The impact of communications and emotions on merger and acquisition success: Does anyone care how you feel about your deal?

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The impact of communications and emotions on M&A success:

Does anyone care how you feel about your deal?

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Abstract

Most merger and acquisition (M&A) performance studies focus upon protagonist pre-deal characteristics, post-deal post-acquisition integration strategies, or a combination of the two. However, a critical part of the M&A process has been overlooked. The "deal completion" phase, between the announcement of a deal and its completion, can make the difference between success and failure. This paper examines this neglected process by focusing upon managerial practices aiming to influence investor sentiment during the deal completion phase. We contend that skillful use of acquirer voluntary communications can affect acquirer stock market price. This matters, as a higher price for acquirer stock generally improves an acquirer's ability to purchase a target company and helps a deal to close successfully. We therefore investigate whether acquirers can influence their share price positively through the skillful use of voluntary communications, in terms of both the volume of communications and the sentiment expressed. We suggest that these voluntary communications can reduce information asymmetry between the acquirer and the financial markets, and so influence market prices. We examine 548 large M&A deals between US acquirers and US targets, completed during 2010–2016, and analyze more than 15,000 voluntary communications taking place between announcement and completion dates. Using stock volatility and cumulative abnormal returns, we find that acquirers benefit from more voluntary communications in the short term, particularly in all equity deals. We also find that the sentiment of voluntary communications matters, as those that express negative sentiment in the short term see a reduction in performance, while longer term those expressing positive sentiment see a positive relationship with stock volatility. These results show that managers can use voluntary communications to influence market perceptions of their acquisition strategies, and that sentiment matters.

Introduction

"Stock price movement represents the aggregate knowledge of Wall Street and, above all, its aggregate knowledge of coming events. The stock market represents everything that everybody knows, hopes, believes, anticipates, with all that knowledge sifted down to … the bloodless verdict of the marketplace."

William Peter Hamilton, editor, *New York Times,*
The Stock Market Barometer, 1922

Mergers and acquisitions (M&A) have a rich history, spanning from the classical Greek and Roman eras to the modern era, with over $20 trillion transacted globally in the last five years. Despite extensive research on M&A performance outcomes (e.g., Papadakis & Thanos, 2010), critical phases of the M&A process remain underexplored, particularly the "deal completion phase," the period between deal announcement and completion (Teerikangas & Thanos, 2018). This matters, as this phase is pivotal to determining final share prices, influences post-acquisition events, and can lead to deal withdrawal due to adverse market reactions, as seen in high-profile cases such as Kraft Heinz's $145bn attempted acquisition of Unilever or Qualcomm's $44bn bid for NXP Semiconductors. Deal withdrawals, which account for approximately 15% of total M&A volumes, impose financial, managerial, and strategic costs on acquirers, highlighting the significance of managing market uncertainty during this critical period. Understanding managerial practices in trying to complete acquisitions during the deal completion phase therefore matters a great deal to organizations attempting to realize their strategies of corporate rejuvenation.

The problem for managers in the deal completion phase is exemplified by the dual challenge of information asymmetry and evaluative uncertainty. Shareholders and analysts face substantial difficulty in assessing the value of announced acquisitions, which imposes a "lemons discount" (Akerlof, 1970; Benner & Zenger, 2016). Unlike regular disclosures, acquisition announcements involve complex complementarities and significant information burdens, creating uncertainty among stakeholders (Litov et al., 2012). This uncertainty can erode confidence in a deal's potential, negatively impacting share prices or even derailing acquisitions entirely. To navigate this landscape, managerial agency, particularly in the form of effective communication, becomes crucial. By actively managing impressions and reducing evaluative uncertainty, managers can mitigate risks and build stakeholder confidence.

Mandatory announcements surrounding M&A have received significant scholarly attention (e.g., Campbell et al., 2016; Collins et al., 2018), but less is known about the role of

voluntary communications—discretionary updates or interim news issued during the deal completion phase. While some dismiss such "cheap talk" as inconsequential (Farrell & Rabin, 1996), recent evidence suggests that these communications can influence markets significantly by shaping perceptions and reducing information asymmetry (Whittington et al., 2016). Voluntary announcements allow managers to manage impressions, signal confidence, and address market uncertainty in ways that mandatory disclosures cannot. However, their effectiveness hinges not just on their volume but also on their content, particularly the emotional sentiment conveyed.

Sentiment in voluntary communications has become an area of growing interest, intersecting with broader research on emotions and decision-making in financial markets (e.g., Vuori & Huy, 2016; Gamache & McNamara, 2019; Dong et al., 2022). Studies suggest that emotions act as heuristics for investors, shaping their evaluations of ambiguous or uncertain situations (Strauß et al., 2016). Despite this, the role of sentiment in voluntary disclosures during M&A remains underexplored. We address this gap by asking, What is the impact of voluntary communications on acquiring firms' stock performance during the deal completion phase, and how does the emotional content of these communications influence stock price volatility?

To answer these questions, we investigate 548 large M&A deals completed between 2010 and 2016, analyzing over 15,000 voluntary communications. We find that an increase in voluntary communications correlates with improved short-term stock performance, while sentiment plays a nuanced role. Negative sentiment is detrimental in the short term, whereas positive sentiment shows a longer-term positive relationship with stock volatility. These findings contribute to the growing body of research on impression management during M&A, offering insights into how managerial communication strategies can mitigate uncertainty and influence market outcomes.

The structure of this paper is as follows. First, we discuss the importance of the deal completion phase in the context of M&A and its implications for managerial agency. Second, we explore the concepts of information asymmetry and evaluative uncertainty. Finally, we present our analysis of voluntary communications, highlighting their influence on stock volatility and cumulative abnormal returns (CARs). We conclude with implications for theory and practice and suggest directions for future research.

Literature Review: The Deal Completion Phase, Information Asymmetry, and Evaluative

Uncertainty

The Deal Completion Phase

Historically, M&A research has largely been focused upon pre-deal strategy and organizational conditions as indicators of M&A outcomes. Consistent reporting of high failure rates (Bauer and Matzler, 2014; Dyer et al., 2004) has subsequently led researchers to focus upon the post-acquisition integration phase as a mediator in the strategy formulation–outcome relationship. While this shift has revealed important insights into organizational outcomes post-deal (Dattee et al., 2022; Mirc et al., 2023) and also drawn attention to important linkages between pre- and post-deal characteristics (Gomes et al., 2013), these studies have overwhelmingly examined M&A deals that have been completed. M&A research has rarely considered deals that are announced and yet fail to complete (Angwin et al., 2015). These withdrawn deals are estimated to amount to 15% of global M&A totals on average, and so represent a significant portion of M&A overall that fail. For this reason, it is important to focus attention on overlooked parts of the M&A process and, in this instance, the deal completion phase between the announcement of an M&A and its completion. This represents a broad shift of research attention back toward the pre-deal phase (Welch et al., 2020; Angwin et al., 2022).

The deal completion phase starts with an announcement, which is when the public first receives information about a company's making a decision that has a high impact on its business and shareholders, such as an acquisition. Prior to this date, any market-sensitive information relating to the decision must be held in strictest confidence. The actual timeline related to the announcement–completion process varies by jurisdiction, but often consists of an intention to make an offer, followed by the actual offer (Day 0; within 28 days under UK law) or a public announcement of withdrawing its interest, known as the "put up or shut up" deadline. The shortest period in which an acquirer can close its offer is 21 days after the actual offer (Day 0). The acquirer must have satisfied its acceptance conditions within 60 days from Day 0 and the offer consideration must be paid before the offer can be declared wholly unconditional. There is some room for deviation from this schedule, so there can be short extensions up to Day 81 to enable fulfilment of material official and regulatory obligations. With this extended process, the duration of the deal completion phase is around 107 days from when a potential deal was announced, but the process is generally quicker than this. At the closing the legal ownership of the target company is transferred to the acquirer.

Once a bidder announces that it may make an acquisition, the markets and investors will be searching for information about the potential deal. The need for information, rendered

through voluntary disclosures, is most likely during acquisition announcements, when analyst judgment about a company's strategy is uncertain. "Evaluative uncertainty" (Fiske and Taylor, 2013; Moskowitz, 2005), defined as the absence of clear and unambiguous indicators or benchmarks of performance (Graffin and Ward, 2010), may lead to unfavorable consequences for companies, including adverse selection (Akerlof, 1970), negative impact on stock price (Copeland and Galai, 1983; Glosten and Milgrom, 1985), and undesirable effects on the cost of capital (Baiman and Verrecchia, 1995; Leuz and Verrecchia, 2000). Certifications and endorsements from reputable third parties such as specialist or public access media and analysts can be invaluable to investors, as they act as a means of assessing capabilities of organizational actors (Rao, 1994; Scott, 1994; Wade et al., 2006) particularly during acquisitions when the assessment becomes more uncertain (Graffin and Ward, 2010; Festinger, 1954; Podolny, 2005; Rindova et al., 2005; Zuckerman, 1999). For acquisitions, where many qualitative judgments need to be made on behalf of investors, gaining endorsements of investment analysts, in particular, is likely to be key in helping companies pursue their strategic interests.

In line with this, a body of empirical research has investigated the relationship between media news and financial market activity (Fang and Peress, 2009; Peress, 2014; Rogers et al., 2016). Peress (2014) finds that national newspaper strikes, resulting in media blackouts, reduce stock trading volume and the volatility of stock prices. Rogers et al. (2016) use the process through which insider trading filings are made public to investigate the dissemination role of the media and suggest that the media play a significant role in capital markets by disseminating news more widely. However, in contrast to some other studies, Fang and Peress (2009) find that stocks with no media coverage may earn higher returns than stocks with media coverage and suggest that stocks with lower investor recognition need to offer higher returns in order to compensate their holders for "imperfect diversification." It seems, therefore, that media news does have an effect upon financial market activity, although there is debate about what that effect is.

Despite the empirical evidence that media news influences financial markets, the impact of voluntary communications—especially those that take place after the announcement of a deal and before deal closure—on M&A outcomes has largely been ignored by the existing literature. In rare examples of research to analyze the impact of interim news events, a few studies use conference calls as a proxy for voluntary communication and investigate their impact on stock returns around M&A announcements (Kimbrough and Louis, 2011, Siougle et al., 2014).

In order to understand the influence of voluntary communications on market returns, we focus on two strands of literature: (i) information asymmetry between managers and other stakeholders, such as investors and analysts, and (ii) the evaluative uncertainty of analysts and other key stakeholders when faced with a forthcoming M&A deal. These topics are directly relevant to our research problem, as existing studies having debated the relationship between information asymmetry and capital markets development, while other studies discuss the disclosure strategies that managers adopt when faced with evaluative uncertainty. This study will therefore address the following two research questions: *What is the impact on an acquiring firm's stock performance of making voluntary communications during the period between the announcement and completion of an M&A deal?* And *how important is the emotional content of those voluntary communications, for example in terms of the expression of strong positive or negative sentiment, in influencing stock price volatility of acquiring firms during M&A deals?*

Information Asymmetry

A number of studies indicate that information asymmetry exists between stakeholders (such as investors and analysts) and managers (Zajac, 1990; Shen and Cannella, 2003; Zhang, 2008; Kothari et al., 2009a; Graffin et al., 2011). The opinions of such external stakeholders can potentially cause a deal to fail. M&A deals are associated with information asymmetry, because choices regarding an upcoming deal are typically opaque, and information about M&A choices is rarely shared (Gomes et al., 2012). M&A information is market sensitive, and the process is characterized by secrecy (Boeh, 2011; Reuer et al., 2012). A rich and effective disclosure, by reducing information asymmetry, could improve capital market development and reduce firms' cost of capital (Kothari et al., 2009a).

Information asymmetry focuses upon managers' knowledge being superior to that of external stakeholders. In addition to the actual extent of the information asymmetry, managers also have a dilemma in selecting which information to disclose and its timing, as this involves anticipating how investors will interpret and react to it (Dutta and Trueman, 2002). They therefore adopt a range of disclosure strategies, perhaps in order to reduce some risks. For example, managers tend to delay releasing bad news relative to good news (Kothari et al., 2009b). Managers can therefore play an important agentic role in determining whether and when to disclose information.

Few studies analyze the effects of disclosures during M&A. Yakis-Douglas et al. (2017) analyze interim news events and suggest that such events help to reduce evaluative uncertainty. Ahern and Sosyura (2014) find that media coverage influences stock price during M&A. In particular, studies suggest that when a new strategic initiative such as a forthcoming M&A deal is announced, there may be negative market reactions which can be explained by the existence of information asymmetry between internal managers and external investors (Gilson, 2000). Specifically, depressed share prices may arise for a range of reasons including investors' lack of understanding of the value of an acquirer's strategy (Feldman et al., 2014), narrow specialization by analysts (Zuckerman, 2004), and numerous cognitive limitations attached to covering diversified firms or firms with unique strategies (Feldman et al., 2014; Litov et al., 2012). Increased communications would then seem to be a method of reducing information asymmetry. We suggest, therefore, that the use of voluntary communications has the potential to allow acquirers to assure markets of the worthiness of their acquisition strategy by improving investor and analyst understanding. Repeated communications will only serve to further reduce uncertainty and strengthen acquirer share price, thus improving their chances of closing successfully. We hypothesize that higher volumes of voluntary communications may be associated with an improvement in acquirer stock performance. We therefore suggest

H1 Engaging in a higher volume of voluntary communications leads to an improvement in acquirer stock performance (as measured by CARs).

Furthermore, we propose that expressions of strong sentiment may be associated with improved acquirer stock performance:

*H2a Expressing strong **positive** sentiment in voluntary communications leads to an improvement in acquirer stock performance (as measured by CARs).*

*H2b Expressing strong **negative** sentiment in voluntary communications leads to a reduction in acquirer stock performance (as measured by CARs).*

Evaluative uncertainty

A dangerous outcome of information asymmetry is evaluative uncertainty (Desyllas et al., 2023; Le et al., 2019; Schijven & Hitt, 2012). The uncertainty of stakeholders such as

investors and analysts, when evaluating M&A deals that have been announced but are not yet complete, can have serious implications, such as higher deal costs for acquirers. Yet very few studies have focused upon the impact of the volume and sentiment of communications on the evaluative uncertainty of key stakeholders. A few empirical studies have used textual analysis to quantify various qualitative dimensions (e.g., positive versus negative "tone") of firm mandatory disclosures or filings, such as the 10-K/10-Q filings and earnings announcements (Kothari et al., 2009a, Loughran and McDonald, 2011, Henry and Leone, 2016, Bonsall et al., 2017). They find that these "tone" measures have significant associations with other financial variables. Based on content analysis of disclosure reports, Kothari et al. (2009a) find that negative disclosures from business press sources result in increased cost of capital and return volatility, and favorable reports from business press reduce the cost of capital and return volatility.

It is widely accepted that managing third-party perceptions is an important task for both sides in a merger or acquisition (e.g., Trautwein, 1990). In the context of M&A, an open approach to strategic communications can act as a force that both increases and reduces information asymmetry (Angwin et al., 2016), with potentially positive consequences for evaluative uncertainty and stock price volatility. Communicating a shift in current strategy is likely to be important for managers; voluntary communications can help to reassure analysts and investors regarding the plans associated with the upcoming merger or acquisition (Yakis-Douglas et al., 2017). Such additional information may help key stakeholders to evaluate the strategic prowess of the acquirer and the target firms in handling issues such as intended integration, restructuring and reorganization. It may also allow investors access to substantive new information such as employee retention plans.

M&A processes often unfold in ways that prevent the financial press, analysts, and investors from having full access to information surrounding the new deal (Angwin et al., 2015). Due to these information failures, shareholders who are already highly sensitive to organizational changes are likely to be facing evaluative uncertainty regarding an M&A deal (Gomes et al., 2013). We therefore suggest that voluntary M&A announcements via interim news events may help reduce evaluative uncertainty. Hence,

H3 Engaging in a higher volume of voluntary communications leads to a reduction in acquirer stock price volatility.

There is growing interest in the role of emotions throughout the M&A process as an explanatory link for overall performance (Klok et al., 2022). In particular, there are many studies suggesting how negative emotions can damage post-acquisition integration, and so organizational performance (Schweiger and Weber, 1992; Vince 2006). However, the literature on the role of emotions in M&A remains focused within and between protagonist organizations rather than across organizational fields to a wider range of stakeholders. It is also fragmented, with calls for further research on the effects of positive emotions as well as negative ones (Klok et al., 2022). There is a small amount of research into the sentiment expressed in M&A communications such as press releases and quarterly reports, with suggestions that top managers systematically hype their firms prior to M&A-rich periods (e.g., Hermes et al., 2019). With this evidence, that managers deliberately act to influence stakeholders, we therefore suggest that expressions of strong sentiment in voluntary communications may lead to a reduction in evaluative uncertainty, and hence in acquirer stock price volatility. Therefore,

*H4a Expressing strong **positive** sentiment in voluntary communications leads to a reduction in acquirer stock price volatility.*

*H4b Expressing strong **negative** sentiment in voluntary communications leads to a reduction in acquirer stock price volatility.*

We seek to address the above gaps in the extant literature by contributing to understanding of the impact of voluntary communications during M&A deals. We explore how interim news events, in reducing information asymmetry, can impact upon stock performance–potentially both enhancing CARs and impacting upon evaluative uncertainty. It is possible that a fundamental difference in the pattern of present and future resource deployments is likely to act as a reason for financial analysts to publish unfavorable earnings forecasts—or not to cover the organization at all (Yakis-Douglas et al., 2017). Both scenarios could lead to negative share price reactions, and these negative reactions are likely to be heightened during periods when the process of a merger or acquisition is unfolding (Haleblian et al., 2009). Organizations are likely to be motivated by a desire to offset anticipated negative market reactions by opening their strategy externally, to win the support of key stakeholders such as analysts and investors.

Data Collection and Analysis

Data collection

Our dataset covers M&A transactions involving U.S. acquirers and U.S. target companies inn the Bloomberg M&A database that were announced from 1 January 2010 to 31 December 2016. We chose this timeframe to avoid the direct turmoil of the global financial crisis, but noting also that post-crisis, the markets were likely to be more sensitive to corporate transactions, and thus more likely to scrutinize the information disclosed by firms thoroughly. A deal is included in the sample if it satisfies the following criteria: (1) both acquirer and target are publicly traded firms on the NYSE or NASDAQ; (2) the deal value (≥$50 million), the method of payment, and the deal announcement date and completion date are available; (3) the transaction is for a majority of shares of the target firm (above 50%); (4) the announcement date and completion date are not the same day; (5) the deal is not a hostile deal, to facilitate comparison across deal types. The selection process yielded 842 deals initially. However, to focus on the voluntary communications occurring between the announcement and closing of the M&A deal, we excluded those deals without any such communications. As a result, we were left with 548 M&A deals. This is an average of 78 deals per year, aligning with the findings of previous studies on voluntary communications in similar contexts (e.g. Yakis-Douglas et al., 2017).

Our analysis focused on both the volume and the content of voluntary communications activity, to understand its impact on acquirer stock performance. We collected daily communications, such as voluntary news items relating to the deals in question, that took place after the announcement and before the closure of each M&A deal. Our earliest news item dates from 18 January 2014, coinciding with the commencement of the earliest M&A deal in 2014. The latest news item in our dataset dates from 1 May 2017, which corresponds to the completion of the final deal announced in 2016. We obtained the relevant news from the Dow Jones Factiva database. Factiva assigns a unique identifier, known as the Intelligent Indexing Code, to each company; this enabled us to identify the relevant news items, using both the acquirer's and the target's Intelligent Indexing Codes. Our news sources include all English-language news covered by Factiva's top source categories: Dow Jones newswires, major news and business sources (e.g., *The New York Times, The Financial Times, RTT News, PR Newswire [U.S.],USA Today*), press release wires, Reuters newswires, and the *Wall Street Journal*. This resulted in a total 223,070 daily communication articles relating to acquirer and target firms for the 548 completed M&A deals. Due to the very large number of news items identified, a software program was developed (in Python) to review the news items and impose some conditions to ensure that they were voluntary communications: (1)

We retained articles tagged with the Factiva subject code M&A; (2) we eliminated news items with a text length below 100 words; (3) we eliminated news items where the headline included the following key words: “8K,” “Market Talk,” “Inst Holders,” “Deals of the Day,” "Fiscal Q1,”[1] "Fiscal Q2,""Fiscal Q3," and "Fiscal Q4"; (4) we removed repeated news items with the same content. After these content and size verifications, we were left with a sample of 15,237 non-repeating voluntary communications.

Variables and Methods

See Appendix A for a description of each variable and data source.

Acquirer stock performance

We used two measures of acquirer stock performance: stock volatility and cumulative abnormal returns (CARs). The stock volatility was measured by the standard deviation of daily stock returns, from announcement date to completion date. It is a widely used equity risk measure; the greater standard deviation represents high market volatility and implies greater risk. The second stock performance variable used was the cumulative abnormal returns (CARs) associated with voluntary M&A communications. An event study methodology was used to calculate CARs from short-term stock price reactions to voluntary communication events. As some of the M&A transactions in our sample had a number of news events on a single day, we group them by date; this results in 5957 daily voluntary communications for 548 M&A transactions. The choice of different measurement periods for these two acquirer stock performance variables was based on the distinct nature of the information each variable aims to capture. The three-day window CARs for average investor reactions were selected to account for the immediate market response surrounding the event, capturing initial sentiments and reactions triggered by the news. This short-term window reflects the market's rapid assimilation of information and its immediate impact. On the other hand, the decision to calculate return volatility from deal announcement to completion aims to encompass the entire timeline of the deal's lifecycle. This extended period is intended to capture the varying market sentiments and conditions that may arise as a deal progresses through different stages. By examining return volatility over this longer period, we aim to provide insights into the evolving dynamics and market uncertainties that accompany the

[1] Our aim was to identify voluntary news items that related specifically to the 548 M&A deals in our dataset. We excluded news items with headlines such as “8K,” “Inst Holders,” "Fiscal Q1,""Fiscal Q2,""Fiscal Q3,"and "Fiscal Q4," as they were typically mandatory announcements or quarterly fiscal reports. News items with headlines including “Market Talk” and “Deals of the Day” were also excluded, as they typically covered a broad range of market-related news, not being focused on a particular deal in our dataset.

journey of a deal from announcement to completion.

We treat daily voluntary communications as events liable to generate CARs in financial markets (Mc Williams and Siegel, 1977). We use a market model to calculate abnormal returns, as described below. The market model to estimate abnormal returns is

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t,} \quad (1)$$

where $R_{i,t}$ is its return for firm *i* on day *t* and $R_{m,t}$ is the corresponding return on the NYSE and NASDAQ equally weighted market index that represents price trend movements based on a broad cross-section of the market. The abnormal return for each day for each firm is then obtained as

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t}), \quad (2)$$

where α_i and β_i are estimated from equation (1) using data from the estimation window. Then CARs are computed by summing average abnormal returns for the window of interest. We use the 260 trading days prior to the event window as the estimation window, and a three-day short event window ($t = -1$ to $+1$) is used to measure immediate investor impressions. When the results were tested over longer event windows, such as seven days (t = - 3 to t = + 3) and 11 days (t = -5 to t = + 5), the results were consistent. However, longer event windows may lead to confounding problems, that is, false inferences about the significance of an event (McWilliams and Siegel, 1997). Therefore, all analysis below is based on a three-day event window, which is considered the most reliable. The three-day estimation window is also consistent with previous management studies (e.g., Yakis-Douglas et al., 2017; McWilliams and Siegel, 1997).

Measuring voluntary communication

The volume and content of voluntary communication are measured by analysis of both the number of news items and the text of those items. We use two approaches to analyze the text of news items, to ensure robust results. In the first approach, we use term frequency–inverse document frequency (tf.idf) weight schemes based on Loughran and McDonald's (2011) financial dictionary (sometimes known as the LM) to measure the sentiment. A few previous studies have used textual analysis to test market reaction to the sentiment or tone (positive or negative) of press releases or corporate 10K reports (Tetlock et al., 2008; Feldman et al., 2014; Loughran and McDonald, 2011; Jegadeesh and Wu, 2013). Earlier studies such as Tetlock et al. (2008) and Feldman et al. (2014) use an approach based on raw word counts, that is, the ratios of the number of positive or negative words to the total number of words, to measure the tone of texts. The Harvard IV-4 Psychosocial Logical Dictionary is used to

categorize the words as positive or negative. Loughran and McDonald (2011), however, indicate that the Harvard IV-4 dictionary might misclassify common words when they are in use in financial texts, because many words that are identified as positive or negative in common usage may not be considered positive or negative in a financial context (e.g., Loughran and McDonald, 2011). Therefore, Loughran and McDonald create a comprehensive list of positive and negative words based on 10-K reports, and they find that the negative word list captures the tone of 10-K reports better than the Harvard list. Loughran and McDonald's dictionary has subsequently been widely used in financial context analysis studies (e.g., Ahern and Sosyura, 2014; Lang and Stice-Lawrence, 2015). In addition, the raw word counts approach in early studies implicitly assumes that all words have equal weight; this assumption has been criticized, in that some words are more important and impactful than others (Loughran and McDonald, 2011). We follow Loughran and McDonald's weighting schemes and define the sentiment of the news items as

$$W_{i,j}^{tf.dif} = \begin{cases} \left(1 + \log\left(tf_{i,j}\right)\right) * log\,\frac{N}{df_j} \text{ if } tf_{i,j} > 0 \\ 0, \end{cases}$$

where $tf_{i,j}$ is the frequency of word *j* in document *i*, *N* is the total number of news items for one M&A deal, and df_j the number of documents containing at least one occurrence of the *j*th word. The sentiment score for the document is defined as

$$Score_i^{tf.dif} = \frac{1}{(1+\log a_i)} \sum W_{i,j}^{tf.dif},$$

where ai is the total number of words in document *i* and *j* is the total number of positive or negative word in the news item.

A worked example of a voluntary communication with a sentiment score is provided in Appendix B. From this, we can see that the resulting score depends upon the number, frequency, and strength of sentiment of the keywords identified in the text.

In our second approach to textual analysis, we analyze sentiment by following previous financial news sentiment analysis studies (e.g., Sohangir et al., 2018; Kunal et al., 2018; Manushree et al., 2017) in using *TextBlob*, a popular Python library for processing textual data. *TextBlob* allows the user to undertake common natural language processing (NLP) tasks such as part-of-speech tagging, noun phrase extraction, and classification. In this instance, we use *TextBlob* to carry out sentiment analysis by assigning a polarity score to each news item.

The polarity scores range from –1 to +1, where 0 indicates neutral sentiment, +1 indicates very positive sentiment, and –1 represents very negative sentiment. Some illustrative examples of quotations from voluntary communications, with polarity scores, are provided in Appendix C. In addition, it is important to note that in both of our two approaches to sentiment analysis, the scoring is weighted by the length of the communication (as well as the frequency of positive or negative words)—hence taking into account the length of the communication.

Control variables

Following previous studies that analyze the impact of corporate disclosure on M&A performance (e.g., Kimbrough and Louis, 2011; Dutordoir et al., 2014; Ahern and Sosyura, 2014), we include deal size, the acquirer's market capitalization, industry relatedness between acquirer and target, length of the deal, and payment method (cash/stock only dummy).[2] Previous studies have suggested that there is a possibility of greater information failures in instances of small deals or deals involving small acquiring companies (Mazzola et al., 2006; Griffin et al., 2003); hence we include deal size and acquirer's market capitalization. In deals across different industries (Dutordoir et al., 2014), market reactions are likely to be larger; hence we include industry relatedness. Time pressures might influence the motivation of organizations to disclose (Yakis-Douglas et al., 2017); hence we include the length of the deal. Finally, extant literature discusses investor perceptions that stock-for-stock mergers may be motivated by overvaluation of the acquirer's shares (e.g., Akbulut, 2013; Louis, 2013); hence we include the payment method of the deal. Descriptive statistics and pairwise correlations of all variables are reported in Tables 1 and 2.

INSERT TABLES 1 and 2

Models

We use two models to estimate how voluntary communications influence acquirers' stock performance:

$$Vol_i = \delta + \theta X_i + \vartheta Control_i + \varepsilon_i, \qquad (3)$$

where Vol_i represents stock price volatility for M&A deal i, X_i is the number of voluntary communications, and $Control_i$ is a set of control variables,

[2] We also included the following control variables: acquisition premium, acquirer debt-to-equity ratio, and acquirer return on assets (ROA) in the year in which the acquisition occurred. However, these variables were not statistically significant (results available from the authors on request).

$$CARs_{i,t} = \rho + \sigma X_{i,t} + \varphi Control_{i,t} + \mu_{i,t}, \quad (4)$$

where $CARs_{i,j}$ represents a three-day window (–1, 0, +1) for acquirer *i* on event day *t*, M&A deal *i*, $X_{i,j}$ is the number of voluntary communications for M&A deal *i* on day *t*, and $Control_{i,j}$ is a set of control variables.

Findings

In this section we explain the analysis undertaken to address our research hypotheses, and we set out our empirical results. We begin with our modeling using CARs as a dependent variable (Table 3), and move on (Table 4) to modeling using stock price volatility as the dependent variable.

INSERT TABLE 3

Table 3 presents the results based on Eq. (4) for short-term stock price reactions, over a three-day window, associated with voluntary M&A communications. First, we find a positive coefficient and statistical significance for the number of news items associated with each M&A deal over a short event window (the NUM_S variable in the first column of Table 3; see Appendix A for further explanation of variables). The results indicate that, in the short term (i.e., over the three-day event window), the CARs are higher for those firms that engage in more voluntary communications than for firms that engage in fewer (regression coefficient = 0.0010, significant at the 0.01 level). This finding provides positive support for our first hypothesis, H1: engaging in a higher volume of voluntary communications is associated with an improvement in acquirer stock performance, as measured by CARs (coefficient = 0.0027, significant at the 0.05 level).

Next, our modeling turns from the volume of communications to the strength of sentiments expressed in them, as represented by the variables SENTI_S (overall sentiment, based on *TextBlob*), POS_SENT_S (positive sentiment, based on Loughran and McDonald), and NEG_SENT_S (negative sentiment, based on Loughran and McDonald). The first two variables representing the sentiment of the news items (SENTI_S and POS_SENT_S) in Columns 2 and 3 do not appear to exert a statistically significant impact on CARs. However, in Column 4, we find a negative coefficient and statistical significance for the NEG_SENT_S variable: This result implies that negative sentiment reduces CARs (coefficient = -0.0063,

significant at the 0.10 level). Hence, while Hypothesis 2a (regarding the impact of positive sentiment) is not supported, we do find support for Hypothesis 2b. Our findings suggest that when firms express strong negative sentiment in their voluntary communications, this is associated with a reduction in acquirer stock performance (as measured by CARs).

INSERT TABLE 4

We next consider stock price volatility as the dependent variable (see Table 4); the period for this analysis is longer than in Table 3, that is, from deal announcement to deal completion (rather than a three-day event window as discussed above). First, we find that there is no statistically significant relationship between the number of news items over this longer period (represented by the variable NUM_L) and the acquirer's stock price volatility in Column 1. Hence, H3 is not supported.

We further create a dummy variable, VOLUNTARY, which equals 1 if any voluntary communications are made during the period of the M&A deal, and zero otherwise (i.e., if the parties concerned choose to remain silent). In Column 2, the results shows that the coefficient of VOLUNTARY has a positive effect and is statistically significant at the 5% level (coefficient = 0.0042, sig. = 0.05). This indicates that, if organizations choose to make voluntary communications, this is likely to increase stock price volatility (in comparison with 'silent' deals).

After controlling for deal size, payment method and completion dummy, we find the estimated coefficients of SENTI_L (overall sentiment over this longer time period, based on *TextBlob*) and POS_SENT_L (positive sentiment over this longer time period, based on Loughran and McDonald), in Columns 3 and 4, are large and highly significant at the 1% (coefficient = 0.0338, sig.=0.01) and 5% (coefficient = 0.1273, sig =0.05) levels, respectively. In Column 5, the NEG_SENT_L variable (representing negative sentiment over this longer period, based on Loughran and McDonald) does not show statistically significant effects on stock price volatility. These results imply that, from announcement to completion, there is a statistically significant and positive association between positive sentiment expressed in voluntary news items, and stock price volatility. This finding is the opposite of the relationship hypothesized in H4a that expressing strong *positive* sentiment in voluntary communications leads to a reduction in acquirer stock price volatility, and so H4a is rejected. However, negative sentiment does not appear to be

associated with stock price volatility over this longer period. Therefore, H4b is also rejected.

Overall, the two statistically significant results (using the variables SENTI_L and POS_SENT_L) appear to offer strong evidence that voluntary news items containing strong positive sentiment increase stock price volatility, suggesting that positive sentiment leads to greater uncertainty in the markets, whereas negative sentiment does not affect stock price volatility.

Several control variables, in particular DEALVALUE, yield significant results. For a full summary of control variables tested and results, see Table 5.

INSERT TABLE 5

In summary, we find that deal size is significantly and negatively associated with CAR; that is, larger deals tend to have lower returns. Moreover, deal size is also significantly and positively associated with stock price volatility; that is, larger deals tend to be more volatile. We find that the acquirer's market capitalization is significantly and positively associated with CAR; that is, deals involving larger acquirers tend to have higher returns. Acquirer's market capitalization is also significantly and negatively associated with stock price volatility; that is, deals involving larger acquirers tend to be less volatile. Finally, we find that deals with cash payment are associated with reduced CAR, and length of deal is significantly and positively associated with stock price volatility; that is, longer deals are associated with greater volatility in stock price.

Discussion

Cumulative abnormal returns

In this study, we explore whether senior managers can successfully deploy voluntary communications, between the announcement of a deal and its completion, with the aim of influencing acquirer stock performance in the market positively. Our results indicate that voluntary communications can be used to influence stock performance such as cumulative abnormal returns. In particular, a greater volume of communications is associated with an increase in stock performance (CARs) in the short term. This is important to acquirers, as it increases their ability to purchase a target company. It is also noticeable that the relationship between volume of communications and CAR is negative where there is a significant cash

component (control variable; see Table 5) in the acquirer's bid, suggesting that voluntary announcements have less effect when equity is a smaller portion of an acquirer's bid.

Our results also indicate that the content of voluntary communications matters. Table 3 shows that while positive sentiment does not influence CAR, negative sentiment does have a negative effect, suggesting that acquirers should avoid voluntarily communicating information with negative sentiments to the markets.

Stock price volatility

We found that sentiment impacts stock volatility (see Table 4). Positive sentiment seems to increase stock price volatility, suggesting an increase in market uncertainty. This may not play to an acquirer's advantage, as it seems to raise questions in the minds of investors. Hearing positive messages may play to investor optimism, but investors may also begin to question why the acquirer feels the need to issue such information. Interestingly, no relationship with stock price volatility was found when voluntary communications contained negative sentiment. This suggests that investors perceive negative announcements to be close to the prevailing truth, as why would acquirers choose to make them, and so are not designed to create uncertainty in the markets.

We also compared our results with deals in which key parties chose to remain silent and found much less volatility. This suggests that silence (choosing to make no voluntary communications) may be preferable where managers are particularly keen to avoid volatility. It may be that lack of voluntary communications is understood to mean that the key parties are happy with the way the deal is proceeding. This raises interesting questions about organizational intentions relating to the strategic use of communications, a choice between "strategic noise" and "strategic silence." Due to its passive nature, silence is not recognized as a type of response to a crisis, which, given the importance of M&A to protagonist companies, can be existential in nature. It is therefore somewhat surprising that 294 of the companies in our sample, approximately 35%, did not issue voluntary communications. This may reflect their knowledge that strategic silence reduces volatility in stock prices, which provides them and their shareholders with higher certainty. The difficulty, however, is in interpreting their silence, as an information vacuum could be interpreted in a negative way as negligence, indifference, or an indicator of weakness in management (Le et al., 2019). It could also be an indicator of confidence (Maor et al., 2012), patience, and composure. There are also legal constraints upon companies about what they can communicate, which may

serve to discourage voluntary communications. The interpretation of the markets may relate to their perceptions of the trustworthiness (Smith, 2013) of the merging companies. Nonetheless it would seem from our results that strategic silence, whether deliberate or unintentional, serves to reduce stock price volatility, and in some situations, this might be deemed beneficial to the protagonists.

Overall, our findings indicate that voluntary communications matter to the markets and can help affect an acquirer's stock price and the overall performance of a deal (CAR) positively—so more communication is good. However, when the content of those communications is examined, it seems that negative emotional content has a direct and immediate negative effect on stock performance and little effect on stock volatility over the longer term, suggesting that markets regard this negative information as true, and unlikely to be an attempt by the acquirer to influence the markets. It further suggests that markets are highly sensitive to negative emotions as a strong indicator of problems and under-performance, perhaps following the logic that acquirers would be highly unlikely to issue negative news in such circumstances, as it would undermine their ability to acquire a target company. Markets are likely to be "hypervigilant" to negative news, as they are likely to sustain losses, and loss is generally more painful than gain, a common cognitive bias (Kahneman, 2011).

Communications with positive sentiment do seem to improve deal performance but also add to market confusion, increasing stock price volatility. In this case, the markets may have some suspicion of acquirer intentions if positive news is released, as they may suspect such communications as containing hyperbole, speculation, and over-optimism, as suggested by Hermes et al. (2019), and to be efforts to influence the markets positively. An interpretation of these results is that markets interpret acquirer information in terms of whether it helps to serve acquirer self-interest or not.

The practice of making voluntary communications to engage stakeholders inside and outside the organization can be viewed from the perspective of growing academic interest in "open strategy" (e.g., Hautz et al., 2017), a more open and participatory mode of strategizing that allows the possibility of many people generating, discussing, and evaluating strategic ideas. A shift toward external transparency and a reduction in information asymmetry imply a more active orientation to shaping investor perceptions and a positive set of choices about both whether and how to communicate (Yakis-Douglas et al., 2017).

External forms of open strategy in the M&A context are in line with what Rindova and Fombrun (1999) have termed “strategic projections,” various kinds of statements about intended strategy (i.e., published in corporate press releases and annual reports). Open strategy, therefore, contributes to how audiences evaluate a firm and allocate the resources they control. Similarly to strategic projections, practices associated with external forms of open strategy not only offer information about strategic investments; they also have additional symbolic content in providing ready-made and desirable interpretations of strategic moves for key audiences (Whittington and Yakis-Douglas, 2012). Our research focus, therefore, is not on the compulsory, non-discretionary forms of communication required by law (i.e., mandatory M&A announcements). Instead, we focus here on voluntary, discretionary communications of strategy (i.e., voluntary M&A announcements) and their volume and content in terms of strong sentiment.

External transparency through acquisition announcements, during the crucial period between deal announcement and deal completion, can help inform investor decisions that can support the successful progress and completion of M&A deals. With the exception of a few studies (for example, Loree et al., 2000), research into M&A has tended to overlook post-announcement voluntary corporate communications in the “deal completion” phase. These acquisition announcements are forms of openness in strategy that can increase transparency by reducing information asymmetry between outside investors and internal managers. Existing research on M&A deals, while considering the information asymmetry between these two parties, tends to focus on reactions of investors to acquisition announcements (e.g., Cuypers et al., 2017; Ragozzino and Reuer, 2007, 2009, 2011; Reuer et al., 2012) rather than to communications following the announcement of the deal. By shedding light on voluntary communications following the initial mandatory bid announcement and exploring the volume and the content of such news events, we seek to address an important gap concerning how investors evaluate “strategy talk” (Whittington and Yakis-Douglas, 2012), as well as shedding light on an important practice that organizations can adopt to manage their M&A process actively.

Theoretical Contributions

This study significantly contributes to the M&A literature by focusing on the often-overlooked "deal completion phase," which spans from the announcement to the finalization of a merger or acquisition. While prior research has largely emphasized pre-deal strategies or post-deal

integration (Bauer & Matzler, 2014; Teerikangas & Thanos, 2018), this study underlines the importance of the intermediate phase, where investor sentiment, mediated by voluntary communications, plays a pivotal role. This insight expands our understanding of how this phase can influence cumulative abnormal returns (CARs) and stock volatility, critical measures of M&A success.

In exploring voluntary communications, this study enriches theories of impression management (Graffin et al., 2011) and open strategy (Hautz et al., 2017). Specifically, it reveals that the volume and sentiment of voluntary communications function as strategic levers to shape market perceptions. The finding that negative sentiment reduces CARs while having limited impact on long-term volatility aligns with research suggesting markets are hyper-attuned to negative news due to its perceived authenticity (Tetlock et al., 2008; Kothari et al., 2009a).

The study also contributes to the literature on emotional heuristics in strategic decision-making (Vuori & Huy, 2016; Vuori, Vuori, & Huy, 2018). It demonstrates how emotions embedded in voluntary disclosures act as cues for investors navigating uncertainty during complex transactions. This aligns with appraisal theories (Strauß et al., 2016), which suggest that emotional language in news media can significantly influence market behavior. By showing that markets interpret positive sentiment with skepticism but regard negative sentiment as credible, the study deepens our understanding of behavioral finance (Nofsinger, 2005) and the psychology of market reactions (Kahneman, 2011).

Furthermore, the study extends prior research on information asymmetry (Akerlof, 1970; Litov et al., 2012) by illustrating how voluntary communications help reduce evaluative uncertainty among stakeholders (Graffin & Ward, 2010). This is particularly relevant in the M&A context, where high information asymmetry and evaluative uncertainty often accompany deal announcements (Zuckerman, 1999; Gomes et al., 2012). By bridging these informational gaps, voluntary communications play a critical role in ensuring deal closure and mitigating stakeholder resistance.

Managerial contributions

From a managerial perspective, this study offers actionable insights for leaders navigating the M&A deal completion phase. The findings reveal that frequent voluntary communications can positively influence short-term stock performance, enhancing the acquirer's financial position and the likelihood of deal closure. This supports the notion that managerial agency, particularly in crafting communication strategies, is central to successful M&A outcomes (Angwin et al., 2016; Yakis-Douglas et al., 2017).

However, managers must be strategic about the content and tone of their communications.

Negative sentiment, while immediately detrimental to CARs, appears to have little impact on long-term volatility, suggesting that investors interpret it as truthful (Loughran & McDonald, 2011). Conversely, positive sentiment, while potentially bolstering short-term optimism, increases stock volatility, raising concerns about market skepticism toward overly optimistic messaging (Hermes et al., 2019; Gamache & McNamara, 2019). This duality highlights the importance of balancing optimism with credibility in voluntary disclosures.

An important managerial insight is the role of "strategic silence." Deals with no voluntary communications were associated with lower stock price volatility, suggesting that silence can mitigate uncertainty and signal confidence to the market. This aligns with prior research on impression management, where silence is sometimes interpreted as composure or stability (Le et al., 2019). However, managers must exercise caution, as silence could also be misinterpreted as negligence or a lack of transparency (Maor et al., 2012). Understanding how silence is perceived in different contexts and among various stakeholders is therefore critical.

This study also underscores the importance of tailoring communication strategies to deal characteristics. For cash-heavy deals, where voluntary announcements have a diminished impact, alternative signaling mechanisms may be more effective (Ahern & Sosyura, 2014; Angwin et al., 2022). Additionally, managers should recognize that frequent and strategically timed communications can reduce evaluative uncertainty, fostering stronger investor confidence and smoothing the path to deal closure (Feldman et al., 2014).

In conclusion, this study provides clear guidance for practitioners. Acquirers should engage in higher volumes of voluntary communications to enhance deal performance but must exercise caution with the emotional content of these messages. Positive sentiment, while potentially beneficial, can introduce market volatility, while negative sentiment is likely to have an immediate detrimental effect. Silence, when strategically employed, may also offer benefits by reducing stock volatility and signaling confidence. In essence, the strategic use of voluntary communications—whether through "strategic noise" or "strategic silence"—is a critical managerial tool for navigating the M&A deal completion phase.

Conclusions

Initial media speculation and subsequent non-voluntary company announcements of forthcoming M&A deals are events that typically introduce information asymmetry into markets. However, voluntary disclosures following the initial announcements have the potential to reduce information asymmetry. There may, of course, be unfavorable outcomes associated with voluntary M&A announcements—for example if a firm is deviating from its

current strategy, or from the typical strategies of its competitors and other players in its industry; such a statement may be viewed by analysts as a cause for concern, increasing their evaluative uncertainty around the firm in question. To seek to combat any negative responses from stakeholders, organizations may try to convey credibility to their investors and analysts regarding their M&A plans. A failure to do this may result in negative share price reactions. Firms may seek to get their messages across by making multiple announcements, and by expressing strong sentiments in their announcements to convince their audiences.

In this study, we make a number of contributions. Our research extends the literature on M&A by focusing on a critical part of the M&A process that is currently under-researched: the period between deal announcement and deal completion. Moreover, we turn our attention to voluntary communications, when much of the extant literature has focused on the mandatory, non-voluntary M&A communications required by law. Our findings show that voluntary communications matter to the markets, and frequent communications may affect an acquirer's stock price and the performance of the deal positively. This is particularly noticeable for deals with a high proportion of equity in the price. The content of those communications also matters, for although positive emotions do not affect the stock price, negative emotional content has a direct and immediate negative effect on stock performance. However, the effects of sentiment on stock volatility are different, as in the long term, negative emotions have little effect on stock volatility, whereas positive emotions increase stock volatility. These findings indicate that voluntary communications can vary in their effect upon information asymmetry in terms of volume and sentiment. While a greater volume of communications can be interpreted as reducing information asymmetry between acquirer and financial markets, the emotional content of the messages has a differential effect. The financial markets seem to have difficulty in interpreting the effects of positive emotions in voluntary communications, but interpret negative emotions as truthful, and respond to them negatively.

Our results have implications for practitioners, as they suggest that acquirers would do well to engage in greater volumes of voluntary communications to improve their chances of successful acquisitions, and they should be very careful of the emotional content of those messages, recognizing that positive emotions are unlikely to have much effect on recipients, but negative emotions are likely to be acted upon negatively. Also, silence may be golden, as this might indicate things are progressing well. In other words, in answer to the question

"Does anyone care how you feel about your M&A?" the answer is yes, particularly when you communicate more, when you communicate negatively, and maybe when you are silent.

We point to a number of limitations of this study, which can be addressed by further research. First, our dataset comprises M&A deals completed in the U.S. market from 2010 to 2016. This avoided the global financial crisis but may have made the markets more sensitive to company announcements than in other periods. Future studies should explore other M&A deals over different time periods and also in different markets to compare different points in the economic cycle (such as boom and bust periods; Angwin et al., 2022). Second, further work should be undertaken to look in greater depth inside voluntary communications and analyze the impact of their specific content on stock performance. Third, our study has not explored why some organizations choose to make voluntary communications during the period of an M&A deal, while others choose to remain silent. We noted that around one-third of protagonists do not issue voluntary communications, so further understanding why this may be, and deeper investigation into the effects of silence, would be welcome.

Future research can continue to explore more nuanced forms of impression management, going beyond the information content and focusing more on qualitative judgments, how they are formed, and how they can be altered. Studying sentiment is a very first step. Furthermore, researchers can focus on contexts of high information asymmetry and how market actors make use of forms of unconventional forms of information to form evaluations, such as M&A rumors. This line of research could make prescriptive contributions on how organizations can proactively use rumors as forms of impression management.

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Table 1: Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
VOL	548	0.018	0.009	0.007	0.119
VOLUNTARY	548	0.988	0.108	0	1
NUM_L	548	26.474	38.500	0.000	358.000
SENTI_L	548	0.075	0.031	-0.046	0.240
POS_SENT_L	548	0.200	0.076	0.000	0.043
NEG_SENT_L	548	0.390	0.016	0.000	0.097
DEALVALUE	548	6.577	1.635	3.951	11.526
CASH	548	0.463	0.499	0.000	1.000
INNER	548	0.703	0.457	0.000	1.000
LENGTH	548	139.694	97.136	8.000	1162.000
LNMARCAP	548	15.206	1.927	10.518	20.085
CARs	5799	-0.003	0.077	-0.571	0.957
SENTI_S	5799	0.076	0.070	-0.800	0.700
POS_SENT_S	5799	0.025	0.022	0.000	0.295
NEG_SENT_S	5799	0.048	0.044	0.000	0.570
NUM_S	5799	2.383	3.377	1.000	65.000

Note: The sample consists of 548 domestic US M&A deals and 5799 voluntary communication events from 2010 to 2016.

Table 2: Correlation matrix

Panel A											
	VOL	NUM_L	SENTI_L	POS_SENT_L	NEG_SENT_L	DEALVALUE	CASH	INNER	LENGTH	LNMARCAP	VOLUNTARY
VOL	1										
NUM_L	-0.0606	1									
SENTI_L	0.0791	0.0870	1								
POS_SENT_L	-0.0142	0.5320	0.0516	1							
NEG_SENT_L	-0.0224	0.5030	-0.2620	0.6560	1						
DEALVALUE	-0.0113	0.4184	0.0692	0.4160	0.3730	1					
CASH	-0.0983	0.0555	0.2647	0.2330	0.2080	0.0278	1				
INNER	-0.0424	-0.0234	-0.0762	-0.0559	-0.0822	0.0139	-0.1404	1			
LENGTH	-0.0393	0.1804	-0.1935	-0.1090	-0.0441	0.1767	-0.4935	0.1565	1		
LNMARCAP	-0.2692	0.2793	0.1927	0.4220	0.3420	0.5655	0.4733	-0.0443	-0.2048	1	
VOLUNTARY	0.0507	0.0757	0.2658	0.0000	0.0000	-0.0142	0.0078	-0.0029	-0.0170	-0.0458	1
Panel B											
	CARs	NUM_S	SENTI_S	POS_SENT_S	NEG_SENT_S	DEALVALUE	CASH	INNER	LENGTH	LNMARCAP	
CARs	1										
NUM_S	0.0052	1									
SENTI_S	0.0271	0.0497	1								
POS_SENT_S	0.0109	0.0009	0.3180	1							
NEG_SENT_S	-0.0007	0.0321	-0.0166	0.0619	1						
DEALVALUE	0.0039	0.0170	0.1193	-0.0166	0.2230	1					
CASH	0.0100	0.0787	0.0559	0.0163	0.110	-0.0259	1				
INNER	0.0254	0.0623	0.1230	0.0783	-0.0420	0.6024	0.4187	1			
LENGTH	-0.0207	-0.0061	-0.0245	-0.0058	0.0237	-0.0290	-0.1351	-0.0503	1		
LNMARCAP	0.0146	-0.0596	-0.0536	-0.0166	0.2340	0.3785	-0.3737	-0.0163	0.1743	1	

Note: This table reports Pearson correlation statistics. Panel A reports the correlation between stock price volatility, the number or sentiment of voluntary communications, and control variables. Panel B reports the correlation between CARs, the number or sentiment of voluntary communications, and control variables.

Table 3: Voluntary communications and cumulative abnormal returns (CARs)

	(1)	(2)	(3)	(4)	(5)
NUM_S	0.0010***				0.0010***
	(0.0004)				(0.0004)
SENTI_S		0.0050			0.0022
		(0.0122)			(0.0131)
POS_SENT_S			0.0526		0.0718
			(0.1122)		0.0022
NEG_SENT_S				-0.0063*	-0.0063*
				(0.0034)	(0.0034)
DEALVALUE	-0.0033***	-0.0030***	-0.0030***	-0.0024**	-0.0026***
	(0.0011)	(0.0011)	(0.0011)	(0.0010)	(0.0010)
LNMARCAP	0.0027**	0.0028***	0.0028***	0.0027***	0.0027***
	(0.0011)	(0.0011)	(0.0011)	(0.0010)	(0.0010)
INNER	-0.0052**	-0.0053**	-0.0052**	-0.0054**	-0.0054**
	(0.0026)	(0.0026)	(0.0026)	(0.0026)	(0.0026)
CASH	-0.0004	-0.0004	-0.0004	-0.0006	-0.0007
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0033)
LENGTH	0.0041**	0.0036*	0.0036*	0.0029	0.0033*
	(0.0019)	(0.0019)	(0.0019)	(0.0020)	(0.0020)
CONSTANT	-0.0344	-0.0314	-0.0310	-0.0334	-0.0362
	(0.0369)	(0.0369)	(0.0368)	(0.0363)	(0.0362)
N	5,799	5,799	5,799	5,799	5,799
R^2	0.0194	0.0175	0.0175	0.0174	0.0207
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes

Note: ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Heteroscedasticity-robust standard errors are shown in parentheses. Industry dummies are based on the 2-digit SIC code. This table examines the association between CARs (–1, +1) and the volume and content of voluntary communications for the sample of 5799 voluntary communication events.

Table 4: Voluntary communications and stock price volatility

	(1)	(2)	(3)	(4)	(5)	(6)
NUM_L	0.0000					-0.0000
	(0.0000)					(0.0000)
VOLUNTARY		0.0042**				
		(0.0021)				
SENTI_L			0.0338***			0.0260*
			(0.0120)			(0.0136)
POS_SENT_L				0.1273**		0.1414**
				(0.0517)		(0.0643)
NEG_SENT_L					0.0248	-0.0068
					(0.0289)	(0.0387)
DEALVALUE	0.0018***	0.0018***	0.0018***	0.0016***	0.0017***	0.0017***
	(0.0003)	(0.0003)	(0.0003)	(0.0004)	(0.0004)	(0.0004)
CASH	0.0006	0.0006	0.0003	0.0004	0.0005	0.0002
	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)
INNER	-0.0004	-0.0004	-0.0003	-0.0003	-0.0003	-0.0003
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0009)
LENGTH	-0.0020*	-0.0019*	-0.0018*	-0.0018*	-0.0019*	-0.0016
	(0.0011)	(0.0010)	(0.0010)	(0.0011)	(0.0011)	(0.0012)
LNMARCAP	-0.0025***	-0.0025***	-0.0025***	-0.0026***	-0.0026***	-0.0026***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
CONSTANT	0.0549***	0.0499***	0.0511***	0.0554***	0.0551***	0.0517***
	(0.0096)	(0.0096)	(0.0085)	(0.0092)	(0.0091)	(0.0100)
N	548	548	548	548	548	548
r2	0.2696	0.2716	0.2801	0.2825	0.2763	0.2893
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: ***,**,* denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. Industry dummies are based on the 2-digit SIC code. Heteroscedasticity-robust standard errors are shown in parentheses. This table examines the association between stock price volatility and the volume and content of voluntary communication for the sample of 548 domestic US M&A deals from 2010 to 2016.

Table 5: Control variables tested, with results

Control Variables (included in final estimation)	**Significance (Independent variable: CAR)**	**Significance (Independent variable: Stock price volatility)**
Deal size	Significant, and negatively associated with CAR	Significant, and positively associated with stock price volatility
Industry relatedness	No	No
Acquirer's market capitalization	Significant, and positively associated with CAR	Significant, and negatively associated with stock price volatility
Payment method	Cash payment significantly reduces CAR	No
Length of the deal	No	Significant, and positively associated with stock price volatility
Control Variables (tested, but not included in final estimation)		
Acquisition premium	No	No
Acquirer debt-to-equity	No	No
Acquirer return on asset (ROA)	No	No
Board size	No	No
Board independence	No	No
CEO power	No	No

Appendix A: Variable descriptions and data sources

Variable	Description	Source
Stock price volatility (VOL)	The standard deviation of daily stock returns	Datastream
Voluntary communication dummy (VOLUNTARY)	A dummy variable, =1 if companies choose to make any voluntary communications during the period of the M&A deal (=0 otherwise)	Authors' calculation
Number of news items over the longer term (NUM_L)	Number of news items between announcement date and completion date	Factiva
Sentiment of news items over the longer term (SENTI_L)	Sentiment of news items from announcement date to completion date	Factiva and authors' calculation using *TextBlob*
Deal size (DEALVALUE)	Log of deal value	Bloomberg
Payment method (CASH)	Payment method: cash = 1, stock = 0	Bloomberg
Same industry (INNER)	A dummy variable, =1 if both acquirer and target are in the same industry according to 2-digit SIC codes (=0 otherwise)	Bloomberg
Length of deal (LENGTH)	Length of M&A deal (in days)	Bloomberg
Acquirer's market capitalization (LNMARCAP)	Log of acquirer's market value of equity at the beginning of the fiscal year in which the M&A is announced	Datastream
Cumulative abnormal return (CARs)	Cumulative abnormal returns, three-day window (-1, 0, +1) for acquirer	Datastream and authors' calculation
Sentiment of news items over short term (SENTI_S)	Sentiment of news items for one communications event	Factiva and authors' calculation using *TextBlob*
Number of news items over short term (NUM_S)	Number of news items for one communication event	Factiva and Authors' calculation
Positive sentiment of news items over longer term (POS_SENT_L)	Positive sentiment score of news items from announcement date to completion date	Authors' calculation, following Loughran and McDonald
Negative sentiment of news items for long term (NEG_SENT_L)	Negative sentiment score of news items from announcement date to completion date	Authors' calculation, following Loughran and McDonald
Positive sentiment of news items over short term (POS_SENT_S)	Positive sentiment score of news items for one communications event	Authors' calculation, following Loughran and McDonald
Negative sentiment of news items over short term (NEG_SENT_S)	Negative sentiment score of news items for one communications event	Authors' calculation, following Loughran and McDonald

Appendix B: An example of the calculation of sentiment, following Loughran and McDonald's (2011) weighting scheme

We begin with the original news item relating to an M&A deal; for example,

"GREENSBURG, Ind., May 1, 2017 GREENSBURG, Ind., May 1, 2017 /PRNewswire/ -- MainSource Financial Group, Inc. (NASDAQ: MSFG); ("MainSource" or the "Company") announced today that it completed its previously-announced acquisition of FCB Bancorp, Inc. ("FCB") on April 30, 2017 for a combination of cash and stock valued at $58.9 million based upon MainSource's April 28, 2017 closing price of $34.20 per share. With this acquisition, MainSource added 7 full service banking offices in the growing market of Louisville, Kentucky, as well as $520 million in assets and $385 million in deposits. The First Capital Bank of Kentucky will continue to operate as a separate entity following the closing. Full conversion and integration of all First Capital branches to MainSource Bank branches is planned for later in the second quarter of 2017. Archie M. Brown, Jr., President and CEO at MainSource Bank stated, "I am pleased to welcome the employees and customers of The First Capital Bank of Kentucky to MainSource Bank. Like FCB, we are a community-focused bank and are significantly involved in the local markets we serve. We believe our approach to banking will provide our new customers with the level of service to which they are accustomed, while delivering a significantly expanded product offering. While MainSource has been part of the greater Louisville community for 25 years, we are very excited to double our presence and offer full branch coverage in the market." MainSource Financial Group is listed on the NASDAQ National Market (under the symbol: "MSFG") and is a community-focused, financial holding company with assets of approximately $4.6 billion. The Company operates 94 full-service offices throughout Indiana, Illinois, Kentucky and Ohio through its banking subsidiaries, MainSource Bank, Greensburg, Indiana and The First Capital Bank of Kentucky, Louisville, Kentucky. To view the original version on PR Newswire, visit:http://www.prnewswire.com/news-releases/mainsource-financial-group-expands-presence-in-louisville-completes-acquisition-of-fcb-bancorp-inc-300448399.html[http://www.prnewswire.com/news-releases/mainsource-financial-group-expands-presence-in-louisville-completes-acquisition-of-fcb-bancorp-inc-300448399.html] SOURCE MainSource Financial Group, Inc. /CONTACT: Archie M. Brown, Jr., President and Chief Executive Officer, MainSource Financial Group, Inc. | 812-663-6734 /Web site: http://www.mainsourcefinancial.com[http://www.mainsourcefinancial.com] 1 May 2017 09:15 ET *MainSource Financial Completes Acquisition of FCB Bancorp (MORE TO FOLLOW) Dow Jones Newswires (212-416-2800) May 01, 2017 09:15 ET (13:15 GMT)"

Step 1: We remove punctuation and stop words (those not carrying thematic content) and create lowercase text in a list of single words, as shown below:

['mainsource', 'financial', 'group', 'expands', 'presence', 'louisville', 'completes', 'acquisition', 'fcb', 'bancorp', 'inc', 'pr', 'newswiregreensburg', 'ind', 'may', '1', '2017', 'greensburg', 'ind', 'may', '1', '2017', 'prnewswire', 'mainsource', 'financial', 'group', 'inc', 'nasdaq', 'msfg', 'mainsource', 'company', 'announced', 'today', 'completed', 'previously', 'announced', 'acquisition', 'fcb', 'bancorp', 'inc', 'fcb', 'april', '30', '2017', 'combination', 'cash', 'stock', 'valued', '58', '9', 'million', 'based', 'upon', 'mainsource', 'april', '28', '2017', 'closing', 'price', '34', '20', 'per', 'share', 'acquisition', 'mainsource', 'added', '7', 'full', 'service', 'banking', 'offices', 'growing', 'market', 'louisville', 'kentucky', 'well', '520', 'million', 'assets', '385', 'million', 'deposits', 'first', 'capital', 'bank', 'kentucky', 'continue', 'operate', 'separate', 'entity', 'following', 'closing', 'full', 'conversion', 'integration', 'first', 'capital', 'branches', 'mainsource', 'bank', 'branches', 'planned', 'later', 'second', 'quarter', '2017', 'archie', 'brown', 'jr', 'president', 'ceo',

'mainsource', 'bank', 'stated', '**pleased**', 'welcome', 'employees', 'customers', 'first', 'capital', 'bank', 'kentucky', 'mainsource', 'bank', 'like', 'fcb', 'community', 'focused', 'bank', 'significantly', 'involved', 'local', 'markets', 'serve', 'believe', 'approach', 'banking', 'provide', 'new', 'customers', 'level', 'service', 'accustomed', 'delivering', 'significantly', 'expanded', 'product', 'offering', 'mainsource', 'part', '**greater**', 'louisville', 'community', '25', 'years', '**excited**', 'double', 'presence', 'offer', 'full', 'branch', 'coverage', 'market', 'mainsource', 'financial', 'group', 'listed', 'nasdaq', 'national', 'market', 'symbol', 'msfg', 'community', 'focused', 'financial', 'holding', 'company', 'assets', 'approximately', '4', '6', 'billion', 'company', 'operates', '94', 'full', 'service', 'offices', 'throughout', 'indiana', 'illinois', 'kentucky', 'ohio', 'banking', 'subsidiaries', 'mainsource', 'bank', 'greensburg', 'indiana', 'first', 'capital', 'bank', 'kentucky', 'louisville', 'kentucky', 'view', 'original', 'version', 'pr', 'newswire', 'visit', 'http', 'www', 'prnewswire', 'com', 'news', 'releases', 'mainsource', 'financial', 'group', 'expands', 'presence', 'louisville', 'completes', 'acquisition', 'fcb', 'bancorp', 'inc', '300448399', 'html', 'http', 'www', 'prnewswire', 'com', 'news', 'releases', 'mainsource', 'financial', 'group', 'expands', 'presence', 'louisville', 'completes', 'acquisition', 'fcb', 'bancorp', 'inc', '300448399', 'html', 'source', 'mainsource', 'financial', 'group', 'inc', 'contact', 'archie', 'brown', 'jr', 'president', 'chief', 'executive', 'officer', 'mainsource', 'financial', 'group', 'inc', '812', '663', '6734', 'web', 'site', 'http', 'www', 'mainsourcefinancial', 'com', 'http', 'www', 'mainsourcefinancial', 'com', '1', 'may', '2017', '09', '15', 'et', 'mainsource', 'financial', 'completes', 'acquisition', 'fcb', 'bancorp', 'follow', 'dow', 'jones', 'newswires', '212', '416', '2800', 'may', '01', '2017', '09', '15', 'et', '13', '15', 'gmt']

Step 2: According to the positive words dictionary from Loughran and McDonald (LM), there are three positive words which appear in this news item; and each of them only appears once **(**1 greater; 1 excited; 1 pleased).

(N.B. The same process is also used to check for negative words.)

The calculations proceed as follows:

$$W_{i,j}^{tf.dif} = \begin{cases} \left(1 + \log\left(tf_{i,j}\right)\right) * log\,\frac{N}{df_j} & \text{if } tf_{i,j} > 0 \\ 0, & \end{cases}$$

where $tf_{i,j}$ is the frequency of word *j* in document *i*, *N* is the total number of news items for one M&A deal, and df_j the number of documents containing at least one occurrence of the *j*th word:

$$Score_i^{tf.dif} = \frac{1}{(1+\log a_i)} \sum W_{i,j}^{tf.dif}.$$

Step 3: According to the algorithm,

Total number of words in this news item = 307

The number of news term here: $N = 7$ (i.e., there were a total of 7 news items about this particular M&A deal);
df (greater) = 0.559616; df(excited) = 0.8473; and df(pleased) = 1.2528

Final positive score for this news item = 0.010.

Appendix C: Examples of quotations from voluntary communications, with sentiment score

Quotation from voluntary communications	**Sentiment Score from *TextBlob***
Examples of positive sentiment (scoring above zero)	
"Company A has a history of buying the best property in a sector."	1.0
"We view this transaction as a merger creating a larger, more diversified operating platform that will be highly attractive to investors, customers, creditors and employees."	0.43
"The increased scale and footprint of the combined company positions Company K to build deeper customer relationships and secure and execute additional accretive growth opportunities, both organically or via bolt-on acquisitions."	0.40
"These are tremendously complementary businesses, and as a result, we expect the increased footprint and scale to create significant synergies and provide substantial organic growth opportunities that will continue to support our goal of increasing distributions and creating unitholder value."	0.35
"In addition, the acquisition provides Company D with an expanded talent base, allowing for more efficient collaboration and sharing of best practices across the business."	0.23
"The addition of Company B's asset base …to Company C's existing footprint …will create a diversified, high-growth midstream company with assets in many of the most economic, high-growth unconventional oil and gas plays…"	0.10
"The transaction … will create a leading gas gathering and processing platform with a scaled presence across North America's premier high-growth unconventional oil and gas plays…"	0.08
"We believe that the size and scope of the combined enterprise will be highly beneficial to our unitholders, offering added diversification and critical mass which will provide the needed financial flexibility to fully execute and benefit from the significant portfolio of organic growth projects we have developed over the past three years…"	0.06
Examples of neutral sentiment (scoring zero)	
Following the closing, the name of the combined company will remain NameM with headquarters in CityN.	0.0
Examples of negative sentiment (scoring below zero)	
"Sales of (two medical) treatments X and Y fell 45% to $X.X million because of generic competition and lower than expected generic pricing."	-0.03
"(Medical treatments) A declined X% as B fell Y% on a decrease in demand and lower average net selling prices."	-0.08
"The combination is expected to be slightly dilutive to 2014 DCF, but is not expected to affect anticipated cash distribution growth in 2014."	-0.08
"The acquisition is expected to reduce fiscal 2014 earnings by about X cents per share."	-0.10
"Company E on Wednesday lowered its outlook, saying sales of some drugs were weaker than expected."	-0.10
"Analysts again questioned the firm's acquisition strategy last month when Company F reported disappointing results, after rising costs sent it deeper into the red."	-0.20