# Does the Market React to the Textual Properties of M&A Press Releases?

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**ABSTRACT:** This article provides evidence on whether the textual properties of M&A press releases (PRs) influence market perceptions of the implications of the deal for acquiring and target firms. Abnormal returns are insignificantly associated with textual properties for both acquiring and target firms. Acquiring firm trading volume, a measure of investor disagreement, increases with the length of the PR, shorter sentences and the intensity of financial terms used, but is insensitive to PR tone. Trading volume of target firms increases with positive tone of PRs, but is largely insensitive to other textual properties. Taken together, our results suggest that textual properties do not affect prices of either acquiring or target firms, but affect disagreement among investors. Moreover, to the extent that more disagreement arises when PRs are less clear, our results suggest that obfuscation increases with shorter sentences that pack more financial terminology in longer announcements. Our results also show that obfuscation is associated with frequent acquiring firms more than one off acquirers.

**Keywords**: M&A press releases; market reaction; textual properties

**Data availability**: Date used in this study are available from public sources identified in the article.

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## 1. INTRODUCTION

There is an emerging and growing literature that analyzes the information content of the language and text used in financial disclosures (e.g., Henry, 2006; Li, 2008; Feldman, Govindaraj, Livnat, & Segal, 2010; Li 2010; Loughran, & McDonald, 2011; Davis, Piger, & Sedor, 2012; Davis, & Tama-Sweet, 2012; Loughran, & McDonald, 2014). The picture that emerges from these papers is that the textual properties of the language used in public disclosures are informative incrementally to financial data. For example, Li (2008) finds that firms with less readable annual reports exhibit lower earnings persistence, while Davis, Piger, & Sedor, (2012) find that positive tone in earnings press releases is positively associated with abnormal returns. Surprisingly, the literature has not explored the informativeness of the text managers use in mergers and acquisitions (M&A) press releases (PRs), notwithstanding M&A are a fundamental cornerstone of corporate strategy worth trillions of dollars per annum (See Table 1) and knowledge of the source of takeover gains are elusive (Jensen and Ruback, 1983; Roll, 1986; Gulobov, Yawson and Zhang, 2015), . In this paper, we evaluate the informativeness of the textual properties of M&A PRs which managers use to convey their beliefs of the merits of proposed combinations.

Most models of M&A behavior, both rational and behavioral, build on theories about the impact of managerial strategies on corporate value. Conceptually, two firms should merge when their combination adds value to shareholders (Barney, 1991; Bruner, 2004). However, scholars also attribute M&A activity to managerial self-serving incentives (Halpern, 1983; Harford, & Li, 2007; Humphery-Jenner, 2012). Empirical studies in this field focus on the economic effects around M&A

*announcements*. M&A is an extended business process from initial negotiation, to public announcement to the final resolution but the M&A disclosure literature focusses primarily on the disclosure behaviour prior to or around the initial plan announcement. Our understanding of how firms actively manage their media coverage is scant (for notable exceptions see Ahern and Sosyura, 2014; Aktas et al 2018; Kimbrough and Louis, 2011) but M&A PRs are known to be fundamentally important to avoid a negative market reaction (INSERT REF HERE). What is not known is whether the choice of words in M&A PR conveys additional information about the fundamentals of the proposed deals for acquirer and target firms or if the narrative disclosures may lose utility or obfuscate issues with writing styles that are confusing, distracting or perplexing to readers (Courtis, 2004; Rutherford, 2003; Securities and Exchange Commission, 1998).

We expect managers who are confident that a deal will add value use clear and simple language to convey their confidence to the market. In contrast, managers who propose deals for self-serving purposes are more likely to use complex wording in an attempt to obfuscate the real reasons for proposing the M&A. Finding that investors react more positively to clearer and positive wording is consistent with this conjecture. However, since M&As are relatively infrequent but have significant economic consequences, the competing hypothesis is they are very closely watched and analyzed, thus leaving little room for textual properties to influence market reaction. If so, we do not expect that the clarity or tone of the PR to have strong pricing implications. We also examine trading volume reaction because even if the wording of PRs does not affect prices, it might still stimulate trading activity owing to disagreement among investors (Beaver, 1968; Kandel & Pearson, 1995).

To explore the information content of M&A PRs, we collect data about 1,894 M&A PRs in 2001-2017. The short-term cumulative abnormal returns (CAR) around M&A

*announcements* are 25% for target companies, consistent with prior findings (Dodd & Ruback, 1977; Jarrell & Poulsen, 1989; Goergen & Renneboog, 2004). For acquiring firms, the returns around M&A *announcements*? are much lower than target firms. On average, acquiring firms experience CARs of -1%, consistent with prior research (for a recent review of evidence on M&As see Renneboog & Vansteenkiste, 2019). Abnormal trading volume (ATV), a measure of investor disagreement about how to interpret a PR, is also substantially higher for the target firm than the acquiring firm (25% vs. 4%, respectively). In other words, markets agree to a greater extent that M&As are bad for acquiring firms than they agree that M&A are good for target firms, on average.

Conditioning on a variety of factors that drive announcement returns, we find that for acquiring firms the textual properties of PRs are not associated with CAR. In contrast, these textual properties are associated with greater short-window abnormal trading volume, suggesting they affect divergence of opinion about the deal. Specifically, we find that longer PRs featuring shorter sentences with higher intensity of financial terminology are associated with greater disagreement among investors in acquiring firms. To the extent that divergence of opinion increases with obfuscation, we interpret these textual properties – short sentences, long PRs and high frequency of financial terminology - as indicators of obfuscation in M&A PRs. While in target firms we do not find that these textual properties explain divergence of opinion, we find that a more positive tone is associated with more disagreement.

We conduct several additional analyses to assess the generalizability of the findings. First, about 58% of deals are announced by frequent acquirers, whereas 42% are one-off deals in the time period we study. Initial analysis reveals that the CAR (ATV) around M&A announcements is significantly higher (lower) for frequent acquirers than for infrequent acquirers. Frequent acquirers may be better at

identifying value-adding M&A opportunities. Being more experienced, they likely more proficient in drafting their PRs. The problem of empire building (Jensen, 1986) is more pronounced in frequent acquirers. A number of studies suggest that the price reaction in deals carried out by frequent acquirers is smaller possibly because managers of frequent acquirers are overconfident (Renneboog & Vansteenkiste, 2019). It is therefore possible that the obfuscation effect is stronger in the subset of frequent acquirers than in the whole sample. Consistent with this conjecture we stronger evidence of textual obfuscation in frequent acquirers than in infrequent acquirers. We also find that shorter and more positive sentences are associated with CAR and ATV only in infrequent acquirers, further supporting the idea that frequent acquirers use language that is more difficult to interpret.

Second, because many M&As are anticipated and pre-analyzed by market participants, the role of textual properties is likely larger in anticipated deals. We find that obfuscation is more pronounced in anticipated deals than in unanticipated deals. We also find that CARs are negatively related to PR length, indicating that obfuscation through longer PRs reduces price reaction.

We contribute to the literature in several ways. First, we provide evidence on the relation between textual properties of PRs and market reaction to M&A announcements. To our knowledge, there is scant evidence pertaining to this very important corporate event. An exception is Cicon, Clarke, Ferris & Jayaraman, (2014), who report that greater frequency of synergy-related words is positively related to CAR. They find a positive relation only for the top quartile of this frequency, but do not find that tone is associated with CAR. They do not, however, explore market reaction in target firms, do not use measures of PR readability and do not use a broad set of controls, as we use here. Second, prior research on the informativeness of textual properties of public announcements other than M&A PR supports the

notion these are price relevant (Davis, Piger, & Sedor, 2012; Davis & Tama-Sweet, 2012; Price, Doran, Peterson, & Bliss, 2012). In contrast, we find no pricing effects for M&A PR in the full sample, suggesting that prior results do not generalize to M&A announcements. We infer from this evidence that for pricing decisions either PR wording is uninformative relative to the investors' existing information set, or that investors are highly suspicious of these verbal massages. Such suspicion is supported by evidence that many deals underperform in the long-run (Agrawal, Jaffe, & Mandelker, 1992; Mitchell, & Stafford, 2000; Megginso, Morgan, & Nail, 2004). Third, the literature on textual properties typically does not explore implications for investor disagreement. Attention to trading volume, as a measure of disagreement, is also relatively sparse in the M&A literature. Both Beaver (1968) and Kandel & Pearson (1995) highlight that price reaction and trading volume need not be correlated. Our evidence from M&A PRs is consistent with this argument since we do not find pricing effects of textual properties, but do find such effects for trading volume. Kim & Verrecchia (1994) present a model in which differences in opinion that arise from the possession of private information lead to higher trading volume around public disclosures. Viewing our results in the light of the Kim & Verrecchia's (1994) paper suggests that the volume response to textual properties of PR may be related to how investors use their private information to differently assess the narratives of the PR. Third, it is unclear which textual properties imply clearer narratives and whether a textual property that implies more clarity in a specific document type (e.g., 10-K) also implies more clarity in another document type (e.g., M&A PR). The prime reason for that is that different documents are used in different contexts and so what makes a document clearer in one context might make it less clear in another context. Prior research finds that readability improves with shorter sentences and a greater use of financial terminology in 10-Ks (Li, 2008; Loughran & McDonald, 2014). 10-Ks are

voluminous and read against a library of prior 10-Ks, 10-Qs and analyst reports. They are packed with numbers and financial information that is compared against other firms and past performance. In this context more financial terminology and shorter sentences reduce processing costs (Lehavy, Li, & Merkley, 2011) However, M&A announcement is relatively succinct whose aim is to convey the rationale for the proposed deal. Extensive use of financial terminology in longer shorter sentences therefore can be an impediment in conveying an appealing plain-language "story" to market participants. Our results are consistent with this argument in hat we document the different role financial terminology and sentence length play in M&A PRs.

## 2. PRIOR RESEARCH AND RESEARCH QUESTIONS

### 2.1 PRIOR LITERATURE

Companies carry out M&As for a myriad of reasons, including strengthening the business through efficiency gains (Silberston, 1972; Jensen, 1986; Dutz, 1989; Capron 1999, Cornett, McNutt & Tehranian, 2006; Martynova & Renneboog, 2008; Phillips & Zhdanov, 2013), realizing synergies and increasing market power (Seth, 1990; Montgomery, 1994; Motta, 2004; Ficery, Herd & Pursche, 2007). However, several studies have argued M&As are motivated by self-interest (Benston, 1985; Jensen & Murphy, 1990; Bliss & Rosen, 2001; Harford & Li, 2007), overconfidence and hubris (Roll, 1986; Lys & Vincent, 1995; Hodgkinson & Partington, 2008; Malmendier & Tate, 2008; Shleifer & Vishny (2003) posit that M&As may also be driven by companies' stock market valuation, while Jensen (1986) argues that managers with excess cash in hand spend it on wasteful investments. Several studies report evidence consistent with Jensen's conjecture (Stulz, 1990; Lang, Stulz, & Walkling, 1991; Doukas, 1995; Lamont & Polk, 2002; Dittmar & Thakor, 2007; Masulis, Wang, & Xie, 2007).

A large number of studies examine the information content of public announcements, such as the 10-K reports (Li, 2008; Feldman, Govindaraj, Livnat, & Segal, 2010; Loughran & McDonald, 2014), 10-Q reports (Easton & Zmijewski, 1993; Campbell, Chistensen, Heninger & Stice, 2001; Li & Ramesh, 2009), earnings announcements (Beaver, 1968; Berkman & Truong, 2009; Collins, Li & Xie, 2009; Beaver, McNichols & Wang, 2018) and dividend announcements (Robinson & Bangwayo-Skeete, 2017). However, these studies focus on the M&A announcement event itself, while the information content of M&A announcement narratives has received little attention.

There are mixed results for the acquiring company's price reaction to the M&A announcement. Some studies have established that the market reaction to M&A announcements is positive for acquirers (Dodd & Ruback, 1977; Kummer & Hoffmeister, 1978; Dodd 1980; Asquith, 1983; Asquith, Bruner & Mullins, 1983; Loderer & Martin, 1990; Franks, Harris & Titman, 1991; Eckbo & Thorburn, 2000). Yet, several other papers report a negative effect (Agrawal et al., 1992; Healy, Palepu, & Ruback, 1992; Sirower, 1997; Walker, 2000; Mitchell & Stafford, 2000; Malmendier & Tate, 2008; Aktas, De Bodt, & Roll, 2009), or no price effect (Langetieg, 1978; Asquith & Kim, 1982; Jensen & Ruback, 1983; Frank et al., 1991; Andrade, Mitchell & Stafford, 2001; Campa & Hernando, 2004).

As Beaver (1968), Kandel & Perason (1995) and Kim & Verrecchia (1994) point out, trading volume reflects investor disagreement over the information content of financial information. As with earnings announcements, higher trading volume around the M&A announcement is indicative of divergence of opinion among investors. Yet, only a few studies examine volume reaction to M&A announcements. The evidence is of positive trading volume for the acquiring company during the M&A announcement period (Sanders & Zdanowicz, 1992; Louis & Sun, 2010; Jansen, 2015; Augustin, Brenner, & Subrahmanyam, 2019).

## 2.2 RESEARCH QUESTIONS

The extant literature on textual properties of financial disclosures views linguistic complexity as an attempt to obfuscate unfavorable information. However, Bushee, Gow, & Talyor (2018, p. 86) note that "complex language could be necessary to convey information about the firm's business transactions and operating strategy." If investors equate complex language with obfuscation of bad news, then we would expect less readable PRs to be associated with lower and possibly negative returns. On the other hand, if complex narratives are informative, then it is likely that returns and complexity will be associated. However, the direction of the association is difficult to predict, as it is a function of the nature of underlying disclosures (bad or good news). Linguistic complexity can nevertheless curtail informed decisions and hence trading. Miller (2010) find that longer and less readable 10-K filings are associated with lower trading volume. However, this result stems mostly from small and unsophisticated investors. In the case on M&A announcements, we expect sophisticated traders to act on complex but informative language (Bushee et al., 2018). To the extent that investors disagree on the meaning of complex language, less readable PRs may be associated with larger trading volume (Beaver, 1968; Karpoff, 1986). Taken together, these arguments lead us first to ask whether PR readability is associated with price and volume reactions.

As we discuss above, previous studies discover that textual properties of financial disclosures other than M&A PRs, are informative. In the case of tone, prospect theory argues that using positive terms to frame financial performance can make investors assess reported results in terms of increases relative to reference points (Henry, 2008). Another explanation, provided by Li (2010), is that higher tone reflects a more positive attitude of managers, and thus positively affect the investor's attitude on the disclosed information. It therefore stands to reason that managers use a positive tone to justify an M&A deal. However, if self-serving incentives, or hubris, drive M&A

activity, managers may use a more positive tone to mask the real purpose of the deal. In this case, investors may react unfavorably to a more positive tone, if tone positivity is inversely related to the expected deal's success. Investor reaction to tone may be revealed not only through stock returns, but also through trading volume. Kandel & Perason (1995), however, caution that returns and trading volumes are largely uncorrelated, but that trading volume arises when traders act on different interpretations of public information. Kim & Verrecchia (1994) suggest that differences in private information are responsible for higher trading volume around public announcements. Thus, it is possible that M&A announcements trigger little price reaction, but still stimulate disagreement. Our second research question is therefore whether market reaction (returns and trading volume) in acquirer or target stock is associated with the tone of the PR.

Previous studies seek to establish whether managers matter in respect to M&A decision making and performance. Managerial overconfidence is more common with frequent M&A than one-off transactions (e.g. Billett and Qian, 2008). Our third research question is whether market reaction (returns and trading volume) in acquirer or target stock is associated with the tone of the PR of frequent M&A than one off M&A.

## 3. METHODOLOGY

### 3.1 MODEL SPECIFICATION

To investigate the effects of the textual properties of PR on the market reaction of both acquirer and target firms we estimate the following model (1) (omitting time and firm subscripts):

$$REACTION = \beta_1 TEXT + \beta_2 PAYTYPE + \beta_3 HOSTILE + \beta_4 TENDER + \beta_5 SAME + \beta_6 REALIZE + \beta_7 TOBINQ\_A + \beta_8 TOBINQ\_T + \beta_9 STOCK\_A + \beta_{10} STOCK\_T +$$

$$\beta_{11}LEVERAGE\_A + \beta_{12}ROA\_A + \beta_{13}SIZE\_A + \beta_{14}OCF\_A + \beta_{15}LEVERAGE\_T + \beta_{16}ROA\_T + \beta_{17}SIZE\_T + \beta_{18}OCF\_T + FIRM\ F.E. + YEAR\ F.E. + \varepsilon \quad (1)$$

In this model, *_A* (*_T*) refer to the acquirer (target) firm. The dependent variable (*REACTION*) is either the cumulative abnormal returns (*CAR*), or abnormal trading volume (*ATV*) over the [-1, +1] window centered around the PR date. We estimate *REACTION* for both the acquiring and target firms (*REACTION_A* and *REACTION_T*, respectively).

The main variables of interest are captured in *TEXT*. We parse the M&A PR disclosures using a lexicon based on words identified in the prior literature that capture the readability of a text document. To focus on the textual properties of M&A PR, we exclude legal language[1] and accounting information[2] that are not directly related to the M&A deal. Many scholars advocate the use of the Fog Index (e.g., Li, 2008) to the remaining text. However, critics contend that the dictionaries that underpin Fog index are not designed for corporate statements (Li, 2010) and common "complex" words, i.e. those with more than two syllables, are often misunderstood (Loughran & McDonald, 2014). To circumvent this problem, we include only the components of the Fog Index that are relevant to business transactions. First, we use the average sentence length (*AVGWORD*). On one hand, shorter sentences constrain the amount of information they convey. On the other hand, it might be harder for investors to extract the information from longer sentences (Li, 2008). It is therefore unclear if shorter or longer sentences contribute to obfuscation. Nevertheless, we follow Li (2008) by multiplying the average sentence length by -1, assuming that the value of *AVGWORD* is inversely related to the readability of PR. We revisit this assumption when we interpret the results. Second, we measure the overall size of the PR using the document size of PR measured at kilobytes (kb) times -1 (*FILESIZE*). Li (2010) argues that longer documents increase information-processing costs and are

1 Legal language includes: Safe Harbour regulations, accounting policy, legal note to investor, introduction of company and contact information.

2 Accounting information includes: revision of earnings and past earnings information.

more difficult to read *ceteris paribus*. Therefore, the clarity of disclosure reduces when its size increases. We multiply the value of file size by -1 so that the value of *FILESIZE* is positively related to the readability of PR.

Following Loughran & McDonald (2014), we also calculate a measure of financial terminology used in the PR. Loughran & McDonald (2014) argue that it is reasonable to assume investors are experienced and knowledgeable, and so a higher frequency of financial terminology improves readability. However they also acknowledge that extensive use of terminology could have a negative relation with readability. Therefore, we use the relative frequency of financial terminology (*FINTERM*) as an additional textual measure using the *Oxford Dictionary of Accounting*, as augmented for terminology we often find in M&A announcements (see Appendix 2).

Prior studies show that firms with a more positive *TONE* (i.e. percentage of optimism words minus percentage of pessimism words) are associated with earnings quality (Li, 2010), analyst behaviour, cost of capital and the information environment (Kothari, Li & Short, 2009) and higher subsequent ROA in earnings press releases (Davis, Piger & Sedor, 2012), and 10-Ks (Davis & Tama-Sweet, 2012). In the current study, *TONE* reflects the extent of managerial optimism in the M&A PR.

In an alternative specification to equation (1) we replace *AVGWORD*, *FILESIZE* and *FINTERM* with a single measure, *READ_INDEX*, which sums the number of cases where each of the three individual readability terms exhibits readability better than the industry median. Thus, *READ_INDEX* = {0, 1, 2, 3}.[3] If textual properties are informative to investors, we expect to see the coefficients on the textual variables statistically significant with higher readability and *TONE* to be positively related to *REACTION*. On the other hand, if managers use the PR to obfuscate, or if they fail to provide new and useful information, we would not expect to see significant relations between the textual properties and market reaction.

[3] In Section 4.2 we consider alternative measures of the readability index.

The model also features a number of control variables building on prior research (Cai & Sevilir, 2012; Fu et al. 2013; Ishii & Xuan, 2014; Schneider & Spalt, 2015). The controls come from three groups: deal characteristics, market-based information about the acquirer and target, and accounting-based information about the acquirer and target.

Starting with deal characteristics we control for payment type (*PAYTYPE*), defined as 0/1/2 for cash/ cash and stock/ stock deal, respectively. Prior literature establishes that payment type can signal overvaluation. Specifically, acquisitions funded by stocks are perceived as overvalued, which leads to lower price reaction in acquirer stock (Loughran & Vijh, 1997; Andrade et al., 2001). Jarrell & Poulsen (1989) and Kennedy & Limmack, (1996) argue that hostile deals involve higher risk than friendly deals in terms of integration and synergy, thus hostile deals receive lower abnormal return than friendly deals do. *HOSTILE*, an indicator variable, equals to 1 if the deal is hostile, or 0 if the deal is friendly. Prior research found that whether an M&A deal is conducted via a direct tender offer to target's shareholders, or filed via a proxy statement followed by a vote, matters for the announcement market reaction (Loughran & Vijh, 1997; Boon, Broughmanb, & Macias, 2018). *TENDER* is therefore an indicator variable that equals 1 for tender offers, and 0 otherwise. Because M&A within the same industry work to increase monopolistic power, and hence the attractiveness of the deal (Fee & Thomas, 2004), we include *SAME*, a dummy set to 1 if the acquirer and target firms have the same 2-digit SIC code and 0 if otherwise. Loughran & Vijh, (1997) argue that the relative size of acquirer and target proxies for anticipated efficiency gains from merger. We therefore include *RELSIZE* which is total assets of target firm divided by total assets of the acquirer firm.

Turning to market-based information, we use pre-acquisition stock performance (*STOCK*), and Tobin's Q (*TOBINQ*) because acquirer (target) stock overvaluation (undervaluation) contributes to value destruction via the empire-building incentives (Rhodes-Kropf & Viswanathan, 2004; Alexandridis et al., 2017). Finally, for the pre-

acquisition accounting information, we use leverage (*LEVERAGE*), defined as short-term debt over total assets, as it disciplines managerial investment decisions (Jensen, 1988; Stulz, 1990).[4] We also control for the profitability, measured as earnings before interest and tax scaled by total assets (*ROA*) and operation cash flow (*OCF*) of both acquirer and target firms. Moeller et al. (2004) and Alexandridis et al. (2017) find that acquirer firm's size is negatively correlated with acquirer's price return, which is consistent with Roll's hubris hypothesis (Roll, 1986). We therefore use log of total assets as the size measure (*SIZE*). The model also features year and acquirer fixed effects. We control for firm fixed effects because there are frequent acquirers. Golubov, Yawson, & Zhang (2015) find that firms fixed effects explain most of acquirer announcement returns. Appendix 1 provides variable definitions and further detail about variables measurement procedures.

### 3.2 DATA AND SAMPLE

The sample creation starts from a population of 413,465 global M&A deals completed between 2000 and 2017 reported by Bloomberg. To avoid any regulatory heterogeneity issues, we include only cash, stock or cash and stock deals where *both* the acquirer and target firms are traded on the North American Stock Exchanges. We obtain the data from various sources. For market reaction we use CRSP. We collect textual properties from Bloomberg, EDGAR, PR newswire, and companies' official websites and financial. Bloomberg also reports deal characteristics. We use Compustat-IQ, EIKON, and Bloomberg to collect accounting data. This sample selection process resulted in 1,894 M&A deals that are summarised in Table 1.

[Insert Table 1 about here]

[4] In untabulated analysis we use an alternative measure of *LEVERAGE* which is the sum of short- and long-term debt scaled by total assets. The results remain qualitatively the same.

The sample is evenly distributed across time except that the number of observations is lower in 2000, in the aftermath of the dot.com bubble and 2017 (Table 1 Panel B). The largest number of deals (8.2%) occur in 2007, immediately prior to the financial crisis that severely reduced firms' ability and willingness to undertake M&As. Total deal value is highest in 2014 & 2015 as is the average deal size. M&A deals occur mainly in manufacturing (41%), finance (21%) and services (18%) with all other sectors making up no more than 10% of the distribution (Table 1 Panel C).

Descriptive statistics are reported in Panel A of Table 2.[5] Turning first to the textual properties, the mean (median) word count (*AVGWORD*) of M&A PRs is 17.873 (17.606), which is smaller than the 23 words per sentence that reported in Loughran & McDonald, (2014) in 10-Ks. Unsurprisingly, the mean (median) file size (*FILESIZE*) of M&A PRs of 3.257 (2.946) kilobyte is considerably smaller than the mean 10-K file size (e.g. 0.42 to 2.51 megabytes) reported in Loughran & McDonald (2014). The mean relative frequency of financial terminology (*FINTERM*) indicates that 14.7% of total words in M&A PR are financial terminology. The use of financial terminology in M&A PRs is more prevalent than investment statements and product disclosure statements (Gilbert & Scott, 2017: 1%-2%) but similar to websites offering details of payday loans, personal loans and credit cards (Burke & Fry, 2018: 11%-14%). The mean (median) *TONE* of 50.4% (53.1%) indicates M&A PR's are considerably more optimistic than other corporate disclosures (e.g. -0.64% for 10-K, Loughran & McDonald, 2011; 0.82% for earnings announcements, Davis, Piger & Sedor, 2012 and -23% for forward-looking MD&A, Li, 2010). Finally, the summary measure, *READ_INDEX*, suggests that the textual property is above the industry median on average 1.5 times.

Of the 1,894 deals, 951 are cash payments, 397 a mixture of cash and stock and 546 stock only. The vast majority of deals are friendly and about 24% are carried out by tender offer. The mean (median) of *SAME* is 0.551 (1), indicating that more than half of the deals are within the same industry.

[5] We discuss the other panels of Table 2 later in the paper.

The average short-term cumulative abnormal returns (CAR) for target companies around M&A announcements is 24.525%, which is in line with prior studies (e.g. 20.58% and 28.99% by Dodd & Ruback, 1977 and Jarrell & Poulsen, 1989, respectively). For acquiring companies, CARs are negative more often than not and on average (-0.958%) smaller compared to some other studies (e.g. Kummer & Hoffmeister, 1978; Asquith, 1983). Taken together, there is a much greater market reaction in relation to target companies than acquiring companies.

*ATV* is considerably and significantly higher for target companies (25.095%) than acquiring companies (3.838%), which is similar to Sanders & Zdanowicz (1992). Unreported results show the price reaction is negative and volume reaction positive across other windows (e.g. 0, 0 and -2, +2). Taken together, consistent with many prior studies, markets perceive M&A announcements as bad news for acquiring firms, but good news for target firms (e.g. Healy, 2016; Dargenidou, Gregory & Hua, 2016).

Target firms have a significantly higher Tobin's Q ratio than acquiring firms, but acquiring firms have larger balance sheets, as captured in *SIZE*, generate more cash from operations, are more profitable and less leveraged. Target runup average daily stock return outperforms acquirer runup daily return e (*STOCK_T* = 0.17% vs. *STOCK_A* = 0.1%).

[Insert Table 2 about here]

Table 3 compares the average measures of market reaction across quartiles of textual properties. Panel A shows that average *CAR* tends to increase with shorter sentences (*AVGWORD*). Average target *CAR* is 4% higher in the fourth quartile of *AVGWORD* than in the first quartile and the difference is significant at the 1% level. Although *ATV* tends to decline across quartiles of *AVGWORD*, the decline is only significant for target firms where abnormal trading volume is 5.65% lower in shortest sentence quartile than the longest sentence quartile ($p$-value = 0.000). Collectively

the effect of the shortest sentences is apparent only in target firms, as it is associated with higher price reaction coupled with smallest disagreement.

Panel B of Table 3 reports the analysis of average market reaction across quartiles of file size. The quartile of smallest file size is associated with significantly higher average *CAR* than in the largest file size. While this holds for both acquiring and target firms, the difference in *CAR* is larger in target firms (6.8% vs. 1.4%). The smallest file size quartile is also associated with significantly lower *ATV* for acquiring firms than the largest file size.

Panel C of Table 3 reports the analysis for quartiles of *FINTERM*. The highest quartile is associated with larger acquirer *CAR* and *ATV* than the lowest quartile. In target firms, in contrast, the highest quartile is associated with *CAR* (*ATV*) that is 6.4% (7.0%) smaller than the lowest *FINTERM* quartile.

In Panel C of Table 4 we use the readability index, which condenses the previous three textual measures into a single measure. Using this summary measure we find that acquirer average *CAR* (*ATV*) is higher (lower) in the top readability quartile than in in other quartiles. In other words, for acquiring firms, PRs that are most readable are associated with the highest *CAR* and lowest disagreement. The effect of the highest readability on target market reaction is confined to *ATV* which is 6.5% lower in the fourth quartile than in the first quartile.

Overall, Table 3 indicates complex patterns and associations between *CAR* and *ATV* across quartiles of textual properties. However, using *READ_INDEX* as a summary measure suggests that disagreement is significantly lower in the highest quartiles of the readability measures in both acquiring and target firms. In addition, for acquiring firms, the highest quartile of the various readability measures are associated with better *CAR* performance (i.e., less negative) than in the lowest quartile of these measures

[Insert Table 3 about here]

Table 4 reports the distribution of average *CAR* and *ATV* across quartiles of the tone measure (*TONE*). The use of most positive tone is associated with *CAR* that is 0.7% lower than the least positive tone for acquiring firms. But for target firms *CAR* is 1.3% higher when the most positive tone is used than when the least positive tone is used. This suggests that the uses of highly positive tone is mostly detrimental (beneficial) to shareholders of acquiring (target) firms. The use of most positive tone is also associated with greater disagreement than using the least positive tone for both firm types.

[Insert Table 4 about here]

Table 5 reports the correlations for select variables. These correlations are largely small in magnitude. Nevertheless, the readability index is about 50% correlated with *AVGWORD*, *FILESIZE* and *FINTERM*, as is expected by construction. It is also negatively related to tone, suggesting that more readable PRs are less positive in tone. *CAR_A* is positively correlated with the three individual measures of readability as well as with the readability index. *ATV* for both acquirers and targets is negatively related to the readability index, suggesting that divergence of onion is inversely related to the readability of the PR. *ATV_A*, *ATV_T* and *CAR_T* are positively related to tone, but *CAR_A* is negatively related to tone. In other words, while a more positive tone is associated with greater disagreement among investors in both target and acquirer firms, the pricing effects are in opposing direction. Specifically, a more positive tone is associated with greater (smaller) *CAR* for target (acquirer) firms.

[Insert Table 5 about here]

## 4. RESULTS

### 4.1 Main Results

Table 6 reports the results for the entire sample whereby columns 1 and 2 present *CAR* while columns 3 and 4 report *ATV* reactions to textual properties for acquiring firms. Although there is no evidence of price reaction to textual properties, short-term trading volume is significantly and positively (negatively) associated with *AVGWORD* and *FINTERM* (*FILESIZE*). These results imply that investor disagreement about the interpretation of news increases for the M&A PRs that are brief, contain more words per sentence and large amounts of financial terminology. Put another way, there is a greater divergence of opinion about the implications of the M&A deal for acquiring firms whose PRs contain shorter sentences with larger amounts of financial terminology and in longer documents. Financially technical content is easier to understand and digest if the underlying document contain sufficient detail without being overly verbose.

Table 6 columns 5 & 6 (7 & 8) report the *CAR* (*ATV*) regressions for target firms. We find no evidence of a pricing reaction to any of the tone or other textual properties. In contrast, *ATV* increases with *TONE*, implying that target investor disagree more when managers release more optimistic PRs.

[Insert Table 6 about here]

If previous M&A experience is informative and value adding, the market reaction to frequent acquirers could be different to one-off acquirers (e.g., Billett & Qian, 2008; Mishra, 2020). Frequent acquirers might be expected to perform better because they have all of the necessary experience needed to integrate the target's activities and operations post-merger. Additionally, there may be behavioral differences amongst managers. For example, entrenched managers are expected to spend more on CAPEX and indulge in more M&A relative to non-entrenched managers (Gompers, Ishii & Mertick, 2003). Mangers with more power and discretion engage in self-serving value destroying M&A (Jensen & Meckling, 1976; Bebchuck, Friend & Walker, 2002). Panel B of Table 2 indicates that deals by frequent buyers are different from one-off deals in a number of ways. For example, frequent buyers use more cash tender offers and are bigger on average than one-off acquirers. They also release shorter PRs that are packed with fewer financial terms.

In Panel A of Table 7 we therefore test the market reaction to textual properties separately for one-off acquirers (columns 1-4) and for frequent acquirers (columns 5-8).[6] *CAR* is significant and positively associated with *AVGWORD* for one-off acquirers and *FILESIZE* for frequent acquirers. The first result is somewhat surprising because *AVGWORD* is similar for both acquirer types, as reported in Panel B of Table 2. For frequent acquirers, the market reacts favorably to shorter PRs. We interpret this as evidence consistent with investors responding positively to more focused information provided by repeat acquirers.

Turning to volume reaction, *ATV*, we find that while tone is positively related to investor disagreement in one-off acquirers, there is no relation in frequent buyers. This is consistent with investors ignoring self-serving tone in firms that routinely buy other companies, but find tone as genuine in one-off acquirers. We also find that the other three textual properties are associated with *ATV* in frequent buyers. Longer PRs packed with more financial terminology are associated with higher *ATV*. Holding constant file size and financial terminology, shorter sentences contribute to further disagreement. Taken together, these results suggest that, although tone is not informative for frequent acquirers, the M&A PRs of these firms reduce disagreement among shareholders when they feature shorter announcements with longer sentences and fewer financial terms.

Table 7 Panel B reports the target firm's market reaction to textual properties for subsamples for one-off acquirers (columns 1-4) and frequent acquirers (columns 5- 8). There is strong evidence that *ATV* is positively associated with *TONE* across all models, suggesting that target investors do not distinguish between buyer types in assessing the PR tone.

[Insert Table 7 about here]

Panel C of Table 2 shows that highly leveraged acquirers rely more on cash-funded bids and make more hostile takeover attempts. They also use less positive tone than low-leverage bidders and use fewer words per sentence, on average. Table 8 explores

[6] For brevity, we report only the findings for the textual properties.

if the market reaction differs between high- and low-leverage acquirers. Panel A (B) reports the acquirer (target) firm's market reaction to textual properties for subsamples for high-leverage acquirers (columns 1-4) and low-leverage acquirers (columns 5-8). In the case of acquirer firm (Panel A), *ATV* is significantly and positively associated with *FINTERM* for high-leveraged firms. Otherwise the results of these analyses for both acquirer and target firms are insignificant across both subsamples. Taken together, market reaction to textual properties does not vary with leverage.

[Insert Table 8 about here]

Cai, Song, & Walking (2011) report that less anticipated bids earn significantly higher announcement returns. We follow Palepu (1986) and classify anticipated announcements if an M&A announcement was made in the previous year within the same industry. This yields a sub-sample of 1,142 anticipated announcements and 752 unanticipated announcements. Panel D of Table 2 is consistent with the findings of Cai et al. (2011) in our sample for acquirer returns. Specifically, *CAR_A* for anticipated announcements is -1.33% compared with -0.40% for unanticipated. Unanticipated announcement feature more positive tone than anticipated announcements. There are also a number of significant differences in the deal characteristics, as reported in Panel D of Table 2. Table 9 analyses the differences in market reaction for the two announcement types. Panel A (B) reports the acquirer (target) firm's market reaction to textual properties for subsamples for anticipated M&A (columns 1-4) and unanticipated M&A (columns 5-8). *CAR* is significantly and positively associated with shorter announcements for anticipated M&A, as is seen from the (coefficient on *FILESIZE*. *ATV* is significantly and positively associated with *FINTERM* for both anticipated and unanticipated deals. For anticipated deals, a significant positive association with *ATV* is observed with *AVGWORD,* and a negative association with *FILESIZE*. Taken together, these results suggest that for

anticipated deals, disagreement amongst investors in the acquirer firm increases when there are fewer words per sentence and when the PR is longer. There is no evidence of a significant target firm price or volume reaction for either anticipated nor unanticipated M&A deals.

[Insert Table 9 about here]

**4.2 Additional Analysis**

Prior research suggests that returns are affected by the way the deal is funded. In particular, Roll's (1986) and Shleifer & Vishny (2003) posit that managers of acquiring firms use over-priced stock as a cheap currency. Using cash may therefore send a more credible signal about the fundamentals of the proposed deal. However, Jensen (1986) posits that with excessive cash in hand, managers may be tempted to spend it on wasteful investments. Prior studies seem to support the notion of higher credibility of cash bids. Specifically, a number of studies find that cash M&A deals generate higher returns for the target company than all-stock M&A deals do (Kummer & Hoffmeister, 1978; Carleton, Guilkey, Harris & Stewart, 1983; Wansley, Lane & Yang, 1983; Huang & Walking, 1987; Davidson & Cheng, 1997). We identify 951 cash-only deals and 546 stock-only deals. In untabulated analysis we find the two deal types are statistically different across practically all variables we use in this study. In particular, we find that cash deals are characterized by shorter and more positive PRs and with fewer financial terms. However, when we examine market reaction to the two deal types, we largely find no relation between textual properties and *CAR* and *ATV*.

The readability index assumes, as in Loughran & McDonald (2014), that readability improves with more financial terms used in the PR. This assumption, however, may be questionable. We therefore recalculate the readability index assuming that fewer financial terms implies better readability. Using this alternative

measure nevertheless leaves our results largely intact. We also follow Guay, Samuels, & Taylor (2016) and construct an alternative readability measure using principal component analysis (PCA). Specifically, we search for principal components that explain most of the variation in the following individual readability measures: Flesch-Kincaid readability, LIX readability, RIX readability, Gunning Fog readability, ARI readability, and SMOG readability. Although we identify a single factor that explains 88% of the common variation across the individual measures, the KMO test result is 0.66, which indicates mediocre suitability for PCA. We then rerun Table 6 and find that the identified component is unrelated to market reaction for either acquiring or target firms. Nevertheless, the finding that PR tone is positively related to target *ATV* remains intact.

Finally, we note from the analyses reported in Tables 3 and 4 that a more pronounced market reaction is associated with the top quartile of the various measures of textual properties. We therefore replace each of the continuous measures of *AVGWORD*, *FILESIZE*, *FINTERM*, *READ_INDEX* and *TONE* with an indicator variable that is set equal to 1 if the underlying measure belongs to the top quartile, and zero otherwise. These indicators are labelled as the continuous variable with the suffix *_IND*. We then rerun Table 6 and find that *AVGWORD_IND* and *FINTERM_IND* are positively related to acquirer *ATV*. While this is consistent with the finding of Table 6, we now do not find that acquirer *ATV* is related to *FILESIZE_IND* and we do not find that target *ATV* is related to tone.

## 5. SUMMARY AND CONCLUSIONS

There is a vast literature dedicated to the consideration of how quantitative data is used in financial markets. Drawing from the corpus linguistics field, a growing accounting and finance literature has explored the usefulness of the textual properties of information used in financial disclosures. Studies show that the textual

properties of the language used in corporate disclosures, such as earnings or dividends announcements, is informative incrementally to financial data. Although M&A are major events in a corporation's life, worth trillions of dollars annually, there is also scant evidence pertaining to the informativeness of M&A announcements. This is surprising given the size and importance of this market, assimilating targets is problematic and the well documented concerns of self-serving managers undertaking M&As that are value destructive. This study contributes to the extant M&A literature by evaluating the textual properties of the main communication medium that managers use to signal their a priori beliefs about a proposed combination – the M&A PR.

For acquiring firms, longer PRs containing many financial terms, shorter sentences are associated with greater short-window trading volume. For target firms we find evidence that PRs that convey more optimistic tone are associated with more investor disagreement. To the extent that more disagreement arises when PRs are less clear, then our results suggest that obfuscation increases with shorter sentences that pack more financial terminology in longer announcements.

We undertake a battery of additional analyses to assess the generalizability of the results. First, when we partition our sample by the regularity of M&A activity, the CAR (ATV) around M&A announcements is significantly higher (lower) for frequent acquirers than for one-off acquirers. Frequent acquirers may be more able to spot and operationalise value adding M&A deals and/or more effective and efficient in PR construction than ad hoc acquirers. Acquiring firm ATV results suggest that investors discount tone for frequent acquirers but find tone more credible in one-off M&A deals. Frequent acquirers use of financial terms is less common than one-off acquirers but this leads to disagreement of opinion amongst investors. For target firms that trading

volume is positively related to tone when the deal is proposed by both one-off and frequent buyers.

Second, we partition based on corporate gearing and find little evidence that textual properties differentially influence market reaction across high or low levels of leverage.

Third, we divide our sample into M&As that are anticipated and those that were not anticipated by the market. There is a positive market reaction by investors in the acquiring firm of anticipated M&A when the PR is shorter. Divergence of investor opinion about anticipated deals are amplified when PRs are long but sentences are shorter.

We contribute to the literature in several ways. First, we provide evidence on the relation between textual properties of PR and market reaction to M&A announcements for a large sample of both acquirer and target US listed firms. Second, prior research argues that the textual properties of public announcements are informative and price relevant. In contrast, we find pricing effects for M&A PR are very limited, suggesting that prior results do not generalize to M&A announcements. Third, the broad literature on textual properties focusses on price but typically ignores investor disagreement. Moreover, trading volume is largely overlooked in the M&A literature. Our limited evidence of pricing effects but considerable trading volume evidence highlights the danger of assuming that price reaction and trading volume are correlated. We contend that the volume response to textual properties of PR is related to how investors use their private information to differently assess the narratives of the PR.

Whilst our study is largely exploratory, we believe our results are likely to be of interest to regulators, standard setters, investors, managers and other researchers. There are a number of limitations of this study. First our results focus on M&A

amongst US listed firms and may not be generalizable to other settings. Second, there is clearly scope for additional research focussing on finer aspects of textual disclosure and constructing more sophisticated measures. Our conclusions are subject to several caveats. As with most work in our field, it is difficult to infer causality without an exogenous shock. Finally, our analyses capture market effects and there is undoubtedly heterogeneity in disclosure practices at the firm level. We leave case by case examination of PR disclosures to further work.

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**Table 1**
**The Sample**

**Panel A - Deal screening from Bloomberg Terminal:**

| **Criteria** | **Dropped** | **Number of M&A deals** |
|---|---|---|
| Global M&A announcements 01/Jan/2000 ---- 31/Dec/2017 | | 413,465 |
| Cash/Stock/Cash&Stock only deals | 144,525 | 268,940 |
| Exchange: Both acquirer and target traded on a North American Exchange | 258,570 | 10,370 |
| M&A deals with available PR 01/Jan/2000 ---- 31/Dec/2017 | 5,906 | 4,464 |
| M&A deals with PR and data on acquirer's and target's market reaction available | 2,055 | 2,409 |
| M&A deals with PR, with complete data on acquirer's and target's market reaction, and acquirer's and target's pre-acquisition financial information | 515 | 1,894 |

**Panel B - Distribution of Deals by Year**

| Announcement Year | Number of Deals | % | Total Deal Value ($ Million) | Average Deal Value ($ Million) |
|---|---|---|---|---|
| 2000 | 31 | 1.637 | 178,341.1 | 5,752.9 |
| 2001 | 165 | 8.712 | 220,021.4 | 1,333.5 |
| 2002 | 96 | 5.069 | 111,420.7 | 1,160.6 |
| 2003 | 123 | 6.494 | 171,824.7 | 1,396.9 |
| 2004 | 121 | 6.389 | 319,698.1 | 2,642.1 |
| 2005 | 121 | 6.389 | 379,361.4 | 3,135.2 |
| 2006 | 161 | 8.501 | 379,010.2 | 2,354.1 |
| 2007 | 156 | 8.237 | 280,715.5 | 1,799.5 |
| 2008 | 107 | 5.649 | 225,802.5 | 2,110.3 |
| 2009 | 95 | 5.016 | 233,458.6 | 2,457.5 |
| 2010 | 105 | 5.544 | 200,718.2 | 1,911.6 |
| 2011 | 87 | 4.593 | 274,479.9 | 3,154.9 |
| 2012 | 85 | 4.488 | 125,985.7 | 1,482.2 |
| 2013 | 86 | 4.541 | 192,953.7 | 2,243.6 |
| 2014 | 104 | 5.491 | 607,253.4 | 5,839.0 |
| 2015 | 93 | 4.910 | 754,094.9 | 8,108.5 |
| 2016 | 98 | 5.174 | 417,280.1 | 4,258.0 |
| 2017 | 60 | 3.168 | 188,555.5 | 3,142.6 |
| Total | 1,894 | 100.00 | 5,260,975.6 | 2,777.7 |

**Panel C - Distribution of Deals by Industry**

| Industry | Acquirer: Number of Deals | % | Target: Number of Deals | % |
|---|---|---|---|---|
| Mining | 98 | 5.17 | 100 | 5.28 |
| Construction | 9 | 0.47 | 8 | 0.42 |
| Manufacturing | 780 | 41.18 | 605 | 31.94 |
| Transportation, Communication, Electric, Gas and Sanitary service | 173 | 9.13 | 236 | 12.46 |
| Wholesale Trade | 36 | 1.90 | 57 | 3.01 |
| Retail Trade | 55 | 2.90 | 56 | 2.96 |
| Finance, Insurance and Real Estate | 403 | 21.28 | 394 | 20.80 |
| Services | 340 | 17.95 | 438 | 23.13 |
| Other industries | 0 | 0.00 | 0 | 0.00 |
| Total | 1894 | 100.00 | 1,894 | 100.00 |

## Table 2 – Descriptive Statistics

### Panel A: Full Sample

| Variable | N | Mean | SD | Min | P25 | P50 | P75 | Max |
|---|---|---|---|---|---|---|---|---|
| ***Textual properties of PR*** | | | | | | | | |
| *AVGWORD* | 1894 | -17.873 | 3.001 | -26.462 | -19.737 | -17.606 | -15.732 | -11.920 |
| *FILESIZE* | 1894 | -3.257 | 1.747 | -9.140 | -4.142 | -2.946 | -2.007 | -0.555 |
| *FINTERM* (%) | 1894 | 14.734 | 3.549 | 7.492 | 12.317 | 14.510 | 16.749 | 25.000 |
| *TONE* (%) | 1894 | 50.448 | 20.241 | -15.385 | 39.130 | 53.125 | 65.116 | 85.714 |
| *READ_INDEX* | 1894 | 1.5 | 0.922 | 0 | 1 | 1 | 2 | 3 |
| ***Deal characteristics*** | | | | | | | | |
| *PAYTYPE* | 1894 | 0.787 | 0.863 | 0 | 0 | 0 | 2 | 2 |
| *HOSTILE* | 1894 | 0.042 | 0.201 | 0 | 0 | 0 | 0 | 1 |
| *TENDER* | 1894 | 0.236 | 0.425 | 0 | 0 | 0 | 0 | 1 |
| *SAME* | 1894 | 0.551 | 0.498 | 0 | 0 | 1 | 1 | 1 |
| *RELASIZE* | 1894 | 0.346 | 0.487 | 0.000 | 0.039 | 0.152 | 0.455 | 2.585 |
| ***Market reaction of acquirer and target companies*** | | | | | | | | |
| *CAR_A* (%) | 1894 | -0.958 | 6.644 | -21.635 | -3.908 | -0.613 | 2.025 | 21.477 |
| *CAR_T* (%) | 1894 | 24.525 | 24.973 | -13.244 | 7.746 | 19.472 | 34.234 | 121.528 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |
| *ATV_A* (%) | 1894 | 3.834 | 6.213 | -2.277 | 0.217 | 1.652 | 4.890 | 34.960 |
| *ATV_T* (%) | 1894 | 25.095 | 24.758 | -0.538 | 7.228 | 17.503 | 35.241 | 127.495 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |
| ***Market-based performance measures*** | | | | | | | | |
| *TOBINQ_A* | 1894 | 2.145 | 1.623 | 0.548 | 1.164 | 1.651 | 2.424 | 11.720 |
| *TOBINQ_T* | 1894 | 2.502 | 2.439 | 0.013 | 1.138 | 1.693 | 2.711 | 15.318 |
| *Difference (p-value)* | | **0.000** | | | | 0.256 | | |
| *STOCK_A* (%) | 1894 | 0.102 | 0.318 | -0.740 | -0.081 | 0.091 | 0.259 | 1.089 |
| *STOCK_T* (%) | 1894 | 0.169 | 0.457 | -1.08 | -0.070 | 0.145 | 0.383 | 1.638 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |
| ***Pre-acquisition financial variables*** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *LEVERAGE_A* | 1894 | 0.276 | 0.185 | 0.000 | 0.132 | 0.247 | 0.394 | 0.808 |
| *LEVERAGE_T* | 1894 | 0.291 | 0.224 | 0.000 | 0.108 | 0.253 | 0.437 | 1.034 |
| *Difference (p-value)* | | **0.013** | | | | 0.455 | | |
| *ROA_A* | 1894 | 0.027 | 0.051 | -0.126 | 0.006 | 0.018 | 0.034 | 0.250 |
| *ROA_T* | 1894 | -0.001 | 0.074 | -0.379 | -0.004 | 0.008 | 0.025 | 0.207 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |
| *SIZE_A* | 1894 | 8.583 | 2.021 | 3.873 | 7.240 | 8.474 | 10.017 | 13.543 |
| *SIZE_T* | 1894 | 6.341 | 1.854 | 2.415 | 4.975 | 6.391 | 7.540 | 10.876 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |
| *OCF_A* | 1894 | 0.050 | 0.072 | -0.229 | 0.011 | 0.039 | 0.087 | 0.257 |
| *OCF_T* | 1894 | 0.013 | 0.137 | -0.656 | -0.006 | 0.024 | 0.070 | 0.300 |
| *Difference (p-value)* | | **0.000** | | | | **0.000** | | |

**Panel B – Frequent Acquirers (N = 1094) vs. One-off Acquirers (N = 800)**

| Variable | Mean _frequent | Mean _single | Difference (*p*-value) | Median _frequent | Median _single | Difference (*p*-value) |
|---|---|---|---|---|---|---|
| *AVGWORD* | -17.811 | -17.955 | 0.150 | -17.568 | -17.631 | 0.780 |
| *FILESIZE* | -3.201 | -3.332 | **0.054** | -2.834 | -3.041 | **0.051** |
| *FINTERM* | 14.519 | 15.014 | **0.001** | 14.286 | 14.778 | **0.007** |
| *TONE* (%) | 50.754 | 50.069 | 0.234 | 53.125 | 52.886 | 0.926 |
| *READ_INDEX* | 1.495 | 1.506 | 0.400 | 1 | 1 | 0.745 |
| *PAYTYPE* | 0.691 | 0.916 | **0.000** | 0 | 1 | **0.000** |
| *HOSTILE* | 0.039 | 0.046 | 0.229 | 0 | 0 | 0.458 |
| *TENDER* | 0.264 | 0.199 | **0.001** | 0 | 0 | **0.001** |
| *SAME* | 0.553 | 0.548 | 0.406 | 1 | 1 | 0.812 |
| *RELASIZE* | 0.247 | 0.482 | **0.000** | 0.089 | 0.296 | **0.000** |
| *CAR_A* (%) | -0.508 | -1.574 | **0.000** | -0.380 | -1.060 | **0.005** |
| *CAR_T* (%) | 26.676 | 21.583 | **0.000** | 21.327 | 16.829 | **0.000** |
| *ATV_A* (%) | 3.327 | 4.528 | **0.000** | 1.340 | 2.319 | **0.000** |
| *ATV_T* (%) | 28.393 | 20.586 | **0.000** | 20.428 | 13.405 | **0.000** |
| *TOBINQ_A* | 2.176 | 2.104 | 0.172 | 1.692 | 1.588 | **0.026** |
| *TOBINQ_T* | 2.595 | 2.380 | **0.058** | 1.772 | 1.600 | **0.007** |
| *STOCK_A* (%) | 0.089 | 0.121 | **0.015** | 0.089 | 0.099 | 0.457 |
| *STOCK_T* (%) | 0.185 | 0.150 | **0.097** | 0.158 | 0.114 | **0.020** |
| *LEVERAGE_A* | 0.282 | 0.267 | **0.044** | 0.254 | 0.227 | **0.032** |
| *ROA_A* | 0.030 | 0.022 | **0.000** | 0.019 | 0.017 | 0.094 |
| *SIZE_A* | 9.269 | 7.651 | **0.000** | 9.213 | 7.634 | **0.000** |
| *OCF_A* | 0.057 | 0.039 | **0.000** | 0.046 | 0.032 | **0.000** |
| *LEVERAGE_T* | 0.293 | 0.288 | 0.653 | 0.256 | 0.248 | 0.710 |
| *ROA_T* | -0.001 | -0.000 | 0.877 | 0.008 | 0.008 | 0.577 |
| *SIZE_T* | 6.488 | 6.138 | **0.000** | 6.510 | 6.245 | **0.026** |
| *OCF_T* | 0.014 | 0.011 | 0.698 | 0.026 | 0.021 | 0.114 |

**Panel C: High-Leverage Acquirers (N= 947) vs. Low-Leverage Acquirers (N= 947)**

| Variable | Mean_high | Mean_low | Difference (*p*-value) | Median_high | Median_low | Difference (*p*-value) |
|---|---|---|---|---|---|---|
| *AVGWORD* | -17.730 | -18.013 | **0.040** | -17.267 | -17.810 | **0.004** |
| *FILESIZE* | -3.275 | -3.237 | 0.629 | -2.941 | -2.949 | 0.818 |
| *FINTERM* | 14.786 | 14.671 | 0.482 | 14.409 | 14.602 | 0.291 |
| *TONE* (%) | 49.256 | 51.673 | **0.009** | 51.852 | 54.545 | **0.024** |
| *READ_INDEX* | 1.524 | 1.476 | 0.262 | 1 | 1 | 0.854 |
| *PAYTYPE* | 0.717 | 0.855 | **0.000** | 0 | 1 | **0.000** |
| *HOSTILE* | 0.052 | 0.033 | **0.040** | 0 | 0 | **0.040** |
| *TENDER* | 0.244 | 0.229 | 0.449 | 0 | 0 | 0.449 |
| *SAME* | 0.511 | 0.590 | **0.001** | 1 | 1 | **0.001** |
| *RELASIZE* | 0.358 | 0.334 | 0.270 | 0.143 | 0.165 | 0.251 |
| *CAR_A* (%) | -0.605 | -1.311 | **0.021** | -0.467 | -0.721 | 0.183 |
| *CAR_T* (%) | 24.842 | 24.207 | 0.580 | 19.020 | 20.067 | 0.154 |
| *ATV_A* (%) | 4.091 | 3.578 | 0.072 | 1.827 | 1.491 | 0.073 |
| *ATV_T* (%) | 24.147 | 26.044 | 0.095 | 17.565 | 17.461 | 0.963 |
| *TOBINQ_A* | 2.313 | 1.978 | **0.000** | 1.688 | 1.612 | 0.108 |
| *TOBINQ_T* | 2.570 | 2.438 | 0.241 | 1.742 | 1.641 | 0.129 |
| *STOCK_A* (%) | 0.098 | 0.106 | 0.587 | 0.091 | 0.091 | 0.890 |
| *STOCK_T* (%) | 0.173 | 0.167 | 0.785 | 0.143 | 0.147 | 0.890 |
| *LEVERAGE_A* | 0.424 | 0.128 | **0.000** | 0.394 | 0.132 | **0.000** |
| *ROA_A* | 0.023 | 0.030 | **0.001** | 0.017 | 0.020 | **0.009** |
| *SIZE_A* | 8.706 | 8.466 | **0.010** | 8.515 | 8.428 | 0.383 |
| *OCF_A* | 0.049 | 0.050 | 0.670 | 0.042 | 0.037 | 0.215 |
| *LEVERAGE_T* | 0.342 | 0.240 | **0.000** | 0.318 | 0.194 | **0.000** |
| *ROA_T* | -0.003 | 0.002 | 0.210 | 0.008 | 0.008 | 0.890 |
| *SIZE_T* | 6.389 | 6.291 | 0.250 | 6.423 | 6.365 | 0.679 |
| *OCF_T* | 0.009 | 0.016 | 0.257 | 0.028 | 0.017 | **0.001** |

**Panel D: Anticipated Deals (N= 1142) vs. Unanticipated Deals (N= 752)**

| Variable | Mean _Anticipated | Mean _Unanticipated | Difference (*p*-value) | Median _ Anticipated | Median _ Unanticipated | Difference (*p*-value) |
|---|---|---|---|---|---|---|
| *AVGWORD* | -17.938 | -17.771 | 0.236 | -17.633 | -17.454 | 0.511 |
| *FILESIZE* | -3.222 | -3.307 | 0.302 | -2.879 | -3.023 | 0.222 |
| *FINTERM (%)* | 14.727 | 14.729 | 0.991 | 14.519 | 14.499 | 0.925 |
| *TONE* (%) | 49.701 | 51.624 | **0.043** | 52.000 | 54.545 | **0.009** |
| *READ_INDEX* | 1.506 | 1.491 | 0.721 | 1 | 1 | 0.863 |
| *PAYTYPE* | 0.813 | 0.745 | **0.090** | 1 | 0 | 0.102 |
| *HOSTILE* | 0.045 | 0.039 | 0.519 | 0 | 0 | 0.519 |
| *TENDER* | 0.257 | 0.205 | **0.008** | 0 | 0 | **0.008** |
| *SAME* | 0.609 | 0.461 | **0.000** | 1 | 0 | **0.001** |
| *RELASIZE* | 0.309 | 0.402 | **0.000** | 0.138 | 0.173 | **0.049** |
| *CAR_A* (%) | -1.329 | -0.395 | **0.003** | -0.879 | -0.147 | **0.001** |
| *CAR_T* (%) | 24.915 | 23.932 | 0.402 | 19.539 | 19.399 | 0.851 |
| *ATV_A* (%) | 3.419 | 4.466 | **0.000** | 1.439 | 2.029 | **0.002** |
| *ATV_T* (%) | 25.025 | 25.202 | 0.879 | 17.555 | 17.417 | 0.925 |
| *TOBINQ_A* | 2.126 | 2.176 | 0.511 | 1.612 | 1.698 | **0.031** |
| *TOBINQ_T* | 2.560 | 2.418 | 0.214 | 1.641 | 1.752 | **0.060** |
| *STOCK_A* (%) | 0.089 | 0.122 | **0.027** | 0.082 | 0.109 | **0.074** |
| *STOCK_T* (%) | 0.162 | 0.182 | 0.360 | 0.149 | 0.140 | 0.573 |
| *LEVERAGE_A* | 0.260 | 0.299 | **0.000** | 0.226 | 0.283 | **0.000** |
| *ROA_A* | 0.027 | 0.027 | 0.930 | 0.018 | 0.019 | 0.189 |
| *SIZE_A* | 8.780 | 8.290 | **0.000** | 8.731 | 8.279 | **0.000** |
| *OCF_A* | 0.049 | 0.050 | 0.725 | 0.038 | 0.042 | 0.189 |
| *LEVERAGE_T* | 0.276 | 0.312 | **0.001** | 0.230 | 0.288 | **0.000** |
| *ROA_T* | -0.004 | 0.005 | **0.012** | 0.007 | 0.010 | **0.009** |
| *SIZE_T* | 6.378 | 6.284 | 0.281 | 6.460 | 6.308 | 0.159 |
| *OCF_T* | 0.005 | 0.024 | **0.003** | 0.019 | 0.031 | **0.001** |

Note: In Panel B *_frequent* refers to acquirers with more than one M&A deal in the sample period; *_single* refers to acquirers with a single M&A deal in the sample period. In Panel C *_high* refers to the acquirer company with leverage ratio that is higher than the median point of all acquirers, and *_low* refers to the acquirer company with leverage ratio that is lower than the median point of all acquirers. In Panel D Anticipated acquirers are defined as the acquirer firms with deals happened within one-year in the same industry. Unanticipated acquirers are defined as the acquirer firms with no deals happened within one-year in the same industry. The 4-digit SIC code of acquirer is used to classify the industry. For variable definitions, see Appendix 1.

**Table 3 - Comparison of Mean *CAR* and *ATV* across Quartiles Of Textual Properties**

**Panel A – Average Word Per Sentence (*AVGWORD*)**

| *AVGWORD* quartile | *CAR_A* [-1, +1] | *CAR_T* [-1, +1] | *ATV_A* [-1, +1] | *ATV_T* [-1, +1] |
|---|---|---|---|---|
| Lowest | -1.216 (0.000) | 24.055 (0.000) | 3.879 (0.000) | 28.035 (0.000) |
| 2 | -1.073 (0.000) | 24.624 (0.000) | 3.987 (0.000) | 27.478 (0.000) |
| 3 | -0.888 (0.002) | 21.417 (0.000) | 3.786 (0.000) | 22.484 (0.000) |
| Highest | -0.655 (0.019) | 28.009 (0.000) | 3.686 (0.000) | 22.375 (0.000) |
| H-L | **0.561 (0.094)** | **3.954 (0.010)** | -0.193 (0.313) | **-5.650 (0.000)** |
| H-123 | 0.404 (0.126) | **4.644 (0.000)** | -0.198 (0.274) | **-3.612 (0.003)** |

**Panel B – Size of File (*FILESIZE*)**

| *FILESIZE* quartile | *CAR_A* [-1, +1] | *CAR_T* [-1, +1] | *ATV_A* [-1, +1] | *ATV_T* [-1, +1] |
|---|---|---|---|---|
| Lowest | -1.719 (0.000) | 19.984 (0.000) | 5.977 (0.000) | 23.567 (0.000) |
| 2 | -1.149 (0.000) | 23.524 (0.000) | 4.011 (0.000) | 25.254 (0.000) |
| 3 | -0.689 (0.008) | 27.788 (0.000) | 2.874 (0.000) | 27.133 (0.000) |
| Highest | -0.274 (0.132) | 26.799 (0.000) | 2.477 (0.000) | 24.423 (0.000) |
| H-L | **1.446 (0.000)** | **6.815 (0.000)** | **-3.500 (0.000)** | 0.856 (0.295) |
| H-123 | **0.912 (0.005)** | **3.031 (0.011)** | **-1.809 (0.000)** | -0.896 (0.248) |

**Panel C – Frequency of Financial Terminology (*FINTERM*)**

| *FINTERM* quartile | *CAR_A* [-1, +1] | *CAR_T* [-1, +1] | *ATV_A* [-1, +1] | *ATV_T* [-1, +1] |
|---|---|---|---|---|
| Lowest | -0.981 | 29.587 | 2.995 | 29.922 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| 2 | -1.278 | 24.026 | 4.293 | 24.329 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| 3 | -1.255 | 21.313 | 4.251 | 23.244 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Highest | -0.316 | 23.181 | 3.798 | 22.892 |
| | (0.134) | (0.000) | (0.000) | (0.000) |
| H-L | **0.666** | **-6.405** | **0.803** | **-7.030** |
| | **(0.045)** | **(0.000)** | **(0.018)** | **(0.000)** |
| H-123 | **0.856** | **-1.791** | -0.049 | **-2.937** |
| | **(0.008)** | **(0.088)** | (0.441) | **(0.013)** |

**Panel D – Readability Index (*READ_INDEX*)**

| *READ_INDEX* quartile | *CAR_A* [-1, +1] | *CAR_T* [-1, +1] | *ATV_A* [-1, +1] | *ATV_T* [-1, +1] |
|---|---|---|---|---|
| Lowest | -1.519 | 25.914 | 4.515 | 29.198 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| 2 | -1.139 | 22.044 | 4.296 | 24.777 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| 3 | -0.948 | 24.769 | 3.189 | 23.751 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Highest | -0.225 | 25.378 | 3.339 | 22.659 |
| | (0.221) | (0.000) | (0.000) | (0.000) |
| H-L | **1.294** | -0.536 | **-1.176** | **-6.539** |
| | **(0.002)** | (0.375) | **(0.002)** | **(0.000)** |
| H-123 | **0.977** | 1.137 | **-0.661** | **-3.247** |
| | **(0.003)** | (0.196) | **(0.023)** | **(0.007)** |

Note: Panel A reports means of market reactions across quartiles of *AVGWORD* (lowest quartile = more words). Panel B reports means of market reactions across quartiles of *FILESIZE* (lowest quartile = larger files). Panel C reports means of market reactions across quartiles of *FINTERM* (lowest quartile = fewer financial terms). Panel D reports means of market reactions across quartiles of *READ_INDEX* (lowest quartile = lowest readability index). H-L refers to the comparison of market reaction between top and bottom quartile. H-123 refers to the comparison of market reaction for the top quartile with the mean of market reaction for the bottom three quartiles. P-values in parentheses.

**Table 4 - Comparison of Market Reaction across Tone Quartiles**

| | **Sentiment (*TONE*)** | | | |
|---|---|---|---|---|
| *TONE* quartile | *CAR_A* [-1, +1] | *CAR_T* [-1, +1] | *ATV_A* [-1, +1] | *ATV_T* [-1, +1] |
| Lowest | -0.322 | 22.699 | 2.845 | 18.682 |
| | (0.112) | (0.000) | (0.000) | (0.000) |
| 2 | -1.294 | 24.926 | 4.132 | 24.160 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| 3 | -1.160 | 24.061 | 4.243 | 28.457 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Highest | -1.055 | 26.414 | 4.116 | 29.077 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| H-L | **-0.733** | **3.716** | **1.271** | **10.395** |
| | **(0.030)** | **(0.013)** | **(0.000)** | **(0.000)** |
| H-123 | -0.129 | **2.518** | 0.375 | **5.307** |
| | (0.357) | **(0.029)** | (0.128) | **(0.000)** |

Note: This table reports means of market reactions across quartiles of *TONE* (lowest quartile = less positive tone). H-L refers to the comparison of market reaction between top and bottom quartile. H-123 refers to the comparison of market reaction for the top quartile with the mean of market reaction for the bottom three quartiles. P-values in parentheses.

**Table 5 - Correlations**

| No | Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *AVGWORD* | 1 | | | | | | | | | | | | | |
| 2 | *FILESIZE* | **0.152** | 1 | | | | | | | | | | | | |
| 3 | *FINTERM* | -0.033 | **0.225** | 1 | | | | | | | | | | | |
| 4 | *TONE* | **0.148** | **-0.181** | **-0.378** | 1 | | | | | | | | | | |
| 5 | *READ_INDEX* | **0.481** | **0.569** | **0.489** | **-0.188** | 1 | | | | | | | | | |
| 6 | *LEVERAGE_A* | 0.044 | 0.005 | 0.036 | **-0.066** | 0.038 | 1 | | | | | | | | |
| 7 | *LEVERAGE_T* | 0.020 | **-0.056** | 0.004 | -0.024 | -0.036 | **0.275** | 1 | | | | | | | |
| 8 | *SIZE_A* | **-0.063** | 0.027 | -0.038 | 0.013 | -0.013 | **0.068** | 0.022 | 1 | | | | | | |
| 9 | *SIZE_T* | **-0.128** | **-0.239** | **0.133** | -0.003 | **-0.084** | 0.027 | **0.062** | **0.501** | 1 | | | | | |
| 10 | *ROA_A* | -0.029 | 0.020 | 0.016 | 0.039 | 0.001 | **-0.085** | 0.011 | **0.145** | **0.050** | 1 | | | | |
| 11 | *ROA_T* | **-0.063** | **-0.065** | **0.114** | -0.018 | -0.026 | 0.007 | -0.029 | **0.195** | **0.285** | **0.180** | 1 | | | |
| 12 | *CAR_A* | **0.056** | **0.085** | **0.053** | **-0.047** | **0.068** | **0.054** | **0.058** | **0.098** | -0.016 | **0.050** | 0.028 | 1 | | |
| 13 | *CAR_T* | 0.042 | **0.125** | **-0.084** | **0.066** | 0.015 | 0.012 | 0.016 | 0.037 | **-0.287** | 0.025 | **-0.170** | **0.067** | 1 | |
| 14 | *ATV_A* | -0.007 | **-0.216** | 0.015 | **0.076** | **-0.093** | 0.023 | 0.041 | **-0.176** | **0.173** | -0.023 | 0.027 | **-0.103** | **-0.087** | 1 |
| 15 | *ATV_T* | **-0.074** | 0.041 | **-0.112** | **0.150** | **-0.088** | -0.035 | 0.037 | **0.237** | **-0.052** | **0.094** | 0.005 | **0.057** | **0.313** | **0.113** |

Note: Pearson correlation coefficients statistically significant at 5% appear in bold face.

**Table 6 – Acquirer and Target Firm Market Reaction to Textual Properties of M&A PR**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Firm type: | *Acquiring Firms* | | | | *Target Firms* | | | |
| *Dependent variable* | *CAR_A* | *CAR_A* | *ATV_A* | *ATV_A* | *CAR_T* | *CAR_T* | *ATV_T* | *ATV_T* |
| *Textual properties* | | | | | | | | |
| *AVGWORD* | 0.120 | | **0.188** | | 0.501 | | 0.112 | |
| | (0.236) | | **(0.009)** | | (0.258) | | (0.776) | |
| *FILESIZE* | 0.275 | | **-0.314** | | 0.293 | | 0.814 | |
| | (0.163) | | **(0.083)** | | (0.674) | | (0.270) | |
| *FINTERM* | -0.029 | | **0.145** | | 0.143 | | 0.062 | |
| | (0.768) | | **(0.043)** | | (0.751) | | (0.878) | |
| *READ_INDEX* | | -0.020 | | 0.336 | | 0.785 | | 0.134 |
| | | (0.950) | | (0.203) | | (0.546) | | (0.933) |
| *TONE* | -0.004 | -0.004 | 0.005 | 0.006 | 0.063 | 0.065 | **0.119** | **0.105** |
| | (0.795) | (0.795) | (0.668) | (0.589) | (0.394) | (0.342) | **(0.058)** | **(0.067)** |
| *Deal characteristics* | | | | | | | | |
| *PAYTYPE* | -0.391 | -0.521 | **1.097** | **1.172** | -2.820 | -2.975 | **-4.314** | **-4.565** |
| | (0.403) | (0.254) | **(0.004)** | **(0.002)** | (0.102) | (0.085) | **(0.034)** | **(0.024)** |
| *HOSTILE* | 0.406 | 0.363 | -1.318 | -1.205 | 1.086 | 1.177 | **-14.608** | **-14.472** |
| | (0.802) | (0.820) | (0.155) | (0.230) | (0.815) | (0.793) | **(0.011)** | **(0.011)** |
| *TENDER* | 0.236 | 0.212 | 0.274 | 0.240 | **6.083** | **5.999** | **10.743** | **10.894** |
| | (0.703) | (0.726) | (0.626) | (0.668) | **(0.050)** | **(0.048)** | **(0.002)** | **(0.002)** |
| *SAME* | 0.010 | -0.048 | -0.364 | -0.300 | -0.224 | -0.277 | -2.821 | -2.907 |
| | (0.984) | (0.928) | (0.527) | (0.610) | (0.941) | (0.925) | (0.304) | (0.293) |
| *RELASIZE* | -0.431 | -0.383 | 2.604 | 2.647 | 1.989 | 2.073 | -1.786 | -1.777 |
| | (0.780) | (0.805) | (0.090) | (0.093) | (0.631) | (0.614) | (0.624) | (0.629) |
| *Market-based performance measures* | | | | | | | | |
| *TOBINQ_A* | 0.093 | 0.123 | 0.186 | 0.175 | -0.293 | -0.254 | 0.971 | 1.051 |
| | (0.614) | (0.514) | (0.359) | (0.384) | (0.736) | (0.767) | (0.330) | (0.279) |
| *TOBINQ_T* | 0.064 | 0.062 | 0.128 | 0.130 | -0.355 | -0.359 | 0.548 | 0.544 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.596) | (0.611) | (0.183) | (0.176) | (0.566) | (0.560) | (0.423) | (0.427) |
| *STOCK_A* | -1.566 | -1.548 | 1.086 | 0.949 | **11.986** | **11.902** | 6.291 | 6.339 |
| | (0.144) | (0.145) | (0.273) | (0.334) | **(0.006)** | **(0.007)** | (0.165) | (0.158) |
| *STOCK_T* | 0.136 | 0.094 | -0.142 | -0.170 | **-14.412** | **-14.545** | -1.487 | -1.448 |
| | (0.847) | (0.893) | (0.806) | (0.769) | **(0.000)** | **(0.000)** | (0.583) | (0.586) |
| *Acquirer firm's financial information* | | | | | | | | |
| *LEVERAGE_A* | -2.658 | -2.560 | 0.186 | 0.928 | 1.096 | 2.098 | -8.491 | -8.885 |
| | (0.219) | (0.246) | (0.914) | (0.595) | (0.898) | (0.810) | (0.297) | (0.281) |
| *ROA_A* | -1.024 | -1.608 | 3.481 | 4.078 | -2.569 | -2.896 | 31.511 | 30.561 |
| | (0.837) | (0.752) | (0.417) | (0.356) | (0.919) | (0.909) | (0.224) | (0.240) |
| *SIZE_A* | -0.385 | -0.469 | **1.042** | 0.940 | **3.872** | 3.528 | 3.115 | 3.066 |
| | (0.507) | (0.493) | **(0.069)** | (0.102) | **(0.091)** | (0.101) | (0.180) | (0.187) |
| *OCF_A* | -2.002 | -2.636 | 1.900 | 2.724 | 31.564 | 31.205 | 1.821 | 0.006 |
| | (0.663) | (0.571) | (0.684) | (0.570) | (0.142) | (0.148) | (0.935) | (1.000) |
| *Target firm's financial information* | | | | | | | | |
| *LEVERAGE_T* | 0.531 | 0.461 | 0.046 | 0.196 | -0.489 | -0.373 | 6.709 | 6.590 |
| | (0.639) | (0.687) | (0.962) | (0.839) | (0.941) | (0.955) | (0.286) | (0.290) |
| *ROA_T* | 1.979 | 1.783 | -3.031 | -2.505 | **-46.277** | **-45.909** | -17.557 | -17.485 |
| | (0.637) | (0.678) | (0.483) | (0.568) | **(0.013)** | **(0.014)** | (0.392) | (0.387) |
| *SIZE_T* | -0.245 | -0.344 | **0.522** | **0.624** | **-3.917** | **-4.004** | 0.752 | 0.564 |
| | (0.331) | (0.168) | **(0.014)** | **(0.004)** | **(0.001)** | **(0.001)** | (0.555) | (0.652) |
| *OCF_T* | -1.210 | -1.163 | 3.098 | 3.547 | **-23.737** | **-23.156** | 5.674 | 5.530 |
| | (0.599) | (0.613) | (0.181) | (0.123) | **(0.047)** | **(0.056)** | (0.592) | (0.604) |
| *Year FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *N* | 1894 | 1894 | 1894 | 1894 | 1894 | 1894 | 1894 | 1894 |
| *Adj_R²* | 0.46 | 0.46 | 0.66 | 0.65 | 0.62 | 0.62 | 0.63 | 0.63 |

Note: This table presents the result of estimating the market reaction model:

$$REACTION = \beta_1 TEXT + \beta_2 PAYTYPE + \beta_3 HOSTILE + \beta_4 TENDER + \beta_5 SAME + \beta_6 REALIZE + \beta_7 TOBINQ\_A + \beta_8 TOBINQ\_T + \beta_9 STOCK\_A + \beta_{10} STOCK\_T + \beta_{11} LEVERAGE\_A + \beta_{12} ROA\_A + \beta_{13} SIZE\_A + \beta_{14} OCF\_A + \beta_{15} LEVERAGE\_T + \beta_{16} ROA\_T + \beta_{17} SIZE\_T + \beta_{18} OCF\_T + FIRM\ F.E. + YEAR\ F.E. + \varepsilon$$

Market reaction is either CAR or ATV in the in the [-1, +1] trading window around the PR date. Columns (1)-(4) are for market reaction in the acquiring firm's stock. Columns (5)-(8) are for market reaction in the target firm's stock. All the standard errors are clustered by industry and year. *p*-values in parentheses. See Appendix 1 for variable definitions.

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## Table 7 – Frequent vs. One-off Acquirers

### Panel A: Acquirer Firm Market Reaction to Textual Properties

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Acquiring firms | *One-off Deals* | | | | *Frequent Deals* | | | |
| *Dependent variable* | *CAR_A* | *CAR_A* | *ATV_A* | *ATV_A* | *CAR_A* | *CAR_A* | *ATV_A* | *ATV_A* |
| *Textual properties* | | | | | | | | |
| *AVGWORD* | **0.294** | | 0.078 | | 0.088 | | **0.222** | |
| | **(0.002)** | | (0.345) | | (0.239) | | **(0.000)** | |
| *FILESIZE* | -0.022 | | **-0.415** | | **0.256** | | **-0.293** | |
| | (0.894) | | **(0.005)** | | **(0.090)** | | **(0.038)** | |
| *FINTERM* | 0.042 | | -0.031 | | 0.004 | | **0.101** | |
| | (0.565) | | (0.616) | | (0.962) | | **(0.075)** | |
| *READ_INDEX* | | 0.322 | | **-0.483** | | 0.016 | | 0.245 |
| | | (0.298) | | **(0.054)** | | (0.947) | | (0.235) |
| *TONE* | -0.002 | 0.004 | **0.031** | **0.037** | 0.002 | 0.000 | -0.002 | 0.002 |
| | (0.857) | (0.715) | **(0.004)** | **(0.000)** | (0.834) | (0.978) | (0.847) | (0.771) |
| *Controls* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm FE* | No | No | No | No | Yes | Yes | Yes | Yes |
| *N* | 800 | 800 | 800 | 800 | 1094 | 1094 | 1094 | 1094 |
| *Adj_R²* | 0.13 | 0.13 | 0.43 | 0.43 | 0.24 | 0.23 | 0.59 | 0.58 |

**Panel B: Target Firm Market Reaction to Textual Properties**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Target firms | *One-off Deals* | | | | *Frequent Deals* | | | |
| *Dependent variable* | *CAR_T* | *CAR_T* | *ATV_T* | *ATV_T* | *CAR_T* | *CAR_T* | *ATV_T* | *ATV_T* |
| *Textual properties* | | | | | | | | |
| *AVGWORD* | -0.187 | | **-0.605** | | 0.528 | | 0.110 | |
| | (0.529) | | **(0.016)** | | (0.110) | | (0.709) | |
| *FILESIZE* | 0.630 | | -0.545 | | 0.305 | | 0.816 | |
| | (0.160) | | (0.279) | | (0.564) | | (0.150) | |
| *FINTERM* | -0.276 | | -0.342 | | 0.140 | | 0.049 | |
| | (0.287) | | (0.178) | | (0.671) | | (0.872) | |
| *READ_INDEX* | | 0.004 | | **-2.153** | | 0.824 | | 0.078 |
| | | (0.996) | | **(0.006)** | | (0.402) | | (0.948) |
| *TONE* | 0.052 | 0.052 | **0.106** | **0.105** | 0.059 | 0.061 | **0.118** | **0.105** |
| | (0.216) | (0.173) | **(0.003)** | **(0.002)** | (0.289) | (0.235) | **(0.013)** | **(0.016)** |
| *Controls* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm FE* | No | No | No | No | Yes | Yes | Yes | Yes |
| *N* | 800 | 800 | 800 | 800 | 1094 | 1094 | 1094 | 1094 |
| *Adj_R²* | 0.56 | 0.56 | 0.59 | 0.59 | 0.67 | 0.66 | 0.70 | 0.69 |

Note: This table presents the result of estimating the market reaction model:

$$REACTION = \beta_1 TEXT + \beta_2 PAYTYPE + \beta_3 HOSTILE + \beta_4 TENDER + \beta_5 SAME + \beta_6 REALIZE + \beta_7 TOBINQ\_A + \beta_8 TOBINQ\_T + \beta_9 STOCK\_A + \beta_{10} STOCK\_T + \beta_{11} LEVERAGE\_A + \beta_{12} ROA\_A + \beta_{13} SIZE\_A + \beta_{14} OCF\_A + \beta_{15} LEVERAGE\_T + \beta_{16} ROA\_T + \beta_{17} SIZE\_T + \beta_{18} OCF\_T + FIRM\ F.E. + YEAR\ F.E. + \varepsilon$$

Market reaction is either CAR or ATV in the [-1, +1] trading window around the PR date. Panel A (B) presents the results for acquiring (target) firms. Columns (1)-(4) are for deals announced by acquirers announcing a single deal during the sample period. Columns (5)-(8) are for deals announced by acquirers announcing multiple deals during the sample period. All the standard errors are clustered by industry and year. *p*-values in parentheses. See Appendix 1 for variable definitions.

## Table 8 – Anticipated Deals vs. Unanticipated Deals

### Panel A: Acquirer Firm's Market Reaction to Textual Properties

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Acquiring firms | Anticipated Deals | | | | Unanticipated Deals | | | |
| *Dependent variable* | *CAR_A* | *CAR_A* | *ATV_A* | *ATV_A* | *CAR_A* | *CAR_A* | *ATV_A* | *ATV_A* |
| *Textual properties* | | | | | | | | |
| *AVGWORD* | 0.084 | | **0.142** | | 0.171 | | 0.340 | |
| | (0.480) | | **(0.071)** | | (0.564) | | (0.222) | |
| *FILESIZE* | **0.647** | | **-0.385** | | -0.064 | | -0.345 | |
| | **(0.009)** | | **(0.098)** | | (0.919) | | (0.464) | |
| *FINTERM* | -0.062 | | **0.134** | | -0.113 | | **0.358** | |
| | (0.625) | | **(0.069)** | | (0.669) | | **(0.078)** | |
| *READ_INDEX* | | 0.316 | | 0.367 | | -0.652 | | 0.942 |
| | | (0.396) | | (0.206) | | (0.374) | | (0.315) |
| *TONE* | 0.006 | 0.004 | 0.002 | 0.003 | -0.056 | -0.051 | -0.021 | -0.030 |
| | (0.754) | (0.797) | (0.877) | (0.816) | (0.175) | (0.244) | (0.579) | (0.437) |
| *Controls* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *N* | 1142 | 1142 | 1142 | 1142 | 752 | 752 | 752 | 752 |
| *Adj_R²* | 0.50 | 0.48 | 0.68 | 0.67 | 0.46 | 0.47 | 0.69 | 0.68 |

**Panel B: Target Firm's Market Reaction to Textual Properties**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Target firms | Anticipated Deals | | | | Unanticipated Deals | | | |
| *Dependent variable* | *CAR_T* | *CAR_T* | *ATV_T* | *ATV_T* | *CAR_T* | *CAR_T* | *ATV_T* | *ATV_T* |
| *Textual properties* | | | | | | | | |
| *AVGWORD* | 0.335 | | 0.030 | | -0.062 | | -0.668 | |
| | (0.591) | | (0.954) | | (0.963) | | (0.646) | |
| *FILESIZE* | 0.420 | | 0.877 | | -0.078 | | 0.760 | |
| | (0.665) | | (0.374) | | (0.965) | | (0.740) | |
| *FINTERM* | -0.435 | | -0.114 | | 0.762 | | 0.630 | |
| | (0.448) | | (0.841) | | (0.542) | | (0.561) | |
| *READ_INDEX* | | -0.166 | | -1.150 | | 3.318 | | 0.464 |
| | | (0.905) | | (0.557) | | (0.412) | | (0.921) |
| *TONE* | 0.015 | 0.050 | 0.079 | 0.068 | 0.228 | 0.200 | 0.243 | 0.186 |
| | (0.880) | (0.560) | (0.343) | (0.344) | (0.286) | (0.337) | (0.295) | (0.396) |
| *Controls* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm FE* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *N* | 1142 | 1142 | 1142 | 1142 | 752 | 752 | 752 | 752 |
| *Adj_R²* | 0.62 | 0.62 | 0.65 | 0.65 | 0.61 | 0.62 | 0.56 | 0.56 |

Note: This table presents the result of estimating the market reaction model:

$$REACTION = \beta_1 TEXT + \beta_2 PAYTYPE + \beta_3 HOSTILE + \beta_4 TENDER + \beta_5 SAME + \beta_6 REALIZE + \beta_7 TOBINQ\_A + \beta_8 TOBINQ\_T + \beta_9 STOCK\_A + \beta_{10} STOCK\_T + \beta_{11} LEVERAGE\_A + \beta_{12} ROA\_A + \beta_{13} SIZE\_A + \beta_{14} OCF\_A + \beta_{15} LEVERAGE\_T + \beta_{16} ROA\_T + \beta_{17} SIZE\_T + \beta_{18} OCF\_T + FIRM\ F.E. + YEAR\ F.E. + \varepsilon$$

Market reaction is either CAR or ATV in the [-1, +1] trading window around the PR date. Panel A (B) presents the results for acquiring (target) firms. Columns (1)-(4) are for deals announced by acquirers with anticipated deals. Columns (5)-(8) are for unanticipated deals. A deal is anticipated if there was an M&A announcement in the same industry in the prior year. All the standard errors are clustered by industry and year. *p*-values in parentheses. See Appendix 1 for variable definitions.

## Appendix 1: Variable definitions

| Variables | Definition |
|---|---|
| ***Market reaction of acquirer and target firms*** | |
| *CAR_A/T* | The cumulative abnormal return (in %) for acquirer (A)/target (T) firm $i$ in the event window (-1, 1), and the date used in this window is the trading day. The expected stock return is estimated by the following model:<br>$$Return_{i,t} = \alpha_i + \beta_i * Return_{m,t} + \mu_{i,t}$$<br>In this model, $Return_{i,t}$ is the stock return (excluding dividend) of acquirer firm $i$ on day $t$; $\alpha_i$ is intercept; $\beta_i$ is coefficient of $Return_{m,t}$; $R_{m,t}$ is return on equally-weighted market return (excluding dividend) on day $t$. The event window used in estimating the $\alpha_i$ and $\beta_i$ for each acquirer firm is (-365, -60). After obtaining the $\alpha_i$ and $\beta_i$, the expected return of acquirer firm $i$ on day $t$ can be calculated by the following formula (here $t$ represents the announcement day):<br>$$Expected\ return_{i,t} = \alpha_i + \beta_i * Return_{i,t}$$<br>After obtaining the expected return of acquirer firm $i$ on day $t$ the abnormal return can be calculated with the following model (here $t$ represents the announcement day):<br>$$Abnormal\ return_{i,t} = Return_{i,t} - Expected\ return_{i,t}$$<br>Then the cumulative abnormal return can be obtained:<br>$$CAR = Abnormal\ Return_{i,t-1} + Abnormal\ Return_{i,t} + Abnormal\ Return_{i,t+1}$$ |
| *ATV_A/T* | The cumulative abnormal trading volume for acquirer (A)/target (T) firm $i$ in the event window (-1,1), and the date used in this window is the trading day. The expected stock trading volume is estimated by the following model:<br>$$Volume_{i,t} = \alpha_i + \beta_i * Volume_{m,t} + \mu_{i,t}$$<br>In this model, $Volume_{i,t}$ is the percentage of trading volume (trading volume divided by the common stock outstanding) of acquirer firm $i$ on day $t$; $\alpha_i$ is intercept; $\beta_i$ is coefficient of $Volume_{m,t}$ ; $Volume_{m,t}$ is percentage of trading volume of all available stocks in CRSP database on day $t$. The event window used in estimating the $\alpha_i$ and $\beta_i$ for each acquirer firm is (-365, -60). After obtaining the $\alpha_i$ and $\beta_i$, the expected trading volume of acquirer firm $i$ on day $t$ (where t is -1, 1 window), can be calculated by the following formula:<br>$$Expected\ volume_{i,t} = \alpha_i + \beta_i * Volume_{i,t}$$ |

After obtaining the expected trading volume of a firm $i$ on day $t$, the abnormal trading volume can be calculated with the following formula (here $t$ represents a day within the announcement window):

$$Abnormal\ volume_{i,t} = Volume_{i,t} - Expected\ volume_{i,t}$$

Then the cumulative abnormal return can be obtained:

$$ATV = Abnormal\ volume_{i,t-1} + Abnormal\ volume_{i,t} + Abnormal\ volume_{i,t+1}$$

***Textual properties of M&A PR***

| | |
|---|---|
| *AVGWORD* | The average word count per sentence of M&A PR. This is measured as the total number of words divided by the number of sentences of the PR. As longer sentences are generally harder to read, the value of average word count per sentence is multiplied by -1 to make it consistent that the higher value of *AVGWORD* means the higher readability of PR. |
| *FILESIZE* | The size of M&A PR file (measured in kilobytes). As longer files are generally harder to read, the value of PR file size is multiplied by -1 to make it consistent that the higher value of *FILESIZE* means the higher readability of PR. |
| *FINTERM* | The % of relative frequency of financial terminology usage in M&A PR. This is measured as the total number of financial terminologies divided by the total number of words of the PR. |
| *TONE* | The sentiment of M&A PR. It is measured as the % of the total number of sentences in PR of positive sentences minus the % of negative sentences. We use machine leaning method with Naïve-Bayes algorithm is applied to classify the sentiment of each sentence in PR. |
| *READ_INDEX* | The readability index of M&A PR. The indicator variable equals 1, if the continuous variable of textual property measure is above its industry median and 0 otherwise. Then the readability index is calculated by the sum up of the indicator variable for the three readability measures. |

***Deal characteristics***

| | |
|---|---|
| *PAYTYPE* | The payment type of M&A deal. It equals 0, if this deal is paid by cash, 1 if it is paid by cash and stock or 2 if it is paid by stock. Source: Bloomberg - payment type. |
| *HOSTILE* | The nature of M&A deal (Hostile/Friendly). It equals 0, if the deal is friendly or 1 if it is hostile. The M&A deal is classified as a hostile (friendly) deal if the acquirer firm carries out the deal without (with) the consent of board of directors of the target firm. Source: Bloomberg - nature of deal. |

| | |
|---|---|
| *TENDER* | The type of M&A deal (Tender offer/ bidding). It equals 0, if the deal is carried out by bidding, or 1 if the deal is carried out by tender offer. Source: Bloomberg terminal - deal attributes. |
| *SAME* | Whether the acquirer and target firm come from the same industry. It equals 0 if, two firms come from different industries based on 2-digit SIC code or 1 otherwise. |
| *RELASIZE* | The relative size of target firm and acquirer firm, defined as the total asset (book value) of target firm divided by the total asset (book value) of acquirer firm. To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement date. |
| ***Market-based performance measures*** | |
| *STOCK_A/T* | The past average daily stock return of acquirer (A) or target (T) firm, defined as the average percentage value of stock return. To ensure the time-relevance of data, this variable is measured from 46 trading days before the M&A announcement day to 3 trading days before the announcement day. |
| *TOBINQ_A/T* | The Tobin's Q ratio of acquirer (A) or target (T) firm, defined as the market value of the firm divided by its book value. To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement date. |
| ***Pre-acquisition accounting variables*** | |
| *LEVERAGE_A/T* | The leverage ratio of acquirer (A) or target (T) firm, defined as the total short-term debt of the firm divided by its total asset (book value). To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement date. |
| *ROA_A/T* | The return on asset of acquirer (A) or target (T) firm, defined as the earnings before interest and tax (EBIT) divided by its total asset (book value). To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement date. |
| *SIZE_A/T* | The size of acquirer (A) or target (T) firm, defined as the log of total assets (book value). To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement. |
| *OCF_A/T* | The operating cash flow of acquirer (A) or target (T) firm, divided by its total assets (book value). To ensure the time-relevance of data, this variable is measured at the closest financial quarter before the M&A announcement date. |

## Appendix 2: Additional Financial Terminology

Loughran and McDonald (2014) use *Campbell's Hypotextual Dictionary* to identify the terminology that appears in corporate texts. However, *Campbell's Hypotextual Dictionary* is unsuitable for determining financial terminology in M&A PR because it incorrectly classifies many words as financial terminology that are not financial phrases, and ignores several words that are financial terminology. We use a subject specific manual - the *Oxford Dictionary of Accounting* - to identify financial terminology terms that appear in M&A PRs.[7]

Nevertheless, there are some words that contain financial meaning, but are ignored by the *Oxford Dictionary of Accounting*. We identify the following additional financial terms and add these to the dictionary's word list.

| **Additional Financial Terminology** | |
|---|---|
| Acquire | Financing Fund(s) |
| Acquisition(s) | Franchises |
| All-stock | Free Cash Flow |
| Asset base | Funding |
| Balance sheets | Immaterial |
| Bank financing | Indebtedness |
| Board of directors | Integrated company |
| Board(s) | Larger scale |
| Bond financing | Net debt |
| Brands | Net leverage |
| Capital efficiencies | Net Operating Losses |
| Chief Executive Officer | Net purchase piece |
| Chief Financial Officer | Non-GAAP |
| Client base | Non-voting stock |
| Client relationships | Operating loss |
| Client-focused | Operating platform |
| Closing conditions | Operational efficiencies. |
| Closing share price | Payment |
| Combined companies | Price(s) |

[7] In this study, a word will not be classified as financial terminology if it appears in the company name of either acquiring or target company.

| | |
|---|---|
| Combined company | Product offerings |
| Combined organization | R&D |
| Common share | Resource |
| Common units | Risk management |
| Companies | Risk(s) |
| Corporate level | Run-rate |
| Corporate(s) | Run-Rate Basis |
| Corporations | Sale(s) |
| Cost efficiencies | Securities |
| Customer base | Series (B) common stock |
| Customer relationships | Share price |
| Customer satisfaction | Shareholder Returns |
| Customer(s) | Stock-for-stock |
| Deposits | Strategic options |
| Diluted basis | Sustainable basis |
| Directors | Tax expense |
| Discounted cash flow basis | Tax-free |
| Diversified portfolio | Tender |
| Efficiencies | Tendering |
| Efficiency | Treasury |
| Employee(s) | Underlying value |
| Equity base | Values-based cultures |
| Exchange ratio | Volume-weighted average |
| Executive Vice President | Weighted average price |
| Finance | Wholly-owned subsidiary |