M & A(dvertising)

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Abstract

We investigate the advertising strategies of firms in mergers and acquisitions. Target firms increase their advertising expenses, on average, by 50% in the quarter before the announcement of a stock deal. Higher offer prices for high-advertising target firms suggest product advertising being a tool to attract investors' attention, which may result in temporarily increased stock prices. For acquiring firms, we observe no increase in advertising before but a significant increase in the week after the announcement of a stock deal. The positive relation between acquirer advertising and the probability of deal completion indicates that advertising can positively influence target shareholders' attitude towards the deal. Overall, our findings support the role of product market advertising as a strategic tool to affect the outcomes of M&As.

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1 Introduction

The decision about mergers and acquisitions is one of the most important managerial tasks that impacts shareholder value. In 2015, aggregate deal values ranged from USD 155 bn in the Business Services industry to USD 297 bn in the combined Pharma, Medical and Biotech industries.[1] These large deal values are, among others, justified by the monetary gains expected to be realized by a combination of the two companies. The monetary gains are divided between the target shareholders and the acquiring shareholders. Assuming that managers of both firms act in the best interest of their shareholders, they are incentivized to negotiate the most favorable conditions for their firms. As the acquiring firm takes on the position of a buyer, and the target firm the position of a seller, conflicting interests among the two firms are a natural consequence.

Our paper contributes to a growing literature on the selling process in M&As (e.g., Boone and Mulherin (2007), Aktas et al. (2010), Betton et al. (2014)) by adding an aspect that has not received much attention yet: The tools that acquiring and target firms use during the selling process to achieve their company-specific goals. More precisely, we look at product market advertising as one particular tool, and exploit a novel and comprehensive dataset on product market advertising spendings by US firms between 1995 and 2012. This dataset covers the daily expenses for advertisements across different channels (newspaper, magazines, TV, internet, ...), allowing us to identify the exact timing of advertisements around M&As. To the best of our knowledge, we are the first to compare the advertising strategies of acquiring and target firms around M&As, on a high-frequency level, and to consider the consequences of these strategies for the deal outcomes.

The key challenge faced by existing studies on the managerial use of product market advertising around M&As is the frequency of the available advertising data. Lou (2014) documents an increase in annual advertising spending of acquiring firms in the fiscal year of an M&A deal, and Fich et al. (2016) report increased advertising spending of target firms in the fiscal year before a deal. However, using advertising data on an annual frequency makes it difficult for these studies to determine the exact timing of changes in advertising around the announcement of M&A deals. Consequently, they might attribute advertising spending long before the announcement or even after the completion of the deal to the takeover itself. Our identification strategy allows us

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[1]http://www.statista.com/statistics/234627/distribution-of-munda-deals-in-the-usa-by-industry/

to circumvent this difficulty. By using high frequency data (daily and monthly) we can exactly determine the point in time when firms increase their expenses on advertising before and after the announcement of an M&A deal.

The benefits of advertising in the context of M&As might not be obvious at first glance. As previous empirical research documents, product advertising can spill over to financial markets by positively affecting a firm's stock returns, its breadth of ownership, and its market capitalization (Grullon et al. (2004),Lou (2014)). There are different explanations for this spillover effect of advertising. First, advertising could draw investors' attention towards the advertised firm's stocks, thus extending the set of firms investors are aware of and resulting in increased investing activities (Merton (1987), Barber and Odean (2007)). Second, advertising could create a sense of familiarity for the firm that affects investors' willingness to hold the firm's stock (Huberman (2001), Keloharju et al. (2012)). Third, the positive effect of advertising on brand perception and brand value of a firm could represent a signal for investors about firm quality in general (e.g., its financial well-being or its competitive effectiveness). Consequently, investors change their prospects about investments in that firm (Chauvin and Hirschey (1993), Frieder and Subrahmanyam (2005)). The deal negotiations between Verizon and Yahoo provide a recent example that illustrates the relevance of brand value in an M&A setting. When data breaches at Yahoo became public, expectations about the offer price were decreased largely, and some even expected Verizon to withdraw its offer[2]. However, the price reduction was only modest and negotiations were continued, since "Verizon conducted brand studies and found that Yahoo's reputation was holding up after the hacks"[3].

Whether firms indeed exploit the benefits of product market advertising during M&As and how this affects the deal outcomes is an empirical question. The incentives for a strategic use of advertising differ for acquiring and target firms, and are described in more detail hereafter.

The main goal of the acquiring firm is to complete the deal at the lowest possible price. Assuming that managers of the acquiring firm are aware of the spillover effect of advertising, we make the following predictions for their behavior in stock deals[4]: First, we expect the acquiring firms to advertise more prior to deal completion to increase their stock price. If this

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[2]https://www.bloomberg.com/news/articles/2016-12-15/verizon-weighs-scrapping-yahoo-deal-on-hacking-liability?cmpid=socialflow-twitter-business
[3]http://www.reuters.com/article/us-yahoo-m-a-verizon-idUSKBN1601EK
[4]We refer to deals in which target shareholders exchange their shares for shares of the acquiring firm as stock deals; in cash deals, target shareholders receive cash for selling their shares.

approach is successful, less shares of the acquiring firm have to be exchanged for target shares, which amounts to a reduction in the purchase price[5]. Second, we expect the acquiring firms to use advertisements after the deal announcement to signal a high firm quality. Since the target shareholders become owners of the acquiring firm in a stock deal, they are more willing to exchange their shares if they consider it a good investment. Hence, the signaling effect of advertising reduces the level of resistance faced by the acquiring firm. Our empirical results support the second hypothesis about acquiring firm behavior, while we cannot find evidence in favor of the first hypothesis.

The main goal of the target firm depends on its attitude towards the deal. In a desirable deal, the firm wants to complete the deal at the highest possible price. In an unsolicited deal, the firm aims to deter the takeover attempt. However, in either case, a high stock price can be helpful. Therefore, assuming that managers of the target firm are aware of the spillover effect of advertising, we make the following prediction for their behavior: We expect the target firms to advertise more prior to deal completion to increase their stock price. Thus, managers can bargain for a high premium for their shareholders in desirable deals, or inflate the firm's stock price above a certain threshold to discourage the acquiring firm in unsolicited deals. The signaling effect of advertising can play an equally important role for target managers: By reinforcing their shareholders' perception of the quality of their own firm, the managers can increase shareholder support and improve their bargaining power. In unsolicited deals, there is another channel through which advertising can effectively help target managers: By increasing advertising spending, the target firm can reduce excessive cash reserves, thus getting rid of exactly those assets that made it attractive as a target in the first place (see, e.g., Jensen (1986)). Our empirical results support the hypothesis about target firm behavior. However, the evidence only holds for stock deals but not for cash deals.

We find that target firms significantly increase their advertising spending before the announcement of a stock deal. The increase is most pronounced in the quarter before the announcement, when target firms on average spend 50% more on advertising than in any other month. We cannot find a similar pattern for deals that are compensated using cash. Our results suggest that target firms decrease their advertising spending after the announcement of a cash deal.

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[5]Although Focke et al. (2016b) do not find evidence for short-term stock price effects of advertising in general, M&As could represent a unique corporate setting in which the effects still hold, allowing managers to take advantage of them.

The acquiring firms exhibit a different advertising pattern. While we cannot report increased advertising spending before the announcement, we find that acquiring firms raise their advertising spending in the week right after the announcement of a stock deal. We observe an increase of 15% in daily advertising spending on the 2 to 4 days after the announcement, compared to the average daily expenditures in the previous 8 weeks.

Are these advertising strategies effective tools to affect the conditions and outcomes of a deal? Our tests indicate they are. First, we find that the target firm's advertising strategy increases the likelihood and the magnitude of an upwards revision in the offer price. Simultaneously, the target firm's advertising strategy increases the likelihood that the acquiring firm eventually withdraws the deal. Second, we find no effect of the acquiring firm's daily post-announcement advertisements on the deal price. However, its advertising strategy increases the probability of completing the deal.

Previous literature on the link between advertising in mergers and acquisitions has focused on either the acquiring or the target firm. For acquiring firms, Devos et al. (2013) document an increase in product market advertising in stock-financed deals, but do not find a similar behavior in cash-financed deals. Lou (2014) supports these findings, arguing that acquiring firms exploit the positive short-term effect of advertising on investor attention. Other papers find similar results for the strategic use of advertising around IPOs and SEOs (Chemmanur and Yan (2009)) as well as an increase in media coverage through corporate press releases prior to M&As (Ahern and Sosyura (2014)). Fich et al. (2016) consider the effects of target advertising in the fiscal year before the announcement of the deal on deal outcomes. They find that increased advertising positively impacts the takeover premium and negatively impacts the acquirer's market capitalization. On the other hand, Ryoo et al. (2015) find insignificant or negative effects of target advertising on the deal premium, arguing that acquiring firms might be concerned about potential window dressing by the target firm.

Finally, our paper is related to the literature on the relevance of stock prices for corporate investment decisions. Previous studies have shown that stock prices matter for a firm's investment policy (e.g., Chen et al. (2007), Polk and Sapienza (2009) or Hau and Lai (2013)). In particular, the model by Shleifer and Vishny (2003) predicts that firms with overvalued equity have an incentive to make acquisitions using their own stock, while firms with undervalued (or less overvalued) equity are more likely to become targets of takeovers. Empirical findings

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by Erickson and Wang (1999) and Edmans et al. (2012) support these predictions: Erickson and Wang (1999) show that acquiring firms actively manipulate their earnings upwards prior to stock-financed acquisitions. The resulting overvaluation of the firms' stock prices allows the acquirers to reduce the cost of buying the targets. The results of Edmans et al. (2012) indicate that firms that are undervalued due to mispricing show an increased probability of being taken over.

The rest of the paper is structured as follows: Section 2 describes the data that we use. Sections 3 and 4 contain our main results on the advertising strategies of acquiring and target firms, respectively, around the deal announcement. Section 5 describes the effects of the firms' advertising strategies on the deal price and the probability of deal completion. Section 6 concludes.

2 Data and Methodology

2.1 Data on Firm Characteristics

Our initial sample comprises all ordinary shares (share codes 10 and 11) from the CRSP-Compustat universe that are traded on the NYSE, Amex and Nasdaq (exchange codes 1, 2, and 3). Stock market data are obtained from CRSP, balance sheet data are taken from Compustat. The sample period starts in January 1995 and ends in December 2012. It comprises 80,249 firm-year observations.

2.2 Advertising Data

We obtain advertising data from the proprietary database Kantar Media Stradegy. This database contains the advertising cost estimates of public and private firms and is available from 1995 to 2012. The cost estimates are based on "rate cards", which provide information on how prices are set depending on the length or size, the product category, the channel, and the day and time of the publication of the advertisement. The advertising channels covered by the database (and the frequency of data availability) are TV (intradaily data), newspapers and magazines (daily data), internet, radio, and outdoor (monthly data). We merge Kantar advertising data with CRSP-Compustat using company names. Missing observations in a firm-year in the Kantar dataset indicate that the firm does not advertise in the respective year. Thus,

the missing values are recorded as advertising expenditures of 0 USD. For a detailed description of the Kantar database, in particular of data for newspaper and TV advertising, we refer to Focke et al. (2016b).

In our analysis, we focus on monthly and daily advertising data, which allows us to determine the precise timing of advertising spending around the announcement of an M&A deal. This provides an advantage over low frequency data such as advertising data obtained from annual balance sheets. In the previous literature, annual advertising data has been strongly relied upon due to a lack of alternatives. However, this approach has several drawbacks. First, firms have some discretion over whether and how to report advertising expenditures in their annual statements. Second, aggregated annual data makes it impossible to determine the exact moment of advertising spending. Hence, one cannot distinguish expenditures before and after the announcement of an M&A deal. Using data from the year before the announcement is problematic, too, as it contains an unknown amount of advertising expenditures that occurred long before the announcement, and that would then erroneously be associated with the deal. Finally, target advertising is typically not available at all after a successful deal, as the target's financial statement usually gets consolidated into the merged firm's financial statement.

Summary statistics for all firms that are in the CRSP-Compustat universe during our sample period are provided in Panel A of Table 1. In Panel B, we exclude all firms that never report positive advertising expenditures between 1995 and 2012 (in the following, we refer to these firms as "advertising firms"). Comparing the advertising firms from Panel B with the overall CRSP-Compustat sample from Panel A shows that the former tend to be larger in terms of sales, total assets, and market capitalization. Furthermore, advertising firms are more profitable, with an EBIT over total assets of 3.9% as compared to a value of 0.6% for the broader CRSP-Compustat sample.

[Insert Table 1 about here.]

2.3 Data on Mergers and Acquisitions

M&A data is obtained from Thomson Reuter's Securities Data Company (SDC). We create a separate dataset for acquiring (target) firms and only keep deals in which the acquirer (target) is a public US company. We exclude all deals that we do not consider to be mergers or acquisitions

in the proper sense, i.e. repurchases, self-tenders, or recapitalizations. As Ahern and Sosyura (2014) and Boone and Mulherin (2007) point out, deals that are entirely paid in cash differ systematically from those in which the acquirer exchanges its shares for shares of the target company. Therefore, we distinguish between cash and stock deals. In cash (stock) deals, cash (common stock) is the only consideration (SDC item "consido") used. Following previous studies (e.g. Lou (2014)), deals with multiple types of consideration are excluded. Moreover, we only keep observations of firms that were involved in at least one cash or stock deal between 1995 and 2012. Finally, we exclude deals for which the transaction value is not available. The target firm dataset is further adjusted by only keeping those deals in which the acquiring firm holds less than 50% of the target shares before the announcement of the deal, and seeks to hold more than 50% after the completion of the deal. The reason is that we expect the target management to care more about deals in which a controlling interest is sought by the acquirer, and in which a change in management of the target firm is more likely. Due to this restriction, the number of deals included in our dataset for target firms differs noticeably from that for acquiring firms. We merge the datasets for acquiring and target firms with the CRSP-Compustat and advertising data described in sections 2.1 and 2.2 using the historical CUSIP. Summary statistics for the acquiring-advertising (target-advertising) firms are reported in Panel C (D) of Table 1. Acquiring firms are larger in terms of sales, total assets, market capitalization, are older and more profitable, have higher cash holdings, and advertise more than the average advertising firm from Panel B. Target firms are smaller in terms of sales and market capitalization, are younger and less profitable, have poorer returns and a higher volatility, and advertise less than the average advertising firm.

3 Acquirer Advertising

Our main empirical analysis in this section focuses on advertising strategies of acquiring firms (advertising strategies of target firms are covered in Section 4). We first examine monthly advertising expenditures around the announcement of M&A deals (Section 3.1) and then conduct a high frequency analysis based on daily advertising (Section 3.2).

3.1 Analysis of Monthly Advertising Expenditures by Acquiring Firms

To examine the relationship between announcements of M&A deals and advertising of the acquirer, we run the following regression:

$$\log(1 + \text{xad})_{i,t} = \alpha + \beta_0 \cdot \text{Pre Event}_{t-1} + \beta_1 \cdot \text{Event}_t + \beta_2 \cdot \text{Post Event}_{t+1} + \gamma \cdot \text{Controls} + \epsilon_{i,t} \quad (1)$$

The dependent variable is the natural logarithm of one plus the amount of advertising in USD of firm i in month t. The main independent variables are three dummy variables that indicate whether firm i announced the takeover of another firm around month t: Pre Event$_{t-1}$ (Event$_t$, Post Event$_{t+1}$) takes on the value one, if month t is a pre-event month (event month, post-event month) for firm i, i.e. if firm i announces a deal in the following month (the same month, the previous month). Thus, a positive impact of Pre Event$_{t-1}$ would be consistent with higher advertising expenditures in month t if the firm announces a deal in the following month. The vector Controls contains various firm-level control variables, lagged by four months if the variable subscript does not indicate otherwise. The sample only includes advertising firms. Results are presented in Table 2.

[Insert Table 2 about here.]

The first four columns show the results for stock deals, while the last four columns present results for cash deals. Columns 1 and 5 include month fixed effects, columns 2 and 6 include combined industry-month fixed effects (based on the Fama-French 49 industry classification), and columns 3, 4, 7 and 8 include combined industry-month fixed effects and firm fixed effects.

Column 1 shows a significantly positive relation of advertising and all three event dummies, suggesting that acquiring firms tend to advertise more in the months around the announcement of a stock deal. The impact of the event dummies are of similar magnitude. An F-test does not reject the null hypothesis that the coefficients are equal. The same pattern results if we replace month-fixed effects by combined industry-month fixed effects (column 2) to control for industry-merger waves.

The similar size of the coefficients of the three dummies suggests that there is no particular pattern in advertising around M&A deal announcements. Rather, it seems plausible that the effect is driven by generally higher advertising expenditures of those acquiring firms that un-

dertake more deals and that this effect is not captured by our control variables. To control for such unobserved heterogeneity across firms we add firm-fixed effects in column 3. Now, only the event dummy shows a statistically significant impact on advertising (with a t-statistic of 2.22). The coefficient of 0.1526 of the event dummy indicates that acquiring firms increase advertising by 16% in the month in which a deal is announced.

Ahern and Sosyura (2014) find that firms strategically issue press releases and try to attract media coverage around M&As. As higher advertising expenditures can increase a firm's media coverage (e.g. Focke et al. (2016a), Gurun and Butler (2012)) it is important to control for media and news channels. In column 4, we add media coverage and firm-specific news as additional control variables. Media coverage is a dummy variable equal to one if the firm has at least one article in a national newspaper in month t. Firm-specific news are proxied by the firm's form 8-K filings which are "current reports companies must file with the SEC to announce major events that shareholders should know about"[6]. The variable 8-K Filing is a dummy equal to one if there is at least one form 8-K filing in month t.[7] The results in column 4 confirm our previous findings for stock deals. The coefficient on the event dummy is still positive and marginally statistically significant (t-statistic of 1.87), indicating higher advertising expenditures of acquiring firms in the announcement month. The significantly positive coefficient of media coverage confirms the findings from the previous literature that there is a positive relation between media coverage and advertising expenditures.

If we turn to the results for cash deals in column 5, we find no significant impact of M&A deal announcements on advertising. This result changes when we replace month fixed effects by combined industry-month fixed effects in column 6. All three event dummies increase in magnitude, and the pre-event and post-event dummies are significantly positive at the 5% level (t-statistics of 2.00 and 2.19, respectively). However, these findings do not endure in our most conservative specification in column 7: When controlling for unobserved firm heterogeneity by adding firm fixed effects, all event dummies become insignificant. Accounting for media coverage and firm-specific news in column 8 leaves the coefficients of the event dummies unchanged. Again, we can confirm a positive relation between advertising and media coverage.

In Panel B, we repeat the same analysis as in Panel A, but define the pre-event and post-event

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[6]Source: https://www.sec.gov/fast-answers/answersform8khtm.html
[7]Using the number of newspaper articles and the number of form 8-K filings instead yields similar results.

dummies over a three-month period instead of a one-month period as above, i.e. Pre Event$_{t-3;t-1}$ (Post Event$_{t+1;t+3}$) takes on the value one if firm i announces a deal in the period between month $t+1$ and month $t+3$ (between month $t-3$ and $t-1$). We obtain similar results as for Panel A. In the specification including only month fixed effects in column 1, the pre-event and the event dummies for stock deals are statistically significant at the 5%-level and indicate that acquirers advertise 31.4% and 32.0% more, respectively. The post-event dummy is only marginally significant (t-statistic of 1.74). However, its coefficient estimate is only slightly smaller than those of the other two dummies and the difference between them is not significant. Replacing month-fixed effects by combined industry-month fixed effects in column 2 leaves the pre-event and event dummies almost unchanged, while the post-event dummy becomes insignificant. Similar to the results described above, the pre-event dummy also becomes insignificant as soon as we add firm fixed effects (column 3), while the event dummy remains significant at the 5% level. Controlling for media coverage and firm-specific news in column 4 does not change this pattern: The coefficient of the event dummy slightly decreases in magnitude but remains marginally statistically significant (t-statistic of 1.83).

We can also confirm the results for cash deals described above: In column 5, where we only include month fixed effects, there are no signs of increased advertising in any of the event months. While we observe signficantly positive coefficients of the pre-event and post-event dummies when including combined industry-month fixed effects (column 6), the coefficients of all event dummies become insginifcant as soon as we additionally control for firm fixed effects in column 7. Adding control variables for media coverage and firm-specific news in column 8 yields qualitatively the same results.

Overall, our analysis using monthly data reveals some within-firm variation of advertising expenditures of acquiring firms in the announcement month of a stock deal. However, firms do not seem to try to inflate their stock price before the official announcement.

3.2 High Frequency Analysis of Acquirer Advertising

Given our low frequency findings using monthly advertising data (see section 3.1), we want to determine the daily dynamics of advertising of the acquiring firm in the event month. Specifically, we calculate two different measures of daily abnormal advertising for firm i on day t, abnormal xad$_{i,t}$, by subtracting the mean and median advertising on the same weekday

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over the last eight weeks from the daily advertising level on day t, respectively. We regress abnormal xad$_{i,t}$ on five pre-event and post-event day dummy variables and one event day dummy variable. Pre Event$_{t-i}$ (Post Event$_{t+i}$) takes the value 1 on day i before (after) the deal is (was) announced, while Event$_t$ takes the value 1 on the announcement day t (for a more detailed description of the variables, see Appendix A). The event window that is used for the estimation covers $\pm$ 20 days around the announcement day t. Standard errors are double-clustered by firm and month, and all firms without advertising expenditures in the eight weeks before and during the event window are excluded[8]. The regression model is the following:

$$\text{abnormal xad}_{i,t} = \sum_{\tau=5}^{1} \beta_\tau^{pre} \cdot \text{Pre Event}_{t-\tau} + \beta_0 \cdot \text{Event}_t + \sum_{\tau=1}^{5} \beta_\tau^{post} \cdot \text{Post Event}_{t+\tau} + \epsilon_{i,t} \quad (2)$$

Again, we run separate regressions for stock and cash deals. All regressions include deal fixed effects. Results are shown in Panel A of Table 3.

[Insert Table 3 about here.]

Results for stock deals in columns 1 and 2 show no signs of abnormally high advertising on the five days prior to an event or on the event day. This finding holds irrespective of whether abnormal advertising is calculated relative to the mean (column 1) or median (column 2) advertising expenditures on the same weekday over the prior eight weeks. Hence, the results reject the idea that firms try to inflate the short-term stock price right before the announcement. However, we do find significantly positive coefficient estimates of the post-event dummies for days t+2 till day t+4, i.e. firms that announce a stock deal seem to advertise significantly more right after the announcement. Regarding their economic magnitude, the coefficients of the three post-event dummies in column 1 (column 2) imply that acquiring firms increase their daily advertising expenditures by an average of 15% (13%) on days 2 to 4 after the announcement of the stock deal. Possibly, advertising provides a positive signal about the quality of the acquiring firm, and helps to convince target shareholders to accept the deal. This line of reasoning is also supported by the fact that we see no such effect for cash deals (columns 3 and 4). Contrary

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[8]Including non-advertising firms leads to identical findings because of the deal fixed effects.

to stock deals, cash deals do not require target shareholders to exchange their shares for shares of the acquiring firm. Hence, they should be indifferent about the reputation of the acquiring firm. Accordingly, we find no systematic pattern of increased advertising in cash deals, neither in the days before nor in the days after the announcement.

To determine the duration of the short-term increase in advertising, we repeat the analysis from Panel A in Panel B, but include five additional post-event dummies for the days t+6 to t+10. It seems that the post-event effect is rather short-lived: for the post-event days t+6 to t+10, we do not find any patterns of abnormally high advertising.[9]

Taken together, our analysis using daily data reveals an increase in advertising intensity of the acquiring firm in stock deals, starting two days after the announcement day t and continuing up to day t+4. Although the average period between the announcement date and the date when the deal becomes effective is much longer, these first days might be very important for the acquiring firm to create a positive impression on investors. Moreover, our results suggest that the advertising strategy of acquiring firms is rather short-termed: We do not find any significant increase in advertising intensity on the days and months before the announcement.

4   Target Advertising

In this section, we analyze the advertising strategies of the target firms around the announcement date. Again, we will first examine monthly advertising expenditures (Section 4.1) and then conduct a high frequency analysis based on daily target advertising (Section 4.2).

4.1   Analysis of Monthly Advertising Expenditures by Target Firms

To examine the relation between announcements of M&A deals and advertising of target firms, we run the same regression as for the acquirer (see Equation (1)). However, all the included variables are now based on our dataset of target firms. The sample only includes advertising firms. Results for this baseline model are shown in Panel A of Table 4.

[Insert Table 4 about here.]

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[9]In untabulated results, we repeat the analysis with ten pre-event and ten post-event dummies. While none of the pre-event dummies is significantly positive, the findings for the post event period remain unchanged.

The first four columns present the results for stock deals, while the last four columns show the results for cash deals. Columns 1 and 4 include month fixed effects, columns 2 and 6 include combined industry-month fixed effects (based on the Fama-French 49 industry classification), and columns 3, 4, 7 and 8 include combined industry-month fixed effects and firm fixed effects.

The results in column 1 show a highly significant and positive impact of the pre-event, event and post-event dummies, suggesting that target firms tend to increase advertising activities in all three months around the announcement of stock deals. To control for industry-merger waves, we replace month fixed effects by combined industry-month fixed effects in column 2. While the coefficients on all event dummies decrease in magnitude, only the pre-event dummy and the event dummy remain statistically significant (with t-statistics of 2.41 and 1.86, respectively). To account for the possibility that increased advertising expenditures reflect the fact that the target firms are growing companies at the time they are approached by the acquirer, we add firm fixed effects in column 3. Controlling for unobserved firm heterogeneity further reduces the magnitude of the pre-event dummy and the event dummy, such that the latter one becomes statistically insignificant. The results indicate that the advertising strategy of the target firms around the announcement date of stock deals seems to concentrate in the pre-event month. Regarding the economic magnitude, the coefficient of 0.4358 for the pre-event dummy implies that target firms increase their advertising expenditures by 55% in the month before the announcement of the stock deal. When controlling for media coverage and firm-specific news in column 4, we still observe a significantly positive coefficient on the pre-event dummy. This finding supports our previous results that target firms spend more on advertising before a stock deal announcement, even after taking into account general news coverage.

For cash deals (columns 5 to 8), we find a different pattern. Results in columns 5 (including month fixed effects) and 6 (including combined industry-month fixed effects) do not show any significant relation between advertising and cash deal announcements. When including firm fixed effects in column 6, we obtain marginally significantly (at the 10% level) negative coefficients of the event dummy and the post-event dummy. This could be driven by the fact that target firms of cash deals are typically smaller firms whose brands are likely to be integrated into and replaced by the acquirer's brands after a successful takeover. Hence, promoting their products becomes unnecessary as soon as the deal completion becomes more likely. We find further evidence for this reasoning when considering a longer post-event period in Panels B and

C of Table 4. The observed decreasing pattern remains unchanged when additionally controlling for media coverage and firm-specific news in column 8.

In Panel B, we repeat the same analysis as in Panel A, but define the pre-event dummy and the post-event dummy over a three-month period instead of a one-month period, i.e. Pre Event$_{t-3;t-1}$ (Post Event$_{t+1;t+3}$) takes on the value one if firm i becomes a target in the period between month $t+1$ and month $t+3$ (between month $t-3$ and $t-1$).

We obtain similar results as for Panel A. In column 1, which reports the specification for stock deals including month fixed effects, the impact of the pre-event dummy and the event dummy is positive and highly significant, while the impact of the post-event dummy is insignificant. Similarly to Panel A, when replacing month fixed effects with combined industry-month fixed effects in column 2, the impact of the pre-event dummy and the event dummy decreases both in magnitude and statistical significance. When adding firm fixed effects in column 3, the coefficient estimate of the pre-event dummy is the only one to remain significant. Regarding the economic magnitude, the coefficient of 0.4006 for the pre-event dummy implies that target firms increase their monthly advertising expenditures by an average of 50% in the three months before the announcement of a stock deal. Although the coefficient of the event dummy seems to be economically significant (it represents an increase of 31% in advertising spending in the event month), the statistical results support the previous impression provided by Panel A: The event month and the post-event months are not equally important as the pre-event months for the advertising strategy of target firms in stock deals. Adding control variables for media coverage and firm-specific news in column 4 leaves the results unchanged.

We can also confirm our findings for cash deals. Including month fixed effects in column 5, and combined industry-month fixed effects in column 6, we do not observe a significant impact of any of the event dummies on advertising. When adding firm fixed effects in column 7, the coefficients of the event dummy and the and post-event dummy become significantly negative, although the impact of the event month is only marginally significant (with a t-statistic of -1.86). Similarly to the specification in Panel A, we find the strongest decrease in advertising intensity of target firms in the post-event period: The coefficient of -0.2957 indicates a reduction in monthly advertising spending by an average of 26% in the three months following a cash deal announcement. Again, controlling for media coverage and firm-specific news in column 8 leaves the results unchanged.

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Our findings hitherto show that target firms of stock deals significantly increase their advertising expenditures in the period prior to the announcement. To determine the length of the pre-event period that matters for the target firm's advertising strategy, we include six separate pre-event dummies, one for each pre-event month from t-6 to t-1[10]. The results are presented in Panel C. Column 1 shows that the impact of all pre-event dummies is positive and highly significant, which is in line with the idea that target firms are growing strongly. When we replace month fixed effects by combined industry-month fixed effects in column 2 (add firm fixed effects in column 3 and control variables for media coverage and firm-specific news in column 4), the pattern resembles our previous results: the post-event dummies do not show any significant impact on advertising, the coefficient estimate for the event dummy is only marginally significant (insignificant) and the pre-event months t-2 and t-1 are the months in which the target firms significantly increase their advertising spending around the announcement date.

For cash deals, we also find a similar pattern as before. When including month fixed effects (column 5 of Panel C) and combined industry-month fixed effects (column 6), we do not observe a significant relation between the event dummies and advertising . When including firm fixed effects in column 7, and controlling for media coverage and firm-specific news in column 8, we find significantly negative coefficients for the event dummy and several post-event dummies (t+1, t+2 and t+4). We also observe a marginally significantly negative coefficient for one pre-event dummy (t-2). However, the coefficients of the event dummy and the post event dummies are larger in magnitude and significance, and represent an ongoing pattern of decreasing advertising intensity starting in the event month.

The different behavior of target firms in stock deals and cash deals is likely driven by their heterogeneity. Firms that become targets of a cash deal are much smaller than target firms in stock deals. When cash-target firms are acquired, their brands are usually either retained or transitioned to the acquiring firm's brand names. Since brand value is typically lower for smaller firms, the brands of target firms in cash deals are more likely to be replaced by the acquirer's brand names after the takeover. Therefore, as the completion of the deal becomes more likely, further promotion of the target firm's brands becomes needless. This could also explain the strong decrease in advertising intensity of target firms in the post-announcement

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[10]For reasons of symmetry, we also include six individual post-event dummies, one for each of post-event month from t+1 to t+6

months of cash deals.

4.2 High Frequency Analysis of Target Advertising

So far, we show that the announcement of a stock deal increases the target firm's advertising expenditures in the three months before the announcement date. For the announcement month, we observe an increase that is economically relevant (about 31%) and statistically significant in two out of three specifications. Therefore, we now explore the dynamcis of target firm advertising around the announcement day, using daily advertising spending and the same regression model as for the high frequency analysis of the acquiring firm (see Equation (2)). Results are shown in Panel A of Table 5. Columns 1 and 2 present the results for stock deals, while the last two columns show the results for cash deals. Abnormal advertising in columns 1 and 3 (2 and 4) is calculated by subtracting the mean (median) advertising on the same weekday over the last eight weeks from the daily advertising level on day t. All regressions include deal fixed effects.

[Insert Table 5 about here.]

The results do not indicate a clear pattern of abnormal advertising on the days around the announcement of the deal. For stock deals, we observe significantly positive coefficients for two pre-event (t-5 and t-4) and two post-event (t+1 and t+2) dummies using mean-adjusted abnormal advertising (column 1). However, we obtain very different coefficients for median-adjusted abnormal advertising in column 2, with one post-event dummy (t+4) being significantly negative, which is likely driven by chance. For cash deals (columns 3 and 4), we do not find any significant results. In Panel B, we repeat the analysis from Panel A but include additional pre-event dummies for days t-10 to t-6. We do not find any signs of abnormally high advertising in the 10 to 5 days before the announcement of a stock deal (columns 1 and 2). For cash deals, we observe a marginally significantly negative coefficient of one pre-event dummy (t-9) using mean-adjusted abnormal advertising (column 3), which is insignificant in the median-adjusted abnormal advertising specification in column 4.

Taken together, our daily analysis does not provide evidence for a higher advertising spending of target firms on the days surrounding the announcement of stock and cash deals. Combining these findings with our monthly results (see section 4.1), we conclude the following: First, the advertising strategy of target firms in stock deals is rather medium-term than short-term:

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The target firm starts its advertising campaign about three months prior to the official announcement, but does not increase expenditures in a final spurt on the days right before the announcement. Second, advertising plays a different role for target firms in cash deals: The target firm decreases its advertising intensity in the post-announcement months, most likely to prepare for the integration of its firm and particularly its brands after the takeover becomes effective.

The results of our analyses using daily and monthly advertising data point out the value of data availability at a high frequency. Using annualized data from fiscal reports of firms, we would not be able to determine the exact time patterns that we observe with high frequency data. However, the exact determination is important to understand the motivation driving the advertising strategies of firms around M&As: An increase before the official announcement likely represents an attempt to affect the deal negotiations, while an increase on the days after the announcement hints at an attempt to address and convince shareholders of the quality of the deal.

5 Effects of Advertising on Deal Outcomes

In this section, we analyse how the reported advertising strategies of acquiring and target firms affect the outcomes of the deal[11]. In particular, we consider changes in the offer price (section 5.1) and the likelihood of deal completion (section 5.2).

5.1 Offer Pice Revision

Since the acquiring firm and the target firm act as buyer and seller, respectively, their interests regarding the price of the deal are contrary: While the acquiring firm wants to avoid paying too much for its investment, the target firm aims at receiving the highest possible price. Our analyses of the advertising strategies of acquiring and target firms in sections 3 and 4 suggest that target firms indeed use advertisements during deal negotiations, which could help them bargaining for a better deal price. We do not observe a similar attempt of the acquiring firm

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[11]Since we cannot find significant increases in advertising for cash deals, the following analyses only include stock deals.

during the negotiation period. However, acquiring firms apply a more short-lived strategy by increasing daily advertising spending in the week after the announcement.

To examine how the specific advertising strategies help each party to achieve its individual price goal, we provide two analyses using the offer price of the deal: First, we use a logit regression of the following form to determine the effect of the advertising strategies on the likelihood of an upwards revision of the price:

$$\text{logit(Upwards Revision)} = \alpha_{industry} + \alpha_{time} + \beta \cdot \text{Advertising} + \gamma \cdot \text{Controls} + \epsilon \qquad (3)$$

Second, we use an OLS regression of the following form to determine the effect of the advertising strategies on the percentage change in the offer price.

$$\text{Price Change} = \alpha_{industry} + \alpha_{time} + \beta \cdot \text{Advertising} + \gamma \cdot \text{Controls} + \epsilon \qquad (4)$$

The dependent variable in equation 3, Upwards Revision, is an indicator variable that takes on the value one if the offer price is revised upwards over the course of the deal, and zero otherwise. The dependent variable in equation 4, Price Change, is the percentage change in the offer price, calculated as $\frac{\text{Price Final - Price Initial}}{\text{Price Initial}}$. The main independent variable, Advertising, differs for acquiring and target firms: For the acquiring firm, variable Advertising Acquirer is the sum of abnormal advertising of the acquiring firm over the first 5 days after the announcement day. Again, abnormal advertising is calculated relative to the mean and median advertising spending, respectively, on the same weekdays in the past 8 weeks (cf. section 3.2). For the target firm, the variable Advertising Target is the natural logarithm of one plus the sum of advertising of the target firm over the 3 months before the announcement month. The vector Controls contains various firm and deal-level control variables. Firm-level controls are either based on the acquiring firm or the target firm, and are lagged by four months if the variable subscript does not indicate otherwise. Table 6 shows the results of the two regressions for acquiring firms (Panel A) and target firms (Panel B).

[Insert Table 6 about here.]

Panel A reports the results of the logit regression (cf. equation 3) for the acquiring firm in columns 1 and 2, and the results for the OLS regression (cf. equation 4) in columns 3 and 4.

Abnormal advertising in columns 1 and 3 (2 and 4) is calculated relative to the mean (median) advertising expenditures on the same weekday over the prior eight weeks. All columns include month and industry fixed effects (based on the Fama-French 49 industry classification). The firm control variables are based on characteristics of the acquiring firm.

In columns 1 and 2, we do not find a clear impact of abnormal advertising of the acquiring firm in the week after the announcement on the probability of an upwards revision of the price. While the coefficient on abnormal advertising in column 2 is significantly positive (t-statistic of 2.33), it is insignificant in column 1 (t-statistic of 0.40), the specification that uses the average of previous daily advertising as the benchmark[12]. The results in columns 3 and 4 support the finding from column 1, i.e. that the post-announcement increase in daily advertising intensity by the acquiring firm does not make a higher deal price more likely: The insignificant coefficient estimates of abnormal advertising imply that the advertising strategy chosen by the acquiring firm does not affect the offer price. This might be advantageous for the acquiring firm, as it might be able use the post-announcement advertisements to improve its reputation towards target shareholders, without having to fear costly effects on the deal price.

Panel B reports the results of the logit regression (cf. equation 3) for the target firm in column 1, and the results for the OLS regression (cf. equation 4) in column 2. All columns include industry fixed effects (based on the Fama-French 49 industry classification). Due to the smaller number of deals in our target firm data set, we use year and calendar-month fixed effects instead of month-fixed effects to control for economy wide shocks and seasonalities in advertising and M&As. The firm control variables are based on characteristics of the target firm.

Column 1 shows a positive coefficient on target firm advertising, which is significant at the 5% level (t-statistic of 2.45). This result indicates that the advertising strategy of the target firm is an effective tool to increase its chances of a higher offer price. The coefficient estimate of 0.1468 implies that a one standard deviation increase in advertising expenditures in the three months before the announcement increases the probability of an upwards revision of the price from 17% to 23%[13]. This finding is supported by the results on the effect of advertising on the change in the offer price presented in column 2. The coefficient estimate on target firm advertising is positive and significant (t-statistic of 2.33), suggesting that increased advertising

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[12]We obtain a similar finding when using a linear probability model.
[13]The effect is calculated with all other variables set at their mean.

intensity in the pre-announcement quarter allows the target firm to obtain a higher deal price. A one standard deviation increase in advertising expenditures in the three months before the announcement increases the price revision from 1.1% to 1.4%.

5.2 Deal Completion

So far, we show that the advertising strategy of the acquiring firm in the post-announcement week does not affect deal prices, while the pre-announcement strategy of the target firm increases the chances and the extent of an upwards revision of the price. To determine whether these specific advertising strategies also affect the probability that the deal is completed, we run the following logit regression:

$$\text{logit(Completed Deal)} = \alpha_{industry} + \alpha_{time} + \beta \cdot \text{Advertising} + \gamma \cdot \text{Controls} + \epsilon \qquad (5)$$

The dependent variable in equation 5, Completed Deal, is an indicator variable that takes on the value one if the deal eventually becomes effective, and zero otherwise. The main independent variable, Advertising, differs for acquiring and target firms: For the acquiring firm, the variable Advertising Acquirer is the sum of abnormal advertising of the acquiring firm over the first 5 days after the announcement day. Again, abnormal advertising is calculated relative to the mean and median advertising spending, respectively, on the same weekdays in the past 8 weeks (cf. section 3.2). For the target firm, the variable Advertising Target is the natural logarithm of one plus the sum of advertising of the target firm over the 3 months before the announcement month. The vector Controls contains various firm and deal-level control variables. Firm-level controls are either based on the acquiring firm or the target firm, and are lagged by four months if the variable subscript does not indicate otherwise. Results for acquiring and target firm are reported in Table 7.

[Insert Table 7 about here.]

Columns 1 and 2 show the results of the logit regression for the acquiring firm. Abnormal advertising in column 1 (2) is calculated relative to the mean (median) advertising expenditures on the same weekday over the prior eight weeks. Columns 1 and 2 include month and industry fixed effects (based on the Fama-French 49 industry classification), and the firm control variables

are based on characteristics of the acquiring firm. Column 3 includes year, calendar-month and industry fixed effects, and the firm control variables are based on characteristics of the target firm.

For the acquiring firm, we find an increasing effect of its advertising strategy on the probability that the deal is completed. The coefficient estimate on acquiring firm advertising in columns 1 and 2 is positive and statistically significant (t-statistics of 1.68 and 2.80, respectively). The magnitude of the effect is larger in column 2, where abnormal advertising is calculated with respect to median advertising on the previous 8 weekdays. In column 2 (column 1), a one standard deviation increase in abnormal advertising in the five days after the announcement lowers the probability of deal failure by 0.7 (0.4) percentage points. This effect corresponds to a 19% (12%) decrease relative to the probability of deal failure of 3.8% for the average firm[14]. This finding supports the idea that the short-term strategy of the acquiring firm is effective: Scheduling more advertisements on the days after the announcement sends a positive signal about the deal to the target shareholders. Thus, the acquiring firm increases its chances to succeed with the takeover.

For the target firm, we find a decreasing effect of its advertising strategy on the probability of deal completion. The coefficient estimate on target firm advertising in column 3 is marginally significantly negative (t-statistic of -1.70). One possible explanation for the negative effect is the positive relation between the target firm's advertising strategy and the deal price (cf. section 5.1): While an increased advertising intensity allows the target firm to negotiate higher prices, it could also cause the acquiring firm to eventually back off from the deal. Under certain circumstances, this could suit the target firm fine: If the takeover attempt by the acquiring firm is unsolicited, the target firm's advertising strategy would then be an effective tool to fight off the deal[15].

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[14]The effect is calculated with all other variables set at their mean.

[15]Thomson Reuter's SDC database contains information about the attitude of a deal. However, in our target firm deal sample, only 1.7% of the deals are classified as hostile. Empirical analyses to test the hypothesis of target firm advertising being a tool to fight off unwanted deals do not provide any results due to a lack of statistical power.

6   Conclusion

We analyze the advertising strategies of firms that are involved in M&A deals. Using high frequency data on product market advertising expenditures, we show that acquiring and target firms use different advertising strategies around the announcement of a deal. Target firms of stock deals increase their expenditures in the quarter before the announcement date. Target firms of cash deals show a decrease in advertising spending, starting in the months after the announcement date. Acquiring firms use a short-term strategy and increase advertising in the week after the announcement. Being on different sides of the timeline around the announcement date indicates that firms use the "advertising" tool for different reasons. On the one hand, target firms try to improve their bargaining position through advertising. However, this only applies to targets of stock deals. In cash deals, considerations about firm integration (of the typically much smaller targets in this case) after the takeover could cause the different observed behavior. On the other hand, acquiring firms focus on the short-term effects of advertising and want to increase their reputation when it is most important to them, i.e., in the phase when they have to convince the target shareholders to exchange their shares for shares of the acquiring firm. The different timing of advertising strategies is also reflected in their impact on the deal outcomes. While the short-term, post-announcement strategy of the acquiring firm does not affect deal prices at all, the pre-announcement advertising strategy of the target firm increases the likelihood and the size of an upwards revision of the offer price. Similarly, while the strategy of the acquiring firm makes a deal completion more likely, the strategy of the target firm increases the probability that the acquiring firm eventually steps back from the deal.

Our findings have implications for corporate events in a more general sense. Although previous research is inconclusive on the spillover effects of product market advertising on financial markets, our results suggest that at least some managers seem to believe in such effects. Apart from the intent to arouse consumers' attention for a product or service, advertising is used strategically to promote additional firm interests by influencing investors. This behavior is not only limited to mergers and acquisitions, but might also be expected around other corporate events where managers have an incentive to push up their firms' stock prices or firm reputation through advertising.

References

Ahern, K. R., and D. Sosyura. 2014. Who Writes the News? Corporate Press Releases during Merger Negotiations. *The Journal of Finance* 69:241–291.

Aktas, N., E. de Bodt, and R. Roll. 2010. Negotiations under the Threat of an Auction. *Journal of Financial Economics* 98:241–255.

Barber, B. M., and T. Odean. 2007. All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors. *Review of Financial Studies* 21:785–818.

Betton, S., B. E. Eckbo, R. Thompson, and K. S. Thorburn. 2014. Merger Negotiations With Stock Market Feedback. *The Journal of Finance* 69:1705–1745.

Boone, A. L., and J. H. Mulherin. 2007. How are Firms Sold? *The Journal of Finance* 62:847–875.

Chauvin, K. W., and M. Hirschey. 1993. Advertising, R&D Expenditures and the Market Value of the Firm. *Financial Management* 22:128–140.

Chemmanur, T., and A. Yan. 2009. Product Market Advertising and New Equity Issues. *Journal of Financial Economics* 92:40–65.

Chen, Q., I. Goldstein, and W. Jiang. 2007. Price Informativeness and Investment Sensitivity to Stock Price. *Review of Financial Studies* 20:619–650.

Devos, E., W. B. Elliott, and M. A. Karim. 2013. Product Market Advertising Effects on the Method of Payment in M&A. *Managerial Finance* 39:362–383.

Edmans, A., I. Goldstein, and W. Jiang. 2012. The Real Effects of Financial Markets: The Impact of Prices on Takeovers. *The Journal of Finance* 67:933–971.

Erickson, M., and S.-w. Wang. 1999. Earnings management by acquiring firms in stock for stock mergers. *Journal of Accounting and Economics* 27:149–176.

Fich, E. M., L. T. Starks, and A. L. Tran. 2016. Advertising, Attention, and Acquisition Returns. *Working Paper* .

Focke, F., A. Niessen-Ruenzi, S. Ruenzi, and C. Paper. 2016a. A Friendly Turn: Advertising Bias in the News Media. *Working Paper* .

Focke, F., S. Ruenzi, and M. Ungeheuer. 2016b. Advertising, Attention, and Financial Markets. *Working Paper* .

Frieder, L., and A. Subrahmanyam. 2005. Brand Perceptions and the Market for Common Stock. *Journal of Financial and Quantitative Analysis* 40:57.

Grullon, G., G. Kanatas, and J. P. Weston. 2004. Advertising, Breadth of Ownership, and Liquidity. *Review of Financial Studies* 17:439–461.

Gurun, U. G., and A. W. Butler. 2012. Don't Believe the Hype: Local Media Slant, Local Advertising, and Firm Value. *Journal of Finance* 67:561–598.

Hau, H., and S. Lai. 2013. Real Effects of Stock Underpricing. *Journal of Financial Economics* 108:392–408.

Huberman, G. 2001. Familiarity Breeds Investment. *Review of Financial Studies* 14:659–680.

Jensen, M. C. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review* 76:pp. 323–329.

Keloharju, M., S. Knuepfer, and J. Linnainmaa. 2012. Do Investors Buy What They Know? Product Market Choices and Investment Decisions. *Review of Financial Studies* 25:2921–2958.

Lou, D. 2014. Attracting Investor Attention through Advertising. *Review of Financial Studies* 27:1797–1829.

Merton, R. C. 1987. A Simple Model of Capital Market Equilibrium with Incomplete Information. *The Journal of Finance* 42:483–510.

Polk, C., and P. Sapienza. 2009. The Stock Market and Corporate Investment: A Test of Catering Theory. *Review of Financial Studies* 22:187–217.

Ryoo, J., J. Q. Jeon, and C. Lee. 2015. Do Marketing Activities Enhance Firm Value? Evidence From M{&}A Transactions. *European Management Journal* .

Shleifer, A., and R. W. Vishny. 2003. Stock Market Driven Acquisitions. *Journal of Financial Economics* 70:295–311.

Table 1: Summary Statistics

This table shows summary statistics (mean, standard deviation (sd), median (p50), 1st percentile (p1), 99th percentile (p99), and number of observations (N)) of yearly firm characteristics of all CRSP/Compustat firms in Panel A, of all advertising firms in Panel B, of all acquiring firms with advertising in Panel C, and of all target firms with advertising in Panel D. The sample period is from January 1995 to December 2012. Advertising firms are firms that have at least one firm-year with non-zero advertising expenditures. Acquiring (target) firms have at least one M&A transaction in which they act as acquirer (target). Advertising expenditures are obtained from Kantar and measured in million USD. All other firm characteristics are defined in detail in Appendix A. None of the variables is reported in logs.

Variable	mean	sd	p50	p1	p99	N
Panel A: CRSP/Compustat Firms						
Advertising	12.053	108.629	0.000	0.000	272.565	80,249
Sales	1,933.047	9,791.582	159.951	0.000	32,495.000	80,249
Total Assets	4,839.557	45,262.703	271.992	4.246	67,548.000	80,249
Cash	215.847	753.602	24.719	0.020	5,887.661	80,249
EBIT / Total Assets	0.006	0.220	0.050	-1.015	0.331	80,249
Leverage	0.450	0.971	0.112	0.000	5.738	80,249
Market-to-Book	3.073	3.821	1.900	0.280	26.383	80,249
1 Year Return	0.141	0.851	0.039	-0.882	2.987	80,249
Volatility	0.153	0.116	0.124	0.030	0.575	80,249
Firm Size	2,690.421	14,308.074	205.232	2.366	48,081.051	80,249
Firm Age	15.796	15.390	10.833	1.250	76.000	80,249
Turnover	1.677	1.795	1.076	0.061	9.822	80,249
Panel B: Advertising Firms						
Advertising	20.210	140.090	0.010	0.000	488.500	47,850
Sales	3,079.200	12,527.746	405.032	0.560	47,547.000	47,850
Total Assets	7,706.631	58,248.064	575.421	7.450	116,433.000	47,850
Cash	330.555	943.056	47.290	0.080	6,019.790	47,850
EBIT / Total Assets	0.039	0.181	0.066	-0.770	0.340	47,850
Leverage	0.436	0.920	0.130	0.000	5.210	47,850
Market-to-Book	3.146	3.715	2.038	0.310	24.710	47,850
1 Year Return	0.168	0.845	0.072	-0.860	2.870	47,850
Volatility	0.139	0.101	0.113	0.030	0.520	47,850
Firm Size	4,306.849	18,302.172	501.647	4.950	74,763.230	47,850
Firm Age	18.497	17.296	12.833	1.330	79.670	47,850
Turnover	1.898	1.865	1.313	0.080	9.980	47,850

Table 1: Summary Statistics (cont'd)

Variable	mean	sd	p50	p1	p99	N
Panel C: Acquiring Firms						
Advertising	25.736	160.360	0.016	0.000	591.895	33,985
Sales	3,806.179	13,130.385	572.736	2.486	56,931.000	33,985
Total Assets	9,964.991	67,806.917	801.462	10.158	163,749.000	33,985
Cash	412.291	1,069.553	61.657	0.124	6,019.787	33,985
EBIT / Total Assets	0.053	0.157	0.072	-0.620	0.319	33,985
Leverage	0.430	0.889	0.145	0.000	5.012	33,985
Market-to-Book	3.211	3.699	2.130	0.340	25.629	33,985
1 Year Return	0.182	0.870	0.087	-0.842	2.861	33,985
Volatility	0.134	0.096	0.110	0.030	0.496	33,985
Firm Size	5,572.400	20,995.151	741.526	7.385	96,428.328	33,985
Firm Age	19.856	17.988	13.833	1.333	80.333	33,985
Turnover	2.012	1.876	1.442	0.092	9.975	33,985
Panel D: Target Firms						
Advertising	6.978	47.350	0.004	0.000	177.344	9,954
Sales	1,501.762	4,802.070	254.024	1.969	21,513.000	9,954
Total Assets	5,066.011	39,813.900	306.632	8.120	80,620.000	9,954
Cash	219.353	722.070	36.633	0.069	6,019.787	9,954
EBIT / Total Assets	0.035	0.170	0.060	-0.654	0.329	9,954
Leverage	0.427	0.960	0.093	0.000	5.889	9,954
Market-to-Book	3.173	3.930	1.975	0.275	26.618	9,954
1 Year Return	0.121	0.630	0.057	-0.660	1.835	9,954
Volatility	0.155	0.110	0.130	0.033	0.549	9,954
Firm Size	1,928.067	7,030.680	311.297	4.890	33,816.258	9,954
Firm Age	16.146	15.290	11.333	1.333	73.917	9,954
Turnover	1.952	1.900	1.325	0.095	9.972	9,954

Table 2: Advertising around Acquisitions - Monthly Analysis - Acquirer

This table shows regressions of monthly advertising expenditures of the acquirer on pre event, event, and post event dummy variables and various firm characteristics. The dependent variable is the log of one plus advertising expenditures. $Event_t$ equals one if a firm announces a M&A transaction in month t. In Panel A, Pre $Event_{t-1}$ (Post $Event_{t+1}$) equals one in the month before (after) the M&A announcement month t. In Panel B, Pre $Event_{t-3;t-1}$ (Post $Event_{t+1;t+3}$) equals one in the three months before (after) the M&A announcement month t. Columns (1) to (4) ((5) to (8)) include firms that undertake at least one stock-financed (cash-financed) transaction. Columns (1) and (4) ((2) and (5), (3), (4), (6) and (7)) include month fixed effects (combined industry-month (Fama French 49) fixed effects, combined industry-month and firm fixed effects). All control variables without subscript are lagged by four months and are defined in detail in Appendix A. All controls are included in the regressions in Panel B, but are not shown in the table. Standard errors are double-clustered by firm and month. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Table 2: Advertising around Acquisitions - Monthly Analysis - Acquirer (cont'd)

Panel A - One Month Pre and Post Event Period

Consideration	Stock					Cash		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre Event$_{t-1}$	0.3094**	0.2796**	0.1037	0.1036	0.0852	0.1579**	0.0089	0.0090
	(2.12)	(2.04)	(1.34)	(1.33)	(0.86)	(2.00)	(0.24)	(0.24)
Event$_t$	0.3050**	0.2857**	0.1526**	0.1275*	0.0666	0.1275	-0.0144	-0.0271
	(2.15)	(2.18)	(2.22)	(1.87)	(0.68)	(1.62)	(-0.39)	(-0.75)
Post Event$_{t+1}$	0.2471*	0.2163*	0.0903	0.0891	0.1109	0.1757**	0.0343	0.0331
	(1.85)	(1.76)	(1.26)	(1.25)	(1.12)	(2.19)	(0.86)	(0.83)
Sales	1.0204***	0.9430***	0.2265***	0.2255***	1.0108***	0.9352***	0.2206**	0.2196**
	(8.32)	(6.52)	(2.69)	(2.68)	(9.59)	(7.37)	(2.48)	(2.47)
Total Assets	0.5210***	-0.0055	0.1179	0.1166	0.5658***	0.2789	0.1579*	0.1565*
	(3.39)	(-0.02)	(1.15)	(1.14)	(4.44)	(1.62)	(1.74)	(1.72)
Cash	0.1945**	0.1946**	0.0317	0.0315	0.1877***	0.1042**	0.0363	0.0364
	(2.38)	(2.58)	(0.83)	(0.83)	(3.50)	(2.21)	(1.63)	(1.63)
EBIT / Total Assets	-2.1883***	-2.7139***	-0.4707*	-0.4660*	-1.6453***	-2.4244***	-0.3825	-0.3774
	(-4.97)	(-6.55)	(-1.77)	(-1.76)	(-3.42)	(-5.29)	(-1.55)	(-1.53)
Leverage	-0.0761	-0.1526	0.0006	0.0005	-0.0158	-0.1102	0.0113	0.0114
	(-0.57)	(-1.34)	(0.01)	(0.01)	(-0.19)	(-1.51)	(0.32)	(0.33)
Market-to-Book	0.3509**	-0.0785	-0.0854	-0.0854	0.6317***	0.3105***	-0.0240	-0.0245
	(2.20)	(-0.53)	(-1.24)	(-1.24)	(4.87)	(2.87)	(-0.50)	(-0.50)
Return$_{t-4;t-6}$	0.1340	-0.1469	-0.0842	-0.0824	0.1390	-0.0090	-0.1004***	-0.0993***
	(1.18)	(-1.35)	(-1.59)	(-1.56)	(1.30)	(-0.11)	(-2.80)	(-2.77)
Return$_{t-7;t-9}$	0.0993	-0.1373	-0.0915**	-0.0900*	0.0666	-0.0344	-0.0811**	-0.0802**
	(0.92)	(-1.36)	(-1.99)	(-1.96)	(0.67)	(-0.45)	(-2.41)	(-2.39)
Return$_{t-10;t-15}$	0.0921	-0.0140	-0.0124	-0.0119	-0.0499	-0.0665	-0.0449*	-0.0444*
	(1.23)	(-0.21)	(-0.35)	(-0.33)	(-0.68)	(-1.15)	(-1.76)	(-1.74)
Volatility	1.1916	1.3024*	-0.1625	-0.1702	-0.2194	0.9002	0.0607	0.0546
	(1.48)	(1.84)	(-0.50)	(-0.53)	(-0.28)	(1.40)	(0.24)	(0.22)
Firm Size	0.1381	0.6963***	0.3918***	0.3890***	0.0226	0.4064***	0.3426***	0.3407***
	(0.89)	(4.19)	(5.76)	(5.73)	(0.17)	(3.33)	(6.60)	(6.57)
Firm Age	-0.3672**	0.0650	0.1401	0.1393	-0.2164*	0.2226**	0.2653*	0.2632*
	(-2.03)	(0.40)	(0.62)	(0.61)	(-1.81)	(2.09)	(1.96)	(1.94)
Turnover	-0.4475***	-0.2015	0.0574	0.0580	-0.1560	0.0300	0.0521	0.0522
	(-3.44)	(-1.62)	(0.89)	(0.89)	(-1.50)	(0.32)	(1.16)	(1.16)
Media Coverage				0.1192**				0.0978***
				(2.41)				(2.95)
8-K Filing				-0.0152				-0.0087
				(-0.53)				(-0.45)
R^2	0.314	0.435	0.769	0.769	0.269	0.426	0.787	0.787
Observations	176,714	173,868	173,866	173,866	350,928	348,336	348,329	348,329
Month FE	Y	N	N	N	Y	N	N	N
Industry-Month FE	N	Y	Y	Y	N	Y	Y	Y
Firm FE	N	N	Y	Y	N	N	Y	Y

Table 2: Advertising around Acquisitions - Monthly Analysis - Acquirer (cont'd)

Panel B - Three Month Pre and Post Event Period

Consideration	Stock					Cash		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre Event$_{t-1;t-3}$	0.2731**	0.2612**	0.0846	0.0850	0.0701	0.1328*	0.0060	0.0063
	(2.22)	(2.21)	(1.32)	(1.32)	(0.79)	(1.86)	(0.18)	(0.19)
Event$_t$	0.2775**	0.2614**	0.1465**	0.1220*	0.0499	0.1051	-0.0158	-0.0283
	(2.19)	(2.21)	(2.18)	(1.83)	(0.56)	(1.47)	(-0.44)	(-0.79)
Post Event$_{t+1;t+3}$	0.2104*	0.1732	0.0868	0.0854	0.0914	0.1534**	0.0338	0.0333
	(1.74)	(1.52)	(1.40)	(1.38)	(1.05)	(2.12)	(1.03)	(1.01)
R^2	0.316	0.436	0.770	0.770	0.270	0.428	0.788	0.788
Observations	175,370	172,534	172,528	172,528	348,769	346,194	346,189	346,189
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Media + 8-K Controls	N	N	N	Y	N	N	N	Y
Month FE	Y	N	N	N	Y	N	N	N
Industry-Month FE	N	Y	Y	Y	N	Y	Y	Y
Firm FE	N	N	Y	Y	N	N	Y	Y

Table 3: Abnormal Advertising around Acquisitions - Daily Analysis - Acquirer

This table shows regressions of daily abnormal advertising expenditures of the acquirer on pre event, event, and post event dummy variables. The dependent variable in columns (1) and (3) ((2) and (4)) is abnormal advertising calculated using the mean (median) advertising on the same weekday over the last 8 weeks (see Appendix A for details). $Event_t$ equals one if a firm announces an M&A transaction on day t. Pre $Event_{t-i}$ (Post $Event_{t+i}$) equals one i days before (after) the M&A announcement day t. Columns (1) and (2) ((3) and (4)) include firms that undertake at least one stock-financed (cash-financed) transaction. All regressions include deal fixed effects. Panel A includes five pre and post event days. Panel B includes five pre and ten post event days. The sample includes daily data for the 41 days (t-20;t+20) around the M&A announcement day t. Events with zero advertising in the 8 weeks before the event window and also zero advertising during the event window are excluded. Standard errors are double-clustered by firm and month. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Panel A				
Consideration	Stock		Cash	
	(1)	(2)	(3)	(4)
Pre Event$_{t-5}$	0.036	0.0223	0.0122	-0.0065
	(0.77)	(0.58)	(0.41)	(-0.19)
Pre Event$_{t-4}$	0.014	0.0397	0.0425	0.0165
	(0.25)	(0.81)	(1.37)	(0.56)
Pre Event$_{t-3}$	0.0332	-0.0109	-0.0295	-0.0311
	(0.62)	(-0.22)	(-0.95)	(-1.05)
Pre Event$_{t-2}$	0.0189	-0.0216	-0.0109	-0.0282
	(0.32)	(-0.44)	(-0.33)	(-0.87)
Pre Event$_{t-1}$	0.0579	0.0497	-0.0677*	-0.04
	(0.81)	(0.71)	(-1.92)	(-1.26)
Event$_t$	0.0815	0.079	-0.0273	0.0001
	(1.3)	(1.36)	(-0.78)	(0.00)
Post Event$_{t+1}$	0.0656	0.0514	0.0056	-0.0041
	(1.37)	(1.07)	(0.17)	(-0.14)
Post Event$_{t+2}$	0.1470***	0.1071**	0.0165	-0.0207
	(2.62)	(2.13)	(0.51)	(-0.71)
Post Event$_{t+3}$	0.1219***	0.1550***	0.0218	-0.0137
	(2.66)	(3.19)	(0.69)	(-0.41)
Post Event$_{t+4}$	0.1871***	0.1333***	0.0267	0.0132
	(3.81)	(2.76)	(0.85)	(0.42)
Post Event$_{t+5}$	0.056	0.0272	0.0029	-0.025
	(1.19)	(0.59)	(0.1)	(-0.8)
Adj. R^2	0.3212	0.2641	0.3322	0.2624
Observations	81,638	81,638	211,949	211,949
Deal FE	Y	Y	Y	Y

Table 3: Abnormal Advertising around Acquisitions - Daily Analysis - Acquirer (cont'd)

Panel B				
Consideration	Stock		Cash	
	(1)	(2)	(3)	(4)
Pre Event$_{t-5}$	0.0405	0.0261	0.0094	-0.0084
	(0.86)	(0.66)	(0.31)	(-0.24)
Pre Event$_{t-4}$	0.0187	0.0433	0.0397	0.0146
	(0.34)	(0.87)	(1.28)	(0.5)
Pre Event$_{t-3}$	0.0383	-0.0069	-0.0325	-0.0331
	(0.73)	(-0.14)	(-1.04)	(-1.09)
Pre Event$_{t-2}$	0.0237	-0.0179	-0.0139	-0.0301
	(0.4)	(-0.36)	(-0.42)	(-0.92)
Pre Event$_{t-1}$	0.0626	0.0532	-0.0706*	-0.0421
	(0.86)	(0.75)	(-1.95)	(-1.28)
Event$_t$	0.0868	0.0832	-0.0302	-0.0019
	(1.33)	(1.39)	(-0.85)	(-0.06)
Post Event$_{t+1}$	0.0708	0.0558	0.0026	-0.0062
	(1.40)	(1.10)	(0.08)	(-0.02)
Post Event$_{t+2}$	0.1523***	0.1114**	0.0134	-0.0226
	(2.67)	(2.14)	(0.40)	(-0.74)
Post Event$_{t+3}$	0.1277***	0.1594***	0.0187	-0.0157
	(2.69)	(3.10)	(0.57)	(-0.44)
Post Event$_{t+4}$	0.1928***	0.1378***	0.0236	0.011
	(3.78)	(2.76)	(0.73)	(0.33)
Post Event$_{t+5}$	0.0618	0.0317	-0.0003	-0.0272
	(1.24)	(0.65)	(-0.01)	(-0.81)
Post Event$_{t+6}$	0.0815	0.0927*	-0.0325	-0.001
	(1.34)	(1.71)	(-0.89)	(-0.03)
Post Event$_{t+7}$	0.0044	-0.0024	-0.0528	-0.0103
	(0.08)	(-0.05)	(-1.51)	(-0.31)
Post Event$_{t+8}$	0.0453	0.0183	0.0032	-0.0022
	(0.85)	(0.37)	(0.09)	(-0.07)
Post Event$_{t+9}$	0.0357	0.0024	-0.0257	-0.053
	(0.75)	(0.05)	(-0.82)	(-1.65)
Post Event$_{t+10}$	-0.0106	0.0137	0.0167	0.0045
	(-0.24)	(0.28)	(0.51)	(0.14)
Adj. R^2	0.3212	0.2641	0.3322	0.2624
Observations	81,638	81,638	211,949	211,949
Deal FE	Y	Y	Y	Y

Table 4: Advertising around Acquisitions - Monthly Analysis - Target

This table shows regressions of monthly advertising expenditures of the target firm on pre event, event, and post event dummy variables and various firm characteristics. The dependent variable is the log of one plus advertising expenditures. $Event_t$ equals one if a firm announces a M&A transaction in month t. In Panel A, Pre $Event_{t-1}$ (Post $Event_{t+1}$) equals one in the month before (after) the M&A announcement month t. In Panel B, Pre $Event_{t-3;t-1}$ (Post $Event_{t+1;t+3}$) equals one in the three months before (after) the M&A announcement month t. In Panel C, Pre $Event_{t-i}$ (Post $Event_{t+i}$) equals one i months before (after) the M&A announcement month t. Columns (1) to (3) ((4) to (6)) include firms that become a target in at leasst one stock-financed (cash-financed) transaction. Columns (1) and (4) ((2) and (5), (3) and (6)) include month fixed effects (combined industry-month (Fama French 49) fixed effects, combined industry-month and firm fixed effects). All control variables without subscript are lagged by four months and are defined in detail in Appendix A. All controls are included in the regressions in Panel B and C, but are not shown in the table. Standard errors are double-clustered by firm and month. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Table 4: Advertising around Acquisitions - Monthly Analysis - Target (cont'd)

Panel A - One Month Pre and Post Event Period

Consideration	Stock				Cash			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre Event$_{t-1}$	0.9444***	0.6427**	0.4358**	0.4341**	0.0404	0.0970	-0.0400	-0.0415
	(3.97)	(2.41)	(2.23)	(2.22)	(0.27)	(0.63)	(-0.41)	(-0.42)
Event$_t$	0.7781***	0.4735*	0.2601	0.2922	-0.0799	-0.0532	-0.2039*	-0.2129*
	(3.23)	(1.86)	(1.36)	(1.48)	(-0.51)	(-0.34)	(-1.79)	(-1.87)
Post Event$_{t+1}$	0.5374**	0.2047	0.0337	0.0398	-0.1589	-0.0456	-0.2114*	-0.2129*
	(2.19)	(0.82)	(0.18)	(0.22)	(-1.07)	(-0.33)	(-1.88)	(-1.89)
Sales	0.6543***	0.4831**	-0.0495	-0.0469	1.1532***	0.7199***	0.3750**	0.3738**
	(2.94)	(2.05)	(-0.34)	(-0.32)	(6.28)	(4.08)	(2.27)	(2.26)
Total Assets	0.9335***	0.7753*	0.4180*	0.4237*	-0.0848	-0.1689	0.1176	0.1181
	(3.28)	(1.83)	(1.94)	(1.96)	(-0.36)	(-0.66)	(0.76)	(0.76)
Cash	-0.0978	0.0749	-0.0016	-0.0022	0.0606	0.1029	0.0543	0.0544
	(-0.57)	(0.46)	(-0.02)	(-0.02)	(0.62)	(1.27)	(1.31)	(1.31)
EBIT / Total Assets	-3.5486***	-3.8602***	-0.9773	-0.9808	-1.6468**	-2.1592***	-0.2984	-0.2978
	(-4.24)	(-4.60)	(-1.48)	(-1.48)	(-2.52)	(-3.42)	(-0.78)	(-0.78)
Leverage	-0.4012*	-0.6023***	-0.0655	-0.0655	0.1605	0.0029	0.0358	0.0358
	(-1.71)	(-2.83)	(-0.53)	(-0.53)	(1.11)	(0.02)	(0.54)	(0.54)
Market-to-Book	0.5920**	0.4475*	0.0120	0.0145	0.2702	0.1435	0.0110	0.0111
	(1.98)	(1.76)	(0.10)	(0.12)	(1.33)	(0.89)	(0.14)	(0.14)
Return$_{t-4;t-6}$	0.3652*	0.4354**	0.0346	0.0359	0.0616	-0.1656	-0.0497	-0.0495
	(1.74)	(2.33)	(0.32)	(0.33)	(0.54)	(-1.55)	(-1.02)	(-1.02)
Return$_{t-7;t-9}$	0.3568*	0.4170**	0.0339	0.0350	-0.0128	-0.2029*	-0.0827	-0.0828
	(1.90)	(2.34)	(0.34)	(0.35)	(-0.13)	(-1.93)	(-1.60)	(-1.60)
Return$_{t-10;t-15}$	0.2909**	0.4363***	0.1747**	0.1762**	0.0217	-0.0922	0.0186	0.0184
	(2.22)	(3.11)	(2.55)	(2.57)	(0.30)	(-1.36)	(0.48)	(0.47)
Volatility	-1.1941	-0.9406	0.1885	0.1977	-2.1678**	-0.6997	-0.4789	-0.4795
	(-1.27)	(-1.06)	(0.32)	(0.34)	(-2.15)	(-0.83)	(-1.04)	(-1.04)
Firm Size	-0.3439	-0.1341	0.2184	0.2161	-0.0171	0.4333**	0.2516***	0.2509***
	(-1.13)	(-0.50)	(1.36)	(1.35)	(-0.08)	(2.27)	(3.18)	(3.17)
Firm Age	0.5083	0.7944***	-0.0224	-0.0277	-0.0960	0.0974	0.2527	0.2538
	(1.62)	(2.89)	(-0.04)	(-0.05)	(-0.45)	(0.57)	(0.96)	(0.97)
Turnover	0.0407	0.1839	-0.0513	-0.0529	0.2305	0.2027	0.0818	0.0818
	(0.17)	(0.90)	(-0.29)	(-0.30)	(1.39)	(1.48)	(1.04)	(1.04)
Media Coverage				-0.1534				0.0437
				(-1.14)				(0.68)
8-K Filing				0.0433				-0.0226
				(0.55)				(-0.54)
R^2	0.230	0.346	0.695	0.695	0.122	0.284	0.682	0.682
Observations	29,732	27,715	27,714	27,714	92,625	91,460	91,458	91,458
Month FE	Y	N	N	N	Y	N	N	N
Industry-Month FE	N	Y	Y	Y	N	Y	Y	Y
Firm FE	N	N	Y	Y	N	N	Y	Y

Table 4: Advertising around Acquisitions - Monthly Analysis - Target (cont'd)

Panel B - Aggregate Three Months Pre and Post Event Period

Consideration	Stock				Cash			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre Event$_{t-1,t-3}$	0.9456***	0.5843**	0.4006**	0.4009**	-0.0414	0.0292	-0.1354	-0.1368
	(4.28)	(2.36)	(2.37)	(2.37)	(-0.29)	(0.21)	(-1.43)	(-1.45)
Event$_t$	0.8094***	0.4910*	0.2732	0.3042	-0.0806	-0.0540	-0.2161*	-0.2271*
	(3.22)	(1.84)	(1.33)	(1.44)	(-0.51)	(-0.35)	(-1.86)	(-1.96)
Post Event$_{t+1,t+3}$	0.3974	0.1050	-0.0809	-0.0749	-0.1788	-0.1190	-0.2957***	-0.2972***
	(1.62)	(0.42)	(-0.44)	(-0.41)	(-1.15)	(-0.82)	(-2.80)	(-2.82)
R^2	0.230	0.346	0.695	0.695	0.122	0.284	0.682	0.682
Observations	29,732	27,715	27,714	27,714	92,625	91,460	91,458	91,458
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Media + 8-K Controls	N	N	N	Y	N	N	N	Y
Month FE	Y	N	N	N	Y	N	N	N
Industry-Month FE	N	Y	Y	Y	N	Y	Y	Y
Firm FE	N	N	Y	Y	N	N	Y	Y

Table 4: Advertising around Acquisitions - Monthly Analysis - Target (cont'd)

Panel C - Six Pre and Post Event Months

Consideration	Stock				Cash			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pre Event$_{t-6}$	0.5786**	0.0592	-0.1016	-0.0978	0.0991	0.1185	-0.0246	-0.0250
	(2.01)	(0.19)	(-0.47)	(-0.45)	(0.66)	(0.78)	(-0.22)	(-0.23)
Pre Event$_{t-5}$	0.7844***	0.2800	0.1367	0.1369	0.1287	0.1245	-0.0374	-0.0381
	(2.96)	(1.01)	(0.67)	(0.67)	(0.89)	(0.83)	(-0.34)	(-0.35)
Pre Event$_{t-4}$	0.7106***	0.1718	-0.0069	-0.0070	0.0079	0.0216	-0.1245	-0.1249
	(2.84)	(0.65)	(-0.03)	(-0.03)	(0.05)	(0.14)	(-1.13)	(-1.13)
Pre Event$_{t-3}$	0.9027***	0.4548	0.2882	0.2889	-0.0404	0.0047	-0.1454	-0.1474
	(3.58)	(1.64)	(1.37)	(1.37)	(-0.25)	(0.03)	(-1.21)	(-1.23)
Pre Event$_{t-2}$	1.0109***	0.6233**	0.4594**	0.4628**	-0.0851	-0.0278	-0.1851*	-0.1856*
	(3.97)	(2.20)	(2.27)	(2.29)	(-0.53)	(-0.18)	(-1.67)	(-1.68)
Pre Event$_{t-1}$	1.0106***	0.6655**	0.4407**	0.4404**	0.0420	0.0974	-0.0648	-0.0664
	(3.91)	(2.29)	(2.05)	(2.05)	(0.26)	(0.61)	(-0.60)	(-0.61)
Event$_t$	0.8475***	0.4968*	0.2633	0.2942	-0.0736	-0.0480	-0.2226*	-0.2342*
	(3.18)	(1.77)	(1.23)	(1.34)	(-0.45)	(-0.30)	(-1.84)	(-1.93)
Post Event$_{t+1}$	0.6043**	0.2263	0.0345	0.0414	-0.1567	-0.0429	-0.2355*	-0.2378*
	(2.25)	(0.82)	(0.16)	(0.20)	(-0.99)	(-0.30)	(-1.94)	(-1.96)
Post Event$_{t+2}$	0.4395	0.0609	-0.0907	-0.0830	-0.2693	-0.2411	-0.4134***	-0.4147***
	(1.50)	(0.19)	(-0.36)	(-0.33)	(-1.52)	(-1.45)	(-3.20)	(-3.22)
Post Event$_{t+3}$	0.1751	-0.0187	-0.2079	-0.2023	-0.0419	-0.0635	-0.1816	-0.1832
	(0.62)	(-0.06)	(-0.89)	(-0.87)	(-0.22)	(-0.34)	(-1.38)	(-1.39)
Post Event$_{t+4}$	0.3706	0.0069	-0.2134	-0.2027	0.0354	-0.0687	-0.2845*	-0.2860*
	(1.26)	(0.02)	(-0.81)	(-0.77)	(0.15)	(-0.31)	(-1.84)	(-1.85)
Post Event$_{t+5}$	0.1560	-0.4075	-0.4629*	-0.4516*	0.1334	-0.0351	-0.1945	-0.1966
	(0.46)	(-1.16)	(-1.94)	(-1.90)	(0.54)	(-0.16)	(-1.30)	(-1.31)
Post Event$_{t+6}$	0.6543*	0.1811	-0.0325	-0.0183	0.1377	0.0433	0.0631	0.0605
	(1.73)	(0.45)	(-0.11)	(-0.06)	(0.54)	(0.17)	(0.32)	(0.31)
R^2	0.231	0.346	0.695	0.695	0.122	0.284	0.682	0.682
Observations	29,732	27,715	27,714	27,714	92,625	91,460	91,458	91,458
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Media + 8-K Controls	N	N	N	Y	N	N	N	Y
Month FE	Y	N	N	N	Y	N	N	N
Industry-Month FE	N	Y	Y	Y	N	Y	Y	Y
Firm FE	N	N	Y	Y	N	N	Y	Y

Table 5: Abnormal Advertising around Acquisitions - Daily Analysis - Target

This table shows regressions of daily abnormal advertising expenditures of the target on pre event, event, and post event dummy variables. The dependent variable in columns (1) and (3) ((2) and (4)) is abnormal advertising calculated using the mean (median) advertising on the same weekday over the last 8 weeks (see Appendix A for details). $Event_t$ equals one if a firm announces an M&A transaction on day t. Pre $Event_{t-i}$ (Post $Event_{t+i}$) equals one i days before (after) the M&A announcement day t. Columns (1) and (2) ((3) and (4)) include firms that become a target in at least one stock-financed (cash-financed) transaction. All regressions include deal fixed effects. The sample includes daily data for the 41 days (t-20;t+20) around the M&A announcement day t. Events with zero advertising in the 8 weeks before the event window and also zero advertising during the event window are excluded. Standard errors are double-clustered by firm and month. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Consideration	Stock		Cash	
	(1)	(2)	(3)	(4)
Pre Event$_{t-5}$	0.3803**	0.0328	-0.0775	0.0582
	(2.34)	(0.19)	(-0.53)	(0.38)
Pre Event$_{t-4}$	0.3297*	0.1054	0.1970	0.1162
	(1.74)	(0.56)	(1.36)	(0.86)
Pre Event$_{t-3}$	-0.0782	-0.1801	0.0524	0.0753
	(-0.40)	(-0.97)	(0.33)	(0.54)
Pre Event$_{t-2}$	0.0683	-0.0989	-0.0821	-0.0161
	(0.34)	(-0.63)	(-0.65)	(-0.13)
Pre Event$_{t-1}$	0.2801	0.2343	-0.1232	0.0974
	(1.28)	(1.31)	(-0.81)	(0.76)
Event$_t$	-0.0461	0.2270	0.0298	-0.0064
	(-0.21)	(1.09)	(0.20)	(-0.05)
Post Event$_{t+1}$	0.3882**	0.1526	-0.0757	0.0831
	(2.06)	(0.86)	(-0.52)	(0.58)
Post Event$_{t+2}$	0.6041***	0.2571	-0.2393	-0.0973
	(3.33)	(1.41)	(-1.43)	(-0.65)
Post Event$_{t+3}$	0.0431	-0.0674	-0.1396	-0.2074
	(0.23)	(-0.39)	(-1.02)	(-1.52)
Post Event$_{t+4}$	-0.1742	-0.3974**	-0.0729	-0.0512
	(-0.88)	(-2.06)	(-0.50)	(-0.37)
Post Event$_{t+5}$	0.0702	-0.2313	-0.0674	-0.0488
	(0.44)	(-1.61)	(-0.44)	(-0.33)
R^2	0.247	0.193	0.254	0.223
Observations	8,876	8,876	14,305	14,305
Deal FE	Y	Y	Y	Y

Table 5: Abnormal Advertising around Acquisitions - Daily Analysis - Target (cont'd)

Consideration	Stock		Cash	
	(1)	(2)	(3)	(4)
Pre Event$_{t-10}$	0.0888	0.0457	0.1280	0.1716
	(0.42)	(0.22)	(0.90)	(1.12)
Pre Event$_{t-9}$	0.1644	0.1413	-0.2771*	-0.1619
	(0.93)	(0.71)	(-1.87)	(-1.16)
Pre Event$_{t-8}$	-0.1655	-0.0545	0.0032	0.1544
	(-0.66)	(-0.26)	(0.02)	(0.94)
Pre Event$_{t-7}$	-0.0906	0.2654	0.2124	0.1879
	(-0.42)	(1.27)	(1.57)	(1.34)
Pre Event$_{t-6}$	0.1031	-0.0663	0.1898	0.2970
	(0.59)	(-0.40)	(1.19)	(1.61)
Pre Event$_{t-5}$	0.3836**	0.0440	-0.0692	0.0796
	(2.23)	(0.24)	(-0.45)	(0.50)
Pre Event$_{t-4}$	0.3331*	0.1165	0.2054	0.1379
	(1.69)	(0.59)	(1.38)	(0.97)
Pre Event$_{t-3}$	-0.0749	-0.1689	0.0619	0.0979
	(-0.36)	(-0.85)	(0.38)	(0.65)
Pre Event$_{t-2}$	0.0717	-0.0877	-0.0734	0.0055
	(0.35)	(-0.53)	(-0.56)	(0.04)
Pre Event$_{t-1}$	0.2834	0.2455	-0.1151	0.1189
	(1.27)	(1.35)	(-0.74)	(0.88)
Event$_t$	-0.0427	0.2381	0.0379	0.0147
	(-0.19)	(1.13)	(0.25)	(0.10)
Post Event$_{t+1}$	0.3915**	0.1638	-0.0675	0.1043
	(2.04)	(0.91)	(-0.45)	(0.70)
Post Event$_{t+2}$	0.6074***	0.2683	-0.2299	-0.0751
	(3.29)	(1.47)	(-1.37)	(-0.49)
Post Event$_{t+3}$	0.0465	-0.0563	-0.1312	-0.1863
	(0.23)	(-0.32)	(-0.97)	(-1.34)
Post Event$_{t+4}$	-0.1712	-0.3865**	-0.0650	-0.0302
	(-0.86)	(-1.99)	(-0.45)	(-0.22)
Post Event$_{t+5}$	0.0728	-0.2208	-0.0595	-0.0281
	(0.46)	(-1.57)	(-0.38)	(-0.19)
R^2	0.247	0.193	0.254	0.223
Observations	8,876	8,876	14,305	14,305
Deal FE	Y	Y	Y	Y

Table 6: Offer Price Revision - Acquirer and Target

This table shows logit regressions of the probability of an upwards revision of the offer price and OLS regressions of the changes in the offer price on daily abnormal advertising of the acquiring firm (Panel A) and monthly advertising of the target firm (Panel B), respectively. In columns 1 and 2 of Panel A and column 1 of Panel B, the dependent variable is an indicator variable that takes on the value one if the offer price is revised upwards and zero otherwise. In columns 3 and 4 of Panel A and column 3 of Panel B, the dependent variable is the percentage change in the offer price. Panel A (Panel B) includes advertising expenditures and firm characteristics of the acquiring firm (target firm), as well as deal characteristics. Advertising Acquirer is the abnormal advertising of the acquiring firm over the 1 to 5 days after the announcement date. Abnormal advertising in Panel A, column (1) ((column (2)) is calculated using the mean (median) advertising on the same weekday over the last 8 weeks. Advertising Target is the log of one plus the sum of advertising expenditures of the target firm in the three pre-announcement months. All columns only include stock-financed transactions. Panel A (Panel B) includes month and industry fixed effects (year, calendar month and industry fixed effects). Industry fixed effects are based on the Fama French 49 classification. All firm control variables without subscript are lagged by four months and are defined in detail in Appendix A. Standard errors are double-clustered by firm and year. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Table 6: Offer Price Revision - Acquirer and Target (cont'd)

Panel A: Offer Price Revision - Acquirer

Dependent Variable	Logit(Upwards Revision)		Price Change	
	(1)	(2)	(3)	(4)
Abnormal Advertising Acquirer	0.0124	0.0406**	0.0002	0.0001
	(0.40)	(2.33)	(0.72)	(0.50)
Firm Size (ln)	-0.7114*	-0.6748*	-0.0055	-0.0055
	(-1.74)	(-1.67)	(-1.07)	(-1.08)
Market-to-Book (ln)	-0.0624	-0.1269	0.0000	0.0000
	(-0.17)	(-0.31)	(0.01)	(0.01)
$Return_{t-1;t-3}$	2.1938*	2.0275	0.0146	0.0145
	(1.69)	(1.61)	(1.55)	(1.55)
$Return_{t-4;t-6}$	0.3749	0.4668	0.0087*	0.0085*
	(0.34)	(0.41)	(1.88)	(1.80)
$Return_{t-7;t-12}$	0.6847	0.7637	0.0164**	0.0163**
	(1.37)	(1.43)	(2.37)	(2.36)
Volatility (ln)	0.1023	0.0616	-0.0007	-0.0007
	(0.27)	(0.16)	(-0.10)	(-0.09)
Firm Age (ln)	0.8974***	0.8239***	0.0029	0.0029
	(3.00)	(3.25)	(0.71)	(0.72)
Turnover	1.7952	1.3370	-0.0061	-0.0059
	(1.06)	(0.75)	(-0.26)	(-0.25)
Total Assets (ln)	1.1829	1.1561	0.0127	0.0127
	(1.43)	(1.38)	(1.60)	(1.60)
Sales (ln)	-0.2405	-0.2127	-0.0057	-0.0057
	(-0.66)	(-0.56)	(-1.15)	(-1.17)
Cash (ln)	-0.1112	-0.1171	-0.0002	-0.0002
	(-0.43)	(-0.47)	(-0.13)	(-0.14)
EBIT / Total Assets	4.9403**	4.6065**	0.0070	0.0073
	(2.14)	(2.14)	(0.46)	(0.49)
Leverage	-0.7819	-0.7997	-0.0087**	-0.0085**
	(-1.18)	(-1.21)	(-2.81)	(-2.62)
Deal Size (ln)	-0.1197	-0.1346	0.0002	0.0002
	(-1.15)	(-1.12)	(0.23)	(0.24)
Friendly Deal	-1.7767***	-1.9140***	-0.0238*	-0.0234*
	(-2.82)	(-3.08)	(-1.95)	(-1.91)
Public Target	-0.2984	-0.3885	0.0016	0.0016
	(-0.73)	(-0.89)	(0.24)	(0.23)
Pseudo R^2	0.281	0.288		
R^2			0.030	0.029
Observations	377	377	996	996
Fixed Effects		Month + Industry		

Table 6: Offer Price Revision - Acquirer and Target (cont'd)

Panel B: Offer Price Revision - Target		
Dependent Variable	Logit(Upwards Revision)	Price Change
	(1)	(2)
AdvertisingTarget	0.1468**	0.0012**
	(2.45)	(2.33)
Sales(ln)	-0.0306	-0.0054*
	(-0.14)	(-1.94)
TotalAssets(ln)	-0.3757	0.0002
	(-0.76)	(0.06)
Cash(ln)	0.0098	0.0009
	(0.05)	(0.62)
EBIT/TotalAssets	0.9601	0.0008
	(0.65)	(0.06)
Leverage	0.3763	0.0062
	(1.57)	(1.14)
Market-to-Book(ln)	-0.7781**	-0.0030
	(-2.18)	(-0.85)
$Return_{t-1;t-3}$	-1.3722**	0.0029
	(-2.16)	(0.50)
$Return_{t-4;t-6}$	-0.4799	0.0037
	(-0.63)	(0.70)
$Return_{t-7;t-12}$	-0.3476	0.0004
	(-0.60)	(0.22)
Volatility(ln)	0.0150	-0.0041
	(0.02)	(-1.09)
FirmSize(ln)	0.3856	0.0025
	(0.85)	(0.96)
FirmAge(ln)	-0.7219**	0.0037
	(-2.18)	(1.21)
Turnover	0.9616	0.0045
	(0.47)	(0.42)
FriendlyDeal	-1.9833**	-0.0253*
	(-2.41)	(-1.85)
PublicAcquirer	0.5021	0.0113
	(0.61)	(1.45)
PseudoR^2	0.344	
R^2		0.050
Observations	469	820
Fixed Effects	Year + Calendar Month + Industry	

Table 7: Probability of Completion - Acquirer and Target

This table shows logit regressions of the probability of deal completion on abnormal advertising of the acquiring firm (columns (1) and (2)), advertising of the target firm (column (3)) and various firm and deal characteristics. Firm characteristics refer to the acquiring firm (target firm) in columns (1) and (2) (column (3)). The dependent variable is an indicator variable that takes the value one if the deal is completed and zero otherwise. Advertising Acquirer is the abnormal advertising of the acquiring firm over the 1 to 5 days after the announcement date. In column (1) (column (2)), abnormal advertising is calculated using the mean (median) advertising on the same weekday over the last 8 weeks. Advertising Target is the log of one plus the sum of advertising expenditures of the target firm in the three pre-announcement months. All columns only include stock-financed transactions. Columns (1) and (2) ((3)) include month and industry (Fama French 49) fixed effects (year, calendar month and industry (Fama French 49) fixed effects). All firm control variables without subscript are lagged by four months and are defined in detail in Appendix A. Standard errors are double-clustered by firm and year. t-statistics are provided in parentheses. *** (**, *) represents statistical significance at the 1% (5%, 10%) level.

Table 7: Probability of Completion - Acquirer and Target (cont'd)

Sample	Acquiring Firms		Target Firms
	(1)	(2)	(3)
Abnormal Advertising Acquirer	0.0167*	0.0297***	
	(1.68)	(2.80)	
Advertising Target			-0.0413*
			(-1.70)
Sales (ln)	-0.0664	-0.0641	-0.1239
	(-0.69)	(-0.67)	(-0.83)
Total Assets (ln)	0.0112	0.0087	-0.0604
	(0.07)	(0.05)	(-0.43)
Cash (ln)	0.0791	0.0807	0.1115
	(1.22)	(1.24)	(1.23)
EBIT / Total Assets	-0.8178	-0.8365	0.2575
	(-1.49)	(-1.54)	(0.68)
Leverage	-0.0578	-0.0601	-0.2007**
	(-0.40)	(-0.43)	(-2.13)
Market-to-Book (ln)	-0.0957	-0.1001	-0.2744
	(-1.28)	(-1.33)	(-1.63)
Return$_{t-1;t-3}$	0.6748*	0.6690*	0.8025*
	(-1.89)	(1.89)	(1.87)
Return$_{t-4;t-6}$	0.2239	0.2254	0.1671
	(1.09)	(1.10)	(0.79)
Return$_{t-7;t-12}$	0.2590*	0.2655*	0.1506
	(1.77)	(1.83)	(0.98)
Volatility (ln)	-0.4990***	-0.4972***	-0.3176
	(-3.21)	(-3.21)	(-1.24)
Firm Size (ln)	0.6777***	0.6710***	0.2775**
	(5.64)	(5.62)	(2.02)
Firm Age (ln)	-0.4156***	-0.4138***	0.0459
	(-3.49)	(-3.45)	(0.21)
Turnover	-1.8417*	-1.8603*	-1.1599*
	(-1.81)	(-1.83)	(-1.68)
Friendly Deal	2.8245***	2.8332***	3.1827***
	(5.52)	(5.59)	(7.44)
Public Target	-0.7282***	-0.7354***	
	(-3.11)	(-3.11)	
Public Acquirer			-0.3116
			(-0.58)
Pseudo R^2	0.294	0.295	0.199
Observations	2,784	2,784	952
Fixed Effects	Month + Industry		Year + Calendar Month + Industry

A Appendix: Variable Description

The following table briefly defines the main variables used in our empirical analysis. Abbreviations for the data sources are:

(i) Kantar: Kantar Stradegy database

(ii) CRSP: CRSP's Stocks Database

(iii) CS: Compustat

(iv) SDC: Thomson Financial's Securities Data Corporation

(v) SEC: EDGAR System of the Securities and Exchange Commission

EST indicates that the variable is estimated or computed based on original variables from the respective data sources.

Panel A: Advertising variables

Variable Name	Description	Source
Advertising	Natural logarithm of one plus advertising expenditures in US Dollar.	Kantar
Abnormal Advertising Mean	Natural logarithm of one plus advertising expenditures on day t minus natural logarithm of one plus average advertising expenditures of the same weekday in the previous eight weeks (t-7, t-14, ..., t-56).	Kantar, EST
Abnormal Advertising Median	Natural logarithm of one plus advertising expenditures on day t minus natural logarithm of one plus median advertising expenditures of the same weekday in the previous eight weeks (t-7, t-14, ..., t-56).	Kantar, EST

Panel B: Financial market variables

Variable Name	Description	Source
Event_t	Dummy variable that is equal to one if there is an announcement of an M&A transaction (SDC item: da) in month t (on day t).	SDC
Pre Event_{t-i}	Dummy variable that is equal to one if there is an announcement of an M&A transaction (SDC item: da) in i months (in i days).	SDC
Post Event_{t+i}	Dummy variable that is equal to one if there was an announcement of an M&A transaction (SDC item: da) i months ago (i days ago).	SDC
Cash financed	A M&A transaction is classified as cash financed if the consideration offered (SDC item: consido) is cash.	SDC
Stock financed	A M&A transaction is classified as stock financed if the consideration offered (SDC item: consido) is common stock.	SDC
Total Assets	Natural logarithm of total assets (CS item: at) measured in million US Dollar.	CS
Sales	Natural logarithm of sales/turnover (CS item: sale) measured in million US Dollar.	CS
Cash	Natural logarithm of cash and short-term investments (CS item: che) measured in million US Dollar. The variable is winsorized at the 1% and 99% level.	CS, EST
EBIT / Assets	Earnings before interest and taxes (CS item: ebit) divided by total assets (CS item: at). The variable is winsorized at the 1% and 99% level.	CS, EST
Leverage	Long-term debt total (CS item: dltt) divided by market capitalization. The variable is winsorized at the 1% and 99% level.	CRSP, CS, EST
Market-to-Book	Natural logarithm of market capitalization divided by common/ordinary equity total (CS item: ceq). Firms with negative book equity are excluded. The variable is winsorized at the 1% and 99% level.	CRSP, CS, EST
Volatility	Standard deviation of the monthly returns (CRSP item: ret) over the last twelve months.	CRSP, EST
Firm Size	Natural logarithm of market capitalization measured in million US Dollar. Market Capitalization is calculated as the product of shares outstanding (CRSP item: shrout) and the closing price (CRSP item: prc).	CRSP, EST
Firm Age	Natural logarithm of one plus the number of years since the first appearance of the permco in CRSP.	CRSP, EST
Turnover	Natural logarithm of the average monthly turnover over the last twelve months. Monthly turnover is calculated as volume (CRSP item: vol) divided by shares outstanding (CRSP item: shrout). The variable is winsorized at the 1% and 99% level.	CRSP, EST

Panel C: Deal variables

Variable Name	Description	Source
Upwards Revision	Dummy variable that is equal to one if Price Final > Price Initial (SDC items: pr, pr_initial).	SDC, EST
Price Change	Percentage change in the offer price calculated as $\frac{\text{Price Final}}{\text{Price Initial}} - 1$ (SDC items: pr, pr_initial).	SDC, EST
Completed Deal	Dummy variable that is equal to one if the deal is effective and completed (SDC item: de).	SDC
Deal Size (ln)	Natural logarithm of the transaction value (SDC item: val) measured in million US Dollar.	SDC
Friendly Deal	Dummy variable that is equal to one if the deal is classified as friendly (SDC item: att).	SDC
Public Acquirer	Dummy variable that is equal to one if the acquiring firm is public at the time of the deal announcement, i.e. it appears in CRSP (CRSP ncusip = SDC item: ACU).	CRSP, SDC
Public Target	Dummy variable that is equal to one if the target firm is public at the time of the deal announcement, i.e. it appears in CRSP (CRSP ncusip = SDC item: TCU).	CRSP, SDC

Panel D: Other variables

Variable Name	Description	Source
Media Coverage	Dummy variable that is equal to one if the firm has at least one article in a national newspaper (New York Times, Wall Street Journal, Washington Post, USA Today) in month t.	LexisNexis
8-K Filing	Dummy variable that is equal to one if there is at least one form 8-K filing in month t.	SEC