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The Intangibles Song in Takeover Announcements: Good Tempo, Hollow Tune

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Abstract

Mergers and acquisitions are often motivated by the intention of creating value from intangible assets. We develop a word list of intangibles and apply it to takeover announcements. One standard deviation more in intangible-related language ("intangibles talk") lowers announcement returns for the acquirer by 0.53 percentage points, and predicts worse operating performance. Bidder managers appear to believe in the deals nonetheless, as evidenced by insider trades, payment choices, and completion probabilities and speed. Overall, takeover announcement texts reveal important information regarding hard-to-measure aspects of deal quality.

Keywords: Corporate announcements, intangible assets, intangibles talk, mergers and acquisitions, takeovers, textual analysis

JEL Classifications: G14, G34, G41

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On July 20, 2011, Minnesota-based Ecolab Inc., a producer of cleaning and sanitizing products, announced it was acquiring Nalco Holding Co., a maker of chemicals used in industrial water treatment, energy and air applications. The transaction was valued at $8.1 billion, including the assumption of $2.7 billion in Nalco net debt. In the acquisition announcement, Ecolab's management identified *innovation, processes, customers, markets, technology know-how, team* and *corporate culture* as the key assets relevant for the deal. Ecolab's CEO is cited as stressing the importance of Nalco's *expertise, services, efficiency*, and *market*.[1] The business press picked up this storyline.[2] In short, Ecolab tried hard to convince investors that Nalco offered a richness in intangible assets. However, investors were not convinced. Ecolab's stock price fell sharply on the announcement day, closing 7.4% below the previous day's closing price. This is substantially larger than the median bidder price reaction to acquisitions of public chemicals companies over the 2002 to 2019 period, which was -1.4%. Ecolab's share price recovered mildly the following day, but then drifted down further. It ended the 10-day post-announcement period 10.6% below the pre-announcement day. Despite the negative market reaction, the deal went forward and Ecolab acquired Nalco.

This paper assesses whether this pattern – even if extreme – is typical. Is it an indication of value destruction in a planned deal when the acquiring CEO cites intangible assets? Intangible assets, typically defined as non-physical assets (Berk and DeMarzo 2020) or "sources of future benefits that lack a physical embodiment" (Lev 2005), have been growing in importance. Intriguingly, Lev (2012) documents a 50% decline of the ability of accounting data to explain share price differences across companies over 1975-2006. Studies such as Ayyagari, Demirgüç-Kunt, and Maksimovic (2024) and Belo et al. (2022) provide further evidence of the importance of intangible assets for firm value and corporate performance. They have been shown to play a major positive role for acquisitions. The literature has established the importance of both patents and unpatented innovation activities (e.g., Higgins and Rodriguez 2006; Sevilir and Tian 2012; Bena and Li 2014; Beneish et al. 2022), but recent work has also high-

[1] Douglas M. Baker, Jr., Ecolab's Chief Executive Officer commented on the target, saying *"Nalco is the global leader with deep expertise in programs and services to enhance water process efficiency, extend asset life, and improve their customers' end products. Nalco's water and oil and gas services end markets in particular represent excellent long term growth potential as the world deals with the quality, cost and availability of those key natural resources. Further, its geographic exposure to high-growth emerging markets offers terrific future potential for the combined companies."* – https://www.sec.gov/Archives/edgar/data/31462/000104746911006458/a2204877zex-99_1.htm

[2] *"We've long admired Nalco's capabilities, know-how and management team for years," said Ecolab Chief Executive Doug Baker in an interview.* – The Wall Street Journal, July 20, 2011.

lighted the importance of broader classes of intangible assets (e.g., Li, Qiu, and Shen 2018; Masulis, Reza, and Guo 2023). However, intangible assets are harder to value than other value-drivers, and arguably relatively easily valued parts such as patents make up a relatively small fraction of typical deal value (Masulis, Reza, and Guo 2023).

These observations raise the question whether the extent to which managers communicate about these assets – henceforth *intangibles talk* – when announcing a merger is a deal quality predictor, and whether the market forms rational expectations at the announcement. There is little prior research on the information content of and market reaction to the announcement texts (press releases) of a merger. This is surprising given that these texts present the first information for investors regarding this major corporate event, given that investors plausibly pay attention to the texts especially for considerations that go beyond the already available financial information, and given that otherwise the literature has extensively employed textual analysis to corporate disclosures. The intersection of these observations – the potential importance of intangible assets, but the absence of evidence of whether intangibles talk actually contains positive or negative information – motivates this paper.

To conduct a systematic analysis, we begin by tallying the extent of intangibles talk in takeover announcements. To do this, we develop a word list to assess this quantity. Drawing on the strategy and business literature (Hall 1992; Lev 2005; Lev 2012), we compile a dictionary of words that indicate intangible assets. The four major categories proposed by Lev (2005) are *Customer Relations*, *Human Resources*, and *Organizational Capital*, and *Products/Services*. Our main word list contains 213 words. For example, each of the words highlighted in Ecolab's takeover announcement above is on that list, and the announcement uses words from each of the four categories. "Intangibles talk" then is the frequency of words associated with intangible assets.

Between 2002 and 2019, the median (average) U.S. takeover announcement contains about 4.6% (4.9%) words that are closely related to intangible assets. Important for this study, there is substantial variation in that frequency across announcements. That variability enables this analysis. Ecolab's announcement has 6.8%, which is considerably larger than the median of 2.6% for acquisitions of public targets that operate in the chemicals industry.

If intangibles talk merely reflected intangible capital of the bidder or the target, it would

correlate perfectly with these measures. We do find that intangibles talk bears some relationship to the size of the bidder's intangible capital (measured in different ways), but this relation vanishes once one controls for industry fixed effects. The target's intangible capital (available in the subsample of publicly listed targets) is also uncorrelated with intangibles talk.

Are frequent references to intangibles, therefore, just inconsequential managerial guff? Or do such references actually reveal something about the deal over and above other observables? One possible reason for a degree of disconnect between intangibles talk and intangible assets is that managers refer more frequently to intangibles when they are disclosing advantageous private information regarding the intangible value the deal offers, rather than merely repeating what is readily visible. We would thus expect a positive relation between intangibles talk and deal quality. Our first test considers stock market reactions to the announcement texts.[3] On average, the market reacts negatively to intangibles talk in the takeover announcements. Greater use of intangibles talk by one standard deviation results in 0.53 percentage points lower abnormal announcement returns. There is no noticeable reversal of this response to intangibles talk. Indeed, the loss of returns is reinforced. After 30 days, that one standard deviation in intangibles talk results in 0.98 percentage points lower returns.

These results obtain even though we control for a wide range of factors. Beyond more than fifteen standard variables that prior work has shown to be correlated with announcement returns, we also account for aspects such as short interest before the announcement (which can control for overvaluation, an important motivation for acquisitions (Shleifer and Vishny 2003; Ben-David, Drake, and Roulstone 2015)), firm complexity, general disclosure quality of a company, and textual variables such as EPS accretion talk in the takeover announcement and the extent to which management typically uses intangibles talk on earnings conference calls.

Intangibles talk also (weakly) predicts a decrease in the operating performance measured by a change in return on assets over the next year. After greater intangibles talk, bidders record more goodwill on their balance sheets. Additionally, analysts decrease bidder stock recommendations following takeover announcements rich in intangibles talk.

[3]Takeover announcements attract keen attention of investors and often significantly move the stock price. Abnormal stock returns around the announcement date are sizable. They range from rather negative to highly positive returns depending predictably on target and deal characteristics (see Moeller, Schlingemann, and Stulz 2004; Moeller, Schlingemann, and Stulz 2007; Bargeron et al. 2008; Betton, Eckbo, and Thorburn 2008; Savor and Lu 2009; Officer, Poulsen, and Stegemoller 2009; Schneider and Spalt Forthcoming).

Given these main results, we seek to explain why managers engage in intangibles talk and why it predicts lower deal quality. First, acquirer insiders (CEOs, executives, and board members) are more likely to purchase stock when the takeover announcement features more intangibles talk. Second, the time between the announcement and the effective date of the acquisition is shorter for deals announced with more intangibles talk, and these deals are more likely to complete.[4] Furthermore, although deals are on average more likely to be canceled when the initial market reaction is negative, this is not the case for deals announced with high intangibles talk.

Third, we draw on the insight of Officer, Poulsen, and Stegemoller (2009) that rational, risk-aware acquirers should be more likely to use stock as the method of payment for hard-to-value targets. The reason is that buying such a company with cash puts all the risk on the bidder: If it turns out to be a bad deal, the bidders suffer, whereas the target shareholders received the cash. Indeed, we confirm that intangibles-heavy targets tend to be bought with stock. However, deals described with lots of intangibles *talk* are more likely to be cash-paid deals than stock-swap deals.

All these findings suggest that acquiring managers appear to believe in the deal when they spout on about intangibles. While the literature has long highlighted overoptimism and overconfidence (see Roll 1986; Malmendier and Tate 2008; Ferris, Jayaraman, and Sabherwal 2013) as a key factor in takeovers,[5] our analysis thus contributes by identifying a specific feature of the deal that managers are plausibly overoptimistic about. Consistent with managerial overoptimism being a concern for investors when it comes to intangibles, the stock price reaction to intangibles talk is particularly negative when the announcement is complemented with optimistic language, when bidder management teams typically use positive language to describe corporate news, and when in a prior deal bidder managers bought their own shares despite a negative market reaction to the deal announcement. Moreover, at least the medium-term reaction is more negative for CEOs recognizable as overoptimistic from their option holdings and/or their forecast behavior. Negative stock price reactions to intangibles talk could also

[4]This finding indicates that intangibles talk does not simply indicates that the deal is complex and/or entails high uncertainty. If these factors were the central drivers, deals where bidders talk more about intangible assets would be slower (because they would require more due diligence) and less likely to complete.

[5]We use the terms overconfidence and overoptimism interchangeably. Malmendier and Tate (2005b) point out that "confidence" tends to focus on a bias in self-assessment, whereas "optimism" refers to a bias in beliefs about exogenous events.

reflect that the market infers distorted managerial objectives such as "empire building" and other private agency benefits (see Jensen and Meckling 1976; Jensen 1986; Morck, Shleifer, and Vishny 1990; Grinstein and Hribar 2004) from intangibles talk. Under this explanation, we would expect the market reaction to intangibles talk to be particularly negative for acquiring firms with weak governance. We find no evidence in favor of this prediction. Linking the optimism and agency dimensions, we do find some evidence that the market's concern about intangibles talk of particularly optimistic CEOs is more pronounced in firms with smaller institutional ownership. Although the evidence on this point is modest, it is in line with the idea that for overoptimism to negatively affect ultimate corporate decisions, there also needs to be poor governance quality.

Overall, our results suggest that managers themselves often seem to believe in the value of deals they describe with intangibles talk, but investors should be (and indeed are) careful when assessing an acquirer's proclamations of the intangible assets involved in a transaction.

The literature is paying burgeoning attention to the importance of qualitative aspects of corporate communication and media content. Existing studies of takeovers have mostly considered whether textual analysis of media coverage helps predict how likely a deal is to succeed. Liu and McConnell (2013) find that the probability of abandoning a deal after a negative stock price reaction at the announcement is related to the level and the tone of media attention it receives. Buehlmaier and Zechner (2021) find that media information released on the announcement day contains information not captured by announcement day stock returns. Ahern and Sosyura (2014) find that bidders manage media coverage during the private negotiation phase in stock acquisitions, and thereby produce a temporary increase in the acquirer's stock price. Merger announcement texts themselves have received little attention. Kimbrough and Louis (2011) study merger-related disclosure in conference calls and merger announcements. They show that managers use conference calls to signal information to the market. They do not study intangibles. Dasgupta et al. (2020) and Hu, Shohfi, and Wang (2021) also focus on conference calls and examine a broad range of topics covered in these calls, without explicitly considering intangibles. After completing the draft of this paper, we became aware of a study by Filip et al. (2022), who also analyze the description of intangibles in merger press releases, albeit in a much smaller sample. They also find that disclosures about intangible resources get a negative reception. We provide a more detailed analysis and also discuss various explanations

for this reaction.

The paper also relates to the literature on managerial backgrounds and behavioral biases in the context of takeovers, focusing in particular on the roles of overoptimism and overconfidence, but highlighting the deal-specific nature of optimism. In his seminal work, Roll (1986) offers an explanation of negative takeover announcement returns in the form of managerial overconfidence, the "hubris hypothesis." Malmendier and Tate (2008) find that CEOs classified as overconfident are more likely to undertake an acquisition. Moreover, they document that overconfident CEOs overpay for target companies and undertake value-destroying mergers. Ferris, Jayaraman, and Sabherwal (2013) study international M&As and find that overconfident CEOs make more merger offers and prefer cash for acquiring targets. Custódio and Metzger (2013) show that when the acquirer's CEO has experience in the target industry, the acquirer's abnormal announcement returns are higher. Aktas et al. (2016) study acquirer and target CEO narcissism. We add to this literature by providing further evidence that over-optimistic CEOs may engage in value-destroying acquisitions, and that this may be revealed in the wording of the announcement. Our analysis identifies a specific feature of the deal that managers are plausibly overoptimistic about.

There is growing research emphasizing the importance of intangible assets, as does this analysis, in corporate value in general and in corporate takeovers specifically. On the general level, the perception of firm value has evolved over time from a mostly real asset driven to intangible based valuation. This is analyzed in particular in the comprehensive work by Lev (2000), Lev (2005), and Lev (2012). Lev attributes the rising importance of intangibles to two major factors: the sharp growth in business competition and the commoditization of physical assets. On the more specific level of takeovers and R&D, Sevilir and Tian (2012) find that acquiring innovative target firms with existing patents is positively related to acquirer short- and long-run performance. Bena and Li (2014) find that patent portfolios and R&D expenses determine whether a firm will be an acquirer or a target. They conclude that synergies obtained from combining innovation capabilities are important drivers of acquisitions. Li, Qiu, and Shen (2018) measure organization capital by capitalized selling, general, and administrative (SG&A) expenses and show that it predicts superior deal performance. Using purchase price allocations, Masulis, Reza, and Guo (2023) estimate a broad measure of target intangibility and find that it relates positively to bidder announcement returns. Phillips and Zhdanov (2013) and Celik,

Tian, and Wang (2022) show that an active acquisition market affects firm incentives to innovate and conduct R&D. Intangible assets are in general difficult for outsiders to identify and value, so that they are associated with greater information asymmetries (Hall et al. 2014; Cohen, Diether, and Malloy 2013; Ewens, Peters, and Wang 2024). Chen et al. (2020) show that a firm's propensity to acquire another firm increases after a competitor wins an innovation award. Denes, Duchin, and Harford (2018) establish the existence of patent expiration waves and show that these in turn trigger merger waves. Exploiting trademark data, Hsu et al. (2022) find that acquisitions provide opportunities for acquirers to optimize their product portfolio. More broadly on the topic of intangibles, Lys and Yehuda (2015) find that private takeover targets have significantly more intangible assets than do public targets. John, Knyazeva, and Knyazeva (2015) and Tate and Yang (2024) study the role of labor mobility in acquisitions. Ouimet and Zarutskie (2020) use the appearance of references to skilled workers in 10-K statements and show that some firms pursue mergers with an objective of securing employees from the target firm. Li and Wang (2020), Chen, Hshieh, and Zhang (2023), and Beaumont, Hebert, and Lyonnet (2022) also highlight the importance of the target's human capital. Frésard, Hege, and Phillips (2017) show that localized intangibles explain acquisitions of foreign targets. While overall this literature studies the role of *actual* intangible assets, we contribute by examining the predictive power of and the market reaction to bidder *communication* regarding intangibles in the deal.

Finally, this paper engages and bolsters the literature that uses textual analysis to provide insight on otherwise difficult to capture issues. For example, some work has established textual measures of financial constraints (Buehlmaier and Whited 2018; Bodnaruk, Loughran, and McDonald 2015; Hoberg and Maksimovic 2015). Others have used 10-Ks to investigate product market competition (Hoberg and Phillips 2010). Moreover, a vast literature, surveyed in Loughran and McDonald (2016), has considered linguistic tone (which we control for). Our analysis shows that textual analysis provides a new view on intangibles.

The paper proceeds as follows. Section 1 presents our methods. Section 2 studies what explains intangibles talk. Section 3 lays out hypotheses that relate intangibles talk and deal quality. It then presents empirical results for how stock prices react to intangibles talk and how intangibles talk predicts post-merger performance. Section 4 develops and implements tests to understand which factors may contribute to the observed outcomes. A battery of robustness

checks are the subject of Section 5. Section 6 concludes.

1. Data

1.1 Deals and takeover announcements

Our data set is composed of corporate takeover deals from 2002 to 2019, collected from SDC and matched to CRSP and COMPUSTAT data. We begin by downloading all announced acquisitions where the bidder is a public company domiciled in the United States, whether the target is a public or private company.[6] Following Moeller, Schlingemann, and Stulz (2004), we collect transactions with at least $1 million deal value and 1% relative size (deal value to bidder market capitalization ratio).[7] We exclude deals that are labeled as recapitalizations, repurchases, self-tenders, or exchange offers, as in Bargeron et al. (2008). We require that the bidder owns at least 80% of the target after the purchase in case of completed deals, and not more than 15% before the announcement (Schneider and Spalt Forthcoming). Following standard practice in the literature, we exclude from the sample bidders that operate in regulated utilities (SIC code 4900-4999) or in the financial industry (SIC code 6000-6999) and bidders with negative book equity. We further require each bidder to match on the CRSP and COMPUSTAT databases. We require that annual financial data for the calculation of the control variables (see below) are available in COMPUSTAT for each bidder, and that the Peters and Taylor (2017) data on intangible capital (see below) are available on WRDS. We extract data for the most recent annual report that is filed not more than a year before the announcement.

The corresponding takeover announcements, filed as 8-K forms, are then downloaded from the EDGAR platform, the Electronic Data Gathering, Analysis, and Retrieval system, which performs automated collection and distribution of data and public filings by companies required by law to file forms with the SEC. Public companies must file an 8-K form with the SEC within four business days to announce material events that shareholders should know about. Form 8-K is a "current report." It is not filed in the regular time intervals, but is triggered

[6] Bidders labeled as government, investor, joint venture, mutually owned, subsidiary, private, or have unknown public status are excluded from the sample. The same restrictions apply to targets except for private status.

[7] In light of overall increasing market capitalizations and inflation, a minimum deal value of $2 million may be more appropriate for our sample period. The results are overall stronger with this deal size requirement.

by a significant event like a CEO departure or an M&A. Only 8-Ks filed no later than 4 business days after the announcement date of the deal are used in the analysis.[8] Table SA.1 summarizes the sample construction. The final takeover sample consists of 3,698 deals.

Several databases provide additional data needed for testing our hypotheses. The number of analysts covering a company and analyst stock buy-sell recommendations are from I/B/E/S (Recommendations - Summary Statistics section). Insider trading data are from Thomson Reuters Insider Filings. Managerial incentives are computed as in Core and Guay (2002) and Coles, Daniel, and Naveen (2006), following code kindly provided by Lalitha Naveen on her website. Institutional investor (13F) stock holdings are downloaded from Thomson Reuters. Data items that are used to construct disclosure quality (as in Chen, Miao, and Shevlin 2015) and operating cash flows (following Lang, Stulz, and Walkling 1991; Li, Liu, and Wu 2018) are from Compustat. The measure of anti-takeover defenses (following Gompers, Ishii, and Metrick 2003; Peters and Wagner 2014) is constructed using data from RiskMetrics. Executive compensation data, used to calculate the longholer measure (as in Malmendier and Tate 2008; Otto 2014), are from Execucomp. We extend the high forecaster measure (Otto 2014) kindly provided by Clemens Otto. Managerial ability data, as in Demerjian, Lev, and McVay (2012), is drawn from Peter Demerjian's website. Earnings call transcripts are from Refinitiv Company Events Coverage (formerly Thomson Reuters Street Events). Data used to construct sentiment in annual 10-K reports and firm complexity measures (as in Loughran and McDonald 2023) are downloaded from Loughran and McDonald's web site.

1.2 Textual analysis of takeover announcements

1.2.1 8-K parsing. We analyze announcements following a common practice in the textual analysis literature, a "bag of words" approach. This approach is based on parsing announcement files into vectors of words and word counts. We exclude footers (the material starting with the forward-looking disclaimer) as they commonly contain template language that is not

[8]The download and announcement identification procedure is described in Supplementary Appendix C.1. EDGAR and SDC do not have a linking identifier. SDC, however, provides 6-digit CUSIPs that can be used to link SDC to CRSP to obtain PERMNOs, which in turn provide a link to COMPUSTAT that gives us CIK codes. These CIK codes can be used to download 8-K filings that contain announcements from EDGAR. There are 95 deals with a missing CIK in the sample. We find the missing identifiers in EDGAR using the bidder name reported by SDC.

useful in measuring text variables of interest. We split words by space and delete all leading and trailing non-alphabetical characters using regular expressions. This procedure automatically removes numbers. Finally, the parsed text is matched to dictionaries to obtain word frequencies.

1.2.2 Intangibles talk dictionary. Our focus is to evaluate the effect of what bidder executives disclose about intangible assets in takeover announcements. We opt for a simple and replicable approach in this analysis, a word counting approach, using a list of relevant words. In line with the textual analysis literature, the assumption here is not that human investors actually count words in any text they read. Rather, the textual analysis literature assumes that humans can grasp the content and meaning by reading text and that the word count is a (rough) approximation for this activity. The extant literature on textual analysis in finance stresses the importance of using word lists that reflect financial jargon (Loughran and McDonald 2016). To our knowledge, there is no such a list for intangibles talk measurement.

To develop our word list, we draw on a number of studies on the role of intangible assets and firm capabilities (Hall 1992; Lev 2005; Lev 2012). These papers do not offer well-defined sets of intangibles words, but they are all rich in describing and listing various types of these assets. Lev (2005) splits intangibles assets in four general categories, presenting examples within each category pointing out growing importance of intangibles assets. According to Lev (2005), *Customer Relations* are intangible assets derived from customer loyalty and brand preference, enabling businesses to charge higher prices or secure larger market shares. They include brand names built through unique products, advertising, and strong customer relationships. Second, unique *Human Resource* policies and practices, such as employee incentive and compensation plans or training programs consistently improve labor productivity and decrease employee turnover, thus generating intangible assets. Third, *Organizational Capital* is intangible assets represented by distinctive corporate organizational designs and business processes that enable companies to either generate higher revenues or reduce production costs more effectively than their competitors. Finally, *Products and Services* with significant intangible components usually originate from companies' research and development and learning processes. Often, owners secure their rights to these assets through patents and trademarks, granting them a temporary monopoly over the intellectual property. Similarly, Hall (1992) lists *Contracts, Copyright, Culture, Know-how, Networks, Patents, Registered designs, Reputation,*

Trade-marks and *Trade secrets* as intangible resource categories, with several examples within each category. He explains that the analysis of intangible assets should play a major role in the strategic management process, and he highlights the link between competitive advantage, capability differentials and intangible resources.

In compiling the word list, we start with the categories that are identified in the above-cited papers as well as all intangible assets listed as examples and keywords regularly used within each category. Following Loughran and McDonald (2011), we add the plural form of nouns, and the simple past tense, the past participle, gerund and the third person present tense for verbs.[9] For example, once we include the word *brand*, we add *brands* and *branding* as well. Furthermore, we add words that are either synonyms or have a very similar meaning in the financial jargon as the words from the studies. For instance, in addition to the word *networks*, we include *alliances*, *relations*, *relationships*, and *connections*. The final list contains 213 words and phrases in total; see Table 1, where we organize the words into the four categories proposed by Lev (2005) and the *Other* category, which just contains the general words "intangible assets" and "intangibles". For the purpose of robustness analysis, we construct alternative (extended or shortened) lists below.

We did not reverse engineer or "optimize" the word list. Indeed, we will see below that our word list gives plausible results in a cross-industry comparison, but there are also some weaknesses. Future work may profitably adjust the list. We also recognize that more sophisticated methods, such as artificial intelligence, are likely to do a superior job at capturing intangibles talk.

Loughran and McDonald (2016) suggest to check word frequency when constructing a dictionary since words tend to follow a power law distribution – a distribution that features a small number of high–frequency words and a large number of low-frequency words. This phenomenon is known as Zipf's law and it raises concerns that certain words can potentially have a large impact on the results. The word frequencies in Figure 1 seem to be intuitive and show no signs of any obvious misclassifications. The 3 most frequent intangibles words (1% of words from our list), *services*, *solutions*, and *customers*, account for 17% of the intangibles word count across all acquisition announcements in the sample (21% when also counting their

[9] Adverbs and adjectives are not included. However, we find qualitatively similar results if we include them in the word list.

singular forms). This is significantly smaller than the 44% that Loughran and McDonald (2016) find for the top 1% of negative words in the sample of 10-K/Q filings.

[Table 1 AND Figure 1 ABOUT HERE]

We use the standard approach of proportional weighting, that is word list counts divided by the total number of words in the analyzed text. Accordingly, we define *% Intangibles talk* as the number of intangibles words divided by the total number of words in announcement i, expressed as a percentage:

$$\%Intangibles\ talk_i = \frac{Intangibles\ words_i}{Total\ words_i} \cdot 100. \tag{1}$$

In the regressions, we standardize this variable (and other textual variables) to have a mean of zero and a standard deviation of one.

1.2.3 Other textual variables. We expect announcements to be fairly positive and definitive overall, but there may still be informative variation across announcements. Negative words may be interpreted as reflecting a degree of cautiousness. Employing the Loughran and McDonald (2016) word list, we compute positive and negative word frequencies to measure the linguistic tone of the announcement, *% Positive* and *% Negative*. We define (net) *Negativity* of announcement i as:

$$Negativity_i = \frac{Negative\ words_i - Positive\ words_i}{Negative\ words_i + Positive\ words_i + 1}. \tag{2}$$

% Uncertainty and *% Strong modal* variables are the percentages of uncertain and strong modal words. We also control for *Text length*, the (natural logarithm of the) number of words in the announcement. In the robustness checks, we also define and use other textual variables, such as average sentence length, and EPS accretion talk.

1.3 Main deal and firm variables

Table 2 defines all main variables. Our main dependent variables are the announcement return and the medium-term return; the change in operating performance of the combined entity one to three years after the transaction; analyst responses; insider trades; payment mode; an indicator for whether the acquisition was completed; and the days to completion. These variables are standard (but we describe them in greater detail below as we go through the analysis).

[Table 2 ABOUT HERE]

Our controls for bidder, target and deal characteristics are also standard. The set of bidder control variables include leverage, market capitalization, market-to-book ratio, number of financial advisors, return on assets (ROA), stock price runup, and volatility. The main target control variables are its public status, deal relative size, defined as deal size as a fraction of bidder market capitalization, and intangible assets. As deal characteristics we use payment method, tender offer, cross-industry, multiple bidder, cross-border, and friendly deal dummies. Cross-industry deals involve targets with a two-digit SIC code other than that of the bidder. When we analyze deal completion probability, we include two additional dummy variables, indicating the existence of target termination fees and acquirer termination fees. Additionally, we include year and industry fixed effects in all regression specifications to control for common time trends and unobservable industry heterogeneity. All continuous control variables (leverage, market capitalization, market-to-book ratio, ROA, stock price runup and its volatility, deal size, relative size, intangible assets and their relative size) are winsorized at the 1st and 99th percentiles.

We will begin the analysis by testing whether bidder management talks more about intangibles when the bidder or the target has more intangible assets. Measuring those assets directly is challenging, and we use three proxies (all of which are only available for public companies). For each of them, we use the ratio of intangible assets to the book value of total assets (*IA/AT*), what we refer to as *intangible asset intensity*. Very similar qualitative inferences hold also when using the log value of intangible assets.

Our primary measure of intangible assets (*Intan. assets*$_{PT}$) is the estimated replacement cost of the target's intangible capital (Peters and Taylor 2017). These authors recognize that

the major part of intangibles arise from expensed activities, for example, a firm's spending to develop knowledge, patents, and software, advertising to build brand capital or employee training to build human capital. They, therefore, define intangible assets as the sum of the firm's externally purchased and internally created intangible capital. Externally purchased intangible capital is measured as the book value of intangible assets. Internally created intangible capital is computed as the sum of the replacement cost of the firm's knowledge capital, which is the portion of intangible capital that comes from research and development (R&D), and the replacement cost of the firm's organization capital, the portion of intangible capital that comes from selling, general, and administrative (SG&A) expenses.[10] The Peters and Taylor (2017) measure is available in WRDS through 2017 and the authors have kindly made updated data available to us.

Second, another widely used measure is the book value of intangible assets (*Intan. assets*$_{bv}$), which is available in COMPUSTAT. The book value of intangible assets does not fully reflect their real size as accounting systems generally do not keep track of internally generated intangible assets.[11] Third, we compute target intangible assets as deal size minus tangible assets, which in turn are calculated as total assets minus the book value of intangible assets. The constructed variable (*Intan. assets*$_{acq}$) essentially quantifies the bidder's estimate of the target intangible assets in the context of the specific deal. This measure has the advantage that it uses current information and captures internally generated intangibles, but it has the disadvantage that, apart from target intangible assets, it also captures synergies and possible over- or underpayment. By construction, this measure is not available for bidders.

1.4 Summary statistics

Table 3 presents summary statistics. On average, 4.89% of takeover announcements' words come from the intangibles words list, with substantial variation across announcements. Interestingly, the distribution is not heavily skewed, as also seen in the median value of 4.60%. (We

[10] This latter part of the Peters and Taylor (2017) of intangible capital is similar to the Li, Qiu, and Shen (2018) measure of organizational capital, which they compute by cumulating the deflated value of SG&A expenses.

[11] Under U.S. GAAP, ASC 350-20-25-3 states, "Costs of internally developing, maintaining, or restoring intangible assets (including goodwill) that are not specifically identifiable, that have indeterminate lives, or that are inherent in a continuing business and related to an entity as a whole, shall be recognized as an expense when incurred." – https://www.fasb.org/resources/ccurl/731/820/fas142.pdf

study industry variation, time trends, and other determinants of intangibles talk below.)

As would be expected in the description of a major corporate investment, the announcements are dominated by positive words (1.92%) relative to negative words (0.51%), resulting in average negativity of -0.53. Words that might carry a negative message, such as strong modal and uncertainty words, are also not so frequent, namely 0.96% and 0.76% respectively.

[Table 3 ABOUT HERE]

The sample has a positive event period bidder cumulative abnormal return (CAR) of 0.63% on average (0.37% median CAR). As is usual, in public deals, bidders reap significantly negative returns on average (-1.47%), in contrast to what happens in private deals (1.51%).[12] The target CAR, by contrast, is significantly positive, with a mean (median) value of 24.2% (19.9%).[13] In our sample, 91% of deals are completed, which is somewhat more than is typically the case.[14] The average (median) time from the announcement to the deal completion is about 55 (34) days. The average abnormal increase in operating performance (ΔROA) following the acquisition is 1.06% over one year and 0.98 over three years.

The size of intangible assets varies substantially depending on the measure we use. The book value is the smallest, followed by the Peters and Taylor (2017) measure, and, where available, the measure that proxies for the size of acquired intangibles using actual deal size.[15]

[12] Moeller, Schlingemann, and Stulz (2004) report average bidder CARs of 1.496% for private deals and -1.022% for public deals. In a more recent study, Schneider and Spalt (Forthcoming) compute bidder CARs of 1.44% for non-public and -1.39% for private deals, respectively.

[13] Similarly, Bargeron et al. (2008) find that shareholders of firms acquired by public firms gain 29.5% on average over the 3 days around the announcement of the acquisition.

[14] For the 1979–2003 period, Officer (2007) reports that 95% of 2,829 offers in SDC for unlisted stand-alone targets for are successful versus 77% of 4,559 offers for publicly traded targets. This combines to an 84% overall completion rate. In our sample, 94% of 2,599 offers for private targets and 84% of 1,099 offers for publicly traded targets are completed. The difference between the full sample statistics can, therefore, be attributed to the relatively higher proportion of private targets and the higher completion rate of public target deals in our sample. The latter is likely due to relatively smaller number of hostile deals in our sample, which were more common during the "corporate raiders" era in the 1980s.

[15] Table SA.2 reports the correlation between the measures of target intangible assets. The correlation coefficients for the measures of absolute intangible asset size (Panel A) are all positive and significant. The smallest coefficient (57.9%) is the one between the book value and the estimate of acquired intangibles, and the largest one is between the book value and the PT measures (88.2%). However, the relative measures (Panel B) are not significantly correlated, with the exception of the correlation between the ratios using the estimate of acquired intangibles and the PT measures, which is statistically different from zero, but still small in magnitude (15%).

2. Which announcements feature intangibles talk?

We begin our analysis by analyzing intangibles talk over time, across industries, and across deals. Figure 2 plots the time series of intangibles talk in the full sample and for private and public target deal announcements separately. There is little discernible variation in intangibles talk over time, though there appears to exist a modest downward trend over time, particularly among public deals (which exhibit less intangibles talk, as detailed further below).

[Figure 2 ABOUT HERE]

Next, Figure 3 shows, as expected, that the magnitude of bidder management talk about intangibles depends on the industry sector of the acquirer and the target. For example, the highest intangibles talk industries among the Fama-French 48 industries, *Business services*, *Computers*, and *Electronic Equipment* are nearly three times richer in intangibles talk than are the lowest three, *Precious metals*, *Petroleum and natural gas*, and *Restaurants, Hotels, Motels*. The later three indeed heavily rely on tangible assets in contrast to the ones at the top of the intangibles talk list which, as one would expect, are technology intensive industries. As such, our classification captures plausible variation. We acknowledge that the classification is not perfect. For example, acquisition announcements in the *Pharma* industry use relatively few of our intangibles words, even though one might expect these deals to involve a high percentage of intangibles. More sophisticated and perhaps industry-specific classification methods could yield further insights here, but would raise concerns about data mining.

[Figure 3 ABOUT HERE]

Our main interest is in the variation of intangibles talk among deals. For a simple theoretical benchmark, consider an acquirer who is making an offer to acquire a target. The deal contains some intangible value. Suppose this value is correctly captured by the measured intangible assets of the bidder or the target or a combination of the two. Additionally, assume a fully rational CEO acting in the interest of shareholders and honestly reporting intangible value. This would imply the benchmark hypothesis that intangibles talk correlates perfectly with observable measures of intangible assets.

This benchmark, while simple, is an important test because it also holds implications for the study of the relation of intangibles talk and deal quality. If intangibles talk merely represents what can be measured about intangibles, then intangibles talk is expected to not correlate with deal quality, controlling for intangible assets. Conversely, if it deviates from measured intangible assets, there may be extra (positive or negative) information in it.

Columns (1) and (2) in Panel A of Table 4 show that bidder intangible assets (whether measured by the Peters and Taylor (2017) method or by book value) are indeed significantly positively related with intangibles talk. However, once we control for industry fixed effects in columns (3) and (4), firm-specific intangible assets do not offer further explanatory power. This is particularly striking because Figure 3 shows that intangibles talk varies widely within industries. Industry and year fixed effects alone explain 29% of the variation in intangibles talk. (All results in the paper are identified from variation within industries and years.) Columns (5) and (6) reveal that deal size and the target public status dummy explain an additional 4% of the variation (34% in total). Both variables enter negatively and significantly. This is consistent with the intuition that private and small firms, such as start-ups, rely more heavily on intangible assets, for example innovation potential.[16]

In additional, untabulated analysis, we also investigate whether deal characteristics correlate with intangibles talk. We do not find much significant variation (though intangibles talk is more prevalent when the payment mode is cash, a theme we pick up further below). In any case, we control for a range of deal variables in the further analysis. We also find that takeover announcements with more intangibles talk use more positive and fewer negative words. We control for these additional linguistic features in what follows.

In additional checks, we also examine the role of other variables such as general disclosure quality and managerial ability. There is some tendency for firms with better disclosure quality and for more capable managers to use less intangibles talk. Because adding either of these controls reduces the sample size, we do not include them in the main regressions, but repeat all analysis with them in the robustness analysis in Section 5, with unchanged inferences.

[Table 4 ABOUT HERE]

[16] Indeed, Lys and Yehuda (2015) find that private takeover targets have significantly more intangible assets than do public targets. Moreover, Phillips and Zhdanov (2013) present evidence of a negative relation between firm size and the innovation process.

In Panel B, we focus on public targets. For these firms we have accounting information not available for private firms. Specifically, we consider three measures of target intangible assets: the estimated replacement cost of the target's intangibles (Peters and Taylor 2017), the book value, and the estimate of the acquired intangibles.[17] Strikingly, again only without industry fixed effects is there a positive correlation, but none of the specifications yields significant coefficients once industry fixed effects are included.

Overall, these results suggest that while intangibles talk predictably varies with industry characteristics, the relative importance of target intangible assets in the target's total assets does not explain the use of intangibles talk, and neither do the bidder's intangible assets (beyond their correlation with industry). These results beg several questions: Is intangibles talk just managerial guff? Or do these results mean that there is new and valuable information in the announcements? That is, do managers perhaps reveal insights into the value of a deal that would not be seen in observables? Do investors respond to intangibles talk? We turn to these questions next.

3. Intangibles talk and deal quality

Section 2 has shown that intangibles talk is unrelated to observable intangible assets, at least once industry is taken into account. This suggests that there may be relevant information in intangibles talk about the quality of deals, that is, about the target's intangible assets and/or about the combination of the acquirer's and the target's intangible assets. But it is not obvious what kind of information this might be. To structure the consequent tests, we proceed as follows. This section considers hypotheses and tests that concern the main question of the paper, the link between intangibles talk and deal quality, which we empirically measure in several ways, namely, announcement returns, operating performance changes, balance sheet consequences, and analyst reactions. The following Section 4 then studies the channels behind the main results.

[17] We do not have these data for international targets.

3.1 Hypotheses

Consider a bidder management evaluating a potential deal. Proxies for the bidder and target intangible assets are observable (as are industry characteristics and other firm-specific variables). However, beyond what is observable, bidder management receives a noisy signal about the value of intangible assets that the target or the business combination offers. This value may be higher than the stand-alone value of the bidder's and target's intangible assets, making the deal potentially economically meaningful. For simplicity, posit that the value added from combining the tangible assets of the two companies is observed (or at least very precisely estimated).

Suppose as a baseline that bidder management acts on behalf of its shareholders, but the signal management receives about the intangibles is uninformative. Any communication about that signal in the form of intangibles talk will, therefore, also be uninformative. Thus, the baseline hypothesis is:

Null Hypothesis. Intangibles talk contains no information about deal quality.

Empirically, in the cross-section of deals, intangibles talk in the takeover announcement would be unrelated to shareholder reactions as well as to the actually realized performance changes.

Consider now deviations from the baseline model assumptions. As a first possibility, consider the case where the bidder's signal about the deal's intangible value is fairly precise. Posit that bidder management acts faithfully on behalf of bidder shareholders. Thus, bidder management utilizes intangibles talk to reveal that they have found a deal offering significant added value. Therefore, we have:

Hypothesis 1 (**Advantageous Information**)**.** Intangibles talk indicates higher deal quality.

Under this hypothesis, shareholders should react positively to intangibles talk in the takeover announcement text.

Alternatively, there are several, not mutually exclusive, reasons for why intangibles talk indicates worse deal quality.[18] First, it is possible, for example, that bidder management

[18] Intangibles talk may also merely occur more frequently when a deal has certain characteristics or when the bidder is in a certain situation, e.g., when it is overvalued. We will include a wide variety of control variables to rule out confounding effects to the maximum extent possible.

receives an informative signal but has motivations to go through with any deal, even a value-destroying one to some extent. That motivation may derive from a classic empire-building motive of the private benefits type, perhaps enhanced by the prospect of receiving higher compensation when managing a larger company. Such agency-driven managers purposefully report an exaggerated quality of the intangibles in the deal. This implies lower expected cash flows than otherwise similar deals announced with less intangibles talk. Second, alternatively, or additionally, their intangibles talk makes the signal about the deal quality more noisy, which makes it harder for shareholders to assess the deal (and increases uncertainty). Moreover, it is possible that bidder management has inaccurate perceptions. Thus, bidder managers report their true signal about the expected returns to intangibles of the deal, but that signal is biased. That is, bidder management is overly optimistic or pessimistic about the deal, but they are not aware of that bias. Optimism about returns to intangibles is plausible because, as Hirshleifer, Low, and Teoh (2012) note, "...people tend to be more overconfident about their performance on hard rather than easy tasks (Griffin and Tversky 1992). Accordingly, we expect relatively overconfident CEOs to be especially enthusiastic about risky, challenging, and talent- and vision-sensitive enterprises." Deals where the bidder management receives a low signal would not be announced, because in management's view they would not create value. Therefore, deals announced with rich intangibles talk tend to overstate intangible values, implying that the deal quality is lower. A third possibility is that deals announced with more intangibles talk may be more complex. Even if the expected performance were no different for such deals, the greater uncertainty would result in lower valuations.

Hypothesis 2 (Disadvantageous Information). Intangibles talk indicates lower deal quality.

Under this hypothesis, shareholders should react negatively to intangibles talk in the takeover announcement text.

3.2 Is intangibles talk related to deal quality?

As proxies for deal quality, in line with the literature, e.g. Gokkaya, Liu, and Stulz (2023), we use multiple measures. We primarily use abnormal returns around the announcement and in the medium run. Moreover, we consider changes in operating performance and analyst

responses after takeover announcements. The extent to which bidders record goodwill after the transaction provides additional information.

Abnormal returns

We measure bidder announcement returns as CAR(-1,1), the 3-day cumulative abnormal returns for the bidder firm using the Carhart four-factor model, around the announcement. Model parameters are estimated over days (-280, -31).[19]

Simple descriptive statistics and visual evidence are already telling. Recall that on average announcement returns are 0.63%. But there is great heterogeneity in these returns depending on intangibles talk. For example, in the top quintile of intangibles talk, announcement returns are roughly 0%, whereas in the lowest quintile, they are about 1%, a sizable spread around the average returns. Figure 4 presents binned scatter plots, adjusting for industry, year, and public target status. A clearly negative relation emerges.

[Figure 4 ABOUT HERE]

To formally investigate the relation between bidder returns and intangibles talk, we estimate the following regression:

$$CAR_i(-1,1) = \alpha + \beta_1 IT_i + \sum_n \beta_n TV_{i,n} + \sum_m \beta_m CV_{i,m} + Ind + Yr, \tag{3}$$

where *CAR(-1,1)* is the bidder announcement CAR, *IT* is intangibles talk, *TV* are other textual variables, and *CV* are deal, bidder and target control variables for deal i. We include 2-digit SIC bidder industry (*Ind*) and year (*Yr*) fixed effects. We cluster standard errors by the announcement year to capture the correlation between observations over time.[20]

Table 5 shows that intangibles talk enters negatively and significantly in both specifications. Because intangibles talk is standardized to have a standard deviation of one, regressions

[19] We use the same interval to estimate the benchmark returns as Schneider and Spalt (Forthcoming). They use the market model instead of the Carhart four-factor model. Our results also hold when we use the market model or the three-factor Fama-French model.

[20] Alternatively, we cluster standard errors by 2-digit SIC industry. The results remain similar throughout the entire analysis. Yet alternatively, we use Fama-French 48 industries, with identical inferences. Very similar results obtain with target industry fixed effects. Finally, our results also remain robust when using industry-year fixed effects (which accounts for the possibility of industry-specific merger waves, for example).

(1) and (2) imply that a one standard deviation higher intangibles talk results in 0.48 to 0.53 percentage points lower abnormal returns, a sizable effect.

[Table 5 ABOUT HERE]

These effects do not revert. Of course, it gets harder to significantly explain returns over longer time horizons due to the increased noise. However, as column (3) shows, after 30 days, high-intangibles talks firms still experience a discount in abnormal returns of -0.90% on average. The point estimate is similar, though a bit bigger at -0.98%, when including other textual variables in column (4).

In addition, regression (2) shows that the other linguistic features of the announcement do not explain much of the announcement returns. In the full regressions shown, intangible assets of the bidder are not significantly associated with the market reaction in our sample.[21] The other control variables have the usual signs or are insignificant. By the large number of controls, we are able to rule out alternative stories. For example, managers might choose intangibles talk more or less often depending on the pre-announcement returns (run-up). Thus, information about the potential deal leaks, the market reacts, and the acquiring firm managers are simply picking up the market sentiment in the announcement text. Management might be also trying to revert stock price moves if the pre-announcement sentiment is negative. In fact, the correlation of intangibles talk and the run-up is very small (0.0207), and including run-up in the regressions as a control variable does not affect the results. A large number of additional variables are included in robustness checks in Section 5.[22]

Overall, these results show that investors respond more negatively to acquisition announcements with more intangibles talk.

[21] Li, Qiu, and Shen (2018) show that bidders with higher organizational capital secure higher announcement returns. We also find a positive, albeit insignificant association of intangible assets when not controlling for the announcement-level text variables and some other controls. While the Li, Qiu, and Shen (2018) measure of organizational capital is based on a similar logic as the Peters and Taylor (2017) measure of intangible capital that we use, there are important differences. For example, Peters and Taylor (2017) add the internally generated intangible capital to prior acquired intangible capital, and they use different depreciation rates for R&D expenses in different industries. In a sample of non-high-tech firms, where the latter difference is likely to play a smaller role, we also find a positive association of intangible asset intensity on announcement returns.

[22] While it is impossible to explicitly rule out that any other omitted variable might play a role, in results available on request, using methods proposed by Altonji, Elder, and Taber (2005) and Oster (2019), we find that unobserved variables would have to be substantially more important than the observed ones to explain away the effect of intangibles talk on stock price reactions.

Post-acquisition performance

To assess further whether intangibles talk is related to actual deal quality, we look at the post-acquisition combined entity performance. We consider Return on Assets (ROA), defined as EBITDA over assets. We allow for performance to accrue over time as it may take time to generate value from intangible assets. Therefore, we examine ROA changes from year 0 to year 1, and from year 0 to year 3, where year 0 is defined as the year of acquisition. We follow Frésard, Hege, and Phillips (2017) and address underlying industry trends by contrasting an acquirer's performance to that of its industry peers. For each acquirer, we construct a portfolio of peers that do not differ more than 50% in size from the acquirer, operate in the same 2-digit SIC industry, and are not involved in any acquisition during a six-year period surrounding the transaction. The benchmark is calculated as a mean performance of each portfolio, which is then subtracted from that of the acquirers.

Table 6 reports the results of cross-sectional regressions for the post-acquisition change in performance. The regression coefficients of intangibles talk prove consistently negative for both 1-year and 3-year period. However, statistical significance obtains only for the 1-year window. Overall, the evidence is broadly consistent with the findings from the CAR analysis, that is, when acquiring firms refer to intangibles, this does not reveal advantageous private information about the deal.

[Table 6 ABOUT HERE]

Analyst stock recommendations

Do financial analysts respond to the information in takeover announcements? To answer, we compute the change in the median analyst recommendation and regress it on intangibles talk. The change is defined as a difference between the earliest available median recommendation that is calculated within the 7-60 days period after the takeover announcement and the most recent median recommendation calculated within the 7-60 days period before the takeover announcement. Thomson Reuters calculates median recommendations by assigning to each contributing analyst's recommendation an integer based on the standardized Thomson Reuters recommendation scale and calculating a real number median. The (inversed) scale is as follows:

5. Strong Buy, 4. Buy, 3. Hold, 2. Underperform, 1. Sell.

Columns 3 and 4 of Table 6 report the results of the test. We find that the intangibles talk coefficient is negative, though it is significant only in the sample with more than 3 analysts covering the stock. Thus, takeover announcements rich in intangibles talk are related to the magnitude of stock recommendation downgrades. Finding even a small effect in such an analysis is impressive, given that on average analysts are known to be reluctant to downgrade their recommendations (Conrad et al. 2006; Michaely and Womack 1999).

Balance sheet consequences

For the recognition of intangibles on the balance sheet of acquirers, the Financial Accounting Standards Board (FASB) has laid out a distinction between separably identifiable intangible assets and goodwill. Separable in this case means that the acquirer is able to parse or divide the asset outside of the target business and potentially sell, rent, license, or exchange to another company or entity. Typical examples of such intangibles include patents, customer lists, employee non-compete agreements, or software code, even if it is not patented. The part of the purchase price that cannot be allocated to these separable assets is goodwill.[23] It is easier and more tempting to be overoptimistic about intangible assets that are not concretely and separately specified, and the literature has also shown that agency-motivated managers can have incentives to allocate a larger portion of the purchase price to goodwill (Shalev, Zhang, and Zhang 2013). There is no reason why under the *Advantageous Information Hypothesis* intangibles talk would imply systematically stronger increases of goodwill than the separably identifiable intangible assets.

We obtain quarterly balance sheet values of goodwill (henceforth GW) from Compustat (item GDWLQ). By deducting GW from the total book value of intangible assets (item INTANQ), we obtain a proxy for the separably identifiable intangible assets (henceforth SIA). Table 7 summarizes differences-in-differences regressions of GW and SIA (scaled by acquirer assets in the quarter before the transaction completes) for a symmetric window of 16 quarters

[23] Goodwill is an indefinite intangible asset, that is, an intangible asset with no pre-specified economic lifetime. Whereas definite intangibles are amortized, indefinite intangibles are subject to annual impairment testing, which requires managerial discretion. Landsman, Liss, and Sievers (2021) provide evidence that investors discount indefinite intangibles relative to definite intangibles when valuing a firm's equity, which suggests that investors find recognized amounts for indefinite-lived assets to be less reliable.

around deal completion. *Post* is a binary indicator variable identifying observations in the 8 quarters after the deal completion. We interact this indicator with intangibles talk to capture the differential change in GW after deal completion for acquirers that use different degrees of intangibles talk. The first two regressions use the full sample, whereas the second two use only those deals where the acquirer did not acquire another company within a symmetrical window of 2 years before and after the announcement day. In both cases, the regressions show that GW (SIA) increases more (less) after takeover announcements rich in intangibles talk.[24] Supplementary Appendix B.5 illustrates these findings graphically and in particular confirms common pre-acquisition trends of GW and SIA for high and low intangible-talk acquirers. Untabulated results similarly show that the change in GW as a fraction of deal size from before to after the quarter in which the acquisition completes is greater for takeovers with more intangibles talk.

[Table 7 ABOUT HERE]

Overall, these findings indicate that intangibles talk does come with balance-sheet consequences regarding intangibles, but it is often in the relatively fuzzy space of goodwill that acquirers choose to (or have to) recognize the acquisition. It is, therefore, perhaps not surprising that acquisitions rich in intangibles talk are less likely to lead to an increase in operating performance.[25]

Summary

Overall, the evidence from each of these dependent variables – stock returns (both immediate and medium-term), operational performance changes, balance sheet consequences, and analyst recommendation changes – firmly rejects the *Null Hypothesis*. Moreover, the evidence suggests that when the bidder management team refers to intangible assets, it is not conveying advanta-

[24] *Post* itself it not significant in these regressions because we also interact it with all deal characteristics to make sure that we do not associate any differential changes in goodwill with intangibles talk when in fact they are due to deal characteristics. A review of 10-K statements reveals that some firms recognize preliminary amounts of goodwill already in the quarter before deal completion, when certainty about the deal is sufficiently high. The inferences are unchanged if we omit that quarter from the analysis. The inferences are also similar if we additionally adjust for amortization of intangibles and goodwill impairment.

[25] Goodwill is subject to annual impairment tests. While goodwill impairment is an indication of poor deal quality if it occurs, a large literature indicates that companies have and indeed exploit discretion in write-down choices because goodwill is inherently unverifiable (see, e.g., Ramanna and Watts 2012). Public acquisitions are arguably under stronger scrutiny than private acquisitions. In results available on request, we indeed find that for acquisitions of public targets goodwill impairment is more likely to occur after intangibles talk.

geous private information to the investors. Rather, intangibles talk on average is an indication of impending value destruction.

4. Why does intangibles talk predict poor deal performance?

After establishing our primary finding that intangibles talk is an indication of lower (perceived) deal quality, the secondary question regarding the channels arises. That is, can we say something about what it is that makes the market (correctly) doubtful about the value of deals announced with lots of intangibles talk? Three of the primary, not mutually exclusive explanations are agency, overoptimism, and complexity. While the literature has established that these factors play a role for the poor performance of some deals in general, this setting provides an opportunity to study their relevance with respect to a specific feature of the deal, namely, intangible assets. This section draws on insider trading choices, choices of payment modes, the completion speed and probability, and cross-sectional variation in the market reactions to shed light on this question. Not all tests speak to all possible explanations, but taken together they paint a comprehensive picture.

4.1 Insider trading

We first ask whether bidder managers themselves consider deals announced with intangibles talk to be of high quality. If they announce a deal with rich intangibles talk and believe the story, they would be comfortable, and indeed positively inclined to add to their investments in their companies after the announcement. Managers driven by empire-building motives, who might anticipate that the deal destroys value but generates private benefits, would not buy their own companies' stock.[26] For this test, we examine insider trading by CEOs, other top executives,

[26]This test is in the spirit of previous literature that has highlighted the importance of insider trading behavior in identifying overconfident managers. Malmendier and Tate (2008) state that unlike traditional empire-builders, overconfident CEOs believe that they are acting in the interest of shareholders and are willing to personally invest in companies. They write "... while excessive acquisitions can result from both agency problems and from overconfidence, CEOs' personal overinvestment in their companies arises only from overconfidence" (p.22). The benchmark as to what constitutes overinvestment is in our case derived from the control variables in the regression model.

and non-executive board members.[27] We construct a trading window for each announcement that begins 2 days after the announcement and ends 180 days (following Lakonishok and Lee (2001)) after the announcement or the effective day if it comes first. A group is labeled as a net buyer if the total number of shares acquired exceeds the number of shares disposed during the window.

[Table 8 ABOUT HERE]

Columns (1) and (2) of Table 8 show that bidder CEOs or other top executives are more likely to acquire stock when a bidder talks more about intangible aspects in the takeover announcements. For example, the average marginal effect on the probability of CEOs or other top executives to acquire stock associated with a one percentage point difference in intangibles talk is 1.1%. The effect is also positive, though not statistically significant for board members. We also find a significant effect for all insiders, i.e., executives and board members combined (column (3)). All regressions recognize that a possible explanation for why insiders buy shares after a takeover announcement with considerable intangibles talk is that they just respond to the stock price decrease. This story predicts a significant negative relation between the bidder CAR and propensity to buy for each individual group, and this is what we find. The intangibles talk coefficients are, however, practically not affected by including bidder abnormal returns (results without controlling for announcement returns are available on request).

Column (4) includes other deal characteristics and firm-level variables.[28] The effects are reduced in size, but the probability that in aggregate the group of insiders buy shares still increases by 1.9% with a one percentage point increase in intangibles talk. As a consistency check that the managerial actions are likely to be purposeful, we note that the relation between intangibles talk and insider trading is substantially stronger in larger deals, see column (5).[29]

Overall, acquiring managers appear to believe in the deal when they spout on about intangibles.

[27] The top executives group include following roles: CFO (Chief Financial Officer), COO (Chief Operating Officer), CIO (Chief Investment Officer) and CTO (Chief Technology Officer).

[28] We caution that board/corporate policies may explain the extent of insider trades. We do not have information on such policies. However, adding a wide variety of governance characteristics as proxies for the existence of such policies does not affect the results.

[29] For ease of interpretation, relative size is standardized in this regression, so that the coefficient on intangibles talk displays the effect for the deal of average size. For deals one standard deviation above average relative size, intangibles talk increases the probability of executive insider trades by 4.0% ($= 0.023 + 0.017$).

4.2 Payment mode

Next, we draw on the insights of Officer, Poulsen, and Stegemoller (2009) regarding the choice of payment mode. They show that acquirer returns are significantly higher in stock-swap acquisitions of difficult-to-value targets (as measured, in their case, by R&D intensity and idiosyncratic return volatility). Following their logic, rational, risk-aware acquirers should be more likely to use stock as the method of payment for intangibles-heavy targets. Buying such a company with stock is a smart move from a risk-management perspective even if bidder management has advantageous information. If the deal does turn out to be worse than expected, then the target shareholders will also suffer. By contrast, buying a hard-to-value company with cash puts all the risk on the bidder. If it turns out to be a bad deal, the bidder shareholders suffer, whereas the target shareholders received the cash. If intangibles talk is an indication of managerial optimism, we would expect deals with lots of intangibles talk to be implemented with cash rather than with stock-swaps. Although our emphasis here is on deal-specific optimism, an additional contributing factor can be that generally overoptimistic managers consider their own stock undervalued and will, therefore, be reluctant to use it as a currency.

Table 9 shows that cash payment is more likely for deals announced with more intangibles talk. By contrast, the table also confirms that bidders are less likely to use cash when they themselves are intangibles rich or when the target has high intangibles intensity.

[Table 9 ABOUT HERE]

4.3 Completion speed and probability

There are various reasons to expect a positive relation between intangibles talk and completion speed and probability. An overoptimistic acquirer management will expend less effort on due diligence, making it more likely that the deal completes, and in a shorter time span. For example, in the model of due diligence of Daley, Geelen, and Green (2024), a manager who is ex ante very positive about a deal has little incentive to expend much effort to increase the posterior estimate of deal quality even further. Moreover, a manager who feels that he has better prospects to complete the deal may feel that he has some latitude to use intangibles talk.

A self-interested, agency-driven manager might seek to complete the deal fast to avoid shareholder resistance. Because under the advantageous information hypothesis, intangibles talk describes deals adding more value, one would expect these deals to be completed more swiftly as well.

By contrast, if intangibles talk primarily captured complexity, we would expect deals described with lots of intangibles talk to be less likely to complete, and to complete more slowly. Similarly, if managers use intangibles talk when they perceive lower certainty about the deal quality, this would lead them to engage in more due diligence work which would again lead to slower deal completion.

Figure 5 presents graphical evidence employing binned scatter plots, adjusting for industry, year, and public target status. A clear pattern emerges in that deals announced with more intangibles talk appear to complete more often and faster.

[Figure 5 ABOUT HERE]

Formally, to explore whether the observed patterns are driven by bidder, target, or deal characteristics, we estimate probit regressions for deal completion probability and OLS regressions estimating the number of days between the announcement and completion dates for each deal. The latter analysis, obviously, examines only completed deals. The other variables remain as in the previous model.

Table 10 reports the regression results for the two models. They corroborate the graphical evidence. Specifically, regressions (1) and (2) imply that, even controlling for a rich set of bidder, target, and deal characteristics, there is a statistically and economically significant association between the extent of intangibles talk and the completion rate of deals. A one percentage point difference in intangibles talk implies a 1.2 to 1.7 percentage point greater completion probability. Similarly, specifications (3) and (4) show that the bidders who talk more about intangible assets in their announcements conclude a deal in a significantly shorter time period, given that the target is acquired. One percentage point more in intangibles talk shortens the deal completion period by 3.5 to 4.5 days.

Uncertain words portend a somewhat lower completion rate, which supports the idea

of using completion rates and speed as an inverse proxy for uncertainty of the deal. When announcements, which tend to be positive, are somewhat less positive, the completion probability is lower and completed deals take longer. The other control variables (not shown to conserve space) largely have signs in line with the existing literature.

[Table 10 ABOUT HERE]

Overall, the evidence strongly indicates that intangibles talk predicts faster and more likely deal completion.

We can push this analysis further by recognizing that a long-standing literature shows that managers extract information from market prices and adjust their actions accordingly (see Goldstein (2023) for a comprehensive review). Thus, the stock price reaction to deal announcements can provide information to managers about the deal quality. For example, Luo (2005) finds that managers are more likely to cancel a deal when the market reacts negatively to the announcement and attributes the findings to learning from the market reaction. However, Banerjee et al. (2023) argue that managers' willingness to learn from price information depends on how informative they perceive the price to be. Overconfident managers, believing there is less to learn from the price, are less likely to follow it. Consistent with this idea, they find a weaker feedback effect among more overconfident managers, that is, the completion probability depends less on the stock price reaction for such managers.[30]

We employ an analogous regression design. Column (3) of Table 10 reports that, consistent with prior work, deals are less likely to complete if the stock price reaction to the announcement is negative. However, column (4) shows that managers using a lot of intangibles talk are less impressed by negative stock price reactions and are more likely to remain committed to the deal. These results are consistent with intangibles talk indicating deal-specific optimism.

[30]The psychology literature explains that people have a hard time admitting they are wrong and attributes this problem to a mental discomfort called cognitive dissonance. For example, Eskreis-Winkler and Fishbach (2019) find that when a mistake interferes with self-esteem, we do not learn from it. A study by Okimoto, Wenzel, and Hedrick (2013) suggests that refusing to admit mistakes and apologize results in greater self-esteem than not refusing to apologize. Moreover, apology refusal also resulted in increased feelings of power/control and value integrity.

4.4 Heterogeneity in stock price reactions

While the market response to intangibles talk on average is negative, studying heterogeneity across deals provides an opportunity to understand whether investors indeed worry managers' behavioral biases (optimism), empire-building and agency tendencies, and deal complexity. Table 11 summarizes these tests for both the short-term (Panel A) and the medium term (Panel B) stock price reactions.

First, column (1) shows that the market responds particularly negatively to intangibles talk when the announcement text also features particularly positive linguistic tone.[31] Second, we use a measure of more general optimistic "style" or personality trait of CEOs. In particular, we use the "longholder" variable established by Malmendier and Tate (2005a,b, 2008) and Malmendier, Tate, and Yan (2011).[32] As seen in column (2) of Table 11's Panel A, the initial reaction does not appear to be strongly explained by this measure of CEO optimism. However, Panel B shows that over the medium run firms run by overoptimistic CEOs experience much lower returns after takeover announcements that feature much intangibles talk. (Additional tests show that this effect sets in already a few days after the immediate announcement window.) Third, column (3) considers serial acquirers. It shows that the market deems intangibles talk particularly problematic if uttered by managers who bought their own shares after a comparatively negative stock price reaction in the prior deal. Supplementary Appendix B.2 shows results for several other proxies of overoptimism, including *minus* negativity, the use of positive language on earnings conference calls, and a tendency to be a "High forecaster." All these results strongly suggest that intangibles talk is particularly worrisome to the market when it comes from managers who are arguably particularly optimistic or confident in general and/or in the deal.

[Table 11 ABOUT HERE]

Second, managers who expect to privately benefit (e.g., through an empire-building

[31] In empirical research on linguistic tone, positive words are usually regarded as uninformative because they are used excessively (Loughran and McDonald (2016)). In our application, positive words are informative precisely because the goal is to identify potential overoptimism by management. The results with percent positive words do not depend on whether we control for negativity or not.

[32] We thank Clemens Otto for providing these data for the early years. Employing code kindly provided by Florian Peters we extend the data using the same method for later years. Despite the extension, this variable is available only for a limited sample (not least because it requires ExecuComp data).

motive) from a takeover, even one that destroys value, might refer to intangible aspects in an attempt to justify a deal and bolster their private returns. If the market also interprets intangibles talk that way, the negative effect of intangibles talk on announcement abnormal returns is expected to be stronger for bidders that have a more pronounced agency problem. To proxy for the extent of the agency problem we use several variables that measure the quality of corporate governance at a firm. Then, we interact each of these measures with intangibles talk. Table 11 presents results for three measures.

The results are mixed. None of the interaction effects are significant (whether in the short or in the long run), and they imply different directional effects. For example, in firms where disclosure quality is better, the market reaction to intangibles talk is somewhat (though not significantly) more positive (in line with the agency story).[33] By contrast, in firms where institutional investors own an important stake in the bidder or where the bidder executive team has strong incentives to increase the share price, there is a somewhat (though not significantly) more negative reaction to intangibles talk. Anti-takeover provisions also do not explain heterogeneous effects of intangibles talk.[34] Supplementary Appendix B.2 shows that these results hold for nine measures, including the number of analysts, CEO-chairman duality, and executive incentive features.

While governance characteristics, therefore, appear to have no influence over how stock market participants perceive intangibles talk, this does not mean that agency plays no role. Indeed, one might reasonably consider that for overoptimism to come through, governance to some extent needs to be poor.[35] Table SA.5 provides some evidence in favor of this prediction. We split the sample into good and bad governance firms (using institutional ownership as a

[33] Better governance is arguably related to disclosure quality because more detailed disclosure reduces information asymmetry and gives managers less possibilities to manage the reported numbers (Hirst, Koonce, and Venkataraman 2007; D'Souza, Ramesh, and Shen 2010). We proxy for disclosure quality using the measure of disaggregation quality computed as in Chen, Miao, and Shevlin (2015). This measure captures the level of disaggregation of accounting data through a count of nonmissing data items in firms' annual reports as reported by Compustat.

[34] Gompers, Ishii, and Metrick (2003) introduce an index that captures the intensity of anti-takeover provisions. The original index is available only for the period 1990 to 2006. We extend it following Peters and Wagner (2014).

[35] Some authors point out that conceptionally governance is not necessarily effective in working against overoptimism, and that some governance features focused on aligned management with firm value can actually exacerbate the already existing overconfidence bias. For example, Malmendier and Tate (2005a) argue that standard incentives such as stock- and option-based compensation are unlikely to mitigate the detrimental effects of managerial overconfidence. Banerjee, Humphery-Jenner, and Nanda (2015) find that independent directors appointed due to the Sarbanes-Oxley Act reined in the detrimental effects of CEO overoptimism. However, the result is absent for overconfident-CEO firms that were compliant prior to SOX.

proxy). The interaction of managerial optimism (here proxied by whether the percent positive words in the takeover announcement is above the median) with intangibles talk enters significantly negatively only in the poor governance subsample for the medium-term returns (column 4). For other governance variables, we do not find such an interaction.[36] Overall, these results tell us that good governance can indeed reduce the overoptimism problem, but it does not eliminate it.

Finally, could the negative market reactions to intangibles talk be explained by the market worrying about the complexity of the deal? Thus, even if expected cash flows from the deal are positive, higher discounting may lead to relatively less value gain for such deals. Relatedly, given that intangibles are harder to value, even if managers truthfully and without overoptimism announce their signal, intangibles talk may be associated with overvalued deals. This explanation faces several empirical challenges. First, recall from Table 4 that managers use less intangibles talk to describe larger deals, hardly what one would expect if more intangibles talk reflects greater complexity or higher signal uncertainty. Second, in Table 11 and in the more extensive Supplementary Appendix Table SA.6 we find only limited evidence that the stock price reaction to intangibles talk is more pronounced in arguably more complex settings. Specifically, intangibles talk does not have noticeably different effects in absolutely or relatively large transactions (a proxy used for capturing complexity in, for example, Grinstein and Hribar (2004)), in cross-industry or cross-country transactions, or in more or less complex Loughran and McDonald (2023) firms. When interacting intangibles talk with the public target dummy, the interaction coefficient in the bidder CAR regression is negative and sizable, but not statistically significant.[37] Third, the results on completion speed and probability presented earlier also speak against this explanation.

[36] This is not a mechanical effect: A supplementary check reveals that the relationship between optimism (measured by the percentage of positive words) and intangibles talk is very similar and positive in both the good and bad governance subsamples.

[37] A separate analysis, in Supplementary Appendix Table SA.7, splits the sample and considers public deals separately. Consistent with the interaction analysis, we find a strongly negative effect of intangibles talk on announcement returns among public deals. That analysis also provides an opportunity to analyze target and combined returns. We find that intangibles talk is positively, but insignificantly associated with target abnormal returns. The net effect in the form of combined returns is still negative. For public targets we can also analyze the premium. Intangibles talk is not strongly related to the premium paid for the target, but this relationship is not particulary informative. Posit that the target does not really care to whom they are sold. There is just a fixed, given premium for a bidder wanting to take over that firm. Thus, any acquirer, including one run by overconfident managers, also pays that price; there is no reason to pay more. However, it may be a poor deal for that overconfident buyer. That is why the bidder returns are more informative than the target returns and the premium paid.

5. Robustness

Table 12 reports several robustness tests. It first summarizes tests involving variations of the intangibles word list. First, to address the concern that our dictionary might be industry specific and captures mostly intangibles related to the technology sector, in Panel A we exclude all words that are tech specific (including plural forms and inflections).[38] The results remain robust with the exception of the regressions of ΔROA and payment mode, where intangibles talk becomes border-line insignificant. We also verify that our results do not depend on any one of the four Lev (2005) categories that are shown in Table 1.

Second, anecdotal evidence suggests that firms often talk about "synergies" in the context of acquisitions. Synergies through combining entities can also be obtained for tangible assets and activities through cost savings, for example. As such, "synergies talk" may deserve a separate inquiry. We have constructed, again drawing on keywords appearing in the business literature, a preliminary word list aiming to capture such talk.[39] Intangibles talk and synergies talk are positively, but little correlated (0.007). Panel B reports regression results when combining the list of intangibles words with the list of synergy words.[40]

Third, Panel C uses a shorter version of the word list that omits words that might be considered as too general and too strongly reflecting technological aspects only.[41] The results remain robust and similar to those obtained using the main dictionary in the previous tables.

[38]The omitted words are: *algorithm, data, database, design, internet activity, network, platform, process, program, service, site visits, software, solution, system, technology, tool,* and *website* (including plural forms and inflections). We omit 31 words and phrases in total.

[39]The list comprises the following words: *alliance, collaborate, collaborated, collaborates, collaborating, collaboration, combination, combine, combined, combined effort, combines, combining, complement, complementary, complemented, complementing, complements, cooperate, cooperated, cooperates, cooperating, cooperation, fit, fits, fitted, fitting, joint, joint effort, match, matched, matches, matching, synergies, synergy, team effort, team work, together,* and *working together*.

[40]Supplementary Appendix Table SA.8 separately includes the synergy list. It shows that while managerial talk about synergies does appear to predict an increase in profitability, lower likelihood of cash payment, and slower completion, it is not a significant determinant of the other dependent variables. Intangibles talk remains significant throughout even controlling for synergies talk. The voluntary disclosure of actual operating efficiency gains (first studied by Houston, James, and Ryngaert (2001) for bank mergers) is relatively rare. For example, Bernile and Bauguess (2014) document, using announcements hand-collected from Factiva, that such disclosures occur in about one quarter of public-target acquisitions. Bernile and Lyandres (2019) show that firms with otherwise high disclosure quality (firms providing earnings guidance) are more likely to provide such forecasts. While we do not have the actually disclosed synergies, our results hold controlling for disclosure quality, as shown below.

[41]We omit *ability, advertising, algorithm, alliance, business model, business process, client, client relations, customer, customer base, customer list, customer relation, data, database, incentives, investment, market, market share, network, project, service, software, system, technology, tool,* and *website* (including plural forms and inflections).

Next, companies operating in high-tech industries are by their nature innovative and rich in intangible assets. To address the concern that such companies drive our results, we exclude all deals that involve a target whose primary industry is: drugs (SIC codes 2833-2836), research and development services (8731-8734), programming (7371-7379), computers (3570-3577), or electronics (3600-3674), as in Baginski, Hassell, and Kimbrough (2004). The results withstand this test (Panel D).

The following panels include some additional control variables and conduct other checks. First, we control for disclosure quality (following Chen, Miao, and Shevlin 2015), which we had previously used as a moderator for the stock returns analysis. Disclosure quality and intangibles talk are positively correlated, so potentially this could explain our findings. However, Panel E shows that intangibles talk remains significant in nearly all our main regressions even after controlling for disclosure quality differences.

Second, intangibles talk could reflect the structure of the industry sector of the target. As the industry matures it becomes less dynamic and more concentrated, shifting focus from intangibles to tangible assets. We control for this factor with the Herfindahl–Hirschman Index (HHI), a widely used measure of market concentration. HHI is calculated by squaring the sales market share of each firm competing in the target 2-digit SIC industry and then summing the resulting numbers. Panel F shows that as expected deals take longer to complete in more concentrated target industries, HHI does not have a material effect on the coefficients of intangibles talk nor is it a significant determinant of the other dependent variables.[42]

Third, it is conceivable that intangibles talk picks up firms that are particularly overvalued at the time of the announcement, and this would then explain why we observe a negative stock price reaction for firms using more intangibles talk in the announcement text. Ben-David, Drake, and Roulstone (2015) show that short interest is a good proxy for overvaluation in advance of M&A announcements. Even controlling for short interest, however, our results continue to hold (Panel G).

Fourth, we control for firm complexity, from Loughran and McDonald (2023), because it is conceivable that intangibles talk is correlated with something else that is unobservable and

[42] HHI_t is indeed negatively correlated with intangibles talk (-9.98%), but it is not a significant explanatory variable of intangibles talk when included in Table 4. Our results also remain robust when we control for the bidder industry concentration.

complex to identify. Panel H shows that the conclusions remain unchanged.

Fifth, it is conceivable that intangibles talk relates to the competence of managers, or to their backgrounds. Demerjian, Lev, and McVay (2012) estimate managerial ability using data envelopment analysis: Firms that are more efficient in generating revenues than one would expect based on their characteristics are posited to be run by more competent managers. A merit of this method is that can be applied to a wide range of firms. We use their decile rank measure (from 0 to 1, by industry and year), though the results also hold with the cardinal score. Untabulated results show that managerial ability is unrelated to intangibles talk. Panel I shows that controlling for managerial ability does not change our results regarding the role of intangibles talk in explaining stock price reactions, payment method, and insider trading.[43] In untabulated results, we find (using data ranging until 2007 provided by Custódio, Ferreira, and Matos (2013)) that general ability, having an MBA, or having an Ivy league degree also do not correlate with intangibles talk. However, the number of observations drops to around 500 in this analysis.

We can also control for two other textual features. First, to test whether a stated intention to increase EPS is a confounding factor, we check if managers talk about EPS accretion in takeover announcements, using the keywords suggested in Ben-David and Chinco (2024).[44] We find that the market reacts positively to the discussions of EPS accretion, however our results regarding intangibles talk remain unaffected (Panel J). Second, we check whether it is the takeover-announcement-specific intangibles talk that is reflected in stock price reactions and the other dependent variables. To conduct this exercise, we measure intangibles talk by managers of each company in earnings conference calls presentations and answers. That is, we use our word list to compute the frequency of intangibles talk in each conference call in the sample period. We then take an average, by firm, thus computing the typical "intangibles talk style" of a company. To avoid reducing the sample sizes further, for firms for which we cannot find matching conference call transcripts we replace intangibles talk in conference calls with the industry average and include a dummy variable equal to 1 (and 0 elsewhere) to absorb the effect of this adjustment in our empirical specifications. Panel K shows that the results for intangibles talk in merger announcements remain unchanged. The market generally responds negatively to

[43] It is somewhat surprising that in our sample managerial ability is unrelated to announcement returns.
[44] See Dasgupta, Harford, and Ma (2024) for the sensitivity of managers and investors to EPS dilution.

merger announcements of firms who usually use a lot of intangibles talk (as seen in the negative and significant coefficient of intangibles talk in conference calls), but the communication in the merger announcement is considered separately by market participants. This is for good reason, as this communication predicts operating performance and insider trading. We have also experimented with controlling for other textual aspects of the takeover announcement. For example, we have controlled for its (textual) complexity by computing the average of words per sentence.[45] The results remain robust controlling for this measure of complexity.

Finally, controlling for industry-year fixed effects, while demanding in this setting given the relatively limited sample size, does not substantially change the results, as seen in Panel L. The effect of intangibles talk on operating performance becomes insignificant, though arguably adding these fixed effects is excessive given that the dependent variable is already industry-adjusted each year.

Panel M confirms that the results are not driven by very large or very small deals (that is, deals in the 1st and 99th percentiles of deal size).

[Table 12 ABOUT HERE]

6. Conclusion

Intangible assets represent an important component of firm value. Indeed, their importance seems to be growing. For example, Lev (2012) documents a secular decline of the ability of accounting data to explain share price differences across companies. It is, therefore, of interest to know how managers communicate about intangibles. This paper quantifies intangibles talk, defined as the frequency of words associated with intangible assets, in financial text. We construct a novel word list of intangible-related words to capture what a financial release about a merger says about this hard-to-value asset class. Intangibles are conceptually particularly important in the context of mergers and acquisitions. Therefore, we apply the list to corporate takeover announcements in the U.S. from 2002 to 2019. Given the overall importance of takeovers and

[45] To parse for sentences, we follow Loughran and McDonald (2014) and first remove abbreviations and numbers, and then assume that the remaining periods are sentence terminations.

their impact on stock prices, it is crucial to understand whether takeover announcement content delivers valuable information to investors.

The analysis reveals considerable variation in the use of intangibles talk in the announcement texts. The amount that managers talk about intangible aspects significantly varies across industries and depends on some deal and target characteristics. Notably, however, at least in public deals, the intangible assets of the target explain little of the usage of intangible words in the takeover announcements.

Intangibles talk is not just inconsequential managerial guff. It is negatively related to announcement returns. The strong negative market reaction to intangibles talk (and the lack of improved operating performance following the deal) suggests that managers do not use intangibles words to disclose advantageous private information about the target. Investors are particularly worried about intangibles talk by arguably overoptimistic CEOs. Indeed, an analysis of insider trading, payment mode choices, and completion probability provides evidence of managerial overoptimism about deals they describe with intangibles talk.

Overall, these results suggest that it can pay off for investors to carefully study the phraseology of takeover announcements. In terms of broader takeaways, we first note that an often-voiced concern is that managers are too much focused on the short term ("short-term bias"). Indeed, attempts to regulate managerial behavior (e.g., with executive compensation rules) often seem motivated by avoiding short-term orientation. Our results on the stock price reaction to a business feature relevant in the long run, namely, intangible assets, suggest that investors worry that managers are perhaps also prone to "long-term bias".[46] We also speculate that managerial overoptimism about intangibles partly arises because the importance of intangibles is a relatively new phenomenon. As such, business school teachings and prior managerial experience are not (yet) sufficiently helpful in assessing and communicating about deals along this dimension.

[46] Barzuza and Talley (2020) discuss anecdotal evidence of such a bias.

Code Availability

The replication code is available in the Harvard Dataverse at https://doi.org/10.7910/DVN/XNV6CY.

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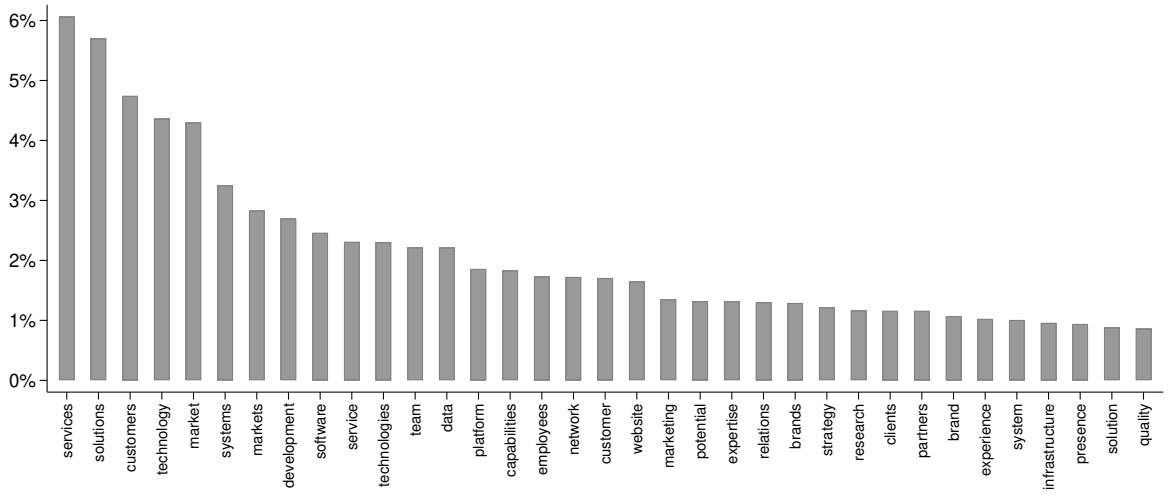


Figure 1: The most frequent intangibles words in takeover announcements

The figure presents the frequency of 35 most common intangibles words in takeover announcements. It is calculated as a ratio of each word count to the total count of all intangibles words (see Table 1) occurring in the announcements. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with a bidder that is a publicly traded company domiciled in the United States.

Alt text: Bar chart of the 35 most common intangibles words in takeover announcements, showing each word's share of total intangibles word usage across 3,698 U.S. takeover deals from 2002 to 2019.

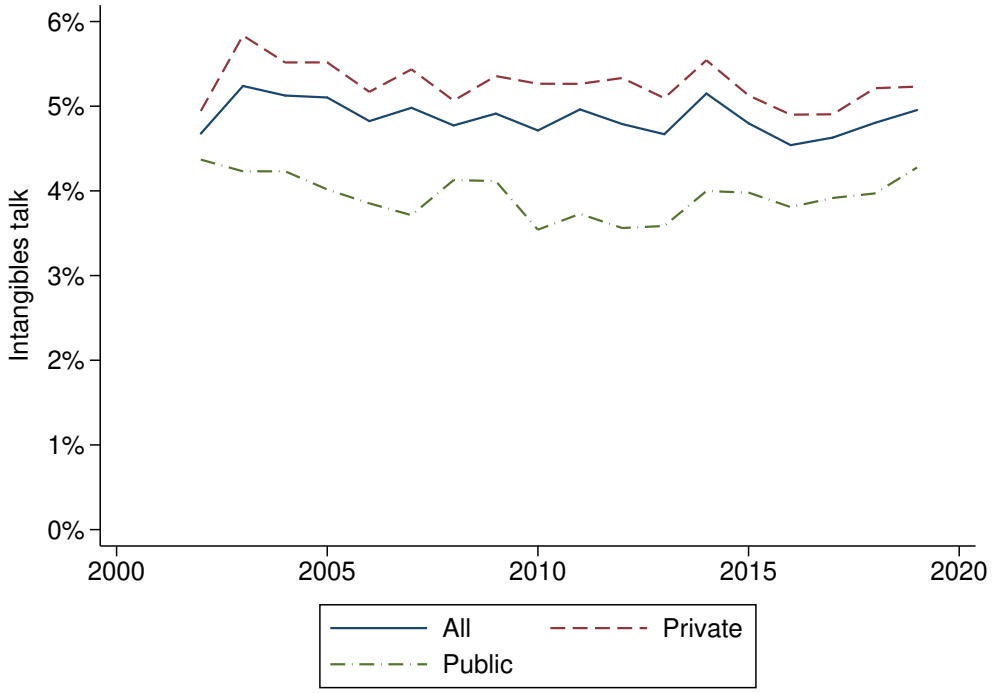
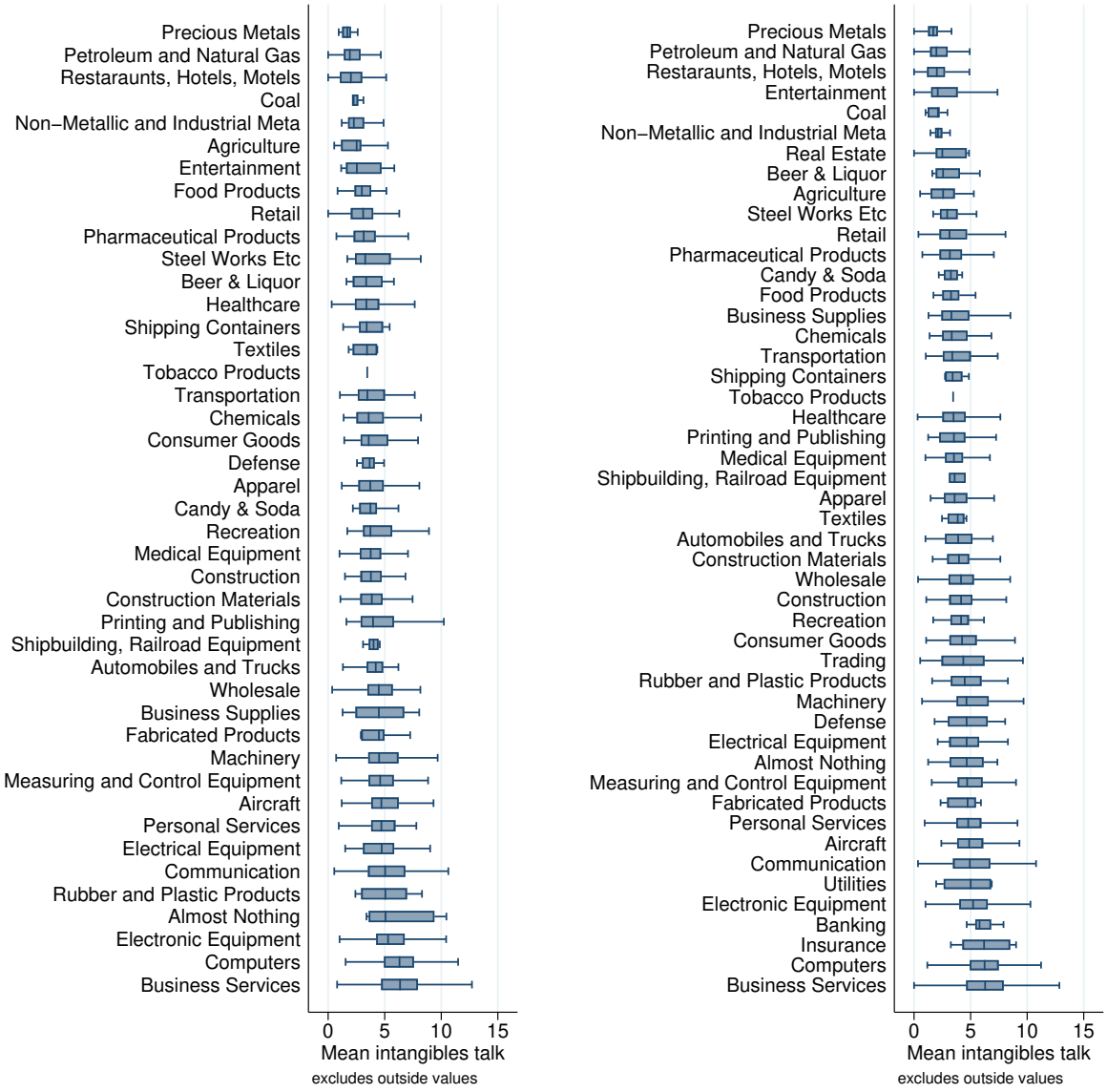


Figure 2: Intangibles talk over time

This figure plots the average frequency of intangibles words relative to the total word count in takeover announcements over time. The frequency is calculated for the whole sample (solid line) and separately for deals with private and public targets. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with a bidder that is a publicly traded company domiciled in the United States.

Alt text: Line chart showing the average frequency of intangible-related words in takeover announcements from 2002 to 2019. The solid line represents the full sample; dashed lines show separate trends for private and public targets.



(a) Acquirer industry

(b) Target industry

Figure 3: Intangibles talk by industry

The figure presents distribution of intangibles talk across different acquirer and target industries. Intangibles talk is defined as the frequency of intangibles words in takeover announcements, expressed as a percent. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with a bidder that is a publicly traded company domiciled in the United States.

Alt text: A box plot showing the distribution of intangibles talk across various acquirer and target industries. Intangibles talk is measured as the percent of intangibles-related words in takeover announcements.

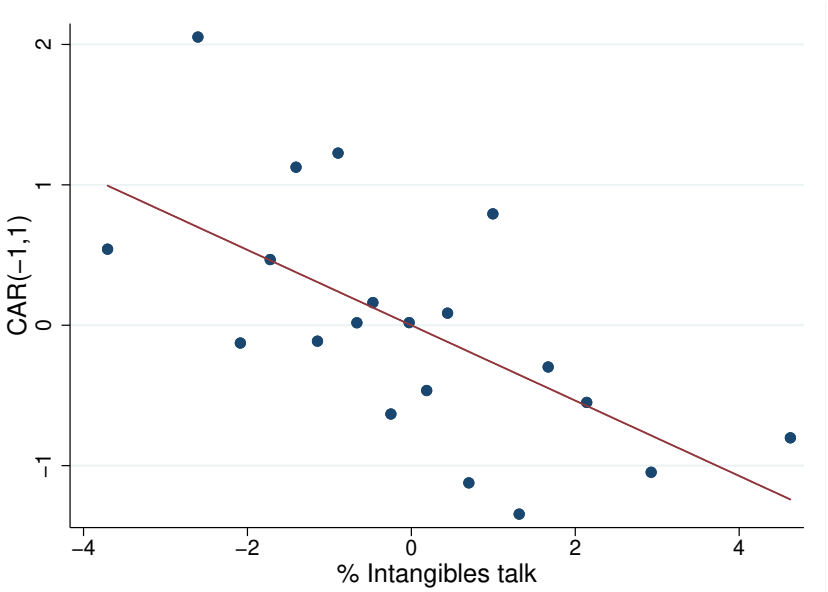


Figure 4: Bidder returns and intangibles talk

The figure shows the relation between the bidder announcement cumulative abnormal return (CAR) adjusted for industry, announcement year and target public status and the frequency of intangibles words in the announcement text. The announcement abnormal return is the cumulative 3-day event period return minus the associated Carhart four-factor model return. Cumulative daily abnormal returns are winsorized at the 1st and 99th percentiles. Plotted returns are residuals of OLS regressions of announcement CAR and intangibles talk on industry and year fixed effects and a dummy indicating whether the target is a public company. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with a bidder that is a publicly traded company domiciled in the United States.

Alt text: Bin-scatter plot showing a negative relationship between bidder announcement CAR residuals and binned intangibles word frequency in deal announcements. Each point represents the average CAR within a bin, adjusted for industry, year, and target public status, based on 3,698 U.S. takeover deals from 2002 to 2019.

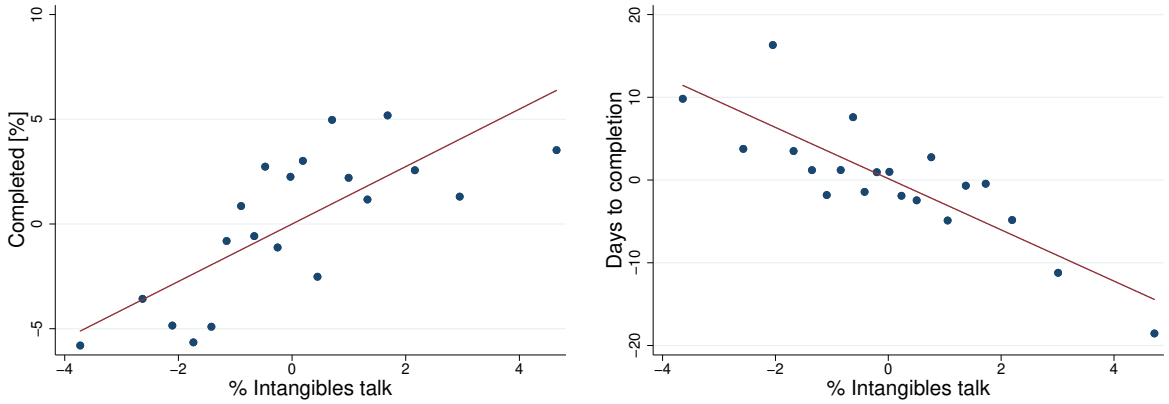


Figure 5: Completion speed and intangibles talk

The relation between the completion rate and the frequency of intangibles words in the announcement text is shown on the left diagram. The relation between time to completion and the frequency of intangibles words in the announcement text is shown on the right diagram. Time to completion is measured by the number of days it takes to complete the deal following the announcement given that the bidder acquires the target. The figures plot residuals of regressions of each variable on industry and year fixed effects and a dummy indicating whether the target is a public company. Thus, the figure shows actual completion (100% or 0%) minus predicted completion probability from a Probit regression in case of the completion rate; actual days to completion minus predicted days to completion from a OLS regression for time to completion; actual intangibles talk minus predicted intangibles talk from a OLS regression. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with a bidder that is a publicly traded company domiciled in the United States.

Alt text: Two bin-scatter plots show residualized relationships between intangible word frequency in deal announcements and deal outcomes. The left plot shows a positive association with completion probability; the right plot shows a negative association with time to completion. All variables are residuals from regressions controlling for industry, year, and public target status.

Table 1: Intangibles word list

This table shows our intangibles word list. The list includes words and phrases that identify intangibles based on Hall (1992), Lev (2005) and Lev (2012). Following Loughran and McDonald (2011), we add the plural form of nouns, the simple past tense, the past participle, gerund and the third person present tense for verbs. Additionally, we include appropriate synonyms and words with similar meaning. For illustrative purposes, we sort the words into four categories proposed by Lev (2005) and *Other*.

Customer Relations	Human Resources	Organizational Capital	Products/Services		Other
Advertising	Employee	Abilities	Algorithm	Tools	Intangible assets
Brand	Employees	Ability	Algortihms	Trade mark	Intangibles
Branding	Employee-training	Alliance	Authorship	Trade marks	
Brands	Experience	Alliances	Authorships	Trade name	
Client	Expert	Business model	Contract	Trade names	
Client relations	Expertise	Business models	Contracts	Trade secret	
Clients	Experts	Business process	Copyright	Trade secrets	
Consumer	HR	Business processes	Copyrights	Trademark	
Consumers	Human capital	Capabilities	Data	Trademarks	
Coverage	Human resources	Capability	Database	Trade-secret	
Coverages	Incentive	Capacities	Databases	Trade-secrets	
Customer	Incentives	Capacity	Design		
Customer base	Innovator	Collaborate	Designs		
Customer bases	Innovators	Collaborated	Developed		
Customer list	Intellectual capital	Collaborates	Development		
Customer lists	Knowhow	Collaborating	Developments		
Customer relation	Know-how	Collaboration	Discoveries		
Customer relations	Knowledge	Competence	Discovery		
Customers	Productivity	Competences	Formula		
Footprint	Skill	Competencies	Formulae		
Footprints	Skills	Competency	Innovate		
Logo	Talent	Connections	Innovated		
Loyalty	Talents	Connectivity	Innovates		
Market	Team	Cost savings	Innovating		
Market share	Teams	Culture	Innovation		
Marketing	Teamwork	Efficiencies	Innovations		
Markets	Training	Efficiency	Intellectual property		
Order backlog	Workforce	Franchise	Invent		
Relation		Franchises	Invented		
Relations		Goodwill	Inventing		
Relationship		Infrastructure	Invention		
Relationships		Infrastructures	Inventions		
User		Internet activities	Invents		
Users		Internet activity	Invest		
		Joint venture	Invested		
		Joint ventures	Investing		
		Model	Investment		
		Models	Investments		
		Network	Invests		
		Networks	Label		
		Organization capital	Labels		
		Organizational design	Licence		
		Organizational designs	Licences		
		Partner	Patent		
		Partners	Patented		
		Platform	Patents		
		Platforms	Private-label		
		Potential	Private-labels		
		Potentials	Product pipeline		
		Presence	Project		
		Process	Projects		
		Processes	Protected design		
		Program	Protected designs		
		Programs	R&D		
		Qualities	Registered design		
		Quality	Registered designs		
		Reputation	Research		
		Risk management	Researches		
		Site visits	Rights		
		Strategies	Service		
		Strategy	Service mark		
		Structure	Service marks		
		Structures	Services		
		Supply chain	Software		
		Supply chains	Solution		
		System	Solutions		
		Systems	Technologies		
		Website	Technology		
		Websites	Tool		

Table 2: Variable definitions and sources

This table defines the main variables used in the analysis. They are obtained directly from or constructed using Compustat, CRSP, EDGAR, ExecuComp, I/B/E/S (Recommendations - Summary Statistics section), RiskMetrics, SDC, Thomson Reuters Institutional (13F) Stock Holdings, Thomson Reuters Insider Filings (IF), and Thomson Reuters Street Events (Refinitiv Company Events Coverage) databases, or are obtained from the listed authors.

Variable	Definition	Source
Textual variables		
% Intangibles talk	Ratio of the number of intangibles words to the total number of words in the takeover announcement, expressed in %.	EDGAR
% Negative	Ratio of the number of negative words to the total number of words in the takeover announcement, expressed in %.	EDGAR
% Positive	Ratio of the number of positive words to the total number of words in the takeover announcement, expressed in %.	EDGAR
% Strong modal	Ratio of the number of strong modal words to the total number of words in the takeover announcement, expressed in %.	EDGAR
% Uncertainty	Ratio of the number of uncertainty words to the total number of words in the takeover announcement, expressed in %.	EDGAR
ln(Text length)	Natural logarithm of the number of words in the takeover announcement.	EDGAR
Negativity	Ratio of the difference between the number of negative and positive words in the takeover announcement to their sum.	EDGAR
Dependent variables		
CAR(-1,1)	Cumulative abnormal returns (in %) for the bidder firm from day -1 to day 1 calculated using the Carhart four-factor model. Model parameters are estimated over days (-280, -31).	CRSP
CAR(-1,30)	Cumulative abnormal returns (in %) for the bidder firm from day -1 to day 30 calculated using the Carhart four-factor model. Model parameters are estimated over days (-280, -31).	CRSP
CAR_t(-1,1)	3-day cumulative abnormal returns (in %) for the target firm calculated using the Carhart four-factor model. Model parameters are estimated over days (-280, -31).	CRSP
V.w. comb. CAR(-1,1)	Value-weighted average of the bidder and target CAR(-1,1) where weights are calculated as day 0 market value of equity. The variable is expressed in %.	CRSP
ΔROA(0,T)	Acquiring firm T-year post acquisition increase in return on assets benchmarked to the mean performance of a portfolio of 2-digit SIC industry peers that do not differ more than 50% in size from the acquirer, and are not involved in any acquisition during a six-year period surrounding the transaction. The variable is expressed in percentage points.	Compustat
ΔAnalyst recom.	Change in the analyst recommendation calculated as a difference between the earliest available median recommendation that is calculated within the 7-60 days period after the takeover announcement and the most recent median recommendation calculated within the 7-60 days period before the takeover announcement. Thomson Reuters calculates median recommendations by assigning to each contributing analyst's recommendation an integer based on the standardized Thomson Reuters recommendation scale and calculating a real number median. We construct and use the inversed scale as follows: 5. Strong Buy, 4. Buy, 3. Hold, 2. Underperform, 1. Sell.	I/B/E/S
GW/AT_0	Goodwill (GDWLQ) scaled by the book value of the bidder total assets in the most recent quarter before the deal completion date (quarter 0).	Compustat

Table 2 – continued from previous page

Variable	Definition	Source
SIA/AT_0	Separable intangible assets computed as a difference between the total book value of intangible assets and goodwill (INTANQ - GDWLQ) scaled by the book value of the bidder total assets in the most recent quarter before the deal completion date (quarter 0).	Compustat
Completed	1 for completed acquisitions.	SDC
Days to completion	Number of days between the effective and announcement dates.	SDC
CEO buys	1 if the number of shares a CEO acquires exceeds the number of shares he sells over a trading window that begins 2 days after the announcement and ends 180 days after the announcement.	TR IF
CEO or Top Execs buy	1 if at least one of the following variables is equal to 1: CEO buys or Top Execs buy	TR IF
Directors buy	1 if the aggregate number of shares board members acquire exceeds the aggregate number of shares they sell over a trading window that begins 2 days after the announcement and ends 180 days after the announcement. Board members who hold an executive role (CEO, CFO, COO, CIO or CTO) are excluded.	TR IF
Insiders buy	1 if at least one of the following variables is equal to 1: CEO buys, Directors buy or Top Execs buy	TR IF
Top Execs buy	1 if the aggregate number of shares top executives (CFO, COO, CIO and CTO), aside from the CEO, acquire exceeds the aggregate number of shares they sell over a trading window that begins 2 days after the announcement and ends 180 days after the announcement.	TR IF
Measures of intangible assets		
Intan. $assets_{acqt}$	Dollar value of target intangible assets (in millions of US $) measured as deal size minus the book value of tangible assets of the target [Tangible assets = Total assets (AT) - Intangible assets (INTAN)].	Compustat, SDC
Intan. $assets_{bvj}$	Dollar value of the book value of *j*=[b(idder), t(arget)] intangible assets (in millions of US $).	Compustat
Intan. $assets_{PTj}$	Dollar value of *j*=[b(idder), t(arget)] intangible assets (in millions of US $) measured as in Peters and Taylor (2017). The measure, labeled as *K_int* and defined as the estimated replacement cost of the firm's intangible capital, is available thorough WRDS.	WRDS
$(IA_{acq}/AT)_t$	Ratio of target intangible assets to the book value of target total assets. Intangible assets are measured as deal size minus the book value of tangible assets [Tangible assets = Total assets (AT) - Intangible assets (INTAN)].	Compustat, SDC
$(IA_{bv}/AT)_j$	Ratio of the book value of *j*=[b(idder), t(arget)] intangible assets to the book value of target total assets.	Compustat
$(IA_{PT}/AT)_j$	Ratio of *j*=[b(idder), t(arget)] intangible assets to the book value of target total assets. Intangible assets are measured as in Peters and Taylor (2017). The measure, labeled as *K_int* and defined as the estimated replacement cost of the firm's intangible capital, is available thorough WRDS.	Compustat, WRDS
Control variables		
Acquirer term. fee	1 if the acquirer is liable to pay a termination fee to the target.	SDC
Book leverage	Total debt (current liabilities plus long-term debt) scaled by book value of total assets [(LCT + DLTT)/AT] at the last fiscal year end before the takeover announcement.	Compustat
Cash	1 for deals financed with cash only.	SDC
Cross-country	1 when the bidder and the target are not from the same country.	SDC

Table 2 – continued from previous page

Variable	Definition	Source
Cross-industry	1 when the bidder and the target are in a different 2-digit SIC code industry.	SDC
Deal size	Total value of the transaction (millions of US $).	SDC
Friendly	1 if attitude of the target management is friendly.	SDC
Managerial ability	Managerial ability (in decile ranks by industry and year) as in Demerjian, Lev, and McVay (2012). The authors split total firm efficiency into firm efficiency and managerial ability by regressing total firm efficiency on six variables: firm size, firm market share, cash availability, life cycle, operational complexity, and foreign operations. The residual from this estimation is their measure of managerial ability.	Peter Demerjian
Market cap	Bidder market capitalization [=Share price (PRCC_F) × Number of shares outstanding (CSHO) (millions of US $)] at the last fiscal year end before the takeover announcement.	Compustat
Market-to-book	Ratio of the bidder market capitalization to its book value of equity [=Total shareholders' equity (SEQ) + Deferred taxes and investment tax credits (TXDITC) - Preferred stock liquidating value (PSTKL)] at the last fiscal year end before the takeover announcement.	Compustat
Mixed	1 for deals financed with a mix of cash and stock.	SDC
Multiple bidders	1 when there is more than one bidder.	SDC
No. of advisors	Number of bidder financial advisors.	SDC
Private	1 when the target is a private company.	SDC
Public	1 when the target is a publicly listed company.	SDC
Relative size	Ratio of the deal size to the bidder market capitalization at the last fiscal year end before the takeover announcement.	Compustat, SDC
ROA	Bidder firm return on assets [EBITDA / Book value of assets (AT)] at the last fiscal year end before the takeover announcement, expressed in %.	Compustat
Runup	Bidder's buy-and-hold abnormal return (BHAR) over days (-205, -6) relative to the takeover announcement date adjusted by CRSP value-weighted index.	CRSP
Shares	1 for deals financed with stock only.	SDC
Sigma	Standard deviation of the bidder's buy-and-hold abnormal return (BHAR) over days (-205, -6) relative to the takeover announcement date adjusted by CRSP value-weighted index.	CRSP
Target term. fee	1 if the target is liable to pay a termination fee to the acquirer.	SDC
Tender offer	1 when the deal is structured as a tender offer	SDC
Additional variables used in heterogeneity analysis and robustness checks		
Accretion talk	1 if the takeover announcement text contains accretion words. We define accretion words as: *accretion*, *accretive*, *accrete*, and *accretes* (see Ben-David and Chinco 2024).	EDGAR
Anti-takeover defenses	Governance index constructed according to Gompers, Ishii, and Metrick (2003). The original index is available only for the period 1990 to 2006. We extend it following Peters and Wagner (2014). The variables included in this modified governance index (GIM) are blank check preferred, classified board, limit ability to call special meeting, limit ability to act by written consent, golden parachutes, limit ability to amend bylaws, limit ability to amend charter, cumulative voting, supermajority requirement, unequal voting rights, fair price, and poison pill.	RiskMetrics

Table 2 – continued from previous page

Variable	Definition	Source
CEO – Chairman & President	1 if the bidder's CEO is both the chairman and the president or if he is the chairman and his firm has no president or Chief Operating Officer (COO) among the top executive team.	Execucomp
CEO - Founder	1 if the bidder's CEO is one of the founders of the firm.	Execucomp
CEO Pay > 200% Closest Executive	1 if the bidder's CEO receives 200% or more total compensation (i.e., total salary plus bonus) compared to the next highest paid top executive in the firm in the same year prior the acquisition announcement date.	Execucomp
Complexity	Bidder complexity, computed using textual analysis of 10-K statements.	Loughran and McDonald (2023)
Disclosure quality	The level of disaggregation of accounting data through a count of nonmissing data items in firms' annual reports as reported by Compustat (as in Chen, Miao, and Shevlin 2015).	Compustat
Executive incentives	The natural logarithm of executive incentives to increase the share price (equity delta), as in Core and Guay (2002) and Coles, Daniel, and Naveen (2006)).	Execucomp
HHI_j	The Herfindahl-Hirschman Index (HHI) that measures concentration of the *j*=[b(idder), t(arget)] industry. It is calculated by squaring the market share (in %) of each firm competing in the 2-digit SIC industry and then summing the resulting numbers. Market shares are calculated using firms' sales in the most recent year before deal announcement (Compustat item SALE [#12])).	Compustat
High forecaster	1 for bidders whose fraction of voluntarily disclosed earnings forecasts that exceed the ex-post realized earnings or, alternatively, the analyst consensus forecast (following Otto 2014) is in the top quartile, and zero otherwise. Since the original measure is available only for the period 1996 to 2005, we extended it over the years 2006 to 2019 keeping the same values.	Clemens Otto
High-tech	1 when the target belongs to the following industries: drugs (SIC codes 2833-2836), research and development services (8731-8734), programming (7371-7379), computers (3570-3577), and electronics (3600-3674), as in Baginski, Hassell, and Kimbrough (2004).	SDC
(Insiders Buy & Neg. CAR)$_{-1}$	1 if Insiders buy is equal to 1 and CAR(-1,1) is negative for the previous deal announced by the acquirer	CRSP, TR IF
Institutional ownership	Total stock ownership by institutional investors relative to the number of shares outstanding.	TR 13F
Longholder	1 for bidders with overoptimistic CEOs. CEOs are classified as overoptimistic if all their options were exercised within one year of the expiration date, and all of them were at least 40% in the money at the end of the year that precedes the exercise date (as in Malmendier and Tate 2008; Otto 2014).	ExecuComp
ln(Num. of analysts)	The natural logarithm of the number of analysts covering an acquiring company.	I/B/E/S
Operating CF/AT	Operating cash flow divided by the acquirer's book value of assets when the acquirer's M/B ratio is not in the top quartile, and zero otherwise (as in Li, Liu, and Wu 2018). Operating cash flow is defined as operating income before depreciation minus interest expense, taxes, preferred dividends, and common dividends (as in Lang, Stulz, and Walkling 1991). (OIBDP[#13] - XINT[#15] - (TXT[#16] - change in TXDITC[#35]) - DVP[#19] - DVC[#21]) / AT[#6]	Compustat
% $Positive_{earn}$	Average ratio of the number of positive words to the total number of words in a company's earnings calls, expressed in %.	Refinitiv Company Events Coverage

Table 2 – continued from previous page

Variable	Definition	Source
% Short interest	Number of shares sold short at mid-month divided by the total shares outstanding in the month before the M&A announcement (as in Ben-David, Drake, and Roulstone 2015), expressed in %.	Compustat, CRSP

Table 3: Descriptive statistics

This table reports summary statistics for the main variables used in our analysis. Panel A reports statistics for the announcement text variables. Panel B reports statistics for the dependent variables. Different measures of bidder and target intangible assets are presented in Panels C and D, respectively, followed by the control variables presented in Panel E and additional control and interaction variables presented in Panel F. The sample consists of 3,698 takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States, though the sample is smaller for some regressions because not all variables are available for all deals. We require that deal and bidder data are available in SDC, CRSP and COMPUSTAT, and that the takeover announcement is accessible through EDGAR. We collect transactions with at least $1 million deal value and 1% relative size (deal value to bidder market capitalization ratio) and that are not labeled as as recapitalizations, repurchases, self-tenders, nor exchange offers. We require that the bidder owns at least 80% of the target after the purchase in case of completed deals, and not more than 15% before the announcement. Bidders that operate in regulated utilities (SIC code 4900-4999) or financial industry (SIC code 6000-6999) are excluded from the sample. *% Intangibles talk* is defined as the number of intangibles words divided by the total number of words in the announcement, expressed as a percentage. The detailed description of the other variables is provided in Table 2.

	Mean	Median	St. Dev.	p25	p75
Panel A: Textual variables					
% Intangibles talk	4.89	4.60	2.39	3.07	6.40
% Negative	0.51	0.41	0.47	0.22	0.68
% Positive	1.92	1.83	0.83	1.33	2.43
% Strong modal	0.96	0.93	0.51	0.59	1.29
% Uncertainty	0.76	0.70	0.47	0.45	1
Negativity	-0.53	-0.59	0.30	-0.75	-0.38
Text length	890.2	788	471.2	556	1111
Panel B: Dependent variables					
CAR(-1,1) [%]	0.63	0.37	8.68	-3.01	4.09
CAR(-1,30) [%]	-2.08	-1.13	18.9	-10.7	7.81
CAR_t(-1,1) [%]	24.2	19.9	23.1	8.91	35.1
V.w. comb. CAR(-1,1)	3.07	2.29	7.87	-0.98	7.23
ΔROA(0,1) [%]	1.06	0.87	8.70	-2.00	3.82
ΔROA(0,3) [%]	0.98	0.95	12.3	-3.69	5.53
Δ Analyst recom.	0.015	0	0.36	0	0
$(GW/AT_0)_{quarter[-7,0]}$	0.16	0.12	0.15	0.023	0.25
$(GW/AT_0)_{quarter[1,8]}$	0.37	0.30	0.31	0.15	0.50
Completed	0.91	1	0.28	1	1
Days to completion	54.7	34	67.7	0	79
Panel C: Bidder intangible assets					
$(\text{Intan. assets}_{PT})_b$ [USDm]	2183.0	275.6	7412.8	79.7	992.7
Intangible Assets - Total	1065.4	80.7	3730.0	11.1	434.4
$(IA_{PT}/AT)_b$	0.76	0.69	0.53	0.46	0.93
$(IA_{bv}/AT)_b$	0.25	0.20	0.22	0.054	0.40
Panel D: Target intangible assets (public targets only)					
$(\text{Intan. assets}_{PT})_t$ [USDm]	1368.5	221.2	4177.5	81.0	744.1
$(\text{Intan. assets}_{bv})_t$ [USDm]	729.2	33.0	2532.8	1.76	244.6
$(\text{Intan. assets}_{acq})_t$ [USDm]	1728.5	207.1	4504.1	20.1	1178.0
$(IA_{PT}/AT)_t$	0.92	0.72	0.92	0.41	1.06
$(IA_{bv}/AT)_t$	0.19	0.12	0.20	0.015	0.32
$(IA_{acq}/AT)_t$	1.57	0.82	2.37	0.13	1.85
Panel E: Control variables					
Acquirer term. fee	0.097	0	0.30	0	0
Book leverage	0.36	0.35	0.19	0.21	0.49
Cash	0.58	1	0.49	0	1
Cross-country	0.16	0	0.37	0	0
Cross-industry	0.36	0	0.48	0	1
Deal size [USDm]	832.9	80	2948.4	23.2	328
Friendly	0.98	1	0.15	1	1
Managerial ability	0.55	0.50	0.28	0.30	0.80
Market cap [USDm]	4949.7	725.4	15566.7	202.9	2403.8
Market-to-book	3.67	2.54	3.77	1.63	4.13
Mixed	0.31	0	0.46	0	1
Multiple bidders	0.028	0	0.17	0	0
No. of advisors	0.62	0	0.83	0	1
Private	0.70	1	0.46	0	1
Public	0.30	0	0.46	0	1
Relative size	0.31	0.12	0.49	0.048	0.32

Table 3 – continued from previous page

	Mean	Median	St. Dev.	p25	p75
ROA [%]	7.62	11.3	18.1	4.91	16.3
Runup	0.14	0.018	0.59	-0.17	0.28
Shares	0.11	0	0.31	0	0
Sigma	0.029	0.024	0.022	0.017	0.035
Target term. fee	0.23	0	0.42	0	0
Tender offer	0.059	0	0.24	0	0
Panel F: Additional control and interaction variables					
Accretion talk	0.51	1	0.50	0	1
Anti-takeover	5.20	5	1.51	4	6
CEO – Founder	0.040	0	0.20	0	0
CEO – Chairman & President	0.22	0	0.41	0	0
CEO Pay $>$ 200% Closest Executive	0.19	0	0.40	0	0
Complexity	0.43	0.40	0.16	0.31	0.52
Disclosure quality	0.48	0.48	0.27	0.25	0.70
HHI_t	0.059	0.037	0.071	0.030	0.067
Executive incentives	1163.7	218.1	9683.9	90.2	575.5
High forecaster	0.24	0	0.43	0	0
High-tech	0.42	0	0.49	0	1
$(\text{Insiders Buy \& Neg. CAR})_{-1}$	0.15	0	0.36	0	0
Institutional ownership	0.64	0.73	0.30	0.45	0.89
Longholder	0.13	0	0.34	0	0
Number of analysts	6.93	5	6.57	2	10
Operating CF/AT	0.039	0.053	0.11	0	0.099
$\%\ \text{Positive}_{\text{earn}}$	1.65	1.63	0.30	1.44	1.83
% Short interest	5.12	3.32	5.47	1.41	6.99

Table 4: What explains intangibles talk?

This table reports OLS regression results. The dependent variable, *% Intangibles talk*, is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Panel A reports results for the full sample (takeover announcements between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States), while panel B is limited to public target deals. Financial data are not available for private targets and for targets abroad. $(IA_s/AT)_j$ is the ratio of *j*=[b(idder), t(arget)] intangible assets to total assets, where *s*=[PT(Peters and Taylor), bv(book value), acq (deal size minus the book value of tangible assets)]. IA_{acq} is only available for targets. Additional variable descriptions are provided in Table 2. The continuous variables are winsorized at the 1st and 99th percentiles. Each regression includes industry and year fixed effects as indicated. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

(a) Panel A: Full sample

	(1)	(2)	(3)	(4)	(5)	(6)
$(IA_{PT}/AT)_b$	0.187***		-0.024		-0.010	
	(0.039)		(0.039)		(0.037)	
$(IA_{bv}/AT)_b$		0.499***		0.044		0.088
		(0.114)		(0.083)		(0.076)
Relative size					-0.195***	-0.196***
					(0.024)	(0.024)
Public					-0.364***	-0.366***
					(0.023)	(0.025)
Constant	-0.222***	-0.175***	-1.405***	-1.413***	-1.252***	-1.258***
	(0.027)	(0.019)	(0.172)	(0.170)	(0.169)	(0.165)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes	Yes
Adjusted R^2	0.01	0.01	0.30	0.30	0.34	0.34
Observations	3698	3698	3698	3698	3698	3698

(b) Panel B: Public targets: The role of target intangible assets

	PT(2017) IA measures			Book value IA measures			Acquired IA measures		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$(IA_{PT}/AT)_b$	0.282***	0.218**	0.023				0.282***	0.322***	0.076
	(0.074)	(0.091)	(0.075)				(0.074)	(0.085)	(0.068)
$(IA_{bv}/AT)_b$				0.637***	0.480**	0.132			
				(0.163)	(0.194)	(0.216)			
$(IA_{PT}/AT)_t$		0.118**	0.066						
		(0.048)	(0.042)						
$(IA_{bv}/AT)_t$					0.378**	0.044			
					(0.178)	(0.154)			
$(IA_{acq}/AT)_t$								0.014	0.001
								(0.015)	(0.013)
Relative size			-0.093**			-0.104**			-0.104**
			(0.039)			(0.039)			(0.038)
Constant	-0.404***	-0.448***	-1.345***	-0.334***	-0.318***	-1.326***	-0.404***	-0.443***	-1.366***
	(0.049)	(0.051)	(0.049)	(0.029)	(0.021)	(0.040)	(0.049)	(0.049)	(0.049)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	No	No	Yes	No	No	Yes
Adjusted R^2	0.03	0.04	0.34	0.03	0.03	0.33	0.03	0.03	0.33
Observations	1099	802	802	1099	802	802	1099	802	802

Table 5: Abnormal bidder returns

This table reports OLS regression results for the bidder's cumulative abnormal returns, CAR(-1,1) and CAR(-1,30), measured using Carhart four-factor model returns. The sample consists of takeover announcements between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. The dependent variables (CAR(-1,1) and CAR(-1,30)) and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	(1) CAR(-1,1) [%]	(2) CAR(-1,1) [%]	(3) CAR(-1,30) [%]	(4) CAR(-1,30) [%]
% Intangibles talk	-0.481**	-0.533***	-0.895**	-0.977**
	(0.174)	(0.153)	(0.421)	(0.432)
Negativity		-0.281		-0.388
		(0.199)		(0.337)
% Uncertainty		0.181		0.214
		(0.152)		(0.275)
% Strong modal		0.128		0.189
		(0.200)		(0.340)
Public	-3.266***	-3.329***	-4.149***	-4.239***
	(0.675)	(0.699)	(0.831)	(0.866)
Mixed	-0.525*	-0.579*	-0.044	-0.117
	(0.287)	(0.290)	(0.666)	(0.663)
Shares	-0.739	-0.815	-2.198	-2.311
	(0.783)	(0.772)	(1.407)	(1.398)
Relative size	2.128***	2.068***	3.206***	3.122***
	(0.587)	(0.576)	(0.910)	(0.935)
Cross-industry	-0.398	-0.402	-0.543	-0.550
	(0.362)	(0.372)	(0.654)	(0.653)
Cross-country	0.098	0.079	-0.191	-0.217
	(0.464)	(0.473)	(0.779)	(0.790)
Tender offer	2.426***	2.479***	4.676***	4.741***
	(0.665)	(0.675)	(1.285)	(1.252)
Multiple bidders	-1.075	-1.021	-1.236	-1.159
	(1.320)	(1.318)	(2.261)	(2.259)
Friendly	-0.609	-0.731	4.424*	4.237*
	(0.645)	(0.664)	(2.244)	(2.306)
No. of advisors	-0.278	-0.301	0.013	-0.020
	(0.408)	(0.407)	(0.835)	(0.828)
ln(Text length)	-0.403	-0.414	-1.307*	-1.326*
	(0.316)	(0.337)	(0.659)	(0.679)
Runup	-0.387	-0.376	-8.422***	-8.406***
	(0.383)	(0.390)	(0.901)	(0.912)
Sigma	1.684	2.265	-127.768***	-127.069***
	(14.022)	(13.917)	(30.466)	(30.620)
Book leverage	1.336	1.370	2.709*	2.760*
	(0.973)	(0.988)	(1.504)	(1.511)
$(IA_{PT}/AT)_b$	-0.117	-0.105	0.015	0.031
	(0.424)	(0.426)	(1.273)	(1.276)
ROA [%]	0.001	-0.000	0.023	0.020
	(0.014)	(0.014)	(0.028)	(0.028)
ln(Market cap)	-0.271*	-0.283*	-0.631**	-0.648**
	(0.137)	(0.137)	(0.267)	(0.265)
Market-to-book	0.035	0.036	-0.115	-0.114
	(0.061)	(0.061)	(0.160)	(0.161)
Constant	18.807***	18.769***	41.549***	41.584***
	(3.123)	(3.360)	(9.471)	(9.376)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.05	0.12	0.12
Observations	3698	3698	3698	3698

Table 6: Ex-post performance and analyst stock recommendations

The table reports OLS regression results for changes in the bidder performance (ΔROA) and analyst stock recommendation changes (ΔAnalyst recom.) following the acquisition. The sample consists of completed takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. The first specification reports results for changes in ROA from year 0 to year 1, where year 0 is defined as the year of acquisition. The second specification reports results for a 3-year period. We adjust bidder ROA changes by subtracting those of the bidder's industry peers. For each bidder, we construct a portfolio of peers that do not differ more than 50% in size from the bidder, operate in the same 2-digit SIC industry, and are not involved in any acquisition during a six-year period surrounding the transaction. The benchmark is calculated as a mean performance change of each portfolio. The third specification reports results for changes in the analyst recommendations, calculated as the difference between the earliest available median recommendation that is calculated within the 7-60 days period after the takeover announcement and the most recent median recommendation calculated within the 7-60 days period before the takeover announcement. The fourth specification analyzes changes in the analyst recommendations for bidders that are followed by more than three stock analysts. Thomson Reuters calculates median recommendations by assigning to each contributing analyst's recommendation an integer based on the standardized Thomson Reuters recommendation scale and calculating a real number median. We construct and use the inversed scale as follows: 5. Strong Buy, 4. Buy, 3. Hold, 2. Underperform, 1. Sell. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. All regressions include the control variables included in Table 5. The dependent variables and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	Δ ROA(0,1)	Δ ROA(0,3)	Δ Analyst recom.	
	(1)	(2)	(3)	(4)
% Intangibles talk	-0.464*	-0.181	-0.006	-0.014*
	(0.229)	(0.371)	(0.005)	(0.007)
Controls	Yes	Yes	Yes	Yes
Textual variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.03	0.03	0.01	0.02
Observations	2612	2225	3304	2330

Table 7: Balance sheet consequences

The table reports results of differences-in-differences panel data regressions for the acquirer goodwill (GW) and separable intangible assets (SIA) over the time period of 16 quarters – 8 quarters before and 8 quarters after the deal completion date. All dependent variables are scaled by the book value of the bidder total assets in the most recent quarter before the deal completion date (quarter 0). The sample in the first two specifications consists of 3,378 completed takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. The last two specifications additionally require that the bidder does not announce another acquisition within $\pm$2 years around the deal announcement day, resulting in 583 deals. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. *Post* dummy is equal to one for quarters after the deal completion date. The regressions control for the same variables as Table 5, and their interactions with *Post*. Additional variable descriptions are provided in Table 2. The dependent variables and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by deal and quarter. Significance levels: * - 10%, ** - 5%, *** - 1%

	All completed deals		No deal w/i $\pm$ 2 years	
	(1) GW/AT_0	(2) SIA/AT_0	(3) GW/AT_0	(4) SIA/AT_0
% Intangibles talk	-0.007	-0.002	-0.002	-0.007
	(0.013)	(0.002)	(0.015)	(0.005)
Post	0.135**	0.046	-0.004	0.140
	(0.058)	(0.043)	(0.089)	(0.086)
Negativity	-0.002	-0.002	-0.009	-0.001
	(0.002)	(0.001)	(0.007)	(0.004)
% Uncertainty	0.005	-0.000	0.019***	0.007
	(0.004)	(0.003)	(0.007)	(0.005)
% Strong modal	-0.014***	-0.003	-0.018***	-0.001
	(0.004)	(0.003)	(0.006)	(0.005)
Post $\times$ % Intangibles talk	0.018***	-0.011***	0.024***	0.000
	(0.005)	(0.003)	(0.008)	(0.006)
Post $\times$ Negativity	-0.002	-0.003	0.003	0.005
	(0.004)	(0.003)	(0.009)	(0.007)
Post $\times$ % Uncertainty	-0.005	-0.007***	0.006	-0.003
	(0.004)	(0.003)	(0.007)	(0.007)
Post $\times$ % Strong modal	0.007	-0.003	0.015**	0.004
	(0.005)	(0.003)	(0.007)	(0.007)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
$R^2_{overall}$	0.371	0.335	0.491	0.443
R^2_{within}	0.410	0.365	0.519	0.441
$R^2_{between}$	0.332	0.301	0.474	0.443
Observations	51883	50864	8807	8733

Table 8: Insider trading

The table reports results of probit regressions that estimate the propensity for the acquirer CEO, top executives, and board members to acquire stock following the takeover announcement. The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. We calculate the total number of shares traded by the CEO, Top Executives and Board members during the period 2-180 days after the takeover announcement. If the number of shares an insider acquires exceeds the number of shares sold, we classify the trade as a buy. The dependent variable in regressions (3) through (5) is equal to one if either the CEO or the group of other top executives or board members buy. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. The continuous control variables are winsorized at the 1st and 99th percentiles. The table reports average marginal effects. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	CEO or Top Execs	Directors	Insiders		
	(1)	(2)	(3)	(4)	(5)
% Intangibles talk	0.011*	0.007	0.022**	0.019*	0.023**
	(0.006)	(0.007)	(0.009)	(0.010)	(0.011)
CAR(-1,1) [%]	-0.002*	-0.003***	-0.002**	-0.002**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
% Int. talk × Rel. size					0.017**
					(0.007)
Textual variables	No	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.06	0.06	0.08	0.08	0.08
Observations	3698	3698	3698	3698	3698

Table 9: Payment method

This table reports the analysis of the relation between intangibles talk and payment method choice. The table reports results of probit regressions. The dependent variable is Cash, a binary indicator which is 1 for deals financed with cash only. Column (1) and (4) use the full sample, Columns (2)-(3) and (5)-(6) only public targets. The sample consists of takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. The continuous control variables are winsorized at the 1st and 99th percentiles. The table reports average marginal effects. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	All (1)	Public targets (2)	Public targets (3)	All (4)	Public targets (5)	Public targets (6)
% Intangibles talk	0.022***	0.052**	0.054**	0.023***	0.063***	0.067***
	(0.008)	(0.023)	(0.023)	(0.009)	(0.023)	(0.022)
$(IA_{PT}/AT)_b$	-0.039***			-0.040***		
	(0.014)			(0.013)		
$(IA_{PT})_t/(IA_{PT})_b$		-0.002			-0.002	
		(0.004)			(0.003)	
$\ln(IA_{PT})_t/\ln(IA_{PT})$			-0.221**			-0.207**
			(0.104)			(0.102)
Textual variables	No	No	No	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.27	0.43	0.43	0.28	0.43	0.44
Observations	3698	805	805	3698	805	805

Table 10: Deal completion

This table reports the analysis of the relation between intangibles talk and deal completion. The first four specifications report results of probit regressions estimating the propensity for the bidder to complete the deal following the takeover announcement. The last two specifications report OLS regression results for the number of days it takes to complete the deal, given that the bidder acquires the target. The sample consists of takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. Days to completion and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	Completion				Days to completion	
	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	0.173***	0.118***	0.121***	0.104**	-4.473***	-3.539***
	(0.042)	(0.042)	(0.041)	(0.043)	(0.927)	(1.084)
CAR(-1,30) [%]			0.004*	0.003	0.021	0.021
			(0.002)	(0.002)	(0.081)	(0.082)
% Intangibles talk × CAR(-1,30) [%]				-0.003**		
				(0.002)		
Textual variables	No	Yes	Yes	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2					0.48	0.48
Pseudo R^2	0.28	0.28	0.28	0.28		
Observations	3698	3698	3698	3698	3378	3378

Table 11: Optimism, agency, complexity and bidder returns

The table summarizes the effect of intangibles talk on bidder returns conditional on the optimism of the bidder, the quality of corporate governance of the bidder and deal complexity. Panel A reports OLS regression results for 3-day bidder cumulative abnormal returns, CAR(-1,1), measured using Carhart four-factor model returns. Panel B reports OLS regression results for CAR(-1,30). The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. In the first three columns, we interact intangibles talk with different optimism measures (*Opt*): (1) *%* Positive, (2) Longholder, and (3) (Insiders Buy & Neg. CAR)$_{-1}$. In the following three columns we interact intangibles talk with different corporate governance measures (*Gov*): (4) Institutional investor holdings, (5) Disclosure quality, and (6) Anti-takeover defenses. In the last two columns, we interact intangibles talk with measures of deal complexity: (7) *Cross-industry*, and (8) *Cross-country*. Additional variable descriptions are provided in Table 2. All regressions include the control variables included in Table 5. CAR and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

(a) Panel A: CAR(-1,1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% Intangibles talk	-0.486***	-0.554*	-0.416**	-0.560***	-0.552***	-0.588**	-0.538**	-0.521***
	(0.147)	(0.309)	(0.174)	(0.152)	(0.171)	(0.204)	(0.224)	(0.141)
Opt	-0.047	1.024**	-0.600					
	(0.168)	(0.406)	(0.391)					
Opt × % Intangibles talk	-0.182*	-0.493	-0.692**					
	(0.100)	(0.615)	(0.267)					
Gov				-0.700	-0.486	0.013		
				(0.794)	(0.531)	(0.130)		
Gov × % Intangibles talk				-0.178	0.289	-0.100		
				(0.451)	(0.515)	(0.105)		
Complex							-0.402	0.085
							(0.371)	(0.477)
Complex × % Intangibles talk							0.011	-0.071
							(0.328)	(0.271)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.09	0.05	0.05	0.05	0.08	0.05	0.05
Observations	3698	1097	3698	3673	3550	1682	3698	3698

(b) Panel B: CAR(-1,30)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% Intangibles talk	-0.864**	-0.099	-0.970**	-0.981**	-0.941*	-0.930*	-1.262***	-1.063**
	(0.396)	(0.715)	(0.456)	(0.428)	(0.451)	(0.525)	(0.421)	(0.467)
Opt	-0.101	0.462	-0.410					
	(0.394)	(1.033)	(1.136)					
Opt × % Intangibles talk	-0.451*	-2.294**	0.077					
	(0.239)	(0.951)	(0.646)					
Gov				0.616	-0.527	-0.049		
				(1.836)	(0.952)	(0.256)		
Gov × % Intangibles talk				0.401	1.703	0.059		
				(1.235)	(1.120)	(0.224)		
Complex							-0.566	-0.253
							(0.648)	(0.783)
Complex × % Intangibles talk							0.732	0.487
							(0.697)	(0.784)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.12	0.12	0.12	0.12	0.12	0.10	0.12	0.12
Observations	3698	1097	3698	3673	3550	1682	3698	3698

Table 12: Robustness

The table summarizes robustness checks for all main regressions. Panel A reports results when tech words are excluded from the basic dictionary. Panel B extends the basic dictionary with synergy words. Panel C uses a dictionary that omits words mentioned in Section 5. Panel D omits bidders that operate in the industry that is classified as High-tech, as in Baginski, Hassell, and Kimbrough (2004). Panel E controls for disclosure quality as in Chen, Miao, and Shevlin (2015). Panel F controls for the target industry concentration measured by the Herfindahl-Hirschman Index (HHI). Short interest, constructed following Ben-David, Drake, and Roulstone (2015), is a control variable in Panel G. Acquiring firm complexity, from Loughran and McDonald (2023), is included as a control variable in Panel H. Panel I controls for managerial ability (in decile ranks by industry and year) as in Demerjian, Lev, and McVay (2012). Panel J controls for accretion talk (see Ben-David and Chinco 2024). Panel K controls for intangibles talk in earnings conference calls. Panel L uses industry-year fixed effects. Panel M omits deals with the smallest 1% and largest 1% of deal volumes. The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. Column (1) reports OLS regression results for bidder 3-day event period cumulative abnormal returns, CAR(-1,1), measured using the Carhart four-factor model return. Column (2) reports OLS regression results for CAR(-1,30). Column (3) reports OLS regression results for changes in ROA from year 0 to year 1, where year 0 is defined as the year of acquisition. We adjust bidder ROA changes by subtracting those of the bidder's industry peers. Column (4) presents probit regressions that estimate the propensity for the bidder to complete the deal following the takeover announcement. Column (5) reports OLS regression results for the number of days it takes to complete the deal, given that the bidder acquires the target. Column (6) reports results of probit regressions that estimate the propensity for the acquisition to be financed with cash. Finally, Column (7) reports results of probit regressions that estimate the propensity for the acquirer CEO, the group of other top executives or the board directors in aggregate to acquire stock following the takeover announcement. Regressions with industry-year fixed effects use linear probability models. For details, see the prior tables. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. *% Intangibles talk* $(conf.)$ is defined as the average, by firm, of the number of intangibles words divided by the total number of words in what management says in earnings conferences calls in the sample period, standardized to the same standard deviation as *% Intangibles talk*. All regressions include industry and year fixed effects as well as the same firm-specific and deal-specific controls as before, as well as controls for negativity, uncertainty, and strong modal words in the announcement. Additional variable descriptions are provided in Table 2. The continuous dependent variables and continuous control variables are winsorized at the 1st and 99th percentiles. Regressions (4), (6) and (7) report average marginal effects instead of estimated coefficients. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: * - 10%, ** - 5%, *** - 1%.

(a) Panel A: IT dictionary excluding tech words

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk$_{\text{w/o Tech words}}$	-0.513***	-0.873*	-0.264	0.010***	-2.078**	0.011	0.024***
	(0.133)	(0.450)	(0.197)	(0.003)	(0.949)	(0.008)	(0.009)
Adjusted R^2	0.05	0.12	0.02		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

(b) Panel B: IT dictionary including synergy words

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk$_{\text{w/ Syn. words}}$	-0.537***	-1.008**	-0.326	0.013***	-2.496**	0.013	0.022**
	(0.138)	(0.459)	(0.189)	(0.004)	(1.045)	(0.008)	(0.010)
Adjusted R^2	0.05	0.12	0.02		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

(c) Panel C: Short IT dictionary

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk$_{\text{Short}}$	-0.593***	-0.787**	-0.440**	0.009**	-3.023***	0.018***	0.013*
	(0.107)	(0.334)	(0.173)	(0.004)	(0.931)	(0.007)	(0.008)
Adjusted R^2	0.05	0.12	0.03		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

Table 12: – continued from previous page

(d) Panel D: Excluding high-tech industries

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.722**	-0.664	-0.430*	0.010	-3.686*	0.031***	0.013
	(0.270)	(0.530)	(0.243)	(0.008)	(1.943)	(0.011)	(0.012)
Adjusted R^2	0.05	0.11	0.03		0.48		
Pseudo R^2				0.32		0.31	0.10
Observations	2134	2134	1476	2134	1932	2134	2134

(e) Panel E: Disclosure quality

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.556***	-0.965**	-0.460*	0.013***	-3.677***	0.023***	0.020**
	(0.170)	(0.444)	(0.233)	(0.005)	(1.072)	(0.009)	(0.010)
Disclosure quality	-0.474	-0.459	-0.073	-0.006	4.729	-0.053**	0.012
	(0.523)	(0.931)	(0.686)	(0.015)	(3.521)	(0.023)	(0.021)
Adjusted R^2	0.05	0.12	0.03		0.48		
Pseudo R^2				0.27		0.28	0.08
Observations	3550	3550	2523	3550	3245	3550	3550

(f) Panel F: Industry concentration

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.535***	-0.975**	-0.465*	0.014***	-3.517***	0.023***	0.021**
	(0.153)	(0.432)	(0.228)	(0.005)	(1.077)	(0.009)	(0.010)
HHI_t	-1.358	1.553	-0.801	0.079	1.377	0.275*	0.145
	(1.490)	(2.744)	(2.829)	(0.068)	(12.800)	(0.152)	(0.094)
Adjusted R^2	0.05	0.12	0.03		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

(g) Panel G: Short interest

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.578***	-1.206**	-0.460*	0.012***	-3.453***	0.020**	0.021**
	(0.159)	(0.448)	(0.239)	(0.004)	(1.084)	(0.009)	(0.010)
% Short interest	-0.047	-0.067	-0.067	0.001	-0.502**	-0.003***	0.000
	(0.033)	(0.065)	(0.052)	(0.001)	(0.197)	(0.001)	(0.001)
Adjusted R^2	0.06	0.13	0.02		0.48		
Pseudo R^2				0.28		0.27	0.07
Observations	3547	3547	2487	3547	3240	3547	3547

(h) Panel H: Firm complexity

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.464**	-0.800	-0.374	0.017***	-3.441***	0.022**	0.021**
	(0.172)	(0.483)	(0.224)	(0.005)	(1.066)	(0.009)	(0.009)
Complexity	-0.972	-0.769	0.241	-0.061**	3.440	-0.020	-0.057
	(0.982)	(1.822)	(1.282)	(0.029)	(5.205)	(0.052)	(0.056)
Adjusted R^2	0.05	0.12	0.03		0.49		
Pseudo R^2				0.29		0.27	0.08
Observations	3484	3484	2492	3484	3184	3484	3484

Table 12: – continued from previous page

(i) Panel I: Managerial ability

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.465**	-0.827*	-0.467*	0.014***	-3.246**	0.027**	0.016
	(0.195)	(0.429)	(0.232)	(0.004)	(1.158)	(0.011)	(0.011)
Managerial ability	0.019	-0.829	1.161*	-0.018	5.874*	-0.063**	-0.033
	(0.469)	(0.680)	(0.631)	(0.013)	(3.128)	(0.032)	(0.022)
Adjusted R^2	0.05	0.13	0.04		0.49		
Pseudo R^2				0.30		0.27	0.08
Observations	3465	3465	2524	3465	3184	3465	3465

(j) Panel J: Accretion talk

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.528***	-0.962**	-0.458*	0.013***	-3.519***	0.023***	0.021**
	(0.155)	(0.433)	(0.223)	(0.005)	(1.077)	(0.009)	(0.010)
Accretion talk	0.942**	2.398***	0.960***	0.021**	-0.065	-0.006	0.008
	(0.356)	(0.627)	(0.296)	(0.009)	(2.112)	(0.019)	(0.020)
Adjusted R^2	0.06	0.12	0.03		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

(k) Panel K: Intangibles talk on conference calls

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.342**	-0.853*	-0.547*	0.013***	-3.086**	0.022***	0.023**
	(0.152)	(0.436)	(0.265)	(0.005)	(1.167)	(0.008)	(0.011)
% Intang. talk (conf.)	-0.761***	-0.477	0.283	0.001	-1.757	0.004	-0.010
	(0.198)	(0.476)	(0.234)	(0.005)	(1.228)	(0.008)	(0.010)
Adjusted R^2	0.06	0.12	0.03		0.48		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

(l) Panel L: Industry-year fixed effects

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.478**	-0.863*	-0.369	0.013**	-4.067***	0.019	0.022*
	(0.205)	(0.485)	(0.263)	(0.005)	(1.157)	(0.012)	(0.013)
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.11	-0.00	0.24	0.51	0.29	0.07
Observations	3698	3698	2612	3698	3378	3698	3698

(m) Panel M: Omitting very small and very large deals

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.466**	-0.920*	-0.319	0.014***	-3.473***	0.026***	0.020*
	(0.163)	(0.452)	(0.225)	(0.005)	(1.028)	(0.008)	(0.010)
Adjusted R^2	0.05	0.12	0.03		0.47		
Pseudo R^2				0.28		0.28	0.08
Observations	3617	3617	2569	3617	3317	3617	3617

Supplementary Appendix

A. Sample construction

Table SA.1: Sample construction

This table lists the steps taken to form the sample of M&A deals announced between 2002 and 2019 that are available in the SDC database.

Sample filters	# of deals
Date announced: January 1, 2002 to December 31, 2019	827,450
Bidder is a US company	199,193
Bidder is a public company	74,763
Exclude: recapitalizations, repurchases, self-tenders and exchange offers	62,415
Deal value ($ mil) ≥ 1	28,228
% of shares held at announcement $\leq 15\%$	27,073
% of shares owned after transaction $\geq 80\%$ (only for completed deals)	25,350
Target is a private or public company	16,697
Payment method: cash, stock or a mix of cash and stock	13,196
Exclude bidders that operate in regulated utilities (SIC code 4900-4999) or in the financial industry (SIC code 6000-6999)	9,547
Return data on CRSP	7,128
Accounting data on Compustat	6,679
Relative size $\geq 1\%$	5,727
Acquirer book value of equity positive	5,564
Acquirer files an 8-K within 4 business days after the announcement	4,444
M&A announcement identified	3,701
Peters and Taylor (2017) measure of intangible assets for bidder	3,698

B. Additional results

B.1 Correlations

Table SA.2: Correlation of the measures of target intangible assets

The table reports the correlation coefficients for three different measures of target intangible assets that are used in the analysis. Panel A reports the correlation between the measures of absolute size of target intangible assets while panel B presents the correlation between the ratios of intangible assets to target total assets size. *Intan. assets*$_{bv}$ is the book value of target intangible assets. *Intan. assets*$_{acq}$ is the estimate of acquired target intangible assets calculated as the difference between deal size and the book value of target tangible assets. *Intan. assets*$_{PT}$ is the estimated replacement cost of target's intangible capital introduced in Peters and Taylor (2017). *IA/AT* is the ratio of target intangible assets (IA) to the book value of target total assets (AT).

(a) Panel A: Absolute size

	(Intan. assets$_{bv}$)$_t$	(Intan. assets$_{acq}$)$_t$	(Intan. assets$_{PT}$)$_t$
(Intan. assets$_{bv}$)$_t$	1		
(Intan. assets$_{acq}$)$_t$	0.579***	1	
(Intan. assets$_{PT}$)$_t$	0.882***	0.645***	1

(b) Panel A: Size relative to total assets

	(IA$_{bv}$/AT)$_t$	(IA$_{acq}$/AT)$_t$	(IA$_{PT}$/AT)$_t$
(IA$_{bv}$/AT)$_t$	1		
(IA$_{acq}$/AT)$_t$	-0.066*	1	
(IA$_{PT}$/AT)$_t$	-0.0053	0.15***	1

B.2 Details on heterogeneous stock price reactions

B.2.1 Optimism and bidder returns In addition to the three variables described in the main text, Table SA.3 presents findings for the following variables. First, column (1) uses negativity instead of the percent positive words, with very similar results. Next, column (3) uses a measure based on how firms typically communicate in other settings, namely, earnings conference calls. We compute the average of positivity in managerial communication on those calls. The idea is that while positivity will vary with current business conditions, an unconditionally high fraction of positive words provides a proxy for managerial optimism. To avoid reducing the sample sizes further, for firms for which we cannot find matching conference call transcripts we replace intangibles talk in conference calls with the average and include a dummy variable equal to 1 (and 0 elsewhere) to absorb the effect of this adjustment in our empirical specifications. The interaction term of intangibles talk with positive talk in conference calls is also negative, indicating that the market responds more negatively to intangibles talk by generally optimistically speaking managers. Both the initial effect and the 30-day effect are significant. Third, we construct a variable that identifies bidders that are "High forecasters". This measure, developed by Otto (2014), compares what firms forecast for their earnings with what they actually achieve. The idea is that if a management team consistently provides forecasts of which performance ends up falling short, this indicates managerial overoptimism. Otto (2014) assigns a time-invariant value to each firm-manager combination. We expand these data to include the recent years, and we then identify a CEO as a high forecaster when he is in the top quartile of this variable.[47] Even with this expansion through time, the sample size is very limited. Despite the small sample size, column (5) of Table SA.3 shows that we obtain effects consistent with overoptimism. Specifically, when the bidder is classified as a "high forecaster", in the medium run deals announced with more intangibles talk result in more critical shareholder responses.

B.2.2 Agency and bidder returns In addition to the three governance variables described in the main text, Table SA.4 presents findings for the following variables.

First, executives whose wealth depends more on the share price are better aligned with shareholder welfare, which should lead them to seek out value-increasing takeovers and avoid value-destroying deals. A standard measure of executives incentives is "equity delta," the dollar change in executive wealth from stock and stock options per percent change of the share price, computed following Core and Guay (2002) and Coles, Daniel, and Naveen (2006). We sum delta of all disclosed executives to get a measure of the total management team's incentives. The data cover firms in ExecuComp, which cuts our sample approximately in half.

Second, analysts decrease information asymmetry, increase transparency, and improve monitoring quality. Therefore, companies that are followed by more analysts are expected to have better governance and less pronounced agency problems. We use the natural logarithm of the number of analysts.

Third, Jensen (1986) argues that managers are prone to investing cash at below the cost of capital and to wasting it on corporate inefficiencies. In particular, acquisitions by cash-rich acquirers tend to be value-destroying (Harford 1999). To proxy for this governance feature, we define Operating CF/AT as operating cash flow scaled by book value of total assets when the

[47] Regressions with the continuous measure do not yield significant interaction terms.

acquirer's market-to-book ratio is not in the top quartile, and zero otherwise (following Lang, Stulz, and Walkling 1991; Li, Liu, and Wu 2018).

Finally, we consider three measures of CEO power: whether the CEO is Chairman, whether the CEO is the founder, and whether CEO pay is particularly high.

Table SA.4 shows that none of these variables interact significantly with intangibles talk in determining the investor reaction to deal announcements, with the exception of two CEO power measures over the 30-day period, which show opposing effects.

Table SA.3: Optimism and bidder returns

The table summarizes the effect of intangibles talk on bidder returns conditional on the optimism of the bidder. Panel A reports OLS regression results for 3-day bidder cumulative abnormal returns, CAR(-1,1), measured using Carhart four-factor model returns. Panel B reports OLS regression results for CAR(-1,30). The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. In each of the columns, we interact intangibles talk with a different optimism measure (*Opt*): (1) minus Negativity, (2) % Positive, (3) % Positive in earnings calls, (4) Longholder, (5) High forecaster, and (6) (Insiders Buy & Neg. CAR)$_{-1}$. Additional variable descriptions are provided in Table 2. All regressions include the control variables included in Table 5. CAR and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

(a) Panel A: CAR(-1,1)

	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	-0.486***	-0.486***	-0.525***	-0.554*	-0.071	-0.416**
	(0.142)	(0.147)	(0.151)	(0.309)	(0.322)	(0.174)
Opt	0.171	-0.047	-0.046	1.024**	-0.025	-0.600
	(0.189)	(0.168)	(0.146)	(0.406)	(0.594)	(0.391)
Opt × % Intangibles talk	-0.347**	-0.182*	-0.284**	-0.493	-0.800	-0.692**
	(0.138)	(0.100)	(0.131)	(0.615)	(0.929)	(0.267)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.05	0.05	0.09	0.10	0.05
Observations	3698	3698	3698	1097	613	3698

(b) Panel B: CAR(-1,30)

	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	-0.890**	-0.864**	-0.963**	-0.099	-0.734	-0.970**
	(0.416)	(0.396)	(0.431)	(0.715)	(1.002)	(0.456)
Opt	0.183	-0.101	0.381	0.462	0.078	-0.410
	(0.334)	(0.394)	(0.392)	(1.033)	(1.729)	(1.136)
Opt × % Intangibles talk	-0.643**	-0.451*	-0.750**	-2.294**	-3.007*	0.077
	(0.279)	(0.239)	(0.323)	(0.951)	(1.672)	(0.646)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.12	0.12	0.12	0.12	0.10	0.12
Observations	3698	3698	3698	1097	613	3698

Table SA.4: Agency and bidder returns

The table summarizes the effect of intangibles talk on bidder returns conditional on the quality of corporate governance of the bidder. Panel A reports OLS regression results for 3-day bidder cumulative abnormal returns, CAR(-1,1), measured using Carhart four-factor model returns. Panel B reports OLS regression results for CAR(-1,30). The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. In each of the columns, we interact intangibles talk with a different corporate governance measure (*Gov*): (1) Institutional investor holdings, (2) Executive incentives, (3) Disclosure quality, (4) ln(Number of analysts), (5) Operating CF/AT, (6) Anti-takeover defenses, and 3 powerful-CEO measures: (7) CEO – Chairman & President, (8) CEO - Founder, and (9) CEO Pay $>$ 200% Closest Executive. Additional variable descriptions are provided in Table 2. All regressions include the control variables included in Table 5. CAR and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

(a) Panel A: CAR(-1,1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
% Intangibles talk	-0.560***	-0.687**	-0.552***	-0.511**	-0.618***	-0.588**	-0.563**	-0.755***	-0.223
	(0.152)	(0.242)	(0.171)	(0.180)	(0.164)	(0.204)	(0.219)	(0.251)	(0.415)
Gov	-0.700	0.396***	-0.486	-0.217	-2.196	0.013	-1.985	0.335	-0.143
	(0.794)	(0.126)	(0.531)	(0.207)	(2.138)	(0.130)	(1.244)	(0.372)	(0.468)
Gov × % Intangibles talk	-0.178	-0.074	0.289	-0.146	-0.598	-0.100	-0.342	0.712	-0.449
	(0.451)	(0.120)	(0.515)	(0.150)	(1.972)	(0.105)	(1.519)	(0.426)	(0.410)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.07	0.05	0.04	0.05	0.08	0.10	0.09	0.09
Observations	3673	1883	3550	3328	3314	1682	1458	1458	1458

(b) Panel B: CAR(-1,30)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
% Intangibles talk	-0.981**	-1.105*	-0.941*	-0.645	-0.810	-0.930*	-0.957	-1.277	0.659
	(0.428)	(0.538)	(0.451)	(0.547)	(0.477)	(0.525)	(0.749)	(0.764)	(1.108)
Gov	0.616	1.229***	-0.527	0.664	1.653	-0.049	-2.690	1.860**	0.304
	(1.836)	(0.244)	(0.952)	(0.733)	(4.786)	(0.256)	(2.530)	(0.793)	(1.388)
Gov × % Intangibles talk	0.401	-0.194	1.703	0.100	7.598	0.059	1.582	1.831**	-1.817*
	(1.235)	(0.236)	(1.120)	(0.356)	(4.398)	(0.224)	(2.087)	(0.819)	(0.931)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.12	0.12	0.12	0.11	0.12	0.10	0.10	0.10	0.10
Observations	3673	1883	3550	3328	3314	1682	1458	1458	1458

Table SA.5: Optimism and bidder returns in subsamples of governance proxies

The table summarizes the effect of intangibles talk on bidder returns conditional on the optimism of the bidder, separately for firms with arguably strong and weak corporate governance. Dependent variables are cumulative abnormal returns measured using Carhart four-factor model returns. The sample consists of takeover deals announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. The sample is split by median corporate governance of the bidder (Institutional investor holdings). The measure of optimism is a dummy equal to one when *% Positive* is above the median. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. The continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%.

	CAR(-1,1)		CAR(-1,30)	
	(1) High inst. holdings	(2) Low inst. holdings	(3) High inst. holdings	(4) Low inst. holdings
% Intangibles talk	-0.628**	-0.318	-1.153	0.364
	(0.278)	(0.343)	(1.035)	(0.967)
Opt	0.060	0.063	0.396	0.646
	(0.386)	(0.536)	(0.808)	(1.197)
Opt × % Intangibles talk	-0.101	-0.137	0.024	-2.190*
	(0.223)	(0.337)	(0.618)	(1.190)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.06	0.08	0.15
Observations	1836	1837	1836	1837

Table SA.6: Deal characteristics and bidder returns

The table reports the effect of intangibles talk on bidder returns depending on deal characteristics. We report cross-sectional regression results for bidder cumulative abnormal returns (CAR) measured using the Carhart four-factor model. We interact intangibles talk with measures of firm complexity (constructed by Loughran and McDonald 2023): (1) *Bidder complexity* and (2) *Target complexity*, and then with measures of deal complexity: (3) *Cross-industry*, (4) *Cross-country*, and (5) *Relative size*. *Public* indicates a publicly listed target. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. Additional variable descriptions are provided in Table 2. CAR and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%

(a) Panel A: CAR(-1,1)

	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	-0.467**	-0.969**	-0.538**	-0.521***	-0.547***	-0.472**
	(0.171)	(0.384)	(0.224)	(0.141)	(0.174)	(0.174)
Complex	-0.957	0.547	-0.402	0.085	2.101***	
	(0.983)	(3.316)	(0.371)	(0.477)	(0.677)	
Public	-2.910***		-3.329***	-3.330***	-3.331***	-3.410***
	(0.732)		(0.700)	(0.699)	(0.701)	(0.722)
Complex × % Intangibles talk	-0.390	0.138	0.011	-0.071	0.070	
	(0.911)	(3.494)	(0.328)	(0.271)	(0.562)	
Public × % Intangibles talk						-0.360
						(0.370)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.05	0.15	0.05	0.05	0.05	0.05
Observations	3484	758	3698	3698	3698	3698

(b) Panel B: CAR(-1,30)

	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	-0.809	-1.556	-1.262***	-1.063**	-0.850	-0.959**
	(0.485)	(0.947)	(0.421)	(0.467)	(0.491)	(0.449)
Complex	-0.717	-3.753	-0.566	-0.253	2.806***	
	(1.838)	(4.403)	(0.648)	(0.783)	(0.937)	
Public	-3.390***		-4.235***	-4.232***	-4.222***	-4.263***
	(0.895)		(0.869)	(0.868)	(0.865)	(0.858)
Complex × % Intangibles talk	-1.362	-3.733	0.732	0.487	-0.677	
	(1.760)	(6.635)	(0.697)	(0.784)	(1.202)	
Public × % Intangibles talk						-0.107
						(1.017)
Textual variables	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.12	0.13	0.12	0.12	0.12	0.12
Observations	3484	758	3698	3698	3698	3698

B.3 Announcement returns for public targets

Table SA.7: Combined announcement returns for public targets

The table reports regression results for bidder, target and combined cumulative abnormal returns, CAR(-1,1), measured using Carhart four-factor model return. Combined CAR is calculated as a value weighted average of the bidder and target CAR(-1,1) where weights are calculated as day 0 market value of equity. The sample consists of public-target takeover announcements between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. The number of observations in columns (3) to (6) is smaller than in columns (1) and (2) because we do not have CAR data for targets abroad. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. The regressions control for the same variables as Table 5. Additional variable descriptions are provided in Table 2. The dependent variables and continuous control variables are winsorized at the 1st and 99th percentiles. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: : * - 10%, ** - 5%, *** - 1%

	Bidder CAR		Target CAR		Combined CAR	
	(1)	(2)	(3)	(4)	(5)	(6)
% Intangibles talk	-1.132***	-0.948**	0.018	0.551	-0.927***	-0.781**
	(0.303)	(0.333)	(1.776)	(1.943)	(0.312)	(0.353)
Negativity		-0.139		0.187		-0.042
		(0.186)		(1.285)		(0.499)
% Uncertainty		0.863***		1.429		0.538*
		(0.269)		(1.042)		(0.259)
% Strong modal		-0.075		-1.313		0.233
		(0.297)		(0.835)		(0.369)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.12	0.13	0.12	0.12	0.17	0.17
Observations	1099	1099	759	759	759	759

B.4 Synergies talk and intangibles talk

Table SA.8: Synergies talk and intangibles talk

The table presents results for all main regressions when controlling for synergies words. The sample consists of the takeovers announced between January 2002 and December 2019 with the bidder that is a publicly traded company domiciled in the United States. Column (1) reports OLS regression results for bidder 3-day event period cumulative abnormal returns, CAR(-1,1), measured using the Carhart four-factor model return. Column (2) reports OLS regression results for CAR(-1,30). Column (3) reports OLS regression results for changes in ROA from year 0 to year 1, where year 0 is defined as the year of acquisition. We adjust bidder ROA changes by subtracting those of the bidder's industry peers. Column (4) presents probit regressions that estimate the propensity for the bidder to complete the deal following the takeover announcement. Column (5) reports OLS regression results for the number of days it takes to complete the deal, given that the bidder acquires the target. Column (6) reports results of probit regressions that estimate the propensity for the acquisition to be financed with cash. Finally, Column (7) reports results of probit regressions that estimate the propensity for the acquirer CEO, the group of other top executives or the board directors in aggregate to buy stock following the takeover announcement. For details, see the prior tables. *% Synergy* is defined as the number of synergies words (see the text) divided by the total number of words in the announcement, expressed as a percent. *% Intangibles talk* is measured as the proportion of intangible-related words in a takeover announcement, expressed as a percentage of total words, and standardized to have a mean of zero and a standard deviation of one. All regressions include industry and year fixed effects as well as the same firm-specific and deal-specific controls as before, as well as controls for negativity, uncertainty, and strong modal words in the announcement. Additional variable descriptions are provided in Table 2. The continuous dependent variables and continuous control variables are winsorized at the 1st and 99th percentiles. Regressions (4), (6) and (7) report average marginal effects instead of estimated coefficients. The standard errors (reported in parentheses) are clustered by the announcement year and are robust to heteroskedasticity. Significance levels: * - 10%, ** - 5%, *** - 1%.

	(1) CAR(-1,1)	(2) CAR(-1,30)	(3) ΔROA(0,1)	(4) Completed	(5) Days to completion	(6) Cash pay	(7) Insiders buy
% Intangibles talk	-0.528***	-0.936**	-0.511*	0.013***	-4.004***	0.029***	0.020**
	(0.162)	(0.418)	(0.239)	(0.005)	(1.085)	(0.009)	(0.010)
% Synergy	-0.055	-0.398	0.518*	0.002	4.759***	-0.053***	0.009
	(0.205)	(0.380)	(0.242)	(0.002)	(1.213)	(0.007)	(0.009)
Adjusted R^2	0.05	0.12	0.03		0.49		
Pseudo R^2				0.28		0.28	0.08
Observations	3698	3698	2612	3698	3378	3698	3698

B.5 Changes in the balance sheet intangible assets of the acquirer

Figure SA.1 traces goodwill (GW) and separably identifiable assets (SIA) over time. It constructs two groups of firms by splitting the sample by median intangibles talk, controlling for target public status, payment method, and relative size. One sees that before the takeover, both GW and SIA are quite stable and moving in parallel for both those acquirers that later use intangibles talk above the median and those below. In the full sample (shown in the top figure), there is a general upward trend in GW and SIA. This reflects the fact that companies occasionally conduct an acquisition also in some of the other quarters. In the bottom figure, which uses the restricted sample of acquirers with only one acquisition in a 16-quarters window, as expected, GW and SIA are effectively unchanged in all quarters except the completion quarter. With either method, the picture confirms the regression evidence in the main text. Specifically, in acquirers employing more intangibles talk GW rises more and SIA increases less than for comparison firms.

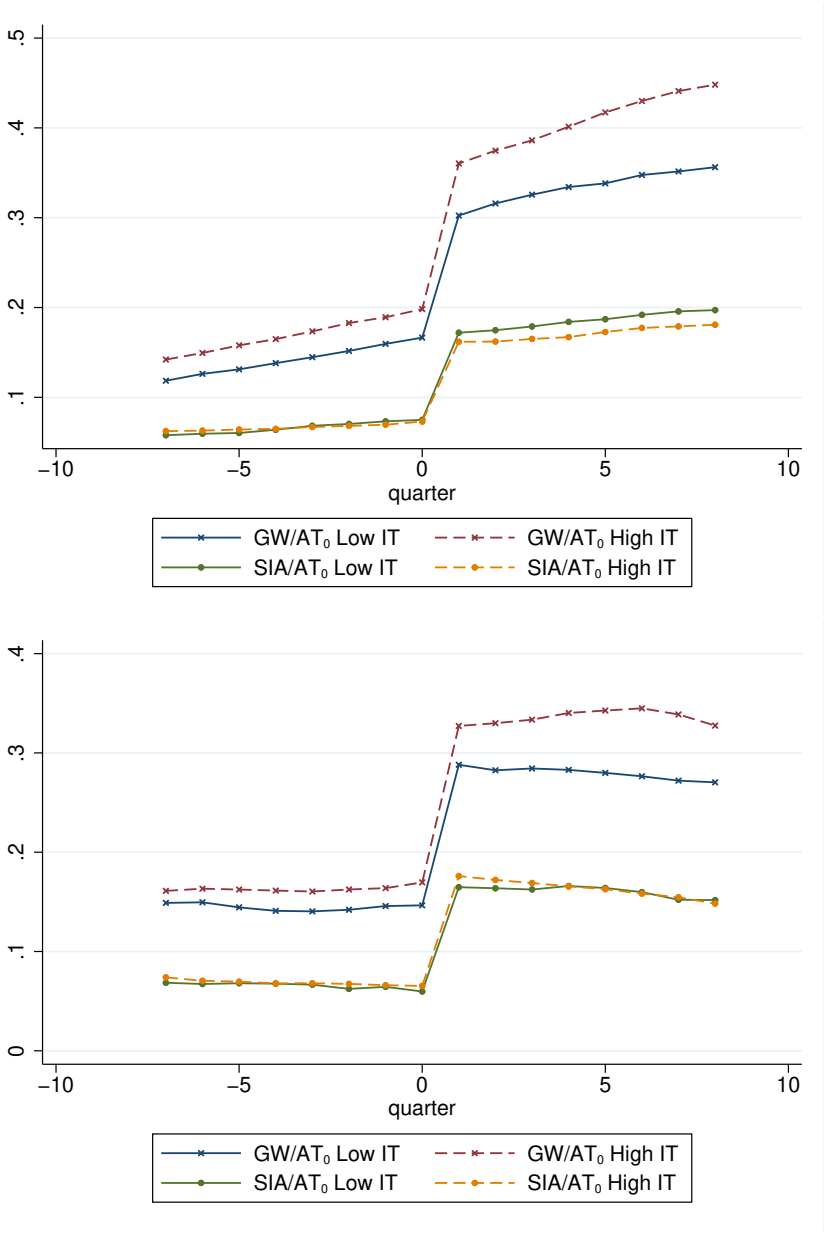


Figure SA.1: Acquirer intangible assets

The figure plots separable intangible assets and goodwill of the acquirer relative to the book value of total assets in quarter 0 over 16 successive quarters – 8 quarters before and 8 quarters after the deal completion date. Quarter 0 is the most recent quarter before the deal completion date. The sample is split by the median intangibles talk (IT) within subsamples that have the same target public status, payment method (cash vs. non-cash) and relative size (high vs. low). Separable intangible assets (SIA) are defined as acquirer balance sheet intangible assets minus goodwill (GW). Intangibles talk is defined as the frequency of intangibles words in takeover announcements. The sample consists of the completed takeovers announced between January 2002 and December 2019 with an acquirer that is a publicly traded company domiciled in the United States. The top figure uses the sample of completed deals. The bottom figures uses the sample consisting of 583 completed deals where the acquirer does not acquire another company within ± 2 years around the announcement day.

C. Data appendix

C.1 8-K download and identification

The download procedure starts with quarterly master index files from EDGAR. The indexes can be found at the following location: https://www.sec.gov/Archives/edgar/full-index/[year]/QTR[1-4]/master.zip, and have entries in this form: CIK|CompanyName|FormType|DateFiled|Filename.[48] The indexes contain the whole universe of filings. We loop through them and look for the CIK codes from our takeover sample that are associated with the 8-K form type, and are filed no later than 4 business days after the announcement date.[49] We allow for filings that are made one business day before the announcement date reported by SDC due to inconsistencies across EDGAR and SDC (see Section C.2). Some companies file multiple 8-Ks within 4-day period after the announcement, which requires additional verification checks.

When companies file with the SEC they rarely submit only one document. EDGAR takes all filing documents, processes them, and then bunches those together into a single text file. A typical 8-K filing has a SEC header and one or more documents that follow. There is no announcement date nor announcement time specified in the header. The acceptance time field is missing in some filings. Acquisition announcements are saved in one of the documents that follow the header. The documents can be either in *text*, *html* or *pdf* format. Each one starts with the <DOCUMENT> tag that is followed by a number of document header fields after which comes the actual content bounded by the <TEXT> and </TEXT> tags. The documents end with the </DOCUMENT> tag. The document header contains a type, a sequence number, filename and the document description. Press releases of acquisition announcements are saved in the documents that are labelled as Exhibit 99, Exhibit 99.1, Exhibit 99.2, etc. There is no document type or attachment number that uniquely identifies acquisition filings or acquisition announcement press releases. We parse all filings and identify the documents we need based on their content.

First, we split 8-K files into documents using document tags, <DOCUMENT> and </DOCUMENT>. The text files extracted from an 8-K filing are already in the format that can be used in the further analysis, while both html and pdf files need some additional processing before we can get any useful text from them. Html files have a lot of overhead in the form of html tags that carry no announcement information, but rather give structure to unstructured text. Pdf files have no overhead, but are in the binary format. We use Apache Tika to clean documents that are in the html or pdf format. This procedure works immediately with html documents. It fails when applied directly to pdf files extracted and saved in the form they are found in 8-K text files. The procedure does not work because pdf files are encoded using uuencoding, a form of binary-to-text encoding, before they are put into the 8-K text files. Therefore, we first decode pdf files, that is translate them from text to the binary format, and then we apply Tika methods on the decoded pdf files. This yields clean text that can be used for announcement detection

[48] For example, the first quarter master index file in 2007 is located here:
https://www.sec.gov/Archives/edgar/full-index/2007/QTR1/master.zip
and one of its entries is:
1004155|AGLRESOURCESINC|10-K|2007-02-07|edgar/data/1004155/0001004155-07-000038.txt

[49] We construct a business day calendar by downloading the S&P 500 index from CRSP and keeping only trading dates from the set.

and further textual analysis.

The next task is the most challenging one, the announcement identification itself. We read and analyze dozens of the documents that we have extracted from 8-K files. We then develop a procedure that aims to replicate our own reasoning behind the conclusion we make when facing a problem to identify announcements, and minimize the number of the documents wrongly labeled as potential announcements. We find that a typical announcement press release document has a title section that is followed by an announcement body. The title section can be very short and contain only the title itself, but there are cases when it is rather long with many bullet points and additional information. The announcement body typically starts with *Place* + *Date* + *Acquirer* + *Acquirer Ticker*, "the body start" hereafter. Yet there is some variation. For example, any of these 4 elements might be missing: date is referenced using "today", a year is missing, the date comes before the place, or the acquirer and its ticker might not be mentioned immediately after the date. Section C.3 provides an example.

We split the announcement identification procedure in 2 steps. The first and more restrictive step relies on the analysis of the beginning of the document only. The second step applies less restrictive requirements on the set of deals that have no announcement document found after the first step. Put differently, the second step checks the deals with no announcement found and picks the related documents that did not meet more restrictive criteria checked in the first step.

The first step starts with requirements that a document:

- is an *Exhibit 99* document,
- is neither defined as a conference call nor financial results release in *the description field*,
- does not contain conference call speech words, e.g. good day, dear etc. (see Section C.5 for the full list), which are typically not used in acquisition announcements, and
- contains words that indicate purchase (acquire, purchase, merge etc., see Section C.5).

A document is *Exhibit 99* if its type field starts with *ex-99*, *ex99* or *ex 99*, case-insensitive (for example `<TYPE>EX-99.1`). We identify the body start in any of its possible forms mentioned earlier. We exploit regular expressions for that task. If the body start is not detected within the first 300 words, we disregard the document. If we find the body start, we then inspect text before it, which is in fact the title section. If the title section contains no purchase words nor the target name, but it contains the conference call (which are not the same as conference call speech words), financial results, or public or tender offer words, we disregard the document. Next, we check text that follows the body start. This is the point in text that usually clearly specifies what the document talks about. A topic is usually clearly stated in the first paragraph. We inspect 150 words that follow the body start and require that both purchase words and the target name is detected. If a document passes all these checks, we label it as a potential announcement. We say potential because there can be more than one document that passes all checks. The requirements listed do not necessarily uniquely identify documents that are acquisition announcements. For example, an 8-K filing may, despite not being an acquisition announcement, mention the target and meet the rest of criteria (e.g. quarterly earnings announcement, conference call transcripts, a presentation of the deal, etc.), or when an amend-

ment (8-K/A) is issued following the announcement (8-K).[50] Even though we observe multiple documents, only one, in fact, is the announcement itself.

The second step helps identify deal announcements that the first step fails to find. A drawback is that it occasionally labels multiple documents as announcements what requires manual inspection. However, the number of such cases is rather small as the first step already did a good job for the major part of the deals. The second step is simpler than the first one. It does not distinguish between the title section and announcement body, but relies simply on the set of requirements that the full document has to meet in order to qualify as a potential acquisition announcement. In addition to the content-based filters listed below, we require that the minimum word count is more than 30 words and less than 5,000. in terms of content, we require that a document:

- is an *Exhibit 99* document,
- is neither indicated as a conference call nor a financial results release in the description field,
- mentions the target name,
- contains words that indicate purchase (acquire, purchase, merge etc.), as in Section C.5
- contains announcement words either in the document description field or text (press release, acquisition announcement etc.), and
- contains a "forward-looking statement" disclosure.

SDC does not always record target names in the form they appear in the announcements: short names are used, words such as Inc., Corp., etc. might be omitted, subsidiaries are described if they do not have a name etc. For these reasons we use a fuzzy search procedure (Section C.4).[51] We require that the fuzzy match score is at least 70% in order to confirm that the target name is found in the document.Forward looking statement is something that we observe in all announcements checked, hence we include it in the list of requirements.

C.2 SDC and EDGAR inconsistencies

There are some inconsistencies regarding announcement dates between SDC and EDGAR. In order to include cases like the one shown below, we have to allow for announcements made 1 business day before the announcement date in SDC.

Example:

SDC Deal Number: 2167136040
SDC Announcement date: **2010/03/24**

SEC Filing Date: **2010-03-23**
SEC 8K announcement text:
*"ROGERS, Conn.–(BUSINESS WIRE)–**March 23, 2010**–Rogers Corporation (NYSE:*

[50] We have also found cases of a company filing the same announcement two times within the same day (e.g. CIK: 0000880460; "*December 23, 2011 – Perfumania Holdings, Inc. (NASDAQ:PERF) and Parlux Fragrances, Inc. (NASDAQ:PARL) announced today that they have signed a definitive merger agreement...*")

[51] Packages that implement fuzzy search algorithms are readily available in Java. We use FuzzyWuzzy library.

ROG) ***announced today*** *that it has signed an agreement with SK Chemicals Co. Ltd. of South Korea, to acquire SK Utis Co., Ltd., its high performance polyurethane foam manufacturing unit located in Ansan, South Korea...”*

C.3 Typical acquisition Announcement structure

A typical announcement press release document has a title section that is followed by an announcement body. The title section can be very short and contain only the title, but there are cases when it is rather long with many bullet points and additional information. The announcement body typically starts with this structure: *Place* + *Date* + *Acquirer* + *Acquirer Ticker* (Figure SA.2). Yet there is some variation. For example, any of this 4 elements might be missing, the date may be referenced using “today”, the year may be missing, the date may come before the place, or acquirer and its ticker might be mentioned not immediately after the date.

```
NEWS RELEASE




FOR IMMEDIATE RELEASE
```

Title section

```
Telephone and Data
Systems Agrees to Acquire BendBroadband



Supports Cable and
Broadband Growth Strategy
```

```
CHICAGO, Ill., (May 1, 2014) - Telephone and Data
Systems, Inc.  [NYSE: TDS], parent company to TDS
Telecom, today announced an agreement to acquire
substantially all of the assets of a group of
companies operating as BendBroadband, headquartered in
Bend, Oregon, for a purchase price of $261 million
...
```

Announcement body

Figure SA.2: Typical announcement press release

C.4 Target name detection (fuzzy matching)

Example:

1. SDC deal number: 2012952020
   SDC target name: **Pernod Ricard SA-Cruzan Rum**
   8K: 0001193125-08-189343

8K announcement text:
"Under the agreement, Pernod Ricard will pay Fortune Brands $230 million in pre-tax proceeds, and Fortune Brands will pay $100 million to ***Pernod*** *to acquire the premium* ***Cruzan Rum brand****..."*

2. SDC deal number: 1313490020
   SDC target name: **Smurfit-Stone-Industrial Pkg**
   8K: 0000950144-02-007750
   8K announcement text:
   "Caraustar Industries, Inc. (NASDAQ-NMS Symbol: CSAR) today announced that it has entered into a definitive agreement with a ***subsidiary*** *of Smurfit-Stone Container Corporation (NASDAQ:SSCC) to acquire substantially all the assets (excluding accounts receivable) of* ***Smurfit's Industrial Packaging Group business*** *for a purchase price of approximately $79.8 million..."*

3. SDC target name: **Frank's Tubular Intl Inc**
   8K announcement text:
   "Dallas, TX, May 29, 2003—Lone Star Technologies, Inc. ("Lone Star") (NYSE:LSS) today announced that it has signed a definitive agreement to acquire the assets of ***Frank's Tubular International*** *("FTI"), a Houston-based provider of high-quality threading and inspection services, ..."*

C.5 Word lists used in the 8-K parsing

Purchase	Announcement	Financial Results	Public or Tender Offer	Conference Call	Completion	Acquisition	Months	ConfCall Speech
acquire	press release	quarter	public offer	conference call	close	acquisition	Jan.	good morning
acquires	news release	quarters	tender offer	transcript	closes	merger	Feb.	good day
acquiring	press announcement	full year	stock offer	script	closed	purchase	Mar.	good afternoon
acquired	news announcement	full-year	private placement		closing		Apr.	good evening
acquisition	acquisition announcement	fiscal year	offering		complete		Jun.	hello
acquisitions	merger announcement	results	issue		completes		Jul.	hi
purchase	purchase announcement	earnings	issues		completed		Aug.	dear
purchases	immediate release	net income	issuing		completing		Sep.	ladies and gentlemen
purchasing		revenue	issued		completion		Oct.	
purchased		revenues	issuance				Nov.	
buy		financial guidance					Dec.	
buys							January	
buying							February	
bought							March	
merge							April	
merges							May	
merging							June	
merged							July	
merger							August	
mergers							September	
definite agreement							October	
definite agreements							November	
expand							December	
expands								
expanding								
expanded								
expansion								

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