10-K filing length and M&A returns

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November 2019

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Acknowledgments: We thank Vicente Cuñat, Isil Erel, Alan Gregory, Dalida Kadyrzhanova, Simi Keida, Fani Kalogirou, Ken Peasnell, Grzegorz Trojanowski, Tim Loughran, Steve Young, and workshop participants at the University of Padua, the University of Exeter, and Lancaster University for comments and suggestions. Monika Tarsalewska gratefully acknowledges financial support from the FMV research cluster at the University of Exeter Business School. Justin Chircop gratefully acknowledges financial support from the Lancaster University Early Career Internal Grant Scheme. Any errors are our own.

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Abstract

This study examines the association between 10-K filing length and M&A returns. We posit that 10-K filing length influences shareholder information acquisition and processing costs. Longer 10-K filings reduce information acquisition costs by making more information about the target available to the shareholder, but may increase information processing costs by increasing the difficulty of extracting that information. Which effect dominates ultimately determines the association between 10-K filing length and M&A returns. We find that 10-K filing length is positively related to M&A returns, suggesting that the reduction in information acquisition costs dominates the increase in information processing costs. This relation is stronger when the acquirer has limited access to private information about the target, and when 10-K filings contain text denoting risk. The relation is weaker when 10-K filings contain complex text and financial statements exhibiting high accounting quality.

Keywords: 10-K filing length; mergers and acquisitions; information acquisition costs; information processing costs; market returns.

JEL Classification: D82; D83; M41

1. Introduction

Mergers and acquisitions are among the most significant decisions for firms. Before announcing an acquisition, the bidding firm must acquire the information necessary to estimate the target firm's intrinsic value, growth opportunities, synergies, and reservation price, as well as establish the deal terms. While high-quality and comparable accounting information is important to facilitate target firm valuation (Raman, Shivakumar, and Tamayo 2013; Francis, Huang, and Khurana 2015; Chen et al. 2018), accounting figures alone may not provide a full picture.

This study examines the association between target firm 10-K filing length and M&A returns, which are market returns around the M&A announcement date. These returns capture shareholder perceptions of the deal. We posit that lengthier 10-K filings reduce information acquisition costs for shareholders by making more information about the target available. More information allows shareholders to more accurately value the target and assess the potential benefits of the transaction.[1] If this is the case, we should observe a positive association between 10-K filing length and M&A returns.[2] We call this the information acquisition cost effect.

However, lengthy 10-K filings also increase shareholder processing costs. Longer 10-K filings are often regarded as more complex and thus less readable (Loughran and McDonald 2014; Li 2008). Prior literature has found that more complex financial statements are associated with higher analyst dispersion and more market underreactions (You and Zhang 2009). These findings suggest that shareholders face greater difficulty extracting meaningful information about a target firm from

[1] On the one hand, if management fails to submit a 10-K filing, this will provide no information to market participants. On the other hand, if management provides an overly lengthy filing, this could lead to information overload (Hirshleifer and Teoh 2003; Miller 2010; KPMG 2011). However, that risk in an M&A context, where market participants seek as much information as possible, is likely to be minimal.

[2] We implicitly assume that management incentives of both the target and acquirer firms are aligned with the incentives of their shareholders.

longer filings. If this is the case, we should observe a negative association between 10-K filing length and M&A returns. We call this the information processing cost effect. In this study, we aim to empirically determine which of the two effects dominates.

To test our predictions, we use a sample of 605 U.S. mergers and acquisitions of publicly listed firms for the 1997-2013 period. To proxy for 10-K filing length, we use the number of words in the target 10-K filing. To measure M&A returns, we use the acquirer cumulative abnormal return (CAR) and the weighted average cumulative return of the acquirer and target firms. Both measures of market returns are intended to capture shareholder perceptions of the success of the M&A transaction.

Our findings indicate that, on average, the information acquisition cost effect dominates the information processing cost effect. Specifically, in line with a net reduction in information acquisition costs, we find that lengthier 10-K filings are associated with larger acquirer CARs, and with larger weighted average cumulative returns of the acquirer and target. This positive association suggests that shareholders perceive the M&A deal positively when a target firm submits lengthy 10-K filings.

We also undertake a series of cross-sectional tests to identify which factors influence the relation between 10-K filing length and M&A returns. First, we test whether the relation is stronger when shareholders perceive that the acquirer has limited access to private information about the target. We capture the level of access by the length of time between the signing of the confidentiality agreement and the M&A announcement date, as well as by the form of the M&A transaction. We find a stronger association between 10-K filing length and M&A returns when the length of time is short, and when the M&A transaction is in the form of an auction.

Second, we examine whether the *quality* of information in 10-K filings affects the relation between the *quantity* of information in the 10-K filing, as captured by 10-K filing length, and M&A returns. We test for two dimensions of quality: textual complexity, and financial statement accounting quality. We posit that these dimensions weaken the relationship between 10-K filing length and M&A returns. Textual complexity increases shareholder information processing costs, thus reducing the net benefit arising from the reduction in information acquisition costs. Financial statements that exhibit higher accounting quality reduce the usefulness of the explanations found in lengthier 10-K filings, thus weakening the association between 10-K filing length and M&A returns. In line with our predictions, we find that the association between filing length and M&A returns is weaker when the filing contains complex text and when the financial statements are of high accounting quality.

Finally, we test whether the overall tone of the 10-K filing impacts M&A returns. Specifically, we posit that the relation between 10-K filing length and M&A returns is stronger in the presence of text denoting greater target firm risk. This is because such filings are more likely to contain a comprehensive explanation of these risks. We use the relative number of words in the 10-K filing that denote uncertainty, as well as weak necessity modals, to proxy for a tone that suggests greater risk. In line with our expectations, we find that the relation between 10-K filing length and M&A returns is incrementally positive in the presence of words that denote greater risk.

We subject our findings to a series of robustness tests. First, we test whether our results are robust to different measures of 10-K filing length. Second, we test whether our measure of 10-K filing length captures public information about the target beyond what is contained in the target 10-K filings. Finally, we test whether our results are robust to the inclusion of additional controls, capturing (1) cases where the acquirer and target firm share a common auditor, (2) target firm

voluntary disclosures, (3) target firm risk, and (4) target firm complexity. The results suggest that the observed relationship between 10-K filing length and M&A returns is not sensitive to the way 10-K filing length is measured, or to the inclusion of any of the above controls in our analyses.

This study contributes to the literature examining the effects of accounting information on mergers and acquisitions (e.g. Rossi and Volpin 2004; Koch, Lefanowicz, and Robinson 2012; Raman, Shivakumar, and Tamayo 2013; Marquardt and Zur 2015; McNichols and Stubben 2015; Francis, Huang, and Khurana 2015; Ahmed and Elshandidy 2016; Chen et al. 2018). The literature analyzes various characteristics of accounting information, but does not explore how the quantity of financial information influences M&A outcomes. We contribute to this line of research by showing that the length of 10-K filings is associated with larger M&A returns.

We also complement the literature on the factors that drive firms' voluntary disclosures. Specifically, Graham, Harvey, and Rajgopal (2005) suggest that CFOs use voluntary reporting strategically, in order to enhance their reputation for transparent reporting, address the limitations of mandatory reporting, and reduce the information risk priced into a firm's stock. In line with this, we find that increased voluntary reporting, as captured by the length of the 10-K filing, is viewed positively by shareholders.

Finally, we contribute to the literature examining the consequences of textual complexity (Li 2008; You and Zhang 2009; Lehavy, Li, and Merkley 2011; and Loughran and McDonald 2014). We show that the complexity of 10-K narratives has important economic consequences, and that it influences the relation between 10-K filing length and M&A returns.

The remainder of this paper is organized as follows. In section 2, we discuss the relevant extant literature, and, in section 3, we develop our hypotheses. Section 4 describes our research design,

while section 5 outlines the data used in the study. Our main findings are presented in section 6, and our robustness tests are in section 7. Section 8 concludes.

2. Previous literature

2.1. The role of financial information in mergers and acquisitions

Financial information has an important effect on investment decisions. It allows investors to estimate the intrinsic value and predict the future cash flows of firms (Dechow 1994; Barth, Cram, and Nelson 2001). It can also facilitate capital reallocation and improve investment efficiency by reducing agency costs and information asymmetries (Biddle, Hilary, and Verdi 2009). Lengthier 10-K filings contain more information because, by construction, more detailed information requires longer filings.

When two firms merge, they can create synergies. However, the pre-M&A evaluation of synergies is a non-trivial task. The process usually begins with preliminary due diligence, where the acquirer gathers publicly available information to estimate the target's intrinsic value. This information should allow the acquirer to set the basic assumptions behind the pricing negotiations, and to estimate the synergies that can effect deal efficiency (Wangerin 2019). Next, the acquirer signs a confidentiality agreement, which is not publicly disclosed, and begins the due diligence review. The confidentiality agreement grants the acquirer access to private information about the target, which may include management reports, financial forecasts, and information on planned investments. Finally, the acquirer performs transactional due diligence to verify the accuracy of the target's financial information. During this stage, the acquirer can choose to withdraw the offer or to complete the deal (Bruner 2004; Skaife and Wangerin 2013).

Several studies explore how various attributes of target firm financial statements influence the M&A process. For example, Rossi and Volpin (2004) show that better accounting quality increases the number of cross-border M&As. Koch, Lefanowicz, and Robinson (2012) find evidence that the premium paid for target firms is related to quarterly earnings guidance. McNichols and Stubben (2015) find that higher-quality accounting information improves the efficiency of merger decisions, while Marquardt and Zur (2015), using a measure of accrual quality, show that better accounting quality affects M&A deal structure. Moreover, Chen et al. (2018) find that acquirers are likely to make better M&A decisions if financial statements are comparable to those of industry peers. Generally, deals where target firms have better accounting quality are more likely to be structured as a negotiation process, to be completed, and to have shorter times to completion.

Martin and Shalev (2016) find a positive correlation between firm-specific information (measured as target firm stock price movements that are not correlated with the market) and the benefits accruing from the deal. Raman, Shivakumar, and Tamayo (2013) provide evidence that the quality of a target's earnings affects takeover decisions such as deal form, premium, and payment method. Following Davis, Piger, and Sedor (2012), we note that textual disclosure might be incrementally informative to quantitative earnings news. In contrast to prior studies, however, we seek to examine how the *quantity* of narrative reporting, as proxied for by 10-K filing length, impacts M&A returns.

2.2. 10-K filing length and investment outcomes

Since the 1930s,[3] the concept of readability, and how to measure it, has evolved dramatically. Recent studies have used the length of financial statements (and correlated measures) as readability-complexity indicators (e.g. Li 2008; Loughran and McDonald 2014). The information disclosed in financial statements is considered difficult to comprehend for the average user, and longer financial statements tend to be more difficult to read.

Several studies have shown that the complexity of 10-K filings has important implications for investors and financial markets. For example, Lawrence (2013) shows that individuals tend to invest more heavily in firms that have shorter reports, while Biddle, Hilary, and Verdi (2009) find that higher readability improves investment efficiency by reducing over- or underinvestment. Miller (2010) shows that more complex (longer, and thus less readable) filings are related to lower overall trading, while several studies report larger dispersions in analyst forecasts when filings are more complex (Lehavy, Li, and Merkley 2011; Loughran and McDonald 2014). In an M&A context, Ahmed and Elshandidy (2016) find that conservative acquirers are less likely to initiate M&A deals.

Bozanic and Thevenot (2015) examine how readability affects analysts' information environments. They find that lower readability is associated with increased analyst uncertainty, but, over time, increased textual similarity reduces analyst uncertainty. Lang and Stice-Lawrence (2015) study the determinants and consequences of financial disclosure in an international setting. They find that firms with higher liquidity, institutional ownership, and analyst following tend to have higher levels of disclosure.

[3] See Gray and Leary (1935) and DuBay (2007) for historical reviews of the readability literature. Kearney and Liu (2014) also provide a thorough review of textual analysis methods and models used in finance.

Unlike the previously discussed literature, which points to the negative effects of longer filings, some research suggests that longer filings may contain more value-relevant information. Bushee, Gow, and Taylor (2017) decompose the effect of complex language in quarterly earnings conference calls. They show that the complexity of language can represent both obfuscation and information, depending on the source. Li and Zhao (2015) show that 10-K filing disclosures have opposing effects on the evolution of uncertainty. Longer disclosures initially reflect complexity and increase uncertainty. However, once the new information is absorbed by investors, uncertainty tends to decrease.

Given that firms' voluntary disclosures contribute significantly to the length of firm filings (Cazier and Pfeiffer 2016), various studies have examined the effects of voluntary disclosures on market participants. Through the use of a questionnaire, Graham, Harvey, and Rajgopal (2005) report CFO motives for voluntary disclosures. They conclude that firms use voluntary disclosure to enhance their reputation for transparent financial reporting, to reduce the information risk priced into their share prices, and to address the limitations of mandatory reporting.

Guay, Samuels, and Taylor (2016) provide support for these findings by empirically showing that voluntary disclosures mitigate the negative effect of complex financial statements on the information environment. Conversely, building on You and Zhang (2009), who show that investor underreactions are stronger for more complex (longer) reports, Cazier and Pfeiffer (2016) examine which parts of 10-K filings tend to be the most difficult for investors to process. They distinguish between 10-K filing disclosures resulting from a firm's operating complexity, SEC and GAAP disclosure requirements, and unrelated residual disclosures. The former categories are mainly influenced by mandatory disclosures, while the residual category consists of voluntary

disclosures. The study finds that residual disclosures are associated with a return drift six months after the 10-K filing date, but finds no such return drift for either operating complexity or regulatory disclosures. These results suggest that certain voluntary disclosures may be particularly difficult for market participants to process.

3. Hypothesis development

3.1. Target firm 10-K filing length and M&A returns

There are many reasons for observing M&As. These include operational and financial synergies, strategic motives, financial distress, acquiring innovation, and managerial overconfidence (Roll 1986; Lewellen 1971; Andrade and Stafford 2004; Harford 2005; Bernile, Lyandres, and Zhdanov 2011; Almeida, Campello, and Hackbarth 2011). While M&As are generally expected to create value, empirical evidence suggests that acquirers on average make value-destroying or zero-gain acquisitions, and that most of the value accrues to the target firm (Fuller, Netter, and Stegemoller 2002).

M&As are complex decisions, and often involve a certain degree of information asymmetry between the bidder and the target. It is well known that information asymmetry adversely affects financial markets (Akerlof 1970). In an M&A context, the risk of matching with a bad firm – or a "*lemon*" – adversely affects the prospects of the merged firm. Moreover, an M&A transaction can represent an information asymmetry game between the bidder and the target (Hansen 1987). The target agrees to the deal if the offer price is higher than or equal to its reservation price. The bidder agrees to the deal if the price is lower than the perceived target intrinsic value plus synergies.

However, the intrinsic value of the target and the expected synergies are unknown to the bidder, and thus constitute a private estimate based on available information. This is not trivial under asymmetric information. On the one hand, it is in the best interest of both players to maximize

synergies. On the other hand, both parties must decide how these synergies should be shared. And the sharing ultimately depends on the bargaining position of each party.

We expect information in target firm 10-K filings to play a crucial role in the success of an M&A deal in at least two ways (Bushman and Smith 2001). First, by estimating potential synergies and attributing value to the target firm, it helps acquirers identify good targets. Therefore, in the absence of a conflict of interest between managers and shareholders, increased availability of financial information about the target should facilitate the acquirer's assessment of the target firm, hence enhancing M&A outcomes. Furthermore, information in 10-K filings allows shareholders to better estimate the potential synergies that may arise from the proposed M&A deal.

Second, in the case of an agency conflict between management and market participants, accounting information can improve the efficiency of the merger decision through its governance role. There are several reasons for potential inefficiencies relating to merger decisions when management is entrenched. Theories based on managerial self-interest explain negative M&A announcement returns and value destruction to the acquirer. For example, agency theory relates to the conflict between shareholders and managers (Jensen 1986), while the hubris theory of Roll (1986) is based on managerial overconfidence. And Goel and Thakor's (2010) theory is based on envy-based motivations to merge.

Morck, Shleifer, and Vishny (1990) explain wealth destruction, which can result from managerial desire for larger firm size and diversification. Gorton, Matthias, and Rosen (2009) describe negative M&A announcement returns by reconciling these neoclassical theories with the managerial preference for not being acquired. Moreover, Masulis, Wang, and Xie (2007) show that acquisitions undertaken by entrenched managers are the most value-destroying.

If 10-K filing length is a result of the information contained therein, lengthier filings should contain more information about the target firm than shorter ones. Greater information availability about a target should reduce information acquisition costs for shareholders. This should give rise to a positive association between target firm 10-K filing length and shareholders' perceptions of M&A outcomes. We call this effect the information acquisition cost effect, and formalize it in the following hypothesis:

Hypothesis 1a: *There is a positive association between target firm 10-K filing length and M&A returns.*

However, as shown in the prior section, longer 10-K filings may also be more complex, and therefore less readable. Furthermore, prior literature has shown that 10-K filing length can be used to obfuscate information (Li 2008; Lehavy, Li, and Merkley 2011; Loughran and McDonald 2014). Hence, market participants may face greater difficulty extracting information from 10-K filings, and thus increased information processing costs. All else being equal, an increase in shareholders' information processing costs would increase market information asymmetry about M&A deal outcomes. This could lead to a negative association between target firm 10-K filing length and market participants' perceptions of M&A outcomes. We call this effect the information processing cost effect, and formalize it in the following hypothesis:

Hypothesis 1b: *There is a negative association between target firm 10-K filing length and M&A returns.*

Given that the reduction in information acquisition costs and the increase in information processing costs are not mutually exclusive, the relation between target firm 10-K filing length and M&A

returns depends on which of the two effects dominates. If the reduction in information acquisition costs dominates, we should find a positive association between target firm 10-K filing length and M&A returns. This result would support Hypothesis 1a. If the increase in information processing costs dominates, we should find a negative association between target firm 10-K filing length and M&A returns. This result would support Hypothesis 1b. Finally, if the two effects cancel out each other, we should find no association between 10-K filing length and M&A returns.

3.2. Cross-sectional analysis: Private information, 10-K filing length, and M&A returns

As discussed in section 2.1, the acquirer's due diligence of the target firm is typically split into distinct phases: 1) preliminary due diligence, 2) signing of a confidentiality agreement, and 3) transactional due diligence. In the first phase, the acquirer relies solely on public information; in the second phase, after signing a confidentiality agreement, the acquirer has access to private information. Finally, in the third phase, the acquirer engages in transactional due diligence to verify the accuracy of the target's financial information, and can then either withdraw the offer or complete the deal.

We predict the information in the target firm 10-K filing will be most useful to the acquirer when it has limited access to private information about the target. Hence, we posit that the relation between 10-K filing length and M&A returns will be stronger in this case. We formalize our second hypothesis as follows:

Hypothesis 2: *The association between 10-K filing length and M&A returns is stronger when the acquirer has limited private information about the target.*

3.3. Cross-sectional analysis: 10-K filing quality, 10-K filing length, and M&A returns

In the previous sections, we examine how the *quantity*, but not the *quality*, of information in target 10-K filings influences M&A returns. We posit that the relation between 10-K filing length (quantity of information) and M&A efficiency is a function of the quality of information. We distinguish between two types of information: (1) textual information, which consists of firm disclosures, and (2) financial information, which consists of financial statements. The quality of this information may have differing effects on the relation between target firm 10-K filing length and M&A returns.

The quality of narrative information in 10-K filings has typically been measured through readability metrics (Loughran and McDonald 2014). Less readable text is considered more complex, and hence of lower quality. Specifically, we expect that target firm 10-K filings exhibiting high textual complexity will be more difficult for shareholders to read and understand. The increased difficulty will increase shareholder processing costs, and offset the benefits arising from a reduction in information acquisition costs. Prior literature (e.g. Li 2008; Loughran and McDonald 2013) identified a negative relation between 10-K filings with low readability metrics and market returns. If low readability reduces the benefits of lengthier 10-K filings, then we expect a weaker relation between 10-K filing length and M&A returns for deals involving target firms with low-quality 10-K filing narratives.

To further test for the effect of filing quality, we also examine how the quality of financial information may impact the relation between 10-K filing length and M&A returns. Higher-quality financial statements are more informative to financial statement users, and, hence, require less explanation. Given this, we expect that lengthier filings will be less useful to shareholders when the accounting quality of the financial statements is high. We expect the relation to be weaker

when the target firm filing contains high-quality financial information. We formalize our third hypothesis as follows:

Hypothesis 3: *The association between 10-K filing length and M&A returns is weaker when the target firm filing contains low-quality textual information or high-quality financial information.*

3.4. Cross-sectional analysis: 10-K filing tone, 10-K filing length, and M&A returns

The relation between 10-K filing length and M&A returns is also likely to be a function of the content of the filing. Specifically, shareholders will find lengthier 10-K filings more useful in their assessment of the target firm if they contain text denoting risk or uncertainty. In this case, market participants will require explanations for the sources of risks and how the firm will address them. Hence, we posit that the relation between target firm 10-K filing length and M&A returns will be stronger when the 10-K filing narrative denotes high risk. We formalize our fourth hypothesis as follows:

Hypothesis 4: *The association between 10-K filing length and M&A returns is stronger when the target firm 10-K filing narrative denotes high risk.*

4. Research design

We use a multivariate regression model to study the association between target 10-K filing length and M&A returns. We use two market return-based measures to capture M&A returns: (1) the acquirer's (*CAR*), and (2) *SYNERGY*. Following Chen et al. (2018), we calculate *SYNERGY* as the weighted average of the acquirers' and targets' CARs. Both variables measure shareholders' perceived net benefit of the M&A transaction. CARs are measured for the three-day window beginning one trading day before and ending one trading day after the announcement date. Abnormal returns (AR_{jt}) are measured as the difference between the actual stock return for firm j at day t (R_{jt}) and the return predicted by Equation (1) below:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt}) \quad (1)$$

We run the market model over the period beginning 210 days prior to and ending 11 days prior to the announcement date, where R_m is the market return and α_j and β_j are the parameters estimated by an ordinary least squares (OLS) regression model.[4]

Following prior studies (e.g. Loughran and McDonald 2014), we measure 10-K filing length as the mean number of words in the target 10-K filing for the three years prior to the M&A announcement date, *NWORDS*.[5] We standardize this variable so that it has a mean of 0 and a standard deviation of 1. The relevant data about target 10-K filings comes from the WRDS SEC Analytics Suite. Moreover, given that the relation between *NWORDS* and M&A returns might not be linear, in our regression model, Equation (2), we include the squared transformation of the variable capturing 10-K filing length, *NWORDS^2*. In Equation (2), we regress M&A returns on *NWORDS, NWORDS^2,* controls, year, and industry fixed effects.[6] Standard errors are clustered by year and by Fama-French industry codes.

$$M\&A\ returns = \alpha + \beta\ NWORDS + \lambda\ NWORDS\text{^}2 + \gamma\ Controls + Year\ F.E. + Industry\ F.E. + \varepsilon \quad (2)$$

The control variables included in Equation (2) are standard in the literature (Fuller, Netter, and Stegemoller 2002; Raman, Shivakumar, and Tamayo 2013; Chen et al., 2018). Specifically, we

[4] In untabulated results, we run the analyses with *CAR* calculated as 1) a simple return, 2) a Fama-French three-factor model, and 3) a Carhart four-factor model. Our inferences remain the same as those presented here.

[5] We recognize that the choice of calculating *NWORDS* for the three years prior to the announcement date is ad hoc. To check whether our results are sensitive to this research design choice, in untabulated results, we re-run our analysis using *NWORDS* calculated over the five years prior to the announcement date. Our inferences remain the same as those presented here.

[6] The inclusion of year fixed effects allows us to control for time trends in the environment in which the firms in our sample operate. Specifically, we control for changes in regulations, industry practices, and trust between market participants (Chambers and Dimson, 2009). Through the use of industry fixed effects we are also able to control for time-invariant industry characteristics.

include: (1) target and acquirer firm characteristics, such as firm size, Tobin's q, leverage, return on assets, and target firm stock synchronicity, (2) deal characteristics, such as payment method, and an indicator variable showing whether the deal is a diversifying acquisition, (3) target bid-ask spread, to capture target firm market information asymmetry, (4) accounting quality of the target's financial statements, and (5) controls for the target firm information environment, such as stock exchange, an indicator variable for whether the target operates in a high tech industry, an indicator variable for whether the target was in play, and the number of analysts following the target firm.[7]

5. Data and sample construction

Our initial M&A sample consists of U.S. public acquirers of U.S. public targets for the 1997-2013 period, and comes from the SDC Platinum Mergers and Acquisitions Thomson One database. To ensure an M&A transaction is of a significant size for the acquirer, we apply the following criteria: (1) the acquirer must own less than 50% of the target's stock before the M&A announcement, (2) the acquirer must own 100% of the target's shares after the M&A deal is completed, (3) the M&A deal value must exceed U.S. $1 million, and (4) the M&A deal value must be more than 1% of the acquirer's market capitalization. We also require that information for both the acquirer and the target for each deal be available on CRSP and Compustat. Finally, we exclude deals for which data on target 10-K filing length for the three years prior to the announcement date are not available in the WRDS SEC Analytics Suite. The final sample consists of 605 deals.[8]

[7] See the appendix for variable definitions.

[8] We acknowledge that our sample size is smaller than those in prior studies due to the requirement to obtain data on target 10-K filing length for the three years prior to the announcement date (e.g. Fu, Lin, and Officer 2013; Kisgen and Song 2009). Without this selection criterion, it would be otherwise comparable.

Table 1 shows the yearly average number of words in target 10-K filings and the sample breakdown by year.[9] Consistent with prior studies, our sample exhibits the well documented merger wave pattern, with one peak around 1998-1999, and a second around 2006-2007. Moreover, in line with prior studies, we find that the average yearly number of words in target 10-K filings increased, from a low of 19,165 in 1997, to a high of 47,931 in 2012.

[Please insert Table 1 here]

Table 2 presents summary statistics for our sample. On average, acquirers have a mean negative return (*CAR*) of around 1% and a standard deviation of 8.2%. *CAR* ranges from a negative 63%, exhibited by Thoratec Cardiosystems Inc., when it announced its acquisition of Thermo Cardiosystems Inc., to a positive 30%, exhibited by FOCUS Enhancements Inc., when it announced its acquisition of Videonics Inc.

The mean weighted *CAR* for both target and acquirer around the announcement date, *SYNERGY*, is 2.7%. The fact that mean *SYNERGY* is positive when mean *CAR* is negative suggests that the mean target *CAR* around the announcement date is positive. These summary statistics are very similar to those found in previous studies, e.g., Raman, Shivakumar, and Tamayo (2013) and McNichols and Stubben (2015).

[Please insert Table 2 here]

Table 3 presents the correlation matrix. Our proxy for target 10-K filing length, *NWORDS*, is positively correlated with the measures for M&A returns, albeit significant at only the 5% level for *SYNERGY*. The positive correlation between *NWORDS* and our variables of interest is evident from Figure 1, where we graphically show the relationship between the two measures for M&A

[9] The yearly average number of words in target 10-K filings is the unlogged *NWORDS.*

returns and *NWORDS.* These graphs show an increase in both our proxies for M&A returns and 10-K filing length over the sample period. The univariate results suggest support for a positive association between 10-K filing length and M&A returns, hence providing support for Hypothesis 1a.

As expected, we find a positive significant correlation between *SYNERGY* and *CAR.* The results for the control variables suggest that the correlation between both the acquirer's and the target's Tobin's q and M&A returns is negative. These univariate results suggest that M&A transactions involving acquirer and target firms that have greater investment opportunities are perceived negatively by market participants. Furthermore, the results indicate that M&A transactions involving financially constrained (high leverage) acquirers are viewed positively by market participants, which leads to better M&A returns.

[Please insert Table 3 and Figure 1 here]

To further examine the relation between 10-K filing length and M&A efficiency, we undertake a univariate analysis. Specifically, we divide our sample into quartiles based on the number of words in target firm 10-K filings, *NWORDS,* and compare the measures of M&A returns between the top and bottom quartiles. The top (bottom) quartile consists of a sample of observations where the target firm has lengthier (shorter) 10-K filings. As shown in Table 4, we find that observations in the bottom quartile (Quartile 1) exhibit lower M&A returns than those in the top quartile (Quartile 4). We use parametric (t-test) and non-parametric (Wilcoxon rank-sum) tests to test for differences in M&A returns between the two quartiles. For both, we find that M&A returns for observations in the top quartile are statistically larger than for those in the bottom quartile. These results provide support for the notion that the reduction in information acquisition costs dominates the increase in information processing costs stemming from lengthier 10-K filings.

[Please insert Table 4 here]

6. Results

6.1. Main results

Given that the univariate results discussed in the previous section may be driven by an omitted correlated variable, we undertake a series of multivariate regression analyses. Table 5 presents the results from estimating Equation (2), where the dependent variable is one of the two measures for M&A returns, and the independent variable of interest is our measure of 10-K filing length (*NWORDS*).

For both measures of M&A returns, the coefficient on *NWORDS* is positive and statistically significant at the 1% level, indicating that longer reports are associated with higher *CAR* and higher *SYNERGY*. Economic significance is also important. We find that a 1-standard deviation increase in *NWORDS* results in a 70-basis point increase in *CAR* and a 61-basis point increase in *SYNERGY*. For the median firm in our sample, this represents an 8.54% increase in acquirer *CAR*, and a 7.72% increase in weighted *CAR* for the acquirer and target firms (*SYNERGY*).[10] These results, which are in line with the univariate results discussed in the prior section, provide support for Hypothesis 1a, and suggest that the reduction in information acquisition costs dominates the increase in information processing costs emanating from lengthier 10-K filings. The coefficient on *NWORDS^2* is negative, albeit insignificant. This suggests that any attenuation in the positive effect of 10-K filing length on M&A returns is insignificantly different from zero. In line with the univariate results discussed in the previous section, we find a positive correlation between acquirer

[10] The *NWORDS* standard deviation is 1.0. The effect on *CAR* (*SYNERGY)* is the *NWORDS* standard deviation (1.0) multiplied by the coefficient on *NWORDS* when *CAR (SYNERGY)* is the dependent variable, 0.0070 (0.0061). The effect on *CAR (SYNERGY)* is 0.0070 (0.0061). To capture the economic significance of the results, we scale the effect on *CAR (SYNERGY)* by the median *CAR (SYNERGY)* for our sample, 0.082 (0.079). Hence, a 1-standard deviation in *NWORDS* increases the sample mean *CAR (SYNERGY)* by 8.54% (7.72%).

leverage (*ACQ_LEV)* and M&A returns. This suggests that M&A deals involving financially constrained acquirers are perceived positively.

Moreover, in line with Offenberg and Pirinsky (2015, p. 331), who find that deals "in more competitive environments and deals with fewer external impediments on execution are more likely to be structured as tender offers," we find a significant positive association between *TENDER* and M&A returns. Finally, we find a negative and significant association between *HIGH_TECH* and M&A returns, suggesting that M&A deals involving complex target firms (such as those operating in the high-tech industry) have lower M&A returns than the average deal in our sample.

[Please insert Table 5 here]

6.2. Cross-sectional analysis: Private information, 10-K filing length, and M&A returns

To test Hypothesis 2, we need to measure acquirer access to private information about the target firm. We proxy for this in two ways: First, we hand-collect data on when the confidentiality agreements were signed from the merger background section of SEC filings 14A, S-4, and 14D. We then introduce an interaction term in Equation (2) between a new indicator variable, *TOP_25_DAYS* and *NWORDS. TOP_25_DAYS* equals 1 if the number of days between the date the confidentiality agreement was signed and the M&A announcement date is in the top quartile (less than thirty-nine days), and 0 otherwise. Second, we classify the sampled M&A deals according to their form. Specifically, we interact *AUCTION* with *NWORDS*, where *AUCTION* is an indicator variable that equals 1 if the M&A deal takes the form of an auction, and 0 otherwise. Similar to Boone and Mulherin (2007), we define an M&A deal as an auction if the target firm has approached multiple potential bidders and signed confidentiality agreements with various potential bidders.

We expect the acquirer to have less private information about the target firm when the period of time between the signing of the confidentiality agreement and the M&A announcement date is short, and when the M&A deal takes the form of an auction. When the acquirer has limited access to private information about the target firm, acquirers will find target firm 10-K filings more useful. Thus, the coefficient on the interaction terms between *NWORDS* and the measures for limited access to private information should be positive and significant. For this analysis, we drop some observations due to limited data availability.

We present the results for this analysis in Table 6. Panel A shows the results when we proxy for limited access to private information using the length of time between the signing of the confidentiality agreement and the M&A announcement date; panel B shows the results when we proxy for limited access to private information using the form of the M&A deal. In line with our prediction, we find that the coefficient on the interaction term *NWORDS*TOP_25_DAYS* is positive for both measures of M&A returns, albeit significant only for *SYNERGY*. Similarly, we find that the interaction term between *NWORDS* and *AUCTION, NWORDS*AUCTION,* is positive and significant at the 5% level for both measures. These results are consistent with the notion that the market's perception of an M&A deal is more positive for longer 10-K filings if the acquirer has limited access to private information about the target.

[Please insert Table 6 here]

6.3. Cross-sectional analysis: 10-K filing quality, 10-K filing length, and M&A returns

Hypothesis 3 posits that the relation between 10-K filing length (quantity of information in the filing) and M&A efficiency is a function of the quality of information in the filing. Specifically, Hypothesis 3 distinguishes between textual quality and accounting quality, and suggests that the

relation between target 10-K filing length and M&A returns is weaker when textual quality is low and accounting quality is high.

Similar to prior literature (e.g. Loughran and McDonald 2013, 2014) we capture textual quality using the following measures of language complexity: the Gunning Fog index, *FOG*, the SMOG grading index, *SMOG*, and the Flesch reading ease index. Given that the Flesch index increases with a reduction in language complexity, to facilitate exposition, we use the inverse, *FLESCH*, in our empirical analysis. Hence, *FOG*, *SMOG*, and *FLESCH* increase with greater language complexity. We calculate these variables as the averages for the target 10-K filings for the three years prior to the M&A announcement date. To ensure that the high correlation among these additional variables does not bias our results, we run the analysis using each measure of language complexity separately.

Table 7 presents the results of this analysis. Panel A shows the results when *CAR* is the dependent variable, and panel B shows the results when *SYNERGY* is the dependent variable. In all specifications, the coefficient on *NWORDS* is consistently positive and significant, suggesting that the positive relation between 10-K filing length and M&A returns holds regardless of 10-K language complexity. In line with our expectations, the coefficients on the interactions between *NWORDS* and our measures for language complexity are consistently negative, albeit significant only for *NWORDS***FOG* and *NWORDS***FLESCH* when *CAR* is the dependent variable. Taken together, these results suggest that (1) 10-K filing length, *NWORDS*, captures a characteristic of the target 10-K filing that is distinct from language complexity, and (2) language complexity attenuates the positive relation between *NWORDS* and market returns.

[Please insert Table 7 here]

To test whether the quality of financial information in the target 10-K filing, accounting quality, influences the association between *NWORDS* and market returns, we interact our measure of accounting quality, *AQ*, with *NWORDS. AQ* captures the quality of the financial statements disclosed in the 10-K filing. Higher-quality statements are more informative to financial statement users, and, hence, require less explanation. In other words, we expect the coefficient on the interaction term *NWORDS*AQ* to be negative and significant.

Table 8 presents the results for this analysis. In line with our expectations, the coefficient on the interaction term *NWORDS*AQ* is negative for both measures of M&A returns, albeit only significant for *CAR.* Moreover, we find that the coefficient on *NWORDS* is positive and significant, suggesting that the positive relation between *NWORDS* and M&A returns holds regardless of accounting quality.

[Please insert Table 8 here]

6.4. Cross-sectional analysis: 10-K language tone, 10-K filing length, and M&A returns

To test Hypothesis 4, we create a new variable, *TONE,* to capture the incidence of text that denotes high risk. *TONE* is computed as the sum of the relative amount of words denoting uncertainty and modal weakness in the target 10-K filing. We define those words by using the Loughran and McDonald (2011) word dictionaries.

To formally test our hypothesis, we introduce a new indicator variable, *TOP_25_TONE,* in Equation (2), and interact it with *NWORDS. TOP_25_TONE* equals 1 when *TONE* is in the top

quartile, and 0 otherwise. If our prediction that lengthier 10-K filings are incrementally informative to shareholders in the presence of words that denote greater target firm risk is correct, we expect the coefficient on the interaction terms to be positive and significant.

Table 9 presents the results of this analysis. In line with our expectations, the coefficient on *NWORDS*TOP_25_TONE* is positive and significant, suggesting that the association between 10-K filing length and M&A returns is stronger when the filing contains words denoting risk. Furthermore, the coefficient on *NWORDS* is positive and significant. This suggests that lengthier 10-K filings are more informative to shareholders regardless of the tone of the disclosures. The coefficient on *TOP_25_TONE* is negative and significant, indicating that riskier target firms tend to lead to less successful M&A transactions.

[Please insert Table 9 here]

7. Robustness tests

7.1. Abnormal number of words

Next, we test whether our results are sensitive to the way we calculate *NWORDS* by substituting it with the variable *ABNWORDS* (abnormal number of words) in our models. We compute *ABNWORDS* as the difference between the actual and expected number of words for that firm-year. Expected number of words (*ENWORDS)* is computed using the coefficients for the variables in Equation (3), which we run on all M&A transactions available on the SDC Thomson One database for our sample period, and for which we have the required data. Equation (3) gives the expected number of words in the 10-K filing for each observation in our sample. The difference

between the actual and expected number of words can be attributed to cross-sectional differences in voluntary disclosures of our sampled firms.[11]

$$NOWORDS = \alpha + \beta SIZE + Year\ F.E. + Industry\ F.E. + \varepsilon \quad (3)$$

NOWORDS is the logarithmic transformation of the number of words for each firm-year in our sample. The abnormal number of words for each firm-year is calculated as the difference between *NOWORDS* and *ENWORDS.* Similar to *NWORDS, ABNWORDS* is calculated as the average for each firm over the three-year period beginning in the third year prior to the M&A announcement date, and ending in the year just prior to it.

In Table 10, we present the results for Equation (2) when substituting *NWORDS* with *ABNWORDS*. The results confirm our previous inferences, and show that longer filings are positively associated with M&A returns. Specifically, we show a positive and significant relationship at the 1% level between *ABNWORDS* and the two measures of M&A returns. The coefficients on the control variables are similar to the results for our main analysis.

[Please insert Table 10 here]

7.2. Public information about the target

The narratives in 10-K filings provide market participants with information to estimate the optimality of investment decisions. However, when significant public information about the target already exists, the usefulness of that information may become less important. To ensure the

[11] As suggested by prior literature (e.g. Cazier and Pfeiffer 2016), size and industry should explain most of the mandatory disclosures required by a specific firm. Furthermore, we include year fixed effects to control for changes in mandatory disclosure regulations over our sample period.

observed relation between *NWORDS* and market returns is not driven by public information over and above what is available in the target 10-K filing, we exclude M&A transactions where significant public information about the target is likely to exist. Specifically, we drop any deals where the target was subject to previous shareholder activism, or was previously targeted by a potential acquirer during the three years prior to the M&A announcement date. The SEC requires investors who acquire beneficial ownership of more than 5% of the voting class of a company's securities to file an SC 13D filing, often called a "beneficial ownership report." By matching this data, sourced from Audit Analytics, to our sample of target firms, we can identify and exclude firms that were subject to shareholder activism. Our sample for this analysis consists of 411 observations.

Table 11 presents the results. Similarly to our base regression, we find a positive relationship between *NWORDS* and M&A returns. This relationship is significant at the 1% level for both *CAR* and *SYNERGY*.

[Please insert Table 11 here]

7.3. Additional controls

To further alleviate concerns that our results are driven by correlated omitted variables, we conduct various robustness tests where we add additional control variables to Equation (2). Specifically, we control for the acquirer availability of information about the target firm, target firm risk, and target firm complexity.

To control for acquirer availability of information about the target firm, we add *COMMON_AU* and *K8_COUNT*. *COMMON_AU* is an indicator variable that equals 1 if the target shares a common auditor with the acquirer and 0 otherwise. It controls for the possibility that the acquirer

may have easier access to information about the target firm when they share a common auditor. *K8_COUNT* is the total number of 8-K filings issued by the target firm in the three years prior to the M&A deal. This variable controls for the target firm management's voluntary disclosures.

To control for target firm risk, we add *TRG_VOL*, *TRG_FRG*, and *STD_CFO* to our model. *TRG_VOL* is target firm stock return volatility. It is calculated as the standard deviation of the target firm's monthly returns over the three years prior to the M&A deal. *TRG_FRG* is an indicator variable that equals 1 if the target firm operates in a fragmented industry, and 0 otherwise. *STD_CFO* is cash flow volatility. It is calculated as the standard deviation of operating cash flows scaled by total assets over the three years prior to the M&A deal.

Finally, to control for target firm complexity, we follow Li (2008), and include in our model *SPEC_ITEMS_D, LBUSSEG, LGEOSEG*, and *LTOTNOMISS*. *SPEC_ITEMS_D* is an indicator variable that equals 1 if the absolute value of special items scaled by total assets is in the top quartile, and 0 otherwise. *LBUSSEG (LGEOSEG)* is the log of the number of business (geographic) segments from Compustat segment firms. It controls for the possibility that firms with more complex operations have lengthier 10-K filings. *LTOTNOMISS* proxies for financial complexity, and is computed as the log of non-missing variables in Compustat. This variable controls for the possibility that target firms exhibiting greater financial complexity have lengthier 10-K filings.

Table 12 presents the results for this analysis. Panel A shows the results when the dependent variable is *CAR*, and panel B shows the results when the dependent variable is *SYNERGY*. In the first column of both panels, we add the controls relating to the availability of information about the target. In the second column, we add the controls relating to target firm risk, and, in the third column, we add the controls relating to target firm complexity. Finally, in the fourth column, we

add all the additional controls in one regression model. As evident from the results (and in line with our main results), we find that *NWORDS* is positive and significant when either *CAR* or *SYNERGY* is the dependent variable.

[Please insert Table 12 here]

7.4. Additional tests

To ensure that correlated omitted variables are not driving our results, we conduct a number of additional tests. First, we analyze how different dimensions of target firm risk influence the association between 10-K filing length and M&A returns. We create a variable that proxies for the financial risk of the target firm, *FIN_RISK*, which equals 1 if the target firm leverage is higher than the sample mean, and 0 otherwise. We interact *NWORDS* with *FIN_RISK*, and include this interaction in Equation (2). In untabulated results, we find that the interaction term is positive and significant, suggesting that lengthier 10-K filings are more informative for investors in the case of target firms that are subject to higher financial risk.

In another analysis, we create a variable that proxies for regulatory risk approval, *REG_RISK*, which equals 1 if the target firm operates in a highly regulated industry, such as healthcare, medical equipment, or pharmaceuticals, and 0 otherwise. We interact *NWORDS* with *REG_RISK*, and include this interaction in Equation (2). In untabulated results, we find that the interaction term is positive and significant, which suggests that lengthier 10-K filings are more informative in industries that are subject to greater regulatory risk.

Second, we examine whether the observed relation between target firm 10-K filing length and M&A returns is influenced by trust. Specifically, we posit that information in target 10-K filings will be most useful in an environment where trust between market participants is less prevalent.

In such an environment, shareholders will demand more information about the target firm in order to independently assess deal success. Conversely, lengthy 10-K filings may be less useful in an environment where market participants trust the target firm.

To examine this proposition, we divide our sample between M&A deals where (1) the acquirer and target have different auditors, and (2) the acquirer and target have the same auditor. The former proxies for a low-trust environment while the latter proxies for a high-trust environment. In untabulated results, we find that *NWORDS* is only positive and significant for firms that do not share a common auditor. This suggests that more information has the most value in a low-trust environment. Put differently, information in lengthier financial statements matters most for deals that do not have trust established through audit networks.

Finally, we test whether investor characteristics affect the relation between target 10-K filing length and M&A returns. We create a dummy variable, *IO*, that equals 1 if the target and acquirer institutional ownership is greater than the mean for the sample, and 0 otherwise. We interact *NWORDS* with *IO* to examine the incremental effect of the presence of institutional ownership on the relation between target 10-K filing length and M&A returns. In untabulated analyses, we find that the interaction term has a positive and significant effect on M&A returns. This suggests that institutional investors are better able to extract value from lengthy M&A reports.

8. Conclusion

This study examines the relation between 10-K filing length and M&A returns. On the one hand, lengthier 10-K filings contain more information, thereby reducing information acquisition costs and enabling market participants to better assess the likelihood of M&A deal success. This effect suggests a positive association between 10-K filing length and M&A returns. On the other hand,

longer 10-K filings are more complex, thereby increasing information processing costs and potentially hindering the extraction of meaningful information from the target 10-K filing. This effect suggests a negative association between 10-K filing length and M&A returns. In this study, we aim to determine which of these two effects dominates.

Using a sample of U.S. M&A transactions for public firms over the 1997-2013 period, we study the relation between target 10-K filing length and M&A returns. In both univariate and multivariate analyses, we find that the acquirer cumulative abnormal return and the weighted sum of the target and acquirer cumulative abnormal returns are higher around the M&A announcement date when the target 10-K filings are longer. This suggests that the reduction in information acquisition costs stemming from lengthier 10-K filings dominates the increase in information processing costs. In cross-sectional analyses, we find that the association between 10-K filing length and M&A returns is a function of acquirers' access to private information about the target, the quality of information in the 10-K filing, and language complexity in the 10-K filing.

We subject these results to a series of robustness tests. We test whether our results hold when we (1) change our measure for 10-K filing length, (2) exclude observations for M&A transactions where the target was subject to shareholder activism or previous acquisitions, and (3) control for the availability of information on the target firm, target firm risk, and target firm complexity. Results for these tests confirm our inferences. We also find that lengthier 10-K filings are more informative to M&A investors if: (1) the target firm operates in industries that are subject to more regulatory risk, (2) the target firm is more leveraged, (3) neither the target nor the acquirer firm can establish sufficient trust through audit networks, and (4) the majority owners of the target and acquirer firms are institutional investors.

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Appendix 1. Variable definitions.

Variable Name	Description [Source]
Dependent Variables	
CAR	Three-day cumulative abnormal return of the acquirer around the M&A announcement date, calculated using the market model over days (-210, -11) with an ordinary least squares model [CRSP].
SYNERGY	Sum of the weighted three-day acquirer and target cumulative abnormal returns around the M&A announcement date, calculated using the market model over days (-210, -11) with an ordinary least squares model [CRSP, Thomson One SDC].
Main Independent Variables	
NWORDS	Standardized value of the mean number of words in the target 10-K filing for the three-year period from the three years prior to the M&A announcement to the year just prior to the M&A announcement [SEC Analytics].
NWORDS^2	Squared value of *NWORDS.*
ABNWORDS	Abnormal mean number of words in the target 10-K filing, calculated as the difference between the actual and expected number of words. The expected number of words is calculated using the coefficients from the following regression, run on all observations in the sample: $NOWORDS_{it} = \alpha + \beta SIZE_{it} + Year\ F.E. + Industry\ F.E. + \varepsilon$, where *NOWORDS* is the logarithmic transformation of the number of words for each firm-year in our sample period. The abnormal number of words for each firm-year is calculated as the difference between *NOWORDS* and *ENWORDS.* Similarly to *NWORDS*, *ABNWORDS* is calculated for each firm as the average over the three-year period beginning in the third year prior to the M&A announcement date and ending in the year just prior to the announcement date [SEC Analytics].
Acquirer Characteristics	
ACQ_LEV	Acquirer's pre-acquisition leverage, measured as the sum of long- and short-term debt deflated by total assets at the fiscal year-end prior to an acquisition announcement [Compustat].
ACQ_ROA	Acquirer's return on assets for the year ending prior to the announcement year, measured as operating income before depreciation, scaled by average total assets [Compustat].
ACQ_SIZE	Acquirer's size, measured as the natural logarithm of the acquirer's market value at the end of the quarter prior to the announcement [CRSP, Compustat].
ACQ_TOBINQ	Acquirer's pre-acquisition Tobin's Q, measured as the ratio of the acquirer's market value of assets to the book value of assets at the fiscal year-end prior to an acquisition announcement [Compustat].
Target Characteristics	
TRG_LEV	Target's pre-acquisition leverage, measured as the sum of long- and short-term debt deflated by total assets at the fiscal year-end prior to an acquisition announcement [Compustat].
TRG_ROA	Target's return on assets for the year ending prior to the announcement year, measured as operating income before depreciation scaled by average total assets [Compustat].
TRG_SIZE	Target's size, measured as the natural logarithm of the acquirer's market value at the end of the quarter prior to the announcement [CRSP, Compustat].
TRG_TOBINQ	Target's pre-acquisition Tobin's Q, measured as the ratio of the acquirer's market value of assets to the book value of assets at the fiscal year-end prior to an acquisition announcement [Compustat].
Deal Characteristics	

ALL_STOCK	Indicator variable that equals 1 if the acquisition was at least 90% financed by acquirer stocks, and 0 otherwise [Thomson One SDC].
ANALYST	Logarithmic transformation of the maximum number of analysts that submitted recommendations about the firm at any point in time during the year [I/B/E/S].
AQ	Target's accrual quality, measured by the standard deviation of firm-level residuals from Dechow and Dichev's (2002) model during years t-5 to t-1, multiplied by -1 and ranked by decile [Compustat].
AUCTION	Indicator variable that equals 1 if the target approached multiple bidders and multiple confidentiality agreements were signed with different potential bidders, and 0 otherwise [SEC Edgar].
DIFFIND	Indicator variable that equals 1 if the acquirer and target are in different industries based on Fama-French industry classifications, and 0 otherwise [Thomson One SDC].
HIGH_TECH	Indicator variable that equals 1 if the acquirer and target are both from high-tech industries as defined in Loughran and Ritter (2004), and 0 otherwise [Thomson One SDC].
IN_PLAY	Indicator variable that equals 1 if the target was subject to another acquisition within the three years before the deal announcement date, and 0 otherwise [Thomson One SDC].
NASDAQ	Indicator variable that equals 1 if the firm is listed on the NASDAQ stock exchange, and 0 otherwise [Compustat].
REL_SIZE	Relative deal size, measured as the ratio of the transaction value to the market value of the bidder [Thomson One SDC, CRSP].
SYNC	Target's stock return synchronicity, measured as the adjusted R^2 from a regression of a firm's daily stock return on the daily market return over the sixteen quarters prior to the focal year [CRSP].
TENDER	Indicator variable that equals 1 if the acquisition is classified as a tender offer, and 0 otherwise [Thomson One SDC].
TRG_BID_ASK	Average target daily bid-ask spreads (scaled by the midpoint of the spread) over the one-year period ending two months prior to the deal announcement [CRSP].
Additional Controls	
COMMON_AU	Equals 1 if the target and acquirer firm have the same auditor, and 0 otherwise [Audit Analytics].
K8_COUNT	Total number of 8-K filings during the three years prior to the M&A announcement date [SEC Edgar].
LBUSSEG	Natural logarithm of the number of business segments [Compustat].
LGEOSEG	Natural logarithm of the number of geographic segments [Compustat].
LTOTNONMISS	Natural logarithm of the number of non-missing items [Compustat].
SPEC_ITEMS_D	Equals 1 if the target has special items in absolute value divided by total assets in the top 25th percentile, and 0 otherwise [Compustat].
STD_CFO	Volatility of cash flows [Compustat].
TRG_FRG	Equals 1 if the target is in fragmented industries, and 0 otherwise [Compustat].
TRG_VOL	Stock return volatility [CRSP].
TOP_25_DAYS	Indicator variable that equals 1 if the number of days between the signing of the confidentiality agreement and the announcement date is in the top quartile, and 0 otherwise.
TOP_25_TONE	Indicator variable that equals 1 if *TONE* is in the top quartile, and 0 otherwise. TONE is defined as the sum of the relative amount of words denoting uncertainty and modal weakness, as defined in the Loughran and McDonald (2014) word dictionaries.
FLESCH	Inverse of the Flesch reading ease index.
SMOG	Smog grading index.
FOG	10-K filing Gunning Fog index.

Figure 1. M&A returns and 10-K length.

This figure shows the relation between M&A returns and 10-K filing length. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. Panel A plots the average *CAR* and *NWORDS* (unstandardized)*;* panel B plots the relationship between *SYNERGY* and *NWORDS (unlogged)* for each year.

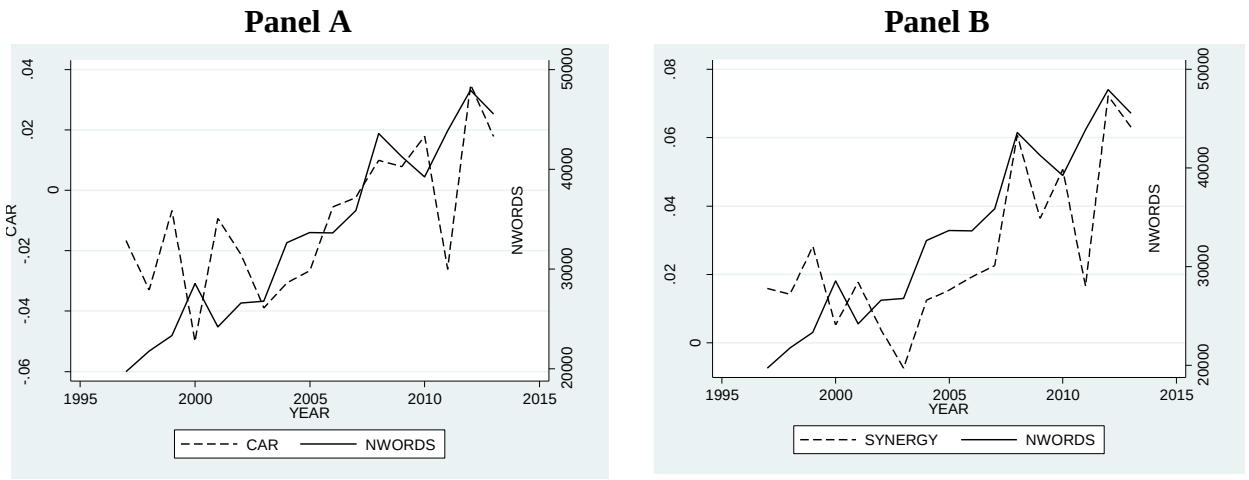

Table 1. Sample composition by year.

This table shows the distribution of M&A transactions across the sample period. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. The sample size consists of 605 deals.

Year	Number of Deals	Percentage of Sample	Number of Words	Median Deal Value (in $ millions)	Median Relative Size
1997	32	0.05	19,165	717	0.31
1998	43	0.07	21,761	492	0.33
1999	51	0.08	23,327	435	0.25
2000	39	0.06	28,552	1,028	0.19
2001	25	0.04	23,395	191	0.17
2002	19	0.03	26,600	384	0.16
2003	32	0.05	26,779	477	0.26
2004	40	0.07	32,635	753	0.30
2005	38	0.06	33,664	584	0.24
2006	51	0.08	33,638	563	0.16
2007	53	0.09	35,876	810	0.13
2008	25	0.04	43,587	476	0.15
2009	30	0.05	41,285	672	0.18
2010	29	0.05	39,244	734	0.17
2011	17	0.03	43,880	612	0.22
2012	38	0.06	47,931	861	0.37
2013	43	0.07	45,569	443	0.38

Table 2. Summary statistics.

This table shows summary statistics for the variables used in our base model. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. The sample size consists of 605 deals. All variables are defined in Appendix 1.

Variable	Mean	Std. Dev.	P25	Median	P75
CAR	-0.010	0.082	-0.049	-0.008	0.029
SYNERGY	0.027	0.079	-0.015	0.017	0.062
NWORDS	0.00	1.00	-0.65	-0.15	0.41
NWORDS^2	1.00	4.24	0.07	0.31	0.87
IN_PLAY	0.167	0.373	0.000	0.000	0.000
ACQ_SIZE	8.052	1.835	6.717	7.977	9.363
ACQ_TOBIN	1.596	2.327	0.559	1.120	1.823
ACQ_LEV	0.214	0.185	0.088	0.182	0.294
ACQ_ROA	0.119	0.116	0.033	0.120	0.184
TRG_SIZE	6.087	1.590	4.992	5.980	7.206
TRG_TOBIN	1.362	1.578	0.545	1.017	1.602
TRG_LEV	0.209	0.214	0.037	0.158	0.323
TRG_ROA	0.079	0.160	0.024	0.096	0.156
REL_SIZE	0.448	0.602	0.084	0.223	0.583
ALL_STOCK	0.309	0.463	0.000	0.000	1.000
TENDER	0.183	0.387	0.000	0.000	0.000
HIGH_TECH	0.380	0.486	0.000	0.000	1.000
DIFFIND	0.312	0.464	0.000	0.000	1.000
AQ	4.225	2.856	2.000	4.000	7.000
NASDAQ	0.640	0.480	0.000	1.000	1.000
SYNC	0.154	0.137	0.043	0.109	0.242
TRG_BID_ASK	0.012	0.016	0.002	0.005	0.016
ANALYST	1.533	0.936	0.811	1.576	2.269

Table 3. Correlation table.

This table shows the Pearson correlation table for the variables used in our base model. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All variables are defined in Appendix 1. * denotes significance at the 5% level. Correlations with deal characteristics are omitted, but are available from the authors upon request.

		1	2	3	4	5	6	7	8	9	10	11	12
1	CAR	1.00											
2	SYNERGY	0.80*	1.00										
3	NWORDS	0.06	0.08*	1.00									
4	NWORDS^2	0.02	0.03	0.63*	1.00								
5	ACQ_SIZE	-0.04	-0.21*	0.16*	0.05	1.00							
6	ACQ_TOBIN	-0.15*	-0.15*	-0.10*	-0.01	0.14*	1.00						
7	ACQ_LEV	0.12*	0.14*	0.04	0.03	-0.08	-0.10*	1.00					
8	ACQ_ROA	0.12*	0.06	-0.04	0.02	0.32*	0.29*	-0.01	1.00				
9	TRG_SIZE	-0.11*	-0.04	0.28*	0.15*	0.70*	0.05	0.03	0.21*	1.00			
10	TRG_TOBIN	-0.12*	-0.09*	-0.12*	-0.03	0.22*	0.66*	-0.04	0.24*	0.19*	1.00		
11	TRG_LEV	0.02	0.03	0.07	0.01	-0.01	-0.06	0.46*	0.05	0.08	-0.02	1.00	
12	TRG_ROA	0.09*	0.11*	-0.10*	-0.01	0.22*	-0.11*	0.13*	0.38*	0.32*	0.04	0.06	1.00

Table 4. Univariate analysis.

This table shows the main results of the univariate summary. We group *NWORDS* into quartiles, and compare *CAR* and *SYNERGY* between the bottom quartile 1 and top quartile 4 using a parametric t-test and a non-parametric rank-sum test. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All variables are defined in Appendix 1. * denotes significance at the 5% level.

	Quartile 1	Quartile 4	Difference
CAR	-0.011	0.002	-0.013*
T-test statistic			-1.29
Wilcoxon rank-sum z-stat			-1.43
SYNERGY	0.027	0.042	-0.015*
T-test statistic			-1.54
Wilcoxon rank-sum z-stat			-1.35

Table 5. 10-K filing length and M&A returns.

This table shows the results of the regression analysis, where the main independent variable is *NWORDS*. The dependent variables are *CAR* and *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0070***	(5.95)	0.0061***	(2.94)
NWORDS^2	-0.0003	(-0.60)	-0.0005	(-0.82)
IN_PLAY	0.0085	(0.94)	-0.0058	(-0.68)
ACQ_SIZE	-0.0031	(-0.50)	-0.0205***	(-3.86)
ACQ_TOBIN	-0.0003	(-0.03)	0.0011	(0.17)
ACQ_LEV	0.0725**	(2.04)	0.0574**	(2.09)
ACQ_ROA	0.0890	(0.72)	0.0515	(0.51)
TRG_SIZE	-0.0024	(-0.39)	0.0109**	(1.99)
TRG_TOBIN	-0.0030	(-0.46)	-0.0009	(-0.12)
TRG_LEV	-0.0090	(-0.59)	-0.0185	(-0.93)
TRG_ROA	0.0362	(0.59)	0.0521	(1.39)
REL_SIZE	-0.0185	(-0.92)	-0.0126	(-0.94)
ALL_STOCK	-0.0112	(-1.12)	-0.0159	(-1.41)
TENDER	0.0168***	(2.68)	0.0173**	(2.46)
HIGH_TECH	-0.0179*	(-1.88)	-0.0124*	(-1.71)
DIFFIND	0.0007	(0.13)	-0.0034	(-0.65)
AQ	-0.0011	(-0.68)	-0.0026*	(-1.87)
NASDAQ	-0.0079	(-1.49)	-0.0060*	(-1.68)
SYNC	0.0140	(0.41)	0.0355	(1.46)
TRG_BID_ASK	-0.1320	(-1.45)	-0.0825	(-0.63)
ANALYST	-0.0124***	(-3.11)	-0.0036	(-0.77)
YEAR F.E	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	605		605	
R-SQ	0.215		0.239	

Table 6. Cross-sectional analysis: Private information, 10-K filing length, and M&A returns.

Panel A shows the results for interacting *TOP_25_DAYS* with *NWORDS*. *TOP_25_DAYS* is an indicator variable that equals 1 if the number of days between the signing of the confidentiality agreement and the announcement date is in the top quartile, and 0 otherwise. Panel B shows the results for interacting *AUCTION* with *NWORDS*. *AUCTION* is an indicator variable that equals 1 if the M&A deal takes the form of an auction, and 0 otherwise. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All other variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

Panel A. Controlling for number of days.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0071*	(1.71)	0.0041	(1.10)
NWORDS*TOP_25_DAYS	0.0057	(0.72)	0.0187**	(2.11)
TOP_25_DAYS	0.0080	(1.38)	0.0042	(0.65)
NWORDS^2	-0.0001	(-0.21)	-0.0000	(-0.02)
CONTROLS	YES		YES	
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	522		522	
R-SQ	0.167		0.195	

Panel B. Controlling for deal type.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0030	(0.98)	0.0012	(0.35)
NWORDS*AUCTION	0.0150**	(2.12)	0.0205**	(2.07)
AUCTION	-0.0004	(-0.06)	-0.0002	(-0.02)
NWORDS^2	0.0002	(0.51)	0.0003	(0.41)
CONTROLS	YES		YES	
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	533		533	
R-SQ	0.167		0.199	

Table 7. Cross-sectional analysis: Textual quality, 10-K filing length, and M&A returns.

This table shows the main results of the regression analysis where the main independent variable is *NWORDS*. The dependent variable in panel A is *CAR*, and it is *SYNERGY* in panel B. *FOG* is the 10-K filing Gunning Fog index, *SMOG* is the Smog grading index, and *FLESCH* is the inverse of the Flesch reading ease index. We calculate these variables for the three years prior to the M&A deal. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constants, control variables, years, and Fama-French twelve-industry dummies. All other variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

Panel A. CAR.

	CAR		CAR		CAR	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0065***	(5.34)	0.0063***	(5.50)	0.0062***	(4.96)
NWORDS^2	0.0007	(0.77)	0.0006	(0.69)	0.0011	(1.06)
FOG	0.0022	(0.70)				
SMOG			0.0021	(0.68)		
FLESCH					0.0022	(1.45)
NWORDS*FOG	-0.0041*	(-1.85)				
NWORDS*SMOG			-0.0038	(-1.62)		
NWORDS*FLESCH					-0.0052**	(-2.02)
CONTROLS	YES		YES		YES	
YEAR F.E.	YES		YES		YES	
INDUSTRY F.E.	YES		YES		YES	
OBS	605		605		605	
R-SQ	0.217		0.216		0.217	

Panel B. SYNERGY.

	SYNERGY		SYNERGY		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0061*	(1.87)	0.0061*	(1.84)	0.0058**	(2.12)
NWORDS^2	-0.0004	(-0.44)	-0.0004	(-0.48)	0.0004	(0.44)
FOG	0.0001	(0.05)				
SMOG			0.0001	(0.05)		
FLESCH					0.0006	(0.32)
NWORDS*FOG	-0.0004	(-0.27)				
NWORDS*SMOG			-0.0002	(-0.16)		
NWORDS*FLESCH					-0.0033	(-1.62)
CONTROLS	YES		YES		YES	
YEAR F.E.	YES		YES		YES	
INDUSTRY F.E.	YES		YES		YES	
OBS	605		605		605	
R-SQ	0.239		0.239		0.239	

Table 8. Cross-sectional analysis: Accounting quality, 10-K filing length, and M&A returns.

This table shows the results of the regression analysis where the main independent variable is *AQ* and its interaction with *NWORDS*. *AQ* is the target's accrual quality. It is measured by the standard deviation of the firm-level residuals from Dechow and Dichev's (2002) model during the years t-5 to t-1, multiplied by -1 and ranked into deciles. The dependent variables are *CAR* and *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0174**	(2.58)	0.0135***	(2.86)
NWORDS*AQ	-0.0025**	(-2.24)	-0.0018	(-1.63)
AQ	-4.6137*	(-1.75)	-4.1572**	(-2.24)
NWORDS^2	-0.0005	(-0.65)	-0.0006	(-0.95)
CONTROLS	YES		YES	
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	605		605	
R-SQ	0.218		0.243	

Table 9. Cross-sectional analysis: 10-K filing tone, 10-K filing length, and M&A returns.

This table shows the results of the regression analysis where the main independent variable is *TOP_25_TONE*, an indicator variable that equals 1 if *TONE* is in the top quartile, and 0 otherwise. *TONE* is defined as the sum of the relative amount of words denoting uncertainty and modal weakness, as defined in the Loughran and McDonald (2014) word dictionaries. The dependent variables are *CAR* and *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0051***	(3.11)	0.0043*	(1.97)
NWORDS*TOP_25_TONE	0.0115**	(2.15)	0.0104***	(2.77)
TOP_25_TONE	-0.0283***	(-3.19)	-0.0234**	(-2.42)
NWORDS^2	-0.0004	(-0.65)	-0.0005	(-0.84)
CONTROLS	YES		YES	
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	605		605	
R-SQ	0.253		0.225	

Table 10. Abnormal number of words and M&A returns.

This table shows the results of the regression analysis where the main independent variable is *ABNWORDS*. The dependent variables are *CAR* and *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
ABNWORDS	0.0089***	(6.74)	0.0054***	(4.07)
IN_PLAY	0.0070	(0.77)	-0.0073	(-0.86)
ACQ_SIZE	-0.0036	(-0.61)	-0.0209***	(-4.05)
ACQ_TOBIN	-0.0000	(-0.00)	0.0016	(0.27)
ACQ_LEV	0.0749**	(2.14)	0.0622**	(2.18)
ACQ_ROA	0.0964	(0.78)	0.0622	(0.60)
TRG_SIZE	-0.0022	(-0.40)	0.0101*	(1.94)
TRG_TOBIN	-0.0034	(-0.55)	-0.0007	(-0.10)
TRG_LEV	-0.0109	(-1.05)	-0.0189	(-1.12)
TRG_ROA	0.0342	(0.57)	0.0517	(1.46)
REL_SIZE	-0.0184	(-0.95)	-0.0122	(-0.91)
ALL_STOCK	-0.0122	(-1.47)	-0.0179	(-1.64)
TENDER	0.0156**	(2.42)	0.0168**	(2.48)
HIGH_TECH	-0.0219**	(-2.14)	-0.0145	(-1.56)
DIFFIND	0.0009	(0.20)	-0.0026	(-0.50)
AQ	-0.0009	(-0.65)	-0.0026**	(-2.02)
NASDAQ	-0.0081*	(-1.71)	-0.0074***	(-5.67)
SYNC	0.0381	(1.57)	0.0577***	(2.83)
TRG_BID_ASK	-0.2019	(-1.24)	-0.1553	(-1.05)
ANALYST	-0.0121**	(-2.38)	-0.0024	(-0.42)
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	605		605	
R-SQ	0.149		0.178	

Table 11. Number of words and M&A returns: Subsample analysis.

This table shows the results of the regression analysis where the main independent variable is *NWORDS*. The dependent variables are *CAR* and *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. We exclude transactions where the target was subject to shareholder activism or to previous acquisitions. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

	CAR		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0097***	(4.15)	0.0094***	(3.87)
NWORDS^2	-0.0004	(-0.47)	-0.0006	(-0.85)
CONTROLS	YES		YES	
YEAR F.E.	YES		YES	
INDUSTRY F.E.	YES		YES	
OBS	411		411	
R-SQ	0.213		0.242	

Table 12. Number of words and M&A returns: Controlling for auditors, management disclosure, risk, and complexity.

Panel A shows the results when the dependent variable is *CAR*, and panel B shows the results for *SYNERGY*. The sample includes all completed U.S. mergers and acquisitions announced between 1997 and 2013 in which (1) the acquirer owned less than 50% of the target stock before the announcement, (2) the acquirer owned 100% of the target's shares after the deal was completed, (3) the deal value exceeded U.S. $1 million, and (4) the deal value was more than 1% of the acquirer's market capitalization. All regressions include constant, year, and Fama-French twelve-industry dummies. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered by year and by industry.

Panel A. CAR

	CAR		CAR		CAR		CAR	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0064***	(4.78)	0.0069***	(3.91)	0.0069***	(4.34)	0.0062***	(7.11)
NWORDS^2	-0.0003	(-0.59)	-0.0003	(-0.42)	-0.0001	(-0.25)	-0.0000	(-0.06)
COMMON_AU	0.0031	(0.78)					0.0060	(1.48)
K8_COUNT	0.0002	(0.77)					0.0001	(0.42)
TRG_VOL			0.4590	(1.05)			0.4273	(1.14)
TRG_FRG			-0.0428**	(-2.20)			-0.0422***	(-2.78)
STD_CFO			0.0134	(0.77)			0.0133	(0.74)
SPEC_ITEMS_D					0.0112*	(1.76)	0.0106	(1.58)
LBUSSEG					0.0022	(1.01)	0.0020	(0.97)
LGEOSEG					-0.0028***	(-6.55)	-0.0030***	(-6.57)
LTOTNONMISS					0.0000	(0.12)	-0.0000	(-0.10)
CONTROLS	YES		YES		YES		YES	
YEAR F.E.	YES		YES		YES		YES	
INDUSTRY F.E.	YES		YES		YES		YES	
OBS	605		605		605		605	
R-SQ	0.216		0.222		0.234		0.241	

Panel B. SYNERGY.

	SYNERGY		SYNERGY		SYNERGY		SYNERGY	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
NWORDS	0.0057***	(2.84)	0.0054***	(3.05)	0.0060**	(2.48)	0.0049***	(2.81)
NWORDS^2	-0.0005	(-0.84)	-0.0004	(-0.60)	-0.0002	(-0.35)	-0.0001	(-0.16)
COMMON_AU	0.0045	(0.80)					0.0077	(1.34)
K8_COUNT	0.0001	(0.47)					0.0001	(0.36)
TRG_VOL			0.4308	(0.95)			0.4899	(1.32)
TRG_FRG			-0.0258	(-1.58)			-0.0248	(-1.52)
STD_CFO			-0.0766	(-1.51)			-0.0669	(-1.35)
SPEC_ITEMS_D					0.0048	(1.10)	0.0036	(0.82)
LBUSSEG					0.0019	(1.10)	0.0017	(1.02)
LGEOSEG					-0.0033***	(-4.76)	-0.0034***	(-3.91)
LTOTNONMISS					-0.0001	(-0.86)	-0.0001	(-0.98)
CONTROLS	YES		YES		YES		YES	
YEAR F.E.	YES		YES		YES		YES	
INDUSTRY F.E.	YES		YES		YES		YES	
OBS	605		605		605		605	
R-SQ	0.240		0.245		0.260		0.268	