	-0.05	0.05	0.16	0.04
(19) *Acquirer R&D intensity*	713	0.03	0.06	0.00	0.30	0.05	-0.11	-0.03	-0.24	0.03	-0.10	-0.04	-0.05
(20) *Acquirer ROA*	713	3.13	8.22	-39.00	22.27	-0.01	0.05	0.03	-0.16	-0.02	0.22	-0.04	-0.18
(21) *Acquirer Tobin's Q*	713	1.68	0.91	0.78	5.84	0.02	-0.04	0.02	-0.28	0.01	0.10	-0.11	-0.12

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(10) *Defense tactic*	-0.04											
(11) *Toehold*	0.01	0.05										
(12) *Competing bidders*	-0.08	0.17	0.09									
(13) *Target net leverage*	0.21	0.01	0.02	-0.05								
(14) *Target R&D intensity*	-0.15	-0.03	0.00	0.01	-0.56							
(15) *Target ROA*	0.03	0.05	0.04	0.00	0.20	-0.62						
(16) *Target Tobin's Q*	-0.19	-0.01	0.01	0.04	-0.47	0.42	-0.14					
(17) *Acquirer log(assets)*	-0.05	0.04	0.04	0.01	0.24	-0.18	0.21	0.04				
(18) *Acquirer net leverage*	0.19	0.01	0.00	0.01	0.69	-0.49	0.23	-0.33	0.38			
(19) *Acquirer R&D intensity*	-0.08	-0.05	-0.06	0.02	-0.59	0.66	-0.32	0.26	-0.34	-0.59		
(20) *Acquirer ROA*	-0.20	0.04	0.02	-0.03	-0.13	-0.06	0.29	0.16	0.24	-0.18	-0.11	
(21) *Acquirer Tobin's Q*	-0.14	0.05	-0.03	0.05	-0.49	0.39	-0.17	0.51	-0.19	-0.46	0.5	0.23

Table S6. Undervaluation-synergy tradeoff and long-run performance of the focal acquisition

	(1)	(2)	(3)	(4)	(5)	(6)
Sample:	Full sample		Acquirer *LT index* ≤ 1st tercile	Acquirer *LT index* < median	Acquirer *LT index* ≥ median	Acquirer *LT index* ≥ 2nd tercile
Dependent variable:	*12-month BHAR (%)*					
Undervaluation-synergy tradeoff		-5.58**	-13.36***	-14.49***	-0.07	-0.01
		(2.69)	(4.97)	(4.10)	(3.57)	(4.38)
Mean market synergy potential	-7.17	-8.01	54.89	56.08*	-66.11	-106.30*
	(27.38)	(27.17)	(35.92)	(29.07)	(47.50)	(62.71)
Mean sentiment shock	6.60	6.14	-8.80	2.79	12.88	20.82
	(22.71)	(22.49)	(40.46)	(34.47)	(32.25)	(44.76)
Acquisition premium (%)	-0.01	-0.01	-0.05	-0.01	-0.01	-0.04
	(0.03)	(0.03)	(0.05)	(0.04)	(0.04)	(0.05)
Geographic proximity	1.53	1.47	-3.38	-3.59	4.54	6.46
	(2.80)	(2.80)	(4.58)	(3.72)	(4.08)	(5.26)
Relative size	2.71	2.58	24.77	8.67	10.15	7.18
	(9.32)	(9.38)	(20.63)	(15.88)	(12.14)	(15.88)
Stock payment	-4.96	-5.08	-9.13**	-6.22	-4.45	-3.10
	(3.33)	(3.31)	(4.44)	(3.90)	(5.60)	(7.40)
Defense tactic	0.45	0.39	-8.15	7.91	3.76	3.41
	(5.90)	(5.81)	(21.10)	(12.33)	(7.07)	(9.77)
Toehold	13.71	14.81*	-43.83*	14.08	15.83	24.63
	(8.71)	(8.75)	(25.60)	(17.14)	(11.38)	(15.30)
Competing bidders	11.19*	10.50*	39.66**	17.80	2.82	8.05
	(6.01)	(6.01)	(16.26)	(10.95)	(6.52)	(7.54)
Target net leverage	-2.25	-2.71	15.86	7.94	-4.33	1.23
	(5.09)	(5.07)	(12.19)	(8.85)	(6.48)	(8.47)
Target R&D intensity	33.20	29.72	22.30	45.47	54.36*	61.00
	(23.04)	(22.96)	(50.41)	(34.83)	(29.75)	(39.52)
Target ROA	0.16	0.15	0.25	0.16	0.16	0.15
	(0.12)	(0.12)	(0.34)	(0.25)	(0.14)	(0.21)
Target Tobin's Q	-1.03	-1.20	0.65	-0.22	-2.71	-3.87
	(1.43)	(1.41)	(3.85)	(2.49)	(1.97)	(2.89)
Acquirer log(assets)	-0.35	-0.35	-1.95	-1.07	0.68	0.80
	(0.93)	(0.93)	(1.52)	(1.34)	(1.30)	(1.73)
Acquirer net leverage	-3.04	-3.47	-9.13	-4.26	5.88	2.06
	(7.32)	(7.35)	(15.12)	(12.71)	(8.06)	(9.35)
Acquirer R&D intensity	21.48	22.08	-76.58	-1.49	73.89	92.50
	(45.40)	(45.17)	(115.21)	(74.10)	(57.31)	(78.46)
Acquirer ROA	-0.02	-0.01	-0.17	0.22	-0.29	-0.20
	(0.25)	(0.26)	(0.48)	(0.44)	(0.27)	(0.40)
Acquirer Tobin's Q	-1.18	-0.96	-4.47	-2.69	0.19	2.74
	(2.08)	(2.08)	(6.14)	(4.31)	(2.54)	(3.56)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	713	713	238	356	357	238
R^2	0.119	0.125	0.351	0.245	0.191	0.274

Notes. Models are estimated with linear regressions. Standard errors (in parentheses) are White-Huber robust standard errors. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table S7. Undervaluation-synergy tradeoff and *short-run* performance of the focal acquisition

	(1)	(2)
Dependent variable:	*CAR [-2, +2] (%)*	
Undervaluation-synergy tradeoff		0.11
		(0.64)
Mean market synergy potential	-3.35	-3.33
	(6.44)	(6.45)
Mean sentiment shock	-0.21	-0.20
	(5.29)	(5.29)
Acquisition premium (%)	-0.01**	-0.01**
	(0.01)	(0.01)
Geographic proximity	0.70	0.70
	(0.61)	(0.61)
Relative size	-3.24	-3.24
	(2.29)	(2.29)
Stock payment	0.49	0.49
	(0.81)	(0.81)
Defense tactic	-0.67	-0.67
	(1.69)	(1.69)
Toehold	-0.21	-0.24
	(1.94)	(1.95)
Competing bidders	0.84	0.86
	(1.29)	(1.30)
Target net leverage	-0.98	-0.97
	(1.13)	(1.13)
Target R&D intensity	-1.11	-1.04
	(4.64)	(4.65)
Target ROA	0.01	0.01
	(0.03)	(0.03)
Target Tobin's Q	-0.22	-0.21
	(0.32)	(0.32)
Acquirer log(assets)	-0.13	-0.13
	(0.21)	(0.21)
Acquirer net leverage	1.69	1.70
	(1.61)	(1.60)
Acquirer R&D intensity	-16.05	-16.06
	(10.17)	(10.18)
Acquirer ROA	0.04	0.04
	(0.06)	(0.06)
Acquirer Tobin's Q	-0.01	-0.02
	(0.54)	(0.55)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	713	713
R^2	0.140	0.140

Notes. Models are estimated with linear regressions. Standard errors (in parentheses) are White-Huber robust standard errors. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

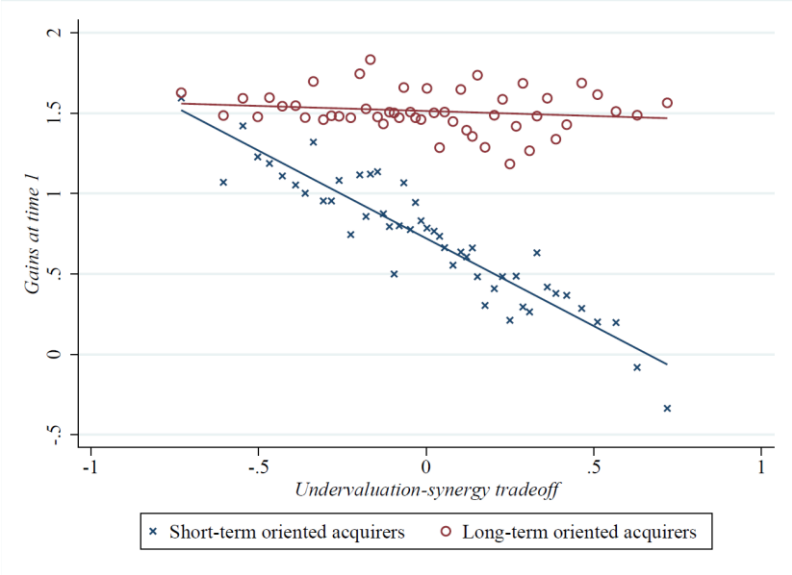

Figure S1. Simulation results