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ABSTRACT
This study develops and tests a set of hypotheses on how to manage investors’ evaluative uncertainty during M&A through a specific form of impression management, namely, interim news events. We suggest that voluntary disclosures are key in influencing investors’ reactions during M&A. Empirical support for our theoretical arguments is shown in a sample of 36,376 deals and 163,023 associated interim news events carried out by NYSE and NSDQ listed organizations over 10 years. Our research contributes to literature on voluntary disclosures, impression management, and managing M&A.

Key words: M&A; voluntary disclosures; evaluative uncertainty

INTRODUCTION
There is significant information asymmetry between outside investors and inside managers (Miller and Rock, 1985; Myers and Majluf, 1984). In contexts associated with information asymmetry, investors are faced with evaluative uncertainty (Fiske and Taylor, 2008; Moskowitz, 2005). Evaluative uncertainty refers to the absence of clear and unambiguous indicators or benchmarks of performance (Graffin and Ward, 2010). Unfavourable consequences for organizations regarding information asymmetry and evaluative uncertainty are tied to adverse selection (Akerlof, 1970), negative impact on stock (Copeland and Galai, 1983; Glosten and Milgrom, 1985) and undesirable effects on the cost of capital (Baiman and Verrecchia, 1995; Leuz and Verrecchia, 2000).
A critical situation in which stakeholders are likely to face high levels of evaluative uncertainty is merger and acquisition (M&A) deals. This is because M&A are contexts associated with high information asymmetry (Reuer, Tong, and Wu, 2012; Boeh, 2011). M&A can play a vital role in the success and failure of organizations, so investors’ ability to evaluate them is of great importance. Managers who have detailed knowledge of the M&A deal may reduce this asymmetry and manage evaluative uncertainty by voluntarily disclosing information to investors which in turn is likely to impact on their decisions about the value of the firm (Narayanan, Pinches, Kelm, and Lander, 2000). To deal with these asymmetries, organization leaders actively manage their firm’s informational environment, and do so in ways they hope will favourably affect the impressions of targeted stakeholders (Puffer and Weintrop, 1991; Zajac and Westphal, 1995; Graffin, Carpenter, and Boivie, 2011). Information asymmetry is traditionally seen as the main reason why managers should disclose voluntary information to the market (Avallone and Ramassa, 2011). Any such action which is carried out with the intent of influencing an audience’s perception of the organization is called organizational impression management (Elsbach, Sutton, and Principe, 1998).

Scholars have studied impression management in various contexts such as executive compensation (Zajac and Westphal, 1995; Wade, Porac, and Pollock, 1997; Porac, Wade, and Pollock, 1999), strategic change (Gioia and Chittipeddi, 1991; Fiss and Zajac, 2006), and more recently CEO succession (Graffin et al, 2011). However, a specific form of impression management, namely interim news events, may be particularly important in the context of Mergers and Acquisitions (M&A) as they have the potential to influence the outcome of the transaction.
Interim news events are public, voluntary communications targeted at financial analysts, prominent institutional shareholders, and specialist media. They are the voluntary communications that take place between the initial announcement of an M&A deal and closing of the deal. These are the published versions of internally-generated plans regarding how to progress with the current M&A, typically reveal only the highlights of the company's plans specific to the M&A, and confine themselves to non-confidential information. Their deliberate and discretionary nature makes them an important form of impression management in which organizations can try to influence stakeholder reactions by communicating their motives behind why, when, and how they choose to implement strategy (definition of impression management: Porac et al., 1999).

It is well known that ‘involuntary’ (those required by law) announcements of M&A bids move stock market prices (Andrade, Mitchell and Stafford, 2001; Goergen and Renneboog, 2003) and 25% increase in target company share price is not uncommon (Baker and Limmack, 2002; Sudarsanam and Mahate, 2003). However, existing M&A research does not comment on market reactions to ‘voluntary’ designed communications that occur post-announcement. In this phase, deals can be made or broken by share price adjustments (as in the opening example) as investors react to deal-specific information released during the period. For organizational leaders to win support for their M&A strategy external communications directed at analysts and investors, on top of financially-orientated events (earnings announcements, more closed meetings), may matter.

This paper contends that ‘voluntary’ designed communications i.e. interim news events, are influential in shaping investor sentiment and reducing evaluative uncertainty. M&A are a substantial strategic move for organizations involved and at the same time they are characterized by high information asymmetries. In the years 2008 – 2010, approximately $5.9 trillion were
spent on M&A worldwide\(^1\). Alongside this substantial financial investment, considerable managerial and organizational resources were also deployed in order to close these deals and integrate the companies. This effort to achieve renewal of the firm is a major strategic move as M&A is a substantial investment, generally for long-term benefit and not easily reversed. However, announcing an intention to purchase a specific firm is not the same as closing a deal as many things may go wrong. A vital aspect of the process is to persuade investors to back the deal, as negative investor reaction can prevent the transaction from being consummated. In order to persuade investors of the wisdom of the M&A, protagonists communicate information to the markets during the M&A process, starting after the deal is announced and until the deal officially takes place. This information will help to inform investor decisions about the price of protagonist shares during a bid.

We therefore focus on how organizational leaders, through a specific form of impression management -namely, interim news events- attempt to influence shareholders’ reactions during M&A. To do so, we follow three steps: First, we measure the impact of interim news events on company stock prices. Second, we demonstrate the impact of these news events on shareholders’ reactions within contexts that are characterised with a vacuum of information. Finally, we test whether interim news events help combat evaluative uncertainty.

This paper makes several contributions. In the first place, our study contributes to the literature on evaluative uncertainty by developing and testing predictions regarding a specific type of event that guides investors’ assessments of M&A. As a measure of evaluative uncertainty, we use consensus of investment analysts’ recommendations. We find that interim news events are associated with higher levels consensus among analysts’ recommendations. Second, our research

\(^1\) Source: Zephyr
extends the literature on impression management by presenting findings on how organizational leaders can make use of voluntary communications to influence shareholder reactions during M&A. The practical implications of our findings involve making organizational leaders aware that managing deals are just as important as announcing them, and more importantly, from an investor’s point of view, these news events are key to evaluating M&A. Finally, we identify a new way to manage M&A -through interim news events- one supported by plentiful public data. We construct a data-base of interim news events during M&A and apply an analytical approach that allows us to distinguish between shareholders’ good, bad, and neutral reactions to these news events.

Our paper continues in the next section by reviewing the literature on voluntary communications during M&A, especially with regard to market reactions. Here we draw on theories of cheap and soft talk (Farrell, 1987; Hutton, Miller and Skinner, 2003). We also consider the possible effect of these being carried out in contexts associated with high levels of information asymmetry. The following section introduces our data and methodology, highlighting some implications of our focus on voluntary communications and market reactions. We then introduce our initial analysis, which finds a significant impact on stock-prices for interim news events carried out during M&A. We conclude by discussing implications of our analysis so far both for theory and for further research.

THEORY AND HYPOTHESES

Investor reactions to interim news events

On December 13th 2004, Deutsche Boerse AG (DB), which owned the German stock exchange in Frankfurt, announced a 530p per share bid for the London Stock Exchange (LSE) – both
exchanges are amongst the largest in the world. This valued the LSE at £1.3bn and represented a 23% premium on the LSE share price two days earlier. DB shareholders were concerned about the announcement, believing the deal would be value destroying. The lack of timely and effective communication after the announcement, and the seeming indifference of DB management, led to dissatisfaction regarding the deal and growing concern about the governance of the company. It was not until March 2005 that the Chairman finally attempted to communicate with shareholders to allay their concerns about the proposed takeover, but the effort was too little too late. The offer for the LSE was withdrawn on 7th March and the CEO of DB was forced to resign, along with the Chairman of the Board and other board members. This example illustrates the importance of communicating to the markets after the announcement of a proposed transaction as lack of voluntary communications caused the hoped for strategic transition to create Europe’s largest stock exchange to fail. In different circumstances, during the hostile bid for Blue Circle PLC, a large British cement company, by the French giant, Lafarge, the world’s largest cement company the Blue Circle management issued several voluntary communications about their intentions for investments and disposals in the future, as well as comments about the quality of Lafarge’s offer. These were sufficient to affect share prices negatively for the transaction for Lafarge and cause the cash offer to be the first all cash hostile takeover to fail in the UK for 10 years. In this instance the use of voluntary communications decided the outcome of the takeover bid.

It is plain that in this case investors believed that interim news events conveyed significant information. Theoretically, however, there are two potential checks on the value of interim news events as forms of voluntary disclosure: 'cheap talk' and 'soft talk'. First, cheap talk involves costless (or very low cost), non-binding and non-verifiable messages intended to affect others’ beliefs about future behavior, potentially to the advantage of the talker (Farrell and Rabin, 1996;
Almazan et al, 2008). Interim news events could be just such cheap talk. Thus cheap talk theorists suspect that voluntary communications are mainly intended to confuse or warn off competitors, rather than to project true intentions. For the firm, the apparent advantage of such communications is how cheap they are as a form of deterrence, at least relative to the likely cost of fighting a competitor’s entry into the market for instance (Farrell, 1987). Voluntary communications can serve as low cost warning shots to competitors. However, the paradox of such talk is that investors are likely to discount it precisely because of its cheapness: firms have not yet put serious money behind their claims i.e. the deal is not yet complete. In this view, the market is unlikely to react to interim news events. They are too cheap to be credible to investors. Nonetheless, while there may be no financial cost to the firm, there may be significant personal cost to the organizations that are authors of these news events. Given the importance of personal credibility, managerial labour markets provide managers with incentives to stick with their plans (Ferreira and Rezende, 2007). Organizational leaders with reputations for not delivering on plans will be penalized with regard to possible future appointments. Moreover, financial analysts are capable of influencing CEO dismissal in the case of disappointed expectations (Wiersema and Zhang, 2011). Failure to hold to projected communications may cost CEOs their jobs. Voluntary communications during M&A in the form of interim news events are not necessarily cheap talk for high-profile organizational leaders, therefore. They may be credible because these organizational leaders have so much personally at stake.

The second potential problem with interim news events is that of 'soft talk'. Soft talk is qualitative information from companies, for example with regard to factors influencing performance or long-term prospects (Hutton et al, 2003). In these terms, interim news events include a good deal of soft talk. But a problem of such talk for investors and analysts is how difficult it is to model and evaluate, relative at least to the quantitative 'hard talk' of financial data and forecasts. Soft talk
lacks precise numbers. Analysts may consequently make less use of this kind of information. From this perspective, soft talk risks practically being of little economic significance.

However, despite the indirect accusations associated with interim news events for being ‘cheap’ and ‘soft’, it is widely accepted that managing third-party perceptions is an important task for both sides in a merger; for instance Trautwein (1991) notes that “mergers need marketing just like products, and effectively addressing the public or regulatory institutions in a merger may be critical to its success’ (p. 293). Management scholars have discussed why some firms engage in more frequent and comprehensive disclosure than others. It has been suggested that large size of firms may reduce disclosure costs, by spreading the cost of information management and, perhaps, by reducing the threat of competitor reaction (Bassen et al, 2010). For complex businesses, voluntary disclosures can help mitigate the agency problem existing between corporate managements and shareholders: the reduction in uncertainty attendant on reducing information asymmetries increases the willingness of shareholders to pay more for the company's stock (Bassen et al, 2010; Healy and Palepu, 2001).

Interestingly, research into M&A has so far overlooked how investors perceive post-announcement voluntary corporate communications. Having alerted investors to the intention to takeover or merge with another company, this powerful set of stakeholders search for information to help them decide whether to buy, sell, or hold onto stock of the companies involved. In this process they may look for evidence in corporate communications for credibility or economic viability (Narayanan et al., 2012) associated with the success of the transaction.

Communicating intention can be as important as taking concrete action and is therefore likely to act as a powerful signal for investors particularly because the firm or management stand to lose something, such as reputation, should the promise not work out (Besanko et al. 2004). In the
context of M&As, the literature provides evidence of the importance of corporate communications (e.g. Sirower and Lipin, 2003).

We therefore build our baseline hypothesis on the assertion that managing third-party perceptions is an important task for both sides in a merger and that investors’ evaluations of mergers are highly dependent on what organizations communicate to external audiences throughout the M&A deal:

**Hypothesis 1: Interim news events will have a significant impact on stock prices, in both a positive and a negative direction**

**Interim news events in contexts associated with information asymmetry**

There is plenty of evidence drawing attention to the high level of information asymmetry that exists between outside stakeholders and inside managers (Zajac, 1990; Shen and Cannella, 2003; Zhang, 2008; Graffin et al., 2011). M&As are associated with information asymmetry because choices regarding the upcoming deal are typically made behind closed doors, and information about the way an organization goes about making M&A choices is rarely shared (Gomes et al. 2012, Gomes et al. 2013). M&A processes unfold privately so the shareholders, financial press, and analysts do not have access to full information surrounding the new deal (Haushalter and Lowry, 2011). Due to these information failures, shareholders who are already highly sensitive to organizational changes are likely to be facing evaluative uncertainty regarding the M&A deal. We believe that organizational leaders can manage shareholders’ evaluative uncertainty in M&A through interim news events because these events can help reassure the investors regarding the future plans associated with the upcoming M&A, help investors evaluate the organizations’ strategic prowess in handling issues such as intended integration, restructuring, reorganization etc. and allow investors to get hold of substantive new information such as employee retention intentions / promises etc. We therefore further build a set of hypotheses which tie circumstances
associated with information asymmetry i.e. industry instability, strategic instability, share price volatility, to abnormal share price reaction.

**Industry instability.** Previous studies have provided evidence that industry conditions are highly associated with information asymmetry (Zhang and Rajagopalan, 2003; Tian, Haleblian, and Rajagopalan, 2011). We believe that investors are likely to be nervous about M&As if the industry is relatively unstable because of two main reasons: one, changing industry conditions render the terms of a deal as less clear and this lack of clarity about an environment in constant flux may cause investors to have a wide array of nonuniform expectations from a deal. Second, organizations that operate in an unstable industry tend to wait to communicate further information in order to increase the time available to learn about the changing industry conditions (Finkelstein and Hambrick, 1996). This waiting, and the possible associated silence in the meantime is likely to make investors increasingly nervous which, in turn, may cause them to react significantly above or below average to interim news events.

**Hypothesis 2: Interim news events will have a significant impact on stock prices for organizations carrying out M&A in contexts associated with industry instability**

**Strategic instability.** Firm strategic instability is the extent to which a firm’s strategy has changed over time (Zhang, 2004). In that sense, it is conceptually the opposite of Finkelstein and Hambrick’s (1990) concept of strategic persistence, defined as the extent to which a firm’s strategy has remained stable over time. Following Zhang (2004), we use the term strategic instability to be consistent with the concept of industry instability. There are several reasons why we think that strategic instability will be associated with information asymmetries and therefore tied to higher reactions to interim news events: First, when strategic instability is high, the cause-effect relationship between strategy i.e. M&A and firm performance is ambiguous (Hambrick and
Finkelstein, 1987). Extending this finding, we can argue that future expectations regarding an M&A are likely to be blurred and therefore the type of information investors desire to hear in an interim news event may also not be clear, given that the ‘future strategy is expected to differ from current strategy’ (Zhang, 2004, p.486). Second, because of instability in strategy, investors’ prior experiences may not provide reliable information, and analysts may be too cautious to issue guidance. Therefore, while strategic instability is likely to make investors nervous about an upcoming deal, the investors are likely to have already become very anxious due to the delay in organizations communicating the details of the deal. We therefore think that strategic instability is likely to be associated with high information asymmetries, and therefore is likely to be one of the situations linked to inflated reactions to interim news events.

**Hypothesis 3: Interim news events will have a significant impact on stock prices for organizations carrying out M&A in contexts associated with strategic instability**

**Share price volatility.** Also, the accounting literature emphasizes three specific circumstances in which high information asymmetry is likely to result in abnormal share price reaction: these are stock volatility, financial distress, and high managerial ownership. Regarding share price volatility, Kothari, Loutskina, and Nikolaev (2006) state that ‘firms with high stock volatilities are less transparent and face greater uncertainty, which create higher information asymmetry’ (p. 256). This implies that we are likely to observe abnormal returns for interim news events carried out by those companies that have faced volatility.

**Hypothesis 4: Interim news events will have a significant impact on stock prices for organizations carrying out M&A that have faced share price volatility**

**Evaluative uncertainty**

We believe that interim news events have a significant impact on share price for organizations involved in an M&A because they reduce evaluative uncertainty. We believe that interim news
events, as a form of voluntary communication, are likely to result in a convergence of investors’ opinions regarding the deal, signaling strongly whether support the plans of how to proceed with the deal and whether they find them realistic and credible. Interim news events are likely to be associated with lower levels of evaluative uncertainty not only through a direct impact on investors’ perceptions, but also through analysts’ recommendations. Investment analysts are considered prominent information intermediaries in the financial markets (Jensen and Meckling, 1976) and their recommendations have significant impact on investors’ decisions, and thus on the firm’s stock price (Wiersema and Zhang, 2011). Investment analysts are recognized as qualified to assess the firm (Wiensenfeld, Wurthmann, and Hambrick, 2008). Thus,

**Hypothesis 5:** Interim news events are associated with lower levels of evaluative uncertainty for organizations involved in M&A

**Hypothesis 6:** The lack of voluntary communications during M&A will be associated with higher levels of evaluative uncertainty for organizations involved in M&A

**DATA AND METHODS**

**Dataset**

Our dataset comprises of all M&A deals involving target and bidder United States (US) publicly owned organizations within the period 01/01/2000-31/12/2010. We collected data using MergerMarket regarding all relevant target and bidder data along with all related external communications associated with the deal. Our dataset comprises of 36,376 deals, and 163,023 external communications. We limit our research findings to public organizations that trade in NYSE and NSDQ.

**Cumulative abnormal returns associated with interim news events**
The objective of our baseline hypothesis is to establish whether there are any stock price responses associated with interim news events carried out during M&A deals. We treat these as events liable to generate cumulative abnormal returns (CAR) in the financial market (McWilliams and Siegel, 1997). These news events are not the actual announcements of the M&A, nor are they announcements of the closing of the deal. They are external, voluntary communications associated with the deal throughout the course of the M&A, undistinguished between the authors (the bidder or target).

We calculated abnormal returns using a market model for each firm with an estimation window. The deviation was calculated using expected returns and actual returns for every firm. The model to capture CAR was:

\[ R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \]
\[ E[\varepsilon_{it}] = 0 \quad \text{and} \quad Var[\varepsilon_{it}] = \sigma^2_{\varepsilon_{it}} \]  

We used the NYSE and NSDQ equal-weighted index as the index of market portfolio which indicates the price trend movements based on a broad cross-section of the market. To estimate the market model, we used the 260 trading day period prior to the event window as the estimation window (see MacKinlay, 1997). The length of the period used in our study was consistent with prior studies in management literature (McWilliams and Siegel, 1997). To calculate CAR, we used a 3-day event window (t= -1 to +1). The short window is used because long windows may lead to false inferences about the significance of an event (McWilliams and Siegel, 1997).

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2 Source: Datastream

3 To further validate our findings, we performed a supplementary analysis. We analyzed the data using alternative stock effect event windows: a five-day window (-2, +2), a seven-day window (-3;+3), an 11-day window (-5;+5), and a 21-day window (-10;+10). The model results become increasingly insignificant with the longer event windows. These analyses are available from the authors.
Similar studies to ours published recently have also used a 3-day window (see for example Shen and Cannella, 2003; Tian et al., 2011; Zhang and Wiersema, 2009). In order to calculate the expected return over the $t= [-1, +1]$ event window, we used the coefficient found from regression (1). Inferences about the cumulative abnormal returns were drawn using the formula below to test the null hypothesis that the abnormal returns are zero:

$$\overline{CAR}(\tau_1, \tau_2) \sim N[0, \text{var}(\overline{CAR}(\tau_1, \tau_2))]$$

(2)

For our estimation model, we used a static linear panel data model where $CAR_{ij}$ is the cumulative abnormal return for firm $i$ for event $j$.

**Analysts’ consensus**

As a measure for evaluative uncertainty, we used the standard deviation of analyst estimates for a firm in the one-month period following an interim news event (Wiersema and Zhang, 2011). Following Wiersema and Zhang (2011), we collected data regarding analysts’ estimates using the Institutional Brokers Estimate System (I/B/E/S) database. Analysts’ estimates are issued monthly in I/B/E/S which uses a five-point recommendation scale, with a recommendation of 1 meaning ‘strong buy’, 2 meaning ‘buy’, 3 meaning ‘hold’, 4 meaning ‘underperform’ and 5 meaning ‘sell’. We used a one-month lag period for the analyst recommendation measures in a given year for an interim news event that has taken place for both bidder and target companies. We weight this measure by the number of analysts who provide firm coverage for each month.

Our model to measure evaluative uncertainty was the following:

$$Y_t = \alpha + \sum_{i=1}^{p} \beta_i X_{i,t} + \sum_{j=1}^{q} \gamma_j G_{j,t} + \varepsilon_t$$
Where $Y_t$ is evaluative uncertainty at time $t$; $X_{1,t}$ is the interim news event at time $t$; and $C_{j,t}$ is the control variables at time $t$.

**Independent variables**

**Regression I**

*Industry instability.* We follow a frequently used definition of industry instability as the level of the unpredictability of changes in industry-specific factors over time (Dess and Beard, 1984; Sharfman & Dean, 1991; Zhang, 2004). We followed Dess and Beard (1984) and Zhang (2004) in measuring industry instability as a composite of instability in sales growth and employment growth in an industry at the four-digit SIC (Standard Industrial Classification) level. First, we calculated instability in industry sales as the standard error of the regression slope coefficient $[Sbl]$ divided by the mean value of sales in the three years prior to the initial announcement of the M&A from year t-3 to t-1). Then we calculated instability in industry employment following the same procedure. These two dimensions were standardized within the sample, and their average was used for industry instability (Zhang, 2004). Our data was gathered from COMPUSTAT.

*Strategic instability.* We follow Zhang’s (2004) measure which uses six strategic dimensions: (1) advertising intensity (advertising/sales), (2) research and development intensity (R&D/sales), (3) plant and equipment newness (net P&E/gross P&E), (4) nonproduction overhead (selling, general, and administrative [SGA] expenses/sales), (5) inventory levels (inventories/sales), and (6) financial leverage (debt/equity). We first computed a firm's pre-presentation three-year variance $(\sum[t_i - T/\ln - 1]$, where $t_i$ is the ratio at year $i$, $T$ is the average of the ratio in the three years, and $n$ is the number of years) for each strategic dimension. Next, we standardized variance scores for each dimension within the sample, and the average of the six standardized dimensions
yielded a composite measure of pre-presentation strategic instability. Data for these was collected from COMPUSTAT.

**Share price volatility.** We calculate share price volatility as ‘the standard deviation of daily stock returns’ in a six-month period prior to our main events (Kothari et al., 2006). We downloaded share price data using DataStream.

**Regression II**

**Interim news events.** We categorize interim news events as any external voluntary communication carried out regarding the M&A by the parties involved in the deal, regardless of the author (i.e. target, bidder, advisors of companies etc.). In our panel of data, we coded the independent variable as “1” if there was an interim news event associated with the deal and “0” otherwise. Our source was MergerMarket.

**Control variables**

**Regression I**

We introduced a variety of control variables for factors that were likely to impact on market reactions. All of the control variables are used as proxies for contexts/events associated with a vacuum of information that would leave investors hungry for information. To take into account changes in the market, we controlled for market volatility. To take into account any possible effects of the financial crisis, we coded communications after 24 October 2008 as ‘1’ for ‘after the crisis’. The nature of the deal may also affect the role and impact of communications. If the deal is hostile, then the protagonists will both be fighting hard to persuade shareholders of the correctness of their strategies as in this instance there will be winners and losers. We therefore
distinguished between deal types by controlling for recommended and hostile deals. We also controlled for acquirers by distinguishing between domestic and overseas bidders. The method of payments may also make a difference as the issuance of debt may be regarded as more risky to the business, due to long-term obligations, rather than the use of equity. To take this into account, we introduced controls for type of financing (stock or no stock). We further took into account the complexity of the deals. Finance theory suggests that market reactions are likely to be larger for companies subject to greater information failures, e.g. small companies, small deals (Mazzola et al, 2006; Griffin, 2003). The extent to which interim news events influence investors is likely to be affected by the relative size of the protagonists. If the M&A is small relative to the acquirer, in turnover terms, then there may be less need for protagonists to communicate to the markets as the effect of the deal on the acquirer will be limited. To calculate relative size, we used Marketcap, and for the relative size of the deal, we took a ratio of deal versus firm size. Finally, we accounted for factors that may act as confounding effects for our variables associated with reputation for M&A such as involving high-reputation intermediaries, and whether the organization is listed on the Fortune 100 most admired list. The weight placed upon communications by the markets may also be affected by the reputations of the protagonists in terms of M&A experience. Recent research into serial acquirers suggests that firms with a history of M&A tend to perform better than those with little M&A experience (Laamanen and Keil, 2008). Firms with significant prior M&A experience are more likely to be trusted in terms of their interim news events than those that are inexperienced.

**Regression II**

For our second regression, we introduced a number of control variables, again aiming to capture internal and external factors associated with information asymmetries in the context of evaluative
uncertainty. We took into account variables that are likely to influence how investors evaluate voluntary communications. As a starting point, we took into account the size of the organization, regardless of the deal size. Finance theory suggests that market reactions to voluntary communications are likely to be larger for small companies because these companies are subject to information asymmetry (Mazzola, Ravasi, Gabbioneta, 2006; Griffin, 2003). Mazzola et al’s (2006) finding that smaller companies are likely to enjoy a greater benefit than larger companies is consistent with the larger information effects found for smaller companies more widely (e.g. Griffin, 2003). For size, we used Marketcap. We calculated Marketcap using data collected from COMPUSTAT. In addition to size, we also controlled for whether or not the organizations were experiencing financial distress. The reason why we expect financial distress to be influential in investors’ evaluative uncertainty is the following: The accounting literature suggests that another contributing factor to information asymmetry is managers’ career concerns which are especially heightened when a firm is approaching a state of financial distress (Gilson, 1989; Weisbach, 1988). ‘The link between financial distress and management turnover provides managers with incentives to delay voluntary disclosure’ (Kothari et al., 2009 p.247). Therefore, if organizations delay communicating in times characterized by financial distress, this is likely to feed into investors’ evaluative uncertainty. Using OneSource Financials, we calculated financial distress as a dummy variable that equals 1 if the firm’s Z-score (Zmijewski, 1984) financial distress rank is in the top decile of all firms within the same industry in a given year, and 0 otherwise (Skinner, 1994, Kothari et al., 2009). Accounting literature also suggests that in addition to incentives stemming from career concerns associated with financial outcomes, high managerial ownership decreases the propensity to disclose (Eng and Mak, 2001; Hutton, 2005) and is therefore a contributing factor to information asymmetry, which in turn is associated with evaluative uncertainty. Managers may have incentives to withhold information especially at times when they
are nervous about the value of equity, that is, stock and options, invested in the firm (Jensen, 2005; Kothari et al., 2006). Considerable evidence suggests managers use aggressive accounting in an attempt to boost the value of their equity portfolio, or delay communicating when facing the loss of wealth invested in firm equity (Bergstresser and Phillipon, 2006; Burns and Kedia, 2006; Cheng and Warfield, 2005). We expect similar effects on managers’ voluntary disclosure decisions. Following Eng and Mak (2003), we calculated the proportion of ordinary shares held by managers during the calendar quarter prior to the initial announcement of the M&A, drawing data from Capital IQ’s Company Intelligence pages and Major Shareholders. The same rationale that applies to financial distress and managerial ownership can be applied to contests for corporate control. To determine whether there was a concurrent or proximate contest for corporate control, we searched both in Factiva and Lexis/Nexis for relevant key words ('share acquisition', 'share sell off', 'change in shareholders', 'change in ownership') and searched Capital IQ for substantial changes in stock-ownership. We recorded these as ‘1’ if we found evidence of contest for corporate control within the six months prior to the initial announcement of the M&A, and ‘0’ otherwise. To control for whether an organization was new to the financial market, and therefore likely to be suffering an information deficit, we followed Webb, Cahan, and Sun (2008) by checking if the company had made a recent initial public offering. Our sources were Capital IQ, OneSource, and Factiva. To determine whether there had been proximate large calls to shareholders, we used the definition by Healy and Palepu (1995) as events that need support from shareholders. The authors provide an extensive list of these events including new product launch, recapitalization, launch/test of a new product or a new service, dividend declaration, security offerings (IPO/SPO), stock repurchase, stock split etc. We used these as key words to search within Capital IQ, SEC filing form 8-K*. We recorded these as ‘1’ if such events had taken place in the six months prior to the interim news events, and ‘0’ otherwise. We also
controlled for *business complexity* because the more diversified the business, the less likely analysts and investors are going to be able make sense of the deal. To measure business complexity, we used COMPUSTAT to count the number of SIC codes associated with each relevant firm. Finally, we controlled for *firm age* because there is generally more information available to investors regarding more established organizations. We measure firm age as the number of years the firm has been listed.

Before carrying on with the rest of the study, we assessed carefully the issue of potential multicollinearity between the variables (Aiken and West, 1991). We inspected the values of variance inflation factors (VIF) to assess our data for multicollinearity. The VIF values ranged between 1.12 and 3.39 for the variables in our regression models, which is much lower than the commonly accepted threshold value of 10 (Hair, Anderson, Tatham, and Black, 1998) and demonstrates that multicollinearity is not a problem in our data.

**RESULTS**

**Hypothesis tests**

Our purpose is two-fold: first to establish whether interim news events have any impact on the market; second, to show that these news reduce evaluative uncertainty faced by investors during M&A. Our analysis therefore proceeds in two steps. In step one, we test whether interim news events are associated with shareprice reaction. In order to test this, we test for cumulative abnormal returns to interim news events during M&A deals. Figure 1 illustrates the distribution of these news events throughout the dataset, plotted against the M&A trend. Figure 1, a descriptive figure of the interim news events over time demonstrates that US firms become
significantly more communicative in optimistic times and very silent during times characterized with pessimism.

**Insert Figure 1**

Figure 2 illustrates the cumulative abnormal returns associated with interim news events. Our categorization of stock price responses into positive, neutral or negative returns (McKinlay, 1997) allows us to explore not simply whether interim news events in general impact on anticipated performance, but whether good or bad communications make any difference.

**Insert Figure 2**

The largest number of interim news events are in the category neutral, i.e. have no significant effect on stock prices at the 0.05 level (71,937 interim news events). However, we identify a substantial number of interim news events which do have significant effects over the three days, and these may be in both directions. Thus 33,376 (20.4%) of the interim news events have a significant positive effect of 23.2% on the day of the news event, diminishing slightly over the next day. At the same time, 57,713 (35.4%) of the interim news events have negative effects, reaching -39.9% on the event day and enduring at around that level for the following day.

In sum, Figure 2 shows that a substantial percentage of interim news events (55.8%) have significant effects on stock-prices: these are not just cheap talk and, however 'soft', they are being responded to by the market. Moreover, not all interim news events are evaluated the same way by the market: some are clearly perceived as attractive and some unattractive by investors. There are slightly less interim news events that are received positively than negatively (20.4% against 35.4%), but negative evaluations are on average slightly more harsh than positive ones (-39.9% on presentation day against +23.2% on presentation day). The overall conclusion is that interim
news events do bring new information. Contrary to the low expectations from proponents of cheap and soft talk perspectives, we find support for our baseline hypothesis.

In stage two of our analysis, we carry out a regression to identify the extent to which interim news events are associated with share price reaction in contexts associated with information asymmetry. Table 1 includes descriptive statistics and Table 2 includes our first regression.

**Insert Table 1**

**Insert Table 2**

Table 2 presents the stepwise regression analysis, with models 1-3 considering the impact of our independent variables on cumulative abnormal returns to interim news events individually, subsequent models introducing the combined effect of all independent variables, and finally successive control variables. Non-significant control variables are dropped in the final model. Table 2 shows that interim news events are associated with significant CAR for contexts characterised by information asymmetry. This holds across all models, as additional variables are added. To this extent, hypotheses 2, 3, and 4 find support.

In model 4 (Table 2), we introduce our control variables. With the exception of a few variables, we find significant results associated with interim news events. Among the control variables, the most significant findings were associated with hostile deals followed by serial M&A.

For our second regression (see Tables 3 and 4), we employ the standard deviation of analysts’ estimates as our dependent variable. Our main effects hypotheses, i.e. interim news events is both significant and they are negatively associated negatively with the standard deviation of analysts’ estimates. In other words, interim news events are associated with lower levels of evalulative
uncertainty, in the sense that they are significantly and negatively associated with the standard deviation of analysts’ estimates. The lack of voluntary communications, on the other hand, is associated significantly and positively with the standard deviation of analysts’ estimates. We therefore find support for hypotheses and 6. We find that four of our control variables, namely, size, financial distress, new to a financial market, and business complexity are also significant for our final model.

Insert Table 3

Insert Table 4

Discussion

Shareholders’ reactions to M&A deals have been characterized by uncertainty (Reuer, Tong, and Wu, 2012; Boeh, 2011). While there is little evidence showing whether shareholders react to voluntary disclosures, there is even less empirical research into whether investors react favorably or unfavorably. Predicting how shareholders will react is difficult because evaluating the outcome of an M&A deal is full of uncertainties. In the present study, we have set out to test hypotheses on how organizations can manage this evaluative uncertainty through voluntary communications during M&A and we have found that investors care about, and react to these communications. Our results show that organizational leaders spark positive reactions even in contexts associated with high information asymmetry such as industry instability, strategic instability and share price volatility. Furthermore, we find that voluntary communications during M&A i.e. interim news events, help reduce evaluative uncertainty. We measure evaluative uncertainty in terms of the standard deviation of analysts’ recommendations and find that interim news events are associated with lower levels of variation among investors’ recommendations.
Investors’ lower levels of evaluative uncertainty and the positive bias towards interim news events may be due to several reasons: First, investors may be relieved to hear that organizational leaders have clear strategic plans for the M&A deal. These may be in the form of integration plans between the two companies, retention, future management of the organization etc. Therefore, due to the perception that M&A are high profile strategic moves, it may be the case that if delivered concisely, interim news events may help organizational leaders inject trust and gain credibility regarding their on-going M&A. Second, public announcements M&A are very often confounded and at the time of the initial announcement and investors and investment analysts are bombarded by various bits of news. This may cause share price reactions to be very diverse. The events that we include in our research are free of confounding effects so it may be the case that in the absence of efforts that create noise, investors act in unison (and relatively free of variability) regarding interim news events. More specifically, our findings suggest that investors and analysts respond very positively to efforts made by organizational leaders to gain support for their M&A deals. While we do not investigate why investors perceive these events favourably, our research informs organizational decision makers that carrying out M&A can help reduce evaluative uncertainty and boost share price, or in the worst case scenario, it will not hurt.

Furthermore, and building on the above, our test results for our baseline hypothesis show that as opposed to the skeptical finance and accounting literature on cheap and soft talk, interim news events do seem to matter. The markets at least appear to believe interim news events are more than ‘just talk’. Our event methodology which discriminates between news events that are perceived as positive, negative and neutral by investors illustrates that a substantial percentage of interim news events have a statistically significant effect on cumulative abnormal returns.
Managerial implications

Interim news events are highly influential in reducing evaluative uncertainty and managing investors’ reactions during M&A. It is worthwhile for organizations to voluntarily disclose their plans after the initial announcement of the M&A. Organizations would benefit from interim news events especially in contexts associated with high levels of information asymmetry, when investors are likely to be facing evaluative uncertainty. In many cases, it cannot hurt, and in others, the potential benefits are likely to overcome the potential disadvantages.

We believe that the reason for the inflated below average reactions to a significant number of interim news events (see Figure 1) may be due to the fact that negative news disclosure is strongly weighted by the market, and positive news is discounted as firms and investment analysts have incentives to skew disclosure, concluding that managers accumulate and withhold bad news up to a certain threshold, but leak and immediately reveal good news to investors (Kothari et al., 2009). We suggest that in order to combat this, organizations can carry out frequent and regular voluntary communications throughout their M&A process and in doing so they will voluntarily disclose a mixture of favorable and unfavorable news, therefore helping to eliminate the surprise aspect of good news and crafting ways of combating inflated negative reactions.

Limitations and directions for future research

Recently, the main criticism of event studies revolve around the assertion that investors are not rational decision makers and that due to information asymmetry, investors’ initial reactions to company-related announcements may be contradicted by the long-run returns (Schijven and Hitt, 2011). From the organizational leaders’ perspective, the short-term reactions given to high profile
strategic moves such as M&A are pretty important, reinforcing or damaging the legitimacy of top management inside or outside the firm immediately. From the managerial perspective, short-term matters. In this research, we are not testing for CAR associated with M&A announcements as an indicator of whether or not the deal will add value to the firm in the long-run. Nor are we looking at whether the M&A will have positive returns in the long-run. What we are looking at is a context in which investors have already reacted to the initial announcement an event, and the organization is then attempting to manage the process of M&A through communicating their plans in how to successfully manage the deal and all the strategic changes that come along with it, before the actual closing of the deal.

With these caveats in mind, we conclude by pointing to two further avenues for research using interim news events. In the first place, while we have shown that these news events are more than just talk, they are also interesting talk. These interim news events, typically transcribed electronically in full, lend themselves to discourse analysis. These presentations are usually based tightly on written scripts, with transcripts of the whole communication typically made available. Discourse analysis techniques are already being applied to other kinds of top management and strategy discourse, for example new Chief Executive letters to shareholders (Fanelli, Misangyi, and Tosi, 2000), the documentation surrounding Initial Public Offerings (Martens, Jennings and Jennings, 2007) and actual strategic plans (Vaara, Sorsa, and Palli, 2010). Discourse associated with chief executive letters and IPO documentation has already been shown to influence material outcomes such as financial analysts’ recommendations and the capacity to raise money (Fanelli et al, 2009; Martens et al. 2007). The opportunity now is to analyse whether there are kinds of discourse in interim news events that can influence stock-market reactions.
The second avenue for further research is to explore why firms choose to make carry out interim news events. The overwhelming majority of NYSE and NSDQ firms choose not to, confining themselves to only the initial announcements of M&A and remaining silent for the rest of the M&A process until the closing of the deal. The strategy literature suggests a number of reasons why some firms will go public on their strategic plans. Thus incumbents trying to defend their position in an industry can signal commitment in order to deter new entry, for example by announcing ambitions with regard to market share or future capacity increments or by affirming the importance of that industry with regard to the strategy of the firm as a whole (Porter, 1985). In industries where there are large sunk costs (because of R&D or initial capital investments), there are incentives to signal intentions clearly to competitors in order to discourage new entrants (Farrell, 1987). Similarly, in capital intensive industries such as paper and pulp, presentations of plans for new capacity help to manage aggregate investment in the industry, holding back more marginal projects, especially in competitive sub-sectors (Christensen and Caves, 1997). Organizations’ communicated plans on how to proceed with an M&A deal can thus work to reduce competitive rivalry in an industry, and are particularly likely where large investments are required. On the other hand, there are insights from the institutionalist literature on why firms might choose to carry out voluntary disclosures. Thus the institutional context in which at least American large firms have evolved in the last two decades has seen a growing emphasis on shareholder value as the guiding norm of business, associated with the rise of large institutional shareholders such as mutual funds and an accompanying increase in the numbers of financial analysts hungry for information (Fligstein, 2001; Davis, 2009). In this institutional environment, there are substantial penalties to corporations that are unable to 'sell' strategic visions that fit the preconceptions of the analyst and shareholder community, the discount suffered by conglomerates being a case in point (Zuckerman, 2000). The result has been a parallel rise within
large corporations of investor relations professionals, responsible for supplying information to shareholders and analysts (Kelly, Laskin, and Rosenstein, 2010; Sandhu, 2009). Taking an institutionalist perspective, Rao and Sivikumar (1999) find that the creation of investor relations departments by Fortune 500 firms is significantly associated with the number of financial analysts following the company, as well as the existence of board interlocks with other companies that had already instituted investor relations departments. Similar institutional factors may be at play in the decision to carry out interim news events.

In short, interim news events offer a fertile new source of data for research on M&A. This paper has suggested that these news events are not empty talk, but can have substantive effects, as measured by cumulative abnormal returns as well as being strongly associated with lower levels of evaluative uncertainty.

Conclusion

Impression management occurs in ambiguous organizational situations (Graffin et al., 2011) such as M&A (Reuer, Tong, and Wu, 2012; Boeh, 2011) in which stakeholders face evaluative uncertainty (Graffin et al., 2013) and therefore have the potential to act negatively (Elsbach et al., 1998; Pfeffer, 1981). In the present study, we have set out to develop and test predictions on the deliberate and discretionary use of interim news events that combat such ambiguity and help manage potential scrutiny from shareholders. In light of our findings, we conclude that interim news events are highly influential in reducing shareholders’ evaluative uncertainty during M&A. Such communications are central to how stakeholders regard the M&A’s potential to deliver value.
References


Goergen M, Renneboog L. 2003. Why are the levels of control (so) different in German and UK companies? Evidence from initial public offerings. *Journal of Law, Economics and Organization* 19 (1): 141-175.


Schijven M, Hitt MA. 2012. The vicarious wisdom of crowds: toward a behavioral perspective on investor reactions to acquisition announcements. SMJ Early View in Wiley Online Library.


Figure 1. USA interim news events plotted against global M&A trend

USA comm.s/deal

Global aggregate deal value (mil USD)
Figure 2. Cumulative abnormal returns associated with interim news events
### Table 1. Correlations for Regression I

| Variables                                    | Mean  | St. Dev. | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|----------------------------------------------|-------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Industry instability                         | 3.41  | 1.03     | 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Strategic instability                        | 0.66  | 0.24     | 0.14*| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Share price volatility                       | 0.32  | 0.13     | 0.17*| 0.15*| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Market volatility                            | 0.37  | 0.12     | 0.07†| 0.09†| 0.21**| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| After 2008                                   | 0.21  | 0.08     | 0.31**| 0.22**| 0.52***| 0.73***| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Contested, hostile deal                      | 0.35  | 0.10     | 0.11 | 0.05| 0.09| 0.12| 0.03|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Recommended deal                             | 0.52  | 0.07     | -0.13| -0.07| -0.14| -0.08| -0.12| 0.00| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Domestic acquirer                            | 0.66  | 0.10     | -0.06| 0.18| 0.16| 0.20*| 0.19*| 0.22**| 0.31**| 1.00|     |     |     |     |     |     |     |     |     |     |     |     |
| Cross border acquirer                        | 0.41  | 0.05     | 0.09| 0.21*| 0.14| -0.15| -0.08| 0.25**| 0.28**| 0.00| 1.00|     |     |     |     |     |     |     |     |     |     |     |
| Stock                                        | 0.25  | 0.11     | 0.32**| 0.17*| 0.20*| 0.29**| -0.07| 0.18†| 0.05| 0.07| 0.12| 1.00|     |     |     |     |     |     |     |     |     |     |     |
| No stock                                     | 0.39  | 0.09     | -0.20*| -0.13| -0.19*| -0.23**| 0.09| 0.08| 0.04| 0.06| 0.15†| 0.00| 1.00|     |     |     |     |     |     |     |     |     |
| Complex                                      | 0.41  | 0.16     | -0.22*| -0.16†| -0.15*| -0.19†| 0.05| 0.03| 0.07| 0.11| 0.14| 0.18*| 0.12| 1.00|     |     |     |     |     |     |     |     |
| Simple                                       | 0.22  | 0.03     | 0.13| 0.19| 0.21*| 0.20*| 0.18†| 0.09| 0.04| 0.08| 0.11| 0.17| 0.10| 0.00| 1.00|     |     |     |     |     |     |     |
| Relative size of bidder vs. target (small to large) | NA | NA       | -0.03| -0.06| -0.07| -0.03| 0.14†| 0.09| 0.03| 0.13†| -0.08| 0.11| 0.25*| 0.13| 0.23*| 1.00|     |     |     |     |     |     |
| Relative size of bidder vs. deal (small to large) | NA | NA       | 0.05| 0.04| -0.05| 0.02| 0.09| 0.04| 0.05| 0.30**| 0.12| 0.08| -0.07| 0.13†| 0.19| 0.00| 1.00|     |     |     |     |     |
| Legal advisors in the magic circle           | 0.90  | 0.14     | 0.01| 0.02| 0.03| 0.07| -0.06| -0.02| -0.01| -0.07| 0.00| -0.03| 0.09| 0.03| 0.13†| 0.07| 0.02| 1.00|     |     |     |
| Financial advisors in the bulge bracket      | 0.89  | 0.16     | 0.00| 0.03| 0.29*| 0.10| 0.04| -0.05| 0.11†| 0.02| 0.09| -0.08| 0.04| 0.05| 0.30**| 0.09| 0.21*| 0.01| 1.00|     |     |
| White shoe consultants                       | 0.81  | 0.20     | 0.09| 0.11| -0.04| -0.12*| -0.10| -0.01| 0.00| -0.01| 0.03| -0.02| -0.02| -0.01| -0.07| 0.03| -0.07| 0.02| 0.02| 1.00|     |
| On FG 100 most admired list                  | 0.28  | 0.12     | 0.11| 0.09| 0.19*| -0.12*| -0.10| -0.01| 0.00| 0.11†| -0.07| 0.07| -0.05| 0.11†| 0.02| -0.02| -0.03| 0.06| 0.05| 0.07| 1.00|
| Serial M&A                                   | 0.66  | 0.14     | 0.13| 0.21*| 0.18*| -0.04| -0.01| 0.00| 0.02| 0.05| 0.18*| -0.04| -0.01| 0.00| -0.01| 0.10†| 0.19†| 0.04| 0.01| 0.03| 0.00| 1.00|

†p<0.1; *p<0.05; **p<0.01; ***p<0.005; p<0.001.
Table 2. Regression I, Dependent variable: Cumulative abnormal returns associated with interim news events

<table>
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<th>Target*</th>
<th>Bidder*</th>
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<th>Bidder*</th>
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<th>Bidder**</th>
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<td>Intercept</td>
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<td>0.73** (0.38)</td>
<td>0.36* (0.25)</td>
<td>0.52** (0.41)</td>
<td>0.61** (0.29)</td>
<td>0.59** (0.38)</td>
<td>0.33* (0.20)</td>
<td>0.41* (0.18)</td>
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<td>1. Industry instability</td>
<td>0.17* (0.16)</td>
<td>0.19* (0.13)</td>
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<td>0.11* (0.21)</td>
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<td>3. Share price volatility</td>
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<td>0.22** (0.09)</td>
<td>0.24** (0.05)</td>
<td>0.19** (0.11)</td>
<td>0.21** (0.08)</td>
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<td>0.02 (0.17)</td>
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<td>3. Contested, hostile deal</td>
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<td>4. Recommended deal</td>
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<td>5. Domestic acquirer</td>
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<td>6. Cross border acquirer</td>
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<td>9. Complex</td>
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<td>11. Relative size of bidder vs. target (small to large)</td>
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<td>12. Relative size of bidder vs. deal (small to large)</td>
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<td>13. Legal advisors in the magic circle</td>
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<td>14. Financial advisors in the bulge bracket</td>
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<td>15. White shoe consultants</td>
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<td>16. On FG 100 most admired list</td>
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<td>17. Serial M&amp;A</td>
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<td>0.22</td>
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*p<0.1; **p<0.05; ***p<0.01; ****p<0.005; p<0.001. Standard errors in parentheses. All models include year fixed effects.
Table 3. Correlations for Regression II

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<th>8</th>
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<td>1 Interim news events</td>
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<td>2.21</td>
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<td>2 No communication</td>
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<tr>
<td>3 Size</td>
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<td>11,532</td>
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<td>6,004</td>
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<td>0.41**</td>
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<td>5 Managerial ownership</td>
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<td>0.07</td>
<td>-0.14*</td>
<td>0.28**</td>
<td>-0.08</td>
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<tr>
<td>6 Contest for corporate control</td>
<td>0.20</td>
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<td>-0.16*</td>
<td>0.22**</td>
<td>-0.10</td>
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<td>0.06</td>
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<td>7 New to a financial market</td>
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<td>0.02</td>
<td>-0.13*</td>
<td>0.24**</td>
<td>-0.17*</td>
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<td>0.09</td>
<td>-0.12</td>
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<tr>
<td>8 Large calls on shareholders</td>
<td>0.32</td>
<td>0.18</td>
<td>-0.19*</td>
<td>0.14*</td>
<td>0.09</td>
<td>0.17*</td>
<td>0.03</td>
<td>0.26**</td>
<td>-0.15†</td>
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<td>9 Business complexity</td>
<td>0.28</td>
<td>0.13</td>
<td>0.04</td>
<td>-0.07</td>
<td>-0.41***</td>
<td>0.19*</td>
<td>0.03</td>
<td>0.12†</td>
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<tr>
<td>10 Firm age</td>
<td>14.31</td>
<td>10.71</td>
<td>0.13†</td>
<td>-0.06</td>
<td>0.14†</td>
<td>-0.17*</td>
<td>0.10</td>
<td>-0.07</td>
<td>-0.15†</td>
<td>0.02</td>
<td>0.11†</td>
<td>1.00</td>
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†p<0.1; *p<0.05; **p<0.01; ***p<0.005; p<0.001.
Table 4. Regression II, Dependent variable: Standard deviation of analysts’ estimates

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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<tbody>
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<td>Intercept</td>
<td>Target*</td>
<td>Bidder*</td>
<td>Target*</td>
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<td></td>
<td>0.65*** (0.22)</td>
<td>0.43*** (0.32)</td>
<td>0.69*** (0.20)</td>
<td>0.40*** (0.30)</td>
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<td>-0.12* (-0.07)</td>
<td>-0.16* (-0.05)</td>
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<td>0.36** (0.08)</td>
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<td>0.32** (0.07)</td>
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<td>RMSE</td>
<td>0.43</td>
<td>0.40</td>
<td>0.37</td>
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</tr>
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</table>

†p<0.1; *p<0.05; **p<0.01; ***p<0.005; p<0.001. Standard errors in parentheses. All models include year fixed effects.