# Information Asymmetry/ Uncertainty and M&A Performance

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## Dedications

To my mother, who has given me endless love and support

To my father, who would have been thrilled for this outstanding achievement if he was alive

## Abstract

This study contributes to the mergers and acquisitions as well as the informational transparency literature – by examining the relationship between a firm's analysts' forecast error/ informational uncertainty and M&A outcomes. Contrary to our conventional wisdom, we find that an acquiring firm with more forecast errors and informational uncertainty (firm risk, as expressed by stock return variation) tends to have more favorable abnormal market reactions. Whereas a target firm with more forecast errors and informational uncertainty tends to have less favorable abnormal market reactions. As the relation between acquirer forecast errors and informational uncertainty looks counter-intuitive, we further delve into this issue.

We find that, in general, firms with higher analysts' forecast errors and informational uncertainty tend to make fewer acquisitions, which implies that firms with lower informational quality are more selective in their acquisitions. Further, we find that the positive relationship between forecast error/ informational uncertainty and CAR is primarily driven by non-public target acquisitions. In the sub-sample analyses - where we consider only public target firms, our results show that acquirers with higher forecast errors and uncertainty end up acquiring targets with higher forecast errors and weaker firm performance. These findings offer some plausible explanation for the non-significant relation between acquirer analysts' forecast errors/ informational uncertainty and M&A market reactions. It appears that market participants are less enthusiastic about public target acquisitions by acquirers with more inferior informational quality.

## 1. Introduction

Mergers and Acquisitions (M&As) are one of the most major incidents in the corporate finance area, which are consequential not only for the firms but also for the economy in general (Fuller et al., 2002). They can bring about considerable benefits (Bao and Edmans, 2011), help entities gain a larger market share, have synergistic merits, and may lead to an increase in a company's overall performance efficiency (Napier, 1989).

On the other hand, they are not constantly bringing advantages for the shareholders, and a great number of them lead to failures and value destructions (Masulis, Wang, and Xie, 2007; Roh, 2011). A study by Doseck, 2012, claims that a 65% failure rate is involved with mergers and acquisitions. Accordingly, a large number of studies have examined relevant factors (e.g., firm size, M&A payment method) that affect M&A performance and shareholder wealth in a firm. Despite this voluminous literature on M&A, very few studies have examined the effect of informational environment surrounding an M&A deal (such as information asymmetry between firm management and market participants) that may affect M&A performance significantly (Luypaert and Caneghem, 2017). Using different types of proxies such as analyst coverage, forecast error, and dispersion, Luypaert and Caneghem (2017) examined the joint effect of information asymmetry and uncertainty on the payment method and the wealth created in M&As. They report that acquisitions with more information asymmetry on the target side are more likely to be pursued through cash offers and the acquirers receive most of the synergistic gains. While Luypaert and Caneghem (2017) present some insightful conclusions, they primarily rely on indices of

analyst perceptions and abilities to gauge the information asymmetry between firm management and market participants, and they do not profoundly focus on an important proxy such as forecast error to analyze its demeanor. Further, they do not consider the reasons for the eccentric behavior of forecast error to understand why it is not in line with the other proxies and has a positive influence on M&As performance. We address these issues in this study.

More specifically, we add to the literature by exploring the impacts of readability of the annual 10-K filings (as a measure of information quality) and the M&A performance. Literature documents that a firm's narrative disclosure (such as annual reports) reveals valuable information to market participants and various stakeholders (Hasan, 2020; Loughran & McDonald, 2014). The quality of narrative disclosures is indicative of a firm's informational environment and can be a proxy for information asymmetry between firm management and market participants. For instance, poorly performing companies may resort to more complex and less readable disclosures to hide their operations and revenue-generating performance (Li, 2008; Hasan, 2020). Therefore, the readability of acquirers' and targets' 10-K reports is likely to provide helpful information about an M&A deal's informational environment and its apparent effect on M&A performance.

To be more precise about our contributions, in this study:

- We additionally consider readability measure of a firm's annual report (i.e. Bog index) as a as a proxy for information asymmetry.

- We intensely focus on important information asymmetry proxies such as analyst forecast error and uncertainty to find out the reasons for the counter-intuitive results which we observe at first glance in our examinations. While it is thoroughly accredited in the literature that forecast error is one of the main proxies to measure information asymmetry of the firms (Krishnaswami and Subramaniam, 1999; Sadka and Scherbina, 2007; Chemmanur et al., 2009; Lehavy et al., 2011; Chatterjee, John, and Yan, 2012; Luypaert and Caneghem, 2017), to the best of our knowledge there is no prior study which utterly investigates the effects of forecast error on M&As' performance from different aspects to understand its odd behavior in M&As area.

## 2. Literature review and hypothesis development

### 2.1. Background on M&A performance

"Mergers and acquisitions are enduring phenomenon. Year after year firms acquire other firms both big and small, private and public, foreign and domestic, and inside and outside their industry" (Raymond, 2006, p. 55). They are used as strategic and essential tools for companies to reach their specific goals (Sudarsanam, 2003). Mergers and acquisitions are probably the most significant decision a firm can make for its corporate resource allocation (Harford and Li, 2007). They happen when two separate companies combine their assets and liabilities to become one entity (Frantlikh, 2003).

Several researches have studied the merits that M&As can bring for the firms to understand the motives of conducting these events for the shareholders, managers, and the whole company. Larsson (1990) stated that an acquirer could increase the number of its customers by absorbing the acquired firm's customers, and in this way, they can expand their market share. Furthermore, M&As will bring synergetic benefits for the entities and increase the firm's overall performance by providing the opportunity of sharing resources, knowledge, and skills in both companies (Napier, 1989).

On the other hand, it has been widely affirmed that mergers and acquisitions do not always create value for the shareholders (Masulis, Wang, and Xie, 2007). They are involved with high rates of failure (Roh, 2011). Malmendier and Tate, 2008, stated that in just two decades, U.S. companies expended over 3.4 trillion on about 12,000 mergers. While M&As should have increased shareholders' wealth, from 1980 to 2001, acquiring shareholders lost over 220 billion on the announcement day of the deals. According to Doseck (2012), mergers and acquisitions experience a failure rate of 65%, and they will not reach their objectives.

Prior studies tried to detect the drivers of M&As success and failure. They refer to different managerial and organizational factors that affect M&A performance. Effective planning, integration and external factors, economic and business certainty, target valuation accuracy, regulations, politics, and cultural environment of the acquiring and target firms have been pointed as the most repeated and common factors in different researches (Gadiesh et al., 2001; Epstein, 2005; Bruner, 2005; Calipha et al., 2010; Weber

et al., 2013; Deloitte M&A trend report, 2017; Qaderi and Bouzeid, 2017). In a case study at Deutsche Post DHL, Qaderi & Bouzeid (2017) explored the likely impact of three M&A performance factors: Finance and capital market, strategic management, and organizational behavior factors. They suggested the firm would be better off having a clear and independent framework for the M&A team to better track the performance of the acquisition after the deal.

## 2.2. Background on information asymmetry and uncertainty

Information asymmetry can cause a significant level of mispricing in the market (Li, Lu, and Lo, 2019). Since merger and acquisitions are substantial corporate activities that change the structure of the companies and introduce uncertainty about the firms' future (Huseman, 2018), they provide a matchless environment for testing the effects of information uncertainty and asymmetry on the advantage gained during the process and the value created for the shareholders (Luypaert, and Caneghem, 2017). M&A literature has shown that information uncertainty, and asymmetry will influence the wealth of shareholders and the deal properties (Luypaert, and Caneghem, 2017; Moeller, Schlingemann, and Stulz, 2007; Fishman, 1989; Eckbo, Giammarino, and Heinkel, 1990; Chemmanur, Paeglis, and Simonyan, 2009; Officer, Poulsen, and Stegemoller, 2009). The majority of the decisions in the M&A process (e.g., payment method, offer premium) are affected by different kinds of information accessible to the parties involved in the M&A deal process (Raman, Shivakumar, and Tamayo, 2013; Luypaert, and Caneghem, 2017).

Therefore, studying the impacts of information asymmetry, specifically in the context of M&As, is of great importance. In addition, when it comes to M&As, a combined effect of information uncertainty can be studied as both parties seem opaque to each other, and some misevaluations might occur (Luypaert and Caneghem, 2017). Luypaert and Caneghem, 2017, examined the double-sided effect of the target and acquirer information asymmetry and uncertainty on the payment method and the wealth created with a sample of 1,725 US acquisitions. They found that the bidders who acquire more uncertain firms will accrue more gains and they avoid sharing the wealth created with the target shareholders. Li and Tong, 2017, examined the target firm's information uncertainty, and they found that an opaque firm has a lower valuation, and acquiring a target with lower information quality, brings more gain for the acquirer shareholders.

Management guidance provides a significant source of information to the capital market (Lee et al., 2012). Market participants, shareholders of the involved firms in the M&A deal, and analysts benefit from management guidance in an uncertain informational environment (Huseman, 2018). Previous studies provide some evidence that management makes an effort to improve the informational environment of a firm (Ajinkya and Gift 1984; Ajinkya et al., 2005; Karamanou and Vafeas 2005; Lennox and Park 2006; Hui et al., 2009; Lee et al., 2012). However, it is not just the management who can provide practical information to the investors and other market participants. Financial analysts also play a crucial role in reducing information asymmetry between the insiders and outsiders of a firm (Luypaert and Caneghem, 2013).

### 2.2.1. Financial analysts and information asymmetry

Information intermediary could be a proper title for the role analysts play in the financial markets (Li, Lu, and Lo, 2019). They gather, interpret and broadcast complicated information to the public that otherwise would have been difficult for the less informed investors to understand (Luypaert and Caneghem, 2013; Li, Lu, and Lo, 2019). In this process, they help to reduce the information asymmetry and contribute to the performance monitoring of a firm (Li, Lu, and Lo, 2019). Their forecasts and coverage influence stock prices, returns and help participants anticipate the bubbles and crashes of the market more accurately – which also contribute towards market efficiency (Gleason and Lee, 2003; Lee and So, 2017; Kim, Lu, and Yu, 2019; Andrade, Bian, & Burch, 2013).

Many attributes of financial analysts, e.g., analyst coverage, forecast error, dispersion, reports, and recommendations, have drawn attention in the prior studies (Kothari et al., 2016). Barber et al., 2006, documented that stock returns can be predicted by the changes in analysts' reports. Other researches illustrate that higher analyst coverage decreases noise in the market, reduces the cost of capital, results in higher valuation, elevates market liquidity, and advances the IPO firms' performance. (Das, Guo, and Zhang, 2006; Schutte and Unlu, 2009; Lang, Lins, and Miller, 2004; Bowen, Chen, and Cheng, 2008; Roulstone, 2003).

Analysts also play a key role in the M&As market. Based on Luypaert and Caneghem, 2013, higher abnormal returns and more considerable gains for the bidder result from the

target being followed by fewer analysts, while higher analyst coverage on the acquirer side decreases the more negative stock reactions at the announcement of the offers.

Besides the quantity of analysts following, the quality of the information provided by the analysts has been well examined. Prior studies use the dispersion in analysts' forecasts and the forecast error as the main proxies for testing the quality in analysts' reports (Krishnaswami and Subramaniam, 1999; Chemmanur et al., 2009; Chatterjee, John, and Yan, 2012; Luypaert, and Caneghem, 2013; Luypaert and Caneghem, 2017). Chaterjee et al., 2012, and Luypaert, and Caneghem, 2013, both found that the target abnormal returns are positively impacted by the target analyst dispersion; and a higher fraction of total M&A gains following the increase in the target analyst forecast error is documented by Luypaert, and Caneghem, 2013. Higher forecast errors and higher forecast dispersions represent higher information asymmetry (Lehavy et al., 2011; Luypaert, and Caneghem, 2013); also, higher analyst disagreement has a positive association with mispricing (Sadka and Scherbina, 2007). Since the variation in the analysts' opinions can be inferred as lower information quality, it is used as a measure of the quality of a firm's informational environment (Luypaert and Caneghem, 2017).

### 2.2.2. Readability Index and information asymmetry/ uncertainty

Investors, analysts, regulators, and all market participants, use the yearly reports, 10-Ks, filed by public firms as a vital source of information (Hasan, 2020). They use this essential information to understand the firm's past, current, and future performance, get a general outlook about the operations and the company's overall informational environment

and understand the fundamental business prospect of a firm (Clarkson et al., 1994; Loughran & McDonald, 2014). Therefore, it is beneficial for a firm to make these reports (e.g., 10-K reports) more accessible and less complex (Bonsall, Leone, Miller, & Rennekamp, 2017). This is why the policymakers such as the Securities and Exchange Commission (SEC) have emphasized the readability of these reports and made some guidelines to make the reports simpler and more accessible to shareholders and other market participants (Hasan, 2020).

Loughran & McDonald, 2014, has defined readability as "the effective communication of valuation-relevant information," and since it gives the users an outlook of the firm's uncertainty and information disclosure, the literature counts the readability as an important factor for performance monitoring (Hasan, 2020; Loughran & McDonald, 2014; Bloomfield, 2002; Li, 2008; Bonsall et al. 2017). Previous studies documented that the readability index is relevant to a firm's price discovery and trading factors, credit ratings, analyst coverage, and the precision of analysts' forecasts (Ertugrul et al., 2017; Bonsall & Miller, 2017; Lang & Stice-Lawrence, 2015; Loughran & McDonald, 2011). Poor performing firms tend to produce less readable, more challenging to understand, and more complex annual reports to mask their profitability and to prevent undesirable consequences of the market through a less transparent informational environment (Hasan, 2020; Li, 2008; Bloomfield, 2002; Bonsall et al., 2017). In addition, Baxamusa et al., 2018, found that readability in 10-K reports directly correlates with cumulative abnormal return in the context of a strategic alliance announcement.

Given that the readability of the annual 10-K disclosures is a signal of the firm's informational environment to the market participants, in this study, we aim to explore the effects of the readability index in mergers and acquisitions decisions and its influence on the M&A performance in line with forecast error and uncertainty as the main variables of information transparency.

## 2.3.Hypotheses

In light of the above literature and the previous studies, we have come up with the two following views to be discussed and examined in our research.

Some studies claim that information asymmetry, in general, leads to higher stock returns for the firm. By dividing analysts' forecast dispersion into information asymmetry and uncertainty components, Barron et al., 2009, showed that information asymmetry is positively associated with future stock returns. Furthermore, Diether et al., 2002, found that higher levels of information asymmetry make the stocks overpriced, and overpricing brings higher returns in stock financed M&A deals.

On the other hand, as discussed in earlier sections, information asymmetry can cause some levels of mispricing in the market (Li, Lu, and Lo, 2019). Diether et al., 2002, also claims that investors pay a premium due to the overpricing caused by higher information asymmetry, which lowers future returns resulting in a negative relationship between information asymmetry and future returns.

Moreover, in a non-transparent merger and acquisition context, conflicts of interest between shareholders and managers might manipulate the deal's outcome. M&As can be means of spending cash instead of sharing it with the shareholders; therefore, managers of the firms with significant cash holdings are likely to participate in less profitable or even value-destroying deals, which leads to lower M&A gains (Jensen,1986).

Assume financial analysts have access to transparent information. In this case, they are more likely to provide accurate forecasts. As many decisions in the firms' daily operations and the M&As process are based on the extent of information accessible, we suppose that a more transparent information environment leads to better corporate decisions and better performance in mergers and acquisitions.

Following Moller et al., 2007 and Luypaert & Caneghem, 2017, we predict that information asymmetry and uncertainty on the acquirer's side are negatively associated with the acquirer's abnormal returns.

Thus, hypotheses (1a) and (1b) are as follows:

> Hypothesis 1a. Acquirer's abnormal return is negatively influenced by the acquiring firm's forecast error.
>
> Hypothesis 1b. Acquirer's abnormal return is negatively influenced by the acquiring firm's uncertainty.

Similarly, for target firms, hypotheses (2a) and (2b) are as follows:

> Hypothesis 2a. Target firm's abnormal return is negatively influenced by the target firm's forecast error.
>
> Hypothesis 2b. Target firm's abnormal return is negatively influenced by the target firm's uncertainty.

Variables and the models used to examine these relations are explained in the data and methodology section.

## 3. Data and methodology

### 3.1.Data

This study will include all completed U.S. mergers and acquisitions with announcement dates between 1994 and 2017. M&A data will be collected from the Securities Data Company (SDC) Platinum M&A database. Then to test the hypotheses and to run the regression models, we needed to merge the SDC Platinum database with Institutional Brokers Estimate System (I/B/E/S) dataset to get the analysts' related data, which contains all the Standard & Poor's 1500 (S&P 1500) companies' earnings forecasts provided by different analysts every fiscal year. Furthermore, financial data and stock returns are collected from Compustat and the Center for Research in Security Prices (CRSP),

respectively. Readability and bog-index-related data are derived from WRDS and Brian P. Miller's website[1], making the data publicly available.

After the data collection process, we used STATA software to prepare, clean, and merge the data, write the required codes, and conduct the analyses. We have two different data files, Event-Based descriptive and Firm-Year descriptive. We require firms have no missing value and a transaction value of more than one million in the Event-Based analyses. Table 1 shows the variables used in our study and their definitions.

<Insert Table 1>

## 3.2.Methodology

This study investigates the double-sided effect of information asymmetry and uncertainty on M&A performance using a U.S. sample over the 1994 – 2017 period. First, we examine the effects of information asymmetry on M&A performance using both the acquirers' and the target firms' perspectives. Then we add some other regressions and analyses to figure out the logic behind the relation between the firms' informational environment and M&A performance. We use the following regression models to examine our research questions.

[1] https://kelley.iu.edu/bpm/activities/ bogindex.html.

Hypothesis (1a) concerns the effect of analyst forecast error on CAR. The dependent variable, CAR, is the cumulative abnormal stock return on the days around the merger announcement. For the accuracy of analysts' forecasts, we use the analyst detailed forecast file from the I/B/E/S database. Forecast error for each company is based on Hirshleifer, Lim, and Teoh, 2009, which is the difference between analysts' consensus forecasts and the actual earnings announcement by the company, scaled by the fiscal year-end share price. Several control variables are included in our model. Leverage is the debt to the total asset of the company. Size is the market capitalization of the company at the end of each fiscal year. Sales growth is the year-over-year sales growth of the company. Firm age is the number of years since the firm first appeared in the CRSP database. Big-4 auditor accounts for whether the firm is using one of the Big 4 accounting firms. The institutional investor is the portion of the firm's equity that institutional investors own. The public target dummy is the target firm being public or non-public. Percentage cash is the percentage of the deal being paid by cash, and finally, Related deal stands for whether the four digits SIC is the same for the target and acquiring firms.

*To examine the impact of analyst forecast error on acquirer's performance:*

$$\text{Acquirer CAR} = \beta0 + \beta1*\text{Forecast Error} + \beta2*\text{Bog index} + \beta3*\text{Leverage} + \beta4*\text{Firm Size} + \beta5*\text{Sales Growth} + \beta6*\text{Firm Age} + \beta7*\text{Big-4 Auditor} + \beta8*\text{Institutional Ownership} + \beta9*\text{Public Target Dummy} + \beta10*\text{Percentage Cash} + \beta11*\text{Related Deal} + \beta12*\text{Industry fixed effect} + \beta13*\text{Year fixed effect}$$

We use the Bog index as the measure for the readability of the annual 10-K reports of the listed companies. The bog index is a measure of plain English readability, and the less readable reports show higher levels of the Bog index (Hasan, 2020). It is added to the regression to explore the effect of the readability of 10-K disclosures in line with forecast error on CAR.

Hypothesis (1b) is about the effect of the information uncertainty on CAR. We use the standard deviation of the past 60 monthly returns of the firms to measure a firm's volatility and information uncertainty.

*To examine the influence of information uncertainty on acquirer performance:*

$$\text{Acquirer CAR} = \beta0 + \beta1*\text{Forecast Error} + \beta2*\text{Bog index} + \beta3*\text{Uncertainty} + \beta4*\text{Leverage} + \beta5*\text{Firm Size} + \beta6*\text{Sales Growth} + \beta7*\text{Firm Age} + \beta8*\text{Big-4 Auditor} + \beta9*\text{Institutional Ownership} + \beta10*\text{Public Target Dummy} + \beta11*\text{Percentage Cash} + \beta12*\text{Related Deal} + \beta13*\text{Industry fixed effect} + \beta14*\text{Year fixed effect}$$

Hypotheses (2a) and (2b) seek to explore the same analyses as in hypotheses (1a) and (1b) from the target company's perspective. As in this research, we are enthusiastic about figuring out the double-sided effect of information asymmetry and uncertainty on both targets and acquiring firms; we try to also test our models on the target side as much as we have the relevant data.

*To examine the impact of the target's analyst forecast error on the target's abnormal returns, we use the following regression model:*

Target CAR = β0 + β1*Forecast Error + β2* Leverage + β3*Firm Size + β4*Sales Growth + β5*Firm Age + β6*Big-4 Auditor + β7*Institutional Ownership + β8*Percentage Cash + β9*Related Deal+ β10*Industry fixed effect + β11*Year fixed effect

*To examine the impact of the target's uncertainty on the target's abnormal returns, we use the following regression model:*

Target CAR = β0 + β1*Forecast Error + β2*Uncertainty + β3* Leverage + β4*Firm Size + β5*Sales Growth + β6*Firm Age + β7*Big-4 Auditor + β8*Institutional Ownership + β9*Percentage Cash + β10*Related Deal+ β11*Industry fixed effect + β12*Year fixed effect

It is worth mentioning that independent variables such as Forecast error, Bog index, and Uncertainty, as well as other control variables in hypotheses 2a and 2b, account for the target firm.

## 4. Results

Table 2 reports the summary of descriptive statistics of the principal variables in the regression models with the number of observations, mean, standard deviation, minimum, and maximum. Panel A includes the descriptive statistics from our Event-Based descriptive file, and Panel B displays the descriptive statistics of the main variables from the Firm-Year descriptive file. M&A-related variables, including cumulative abnormal returns, acquiring probability, public target dummy, percentage of cash, and related deal, are from the SDC Platinum database. Forecast error and uncertainty as measures of information asymmetry and uncertainty are calculated from IBES and CRSP-Compustat datasets. Other firm-related control variables include leverage, firm size, sales growth, firm age, Big 4 auditor, and institutional investors' ownership.

<Insert Table 2>

Table 3 indicates the correlation between the main variables of our study and the significance of their pairwise t-test at one, five, and ten percent. As shown in the table, almost all the main variables have a significant pairwise correlation. We also have two panels for table 3. Panel A shows the correlation matrix for the variables from the Event-Based descriptive file; Panel B indicates the correlation matrix of the main variables from the Firm-Year descriptive file

<Insert Table 3>

### 4.1. The relation between acquirer's forecast error and uncertainty with acquirer's CAR (H1a, H1b)

Tables 4 and 5 represent the impact of forecast error and uncertainty on acquiring firms' Cumulative Abnormal Returns. Model 1 includes more commonly used variables (e.g., Leverage, Firm Size, Sales Growth, Firm Age, Big-4 Auditor, Institutional Ownership, Public target Dummy, Percentage Cash, and Related Deal). While model 2 adds the Bog Index to observe its impact on the analysis. Table 5 has the same variables as table 4, and it also adds 'Uncertainty' to both models 1 and 2.

Based on the literature, we expected to observe a negative relation between forecast error and the acquiring company's CAR. However, as model 2 in the following tables (table 4 and 5) depict, the acquirer's CAR is significantly and positively correlated with forecast error (coefficient of 0.1570, at 5% significance level; and coefficient of 0.1428, at 5% significance in models 2 of both tables 4 and 5). Table 5 also shows similar results for informational uncertainty (proxied by a firm's standard deviation of past stock returns). These results do not support our hypotheses 1a and 1b. As the relation between acquirer forecast errors and informational uncertainty looks counter-intuitive, we further delve into this issue in subsequent sections.

In line with M&A literature, from Tables 4 and 5, we find that firm size, sales growth, institutional ownership, and public target dummy have a negative impact on abnormal returns. At the same time, percentage cash and related deal variables are positively correlated with CAR. Although the literature has been agreed on the readability of annual

10-k filings and the Bog index as a measure of a firm's informational transparency, we do not see a meaningful relationship between this variable and abnormal returns of acquisitions in models 2 of tables 4 and 5.

<Insert Table 4>

<Insert Table 5>

While the literature seems to be scant in this research domain, Luypaert and Caneghem (2017) mention that forecast error does not follow the same path as the other information asymmetry proxies. "Surprisingly and in contrast to our other proxies for information asymmetry and uncertainty, we observe a significantly positive coefficient of acquirer analyst forecast error on the likelihood of cash payment. This suggests that a higher forecast error by analysts does not increase the likelihood of market-timing behavior" (Luypaert and Caneghem, 2017, p. 889). However, they did not go further in their study to explore the reasons for such inconsistent results. We try to find some plausible explanations for this apparently counter-intuitive result in the subsequent sections (section 4.3).

## 4.2. The relation between target's forecast error and uncertainty with target's CAR (H2a, H2b)

Table 6 depicts the results of the relationship between the target firm's forecast error and cumulative abnormal returns of the target, as well as the impact of uncertainty on CAR (in model 2) as a target's perspective. As we hypothesized in H2a and H2b, forecast error negatively influences the target's performance. Model 1 signifies a significant negative coefficient (-0.4972) at a 5% confidence level. Model 2 accredits the results with the presence of uncertainty, which gives a coefficient of -0.5080 at a 5% significance level for the forecast error. This means that a potential target with a poor informational environment (i.e., transparency and uncertainty) is likely not to benefit from the M&A gains.

Leverage, firm size, sales growth, firm age, Big-4 Auditor, institutional ownership, percentage cash, and related deal are the most commonly used variables in M&A literature. We also included them in our models. Model 2 also tests the influence of a target's uncertainty on the target's CAR; however, we do not get a significant coefficient for this variable. Overall, these results support our hypothesis 2a, but not hypothesis 2b.

<Insert Table 6>

## 4.3. Additional Tests

As discussed earlier, tables 4 and 5 present apparently counter-intuitive results: for acquirers, higher forecast errors are associated with higher abnormal returns. In this section, we present a series of tests to examine this issue more closely.

### 4.3.1. The relation between acquirer's forecast error/ uncertainty and acquisition probability

Table 7 presents logistic regression results that examine the relation between a firm's forecast errors and its acquisition probability. Panel A presents simple logistic regression results, whereas Panel B presents panel data logistic regression results. In all regression models, we find that a firm with higher forecast errors and uncertainty is less likely to make an acquisition. We use the following regression set-up to perform relevant tests.

$$\text{Acquiring probability} = \beta0 + \beta1*\text{Forecast Error} + \beta2*\text{ Bog Index} + \beta3*\text{Uncertainty} + \beta4*\text{ Leverage} + \beta5*\text{Firm Size} + \beta6*\text{Sales Growth} + \beta7*\text{Firm Age} + \beta8*\text{Big-4 Auditor} + \beta9*\text{Institutional Ownership} + \beta10*\text{Industry fixed effect} + \beta11*\text{Year fixed effect}$$

<Insert Table 7>

The result ensures that the more imperfect informational environment (higher forecast error or higher uncertainty) the firms have, the lower their chance of making an acquisition is. One possible explanation could be that as forecast error and uncertainty increase in a firm, they are not able to maintain their information transparency, and they try to act more cautious in their corporate decisions; hence they participate in a smaller number of mergers and acquisitions.

Table 8 repeats the similar analysis by excluding financial firms (Utilities, financial, insurance, banking, and real estate firms). We find qualitatively similar results.

<Insert Table 8>

It appears that even after removing financial firms from our model (Table 8), the results are still significant, and the firms with higher forecast errors and uncertainty are more cautious while making an acquisition and may take more prudent decisions. This may result in more enthusiastic market reactions.

Leverage, firm size, sales growth, firm age, Big-4 Auditor, institutional ownership, percentage cash, and related deal are the most used variables in M&A literature that we also included them in our models.

### 4.3.2. Public vs. Private targets: as a driver of the positive relation between acquirer's forecast error and M&A market reactions

Table 9 exhibits the results of the relation between forecast error and CAR. Model 1 indicates the regression results with the inclusion of only non-public targets, that is, private targets and subsidiaries, and model 2 shows the analysis result with only public targets. The coefficients for forecast error and uncertainty are significant at 10% and 5%, respectively, when we exclude public targets in model 1. While we do not receive a significant coefficient when only public targets are tested (model 2). This sub-sample analysis presents that the primary benefits to acquirers with higher forecast errors come from non-public target acquisitions. Literature accredits that private targets have a poorer informational environment (higher error and uncertainty), and this brings some bargaining power for the acquirers leading to more gains for the shareholders of the acquiring firm.

We investigate this further in sub-section 4.3.3 (forecast error/ uncertainty of targets) and 4.3.4 (quality of targets). Due to the data limitation, these analyses are performed only for the public target sample. This gives us a better insight into how acquiring firms with higher forecast errors and uncertainty make decisions about the potential public targets. It is interesting and particularly important for us because our results show that acquirers with higher errors do not receive an enthusiastic reaction from market participants when they acquire public targets (model 2, table 9). Thus, acquiring firms with higher forecast errors and uncertainty should be more strategic with such acquisitions.

<Insert Table 9>

Leverage, firm size, sales growth, firm age, Big-4 Auditor, institutional ownership, percentage cash, and related deal are the most commonly used variables in M&A literature. We also included them in our models. As it is presented in table 9, there is no meaningful relationship between the Bog index and CAR for public and non-public firms.

### 4.3.3. Selection of a target with a higher or lower forecast error

Table 10 represents the effect of the acquirer's forecast error on exclusively public target firm's forecast error. It gives us a better insight into how more uncertain and less transparent acquirers act in selecting targets. It also shed light on the reasons why we do not see significant results in model 2 of table 9.

Model 1 includes more common M&A variables along with forecast error and Bog index, while model 2 adds the uncertainty variable. Leverage, firm size, sales growth, firm age, Big-4 Auditor, institutional ownership, percentage cash, and related deal are the most commonly used variables in M&A literature. We also included them in our models.

The positive significant coefficients (0.8400 in model 1 and 08343 in model 2, at 1%) show that if acquirers have higher forecast errors, they generally end up acquiring targets with higher forecast errors, which may not be positively viewed by market participants. This offers some plausible explanations as to why we do not see a positive relationship

between acquirer's forecast errors and CAR in model 2 of table 9 when we consider public target firms. The Bog index and uncertainty, as the other measures of the informational environment, do not show a significant coefficient in this analysis.

To examine the influence of forecast error on the target's error, we run the following regression model.

Forecast Error (target) = β0 + β1*Forecast Error (acquirer) + β2* Bog index + β3*Uncertainty + β4* Leverage + β5*Firm Size + β6*Sales Growth + β7*Firm Age + β8*Big-4 Auditor + β9*Institutional Ownership + β10*Percentage Cash + β11*Related Deal+ β12*Industry fixed effect + β13*Year fixed effect

<Insert Table 10>

#### 4.3.4. Quality of target firms: Selection of a target with a higher or lower performance

Tables 11 and 12 show the results of our examination on whether the acquirers with higher forecast error select a target with better performance or more unsatisfactory performance when making an acquisition. This test is conducted exclusively on public targets.

We use ROA-EBIT and Operating Cashflow to Total Assets in tables 11 and 12 analyses, respectively, to measure the performance of the target firms. To examine the

relation between forecast error and the performance of target firms, we use the subsequent regressions:

Target ROA-EBIT = β0 + β1*Forecast Error + β2* Bog Index + β3*Uncertainty + β4* Leverage + β5*Firm Size + β6*Sales Growth + β7*Firm Age + β8*Big-4 Auditor+ β9*Institutional Ownership + β10*Percentage Cash + β11*Related Deal+ β12*Industry fixed effect + β13*Year fixed effect

Target OCF/T-Assets = β0 + β1*Forecast Error + β2* Bog Index + β3*Uncertainty + β4* Leverage + β5*Firm Size + β6*Sales Growth + β7*Firm Age + β8*Big-4 Auditor+ β9*Institutional Ownership + β10*Percentage Cash + β11*Related Deal+ β12*Industry fixed effect + β13*Year fixed effect

Model 1 in both tables (Table 11 and 12) includes more common M&A variables, while model 2 adds the influence of the Bog index. Leverage, firm size, sales growth, firm age, Big-4 Auditor, institutional ownership, percentage cash, and related deal are the most commonly used variables in M&A literature, that we also included them in our models.

The significant negative coefficients of acquirer forecast error and uncertainty in both tables and all models confirm that acquirers with higher forecast errors/ uncertainty are more likely to acquire public targets with weaker performance. This may lead to lukewarm reactions from market participants and could offer a plausible explanation as to why we do not see a positive correlation between forecast error and CAR in model 2 of table 9 when we examine our model for public targets. Further, the Bog index in model 2 of table 11 shows a meaningful negative relationship (coefficient of -0.0018, significant at 5%) with

the target's performance (ROA-EBIT), which is in line with other informational environment proxies (We do not get a significant coefficient when we consider OCF/T-Assets as the measure of performance).

<Insert Table 11>

<Insert Table 12>

Next, we investigate whether acquirers with higher forecast errors/ uncertainty tend to make related or unrelated acquisitions.

#### 4.3.5. Related vs. unrelated acquisitions: as a driver of the positive relation between acquirer forecast error and M&A market reactions

Table 13 presents the results of our last examination towards the relations between information transparency and M&A-related variables. We use the following equation for this test.

$$\text{Related deal} = \beta0 + \beta1*\text{Forecast Error} + \beta2*\text{Bog Index} + \beta3*\text{Uncertainty} + \beta4*\text{Leverage} + \beta5*\text{Firm Size} + \beta6*\text{Sales Growth} + \beta7*\text{Firm Age} + \beta8*\text{Big-4 Auditor} + \beta9*\text{Institutional Ownership} + \beta10*\text{Public Target Dummy} + \beta11*\text{Industry fixed effect} + \beta12*\text{Year fixed effect}$$

Panel A includes all non-public and public firms. Whilst Panels B and C show the results on a sub-sample analysis. Panel B accounts for non-public targets, and Panel C is about only public target firms. All three panels include three models. Model 1 includes forecast error and the most commonly used variables in the M&As area, while models 2 and 3 add the impact of the Bog index and uncertainty, respectively.

As it is recognized from the Panel A of the table, in model 3, uncertainty has a positive relationship with the related deal variable (coefficient of 1.4317, at 1%). In other words, acquirers with higher uncertainty are more careful about choosing a target, and they prefer related industry target firms. Earlier literature shows that related targets are viewed more favorably by the market participants.

<Insert Table 13>

Panel B also indicates a significant positive correlation between uncertainty and related deal (coefficient of 1.8327, at 1%). However, when we consider Panel C, we realize no significant relationship between uncertainty and related deal anymore, and the number of observations decreases remarkably when we only include public targets (Panel C).

### 4.3.6. The relation between forecast error and payment method

Table 14 represents the results of the relationship between forecast error, uncertainty, and the payment method. We use the following regression model for this test.

$$\text{Percentage Cash} = \beta_0 + \beta_1 * \text{Forecast Error} + \beta_2 * \text{Bog Index} + \beta_3 * \text{Uncertainty} + \beta_4 * \text{Leverage} + \beta_5 * \text{Firm Size} + \beta_6 * \text{Sales Growth} + \beta_7 * \text{Firm Age} + \beta_8 * \text{Big-4 Auditor} + \beta_9 * \text{Institutional Ownership} + \beta_{10} * \text{Public Target Dummy} + \beta_{11} * \text{Industry fixed effect} + \beta_{12} * \text{Year fixed effect}$$

Model 1 in table 14 includes forecast error and the most used variables in the M&As area, while model 2 adds the impact of uncertainty to the regression test. As the table illustrates, forecast error in both models has a negative relationship with the percentage cash variable (coefficient of 93.5824, at 1% in model 1 and coefficient of 75.4612, at 1% in model 2). This means that the acquirers with higher forecast error tend to finance the deal with stock rather than cash and benefit from the overvalued stock by this offering.

The literature also states that when acquiring firms have some private information about their own valuation and they are overvalued, they try to gain form this privilege by offering stock (Luypaert and Caneghem, 2017).

<Insert Table 14>

## 5. Conclusions

This study examines the relationship between information asymmetry and uncertainty of the firms and their performance in mergers and acquisitions in different ways. Using a large sample of M&As listed in the SDC Platinum database and the forecast error of financial analysts' reports from the I/B/E/S dataset, we execute several regression models to deeply explore the reason(s) for the counter-intuitive behavior between financial analysts' forecast error and M&A performance.

Previous studies have documented that information asymmetry negatively affects M&A performance. However, in line with Luypaert and Caneghem (2017), we find that forecast error is acting differently, and it is positively associated with acquisition productivity. Although Luypaert and Caneghem (2017) did not go further in their research, we investigate several hypotheses that may bring an answer to the reasons for this phenomenon.

In the first step, after observing a positive relationship between forecast error and acquirer CAR, we model analysis between a firm's forecast error/ informational uncertainty and acquiring probability. We find that, in general, firms with higher analysts' forecast errors and informational uncertainty tend to make fewer acquisitions, which implies that firms with lower informational quality are more selective in their acquisitions. Further, we find that the positive relationship between forecast error/ informational uncertainty and CAR is primarily driven by non-public target acquisitions. In the sub-sample analyses - where we consider only public target firms, our results show that

acquirers with higher forecast errors and uncertainty end up acquiring targets with higher forecast errors and weaker firm performance. These findings offer some plausible explanation for the non-significant relation between acquirer analysts' forecast errors/ informational uncertainty and M&A market reactions. It appears that market participants are less enthusiastic about public target acquisitions by acquirers with poorer informational quality.

This study will contribute to the literature of M&A performance and the informational environment in the following ways. To the best of our knowledge, it is the first empirical study to investigate the reasons for the positive association between forecast error/ informational uncertainty and the performance of M&As. There is a minimal body of studies that focuses on the informational quality (analysts forecast errors and uncertainty) of an acquirer and its impact on M&A performance. We extend the literature by investigating the causes of analyst forecast error and uncertainty on acquisitions' performance as a measure of informational transparency.

The study has some limitations. We do not have relevant data to conduct additional analyses on the private target sub-sample, which might have offered more insights. Further, there could be endogeneity bias associated with our results.

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# Appendix

## Table 1: Variable Descriptions

| Variable | Description |
|---|---|
| Forecast Error/<br><br>(Also called Standards Unexpected Earnings) | Difference between the Actual earning announced by the firm in each year and Consensus scaled by the end of fiscal year share Price<br><br>$Error = (Actual - Consensus) / (end\ of\ fiscal\ year\ price)$<br><br>Actual = The actual earning announced by a company at the end of each fiscal year<br><br>Consensus = Is the mean of the EPS forecasts provided by different analysts for a firm each year |
| Readability index/ Bog index | A multifaceted measure of plain English readability called the Bog index. A higher level of the Bog index represents a lower readable document. |
| Uncertainty | The standard deviation of the past 60 monthly returns of the firm |
| acq CAR (-2 to +2) | Cumulative abnormal return, the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2) in excess of predicted returns if acquisition did not happen |
| Acquiring probability/ Acquisition Dummy | Whether the firm has participated in an M&A in each fiscal year |
| tar CAR (-2 to +2) | Cumulative abnormal return, the cumulative sum of stock returns by the target firm around the announcement period (-2, +2) in excess of predicted returns if acquisition did not happen |
| Forecast error (target) | Difference between the Actual earning announced by the target firm in each year and Consensus scaled by the end of fiscal year share Price |
| tar ROA-EBIT | A measure of the target firm's performance that is the ratio of the acquiring firm's EBITDA to its total assets |
| tar OCF/T-Assets | The measure of the target firm's performance which is the ratio of the acquiring firm's operating cash flow to its total assets |
| Firm Size | Total number of shares multiplied by the firm's share price at the end of each fiscal year |
| Sales Growth | The year-over-year sales growth of the company |
| Firm Age | The number of years since the firm first appeared in the CRSP database |

| | |
|---|---|
| Big-4 Auditor | Whether the firm is using one of the Big 4 accounting firms or not. |
| Institutional Ownership | The portion of the firm's equity that institutional investors own |
| Leverage | Risk measure which is the ratio of the acquiring firm's total debt to total assets |
| Percentage cash | The portion of the deal financed by cash |
| Public Target Dummy | A dummy variable which takes value one if the target firm is public and 0 otherwise |
| Related deal | Dummy variable which takes the value one if acquiring and target firms are from the same industry, and 0 if not. For industry classification, we have used the Fama-French 48 Industry classification |
| Industry fixed effect | The variable that controls for industry specifics |
| Year fixed effect | The variable that controls for year specifics |

## Table 2: Descriptive Statistics

Table 2 illustrates the descriptive statistics of the main variables used in this study. 'Acquirer CAR (-2 to +2)' is the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2). 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1.

Panel A: From Event-Based Descriptive File

| Variable | Obs | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| Acquirer CAR (-2 to +2) | 22,747 | 0.01 | 0.07 | (0.20) | 0.28 |
| Forecast error | 16,972 | 0.01 | 0.02 | 0 | 0.19 |
| Bog Index | 18,971 | 84.34 | 7.18 | 50 | 126 |
| Uncertainty | 23,706 | 0.13 | 0.08 | 0.01 | 0.48 |
| Leverage | 23,736 | 0.20 | 0.20 | 0 | 0.88 |
| Firm Size | 23,872 | 6.76 | 2.04 | 1.22 | 11.13 |
| Sales Growth | 21,725 | 0.26 | 0.53 | (0.78) | 3.63 |
| Firm Age | 23,901 | 15.37 | 17.16 | 0 | 91 |
| Big-4 Auditor | 22,307 | 0.88 | 0.33 | 0 | 1 |
| Institutional Ownership | 21,106 | 0.59 | 0.29 | 0 | 1.11 |
| Public Tar Dummy | 23,905 | 0.22 | 0.42 | 0 | 1 |
| Percentage Cash | 17,364 | 60.80 | 43.74 | 0 | 101.56 |
| Related Deal | 23,905 | 0.36 | 0.48 | 0 | 1 |

Panel B: From Firm-Year Descriptive File

| Variable | Obs | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| Acquiring probability | 108,836 | 0.20 | 0.40 | 0 | 1 |
| Leverage | 108,836 | 0.18 | 0.20 | 0 | 0.88 |
| Firm Size | 108,836 | 5.84 | 2.22 | 1.22 | 11.13 |
| Sales Growth | 108,836 | 0.17 | 0.53 | (0.78) | 3.63 |
| Firm age | 108,817 | 15.00 | 14.88 | 0 | 91 |
| Big-4 Auditor | 102,769 | 0.78 | 0.41 | 0 | 1 |
| Uncertainty | 108,836 | 0.15 | 0.09 | 0.01 | 0.48 |
| Intangible assets | 108,836 | 0.12 | 0.17 | 0 | 0.73 |

## Table 3: Correlation Matrix

Table 3 illustrates the correlation matrix of the main variables used in this study. 'Acquirer CAR (-2 to +2)' is the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2). 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

Panel A: From Event-Based Descriptive File

| Variables | Acq_CAR | Forecast error | Bog_bogindex | Uncertainty | Leverage | Size | Sales growth | Firm age | Big_4 | Ins_ ownership | Intangible assets | Public_ tar_dummy | Per_cash | Related deal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acquirer CAR | 1 | | | | | | | | | | | | | |
| Forecast error | 0.0621*** | 1 | | | | | | | | | | | | |
| Bog Index | -0.0141 | 0.0587*** | 1 | | | | | | | | | | | |
| Uncertainty | 0.0718*** | 0.157*** | 0.0842*** | 1 | | | | | | | | | | |
| Leverage | 0.00534 | 0.0880*** | 0.0811*** | -0.139*** | 1 | | | | | | | | | |
| Firm Size | -0.127*** | -0.231*** | 0.134*** | -0.310*** | 0.0377*** | 1 | | | | | | | | |
| Sales Growth | -0.0319*** | -0.0426*** | 0.0328*** | 0.150*** | 0.0374*** | -0.0672*** | 1 | | | | | | | |
| Firm Age | -0.0314*** | -0.0996*** | -0.0508*** | -0.245*** | -0.00779 | 0.427*** | -0.220*** | 1 | | | | | | |
| Big-4 Auditor | -0.0407*** | -0.0764*** | 0.0393*** | -0.0992*** | 0.0755*** | 0.317*** | -0.00394 | 0.0622*** | 1 | | | | | |
| Institutional Ownership | -0.0653*** | -0.133*** | 0.246*** | -0.139*** | 0.109*** | 0.498*** | -0.0901*** | 0.203*** | 0.231*** | 1 | | | | |
| Intangible assets | 0.0182** | -0.0663*** | 0.202*** | 0.0319*** | 0.0994*** | 0.160*** | 0.00658 | 0.0630*** | 0.0252*** | 0.260*** | 1 | | | |
| Public Tar Dummy | -0.0451*** | -0.0348*** | -0.0672*** | -0.113*** | -0.105*** | 0.105*** | -0.0545*** | 0.103*** | 0.00618 | -0.0676*** | -0.0860*** | 1 | | |
| Percentage Cash | 0.0596*** | -0.0473*** | 0.00606 | -0.0950*** | 0.0279*** | 0.108*** | -0.110*** | 0.112*** | 0.0714*** | 0.160*** | 0.152*** | 0.0142 | 1 | |
| Related deal | 0.0425*** | 0.0117 | -0.0433*** | 0.0523*** | -0.0447*** | -0.0367*** | -0.0214** | -0.0359*** | -0.00541 | -0.0308*** | -0.0144* | 0.219*** | 0.0746*** | 1 |

Panel B: From Firm-Year Descriptive File

| Variables | Acquiring probability | Leverage | Size | Sales growth | Firm age | Big_4 | Uncertainty | Intangible assets |
|---|---|---|---|---|---|---|---|---|
| Acquiring probability | 1 | | | | | | | |
| Leverage | 0.0263*** | 1 | | | | | | |
| Firm Size | 0.202*** | 0.139*** | 1 | | | | | |
| Sales Growth | 0.0236*** | 0.0101*** | 0.00983** | 1 | | | | |
| Firm Age | 0.0977*** | 0.0403*** | 0.301*** | -0.134*** | 1 | | | |
| Big-4 Auditor | 0.0992*** | 0.136*** | 0.392*** | 0.00501 | 0.0586*** | 1 | | |
| Uncertainty | -0.101*** | -0.0870*** | -0.398*** | 0.113*** | -0.257*** | -0.131*** | 1 | |
| Intangible Assets | 0.149*** | 0.159*** | 0.177*** | 0.0492*** | 0.0263*** | 0.0761*** | 0.0193*** | 1 |

## Table 4: Acquirer's analyst forecast error and deal abnormal returns

Table 4 illustrates the relationship between the acquirer's forecast error as the independent variable and the deal abnormal returns as the dependent variable. The regression models also include various control variables. 'acq CAR (-2 to +2)' is the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2). Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds analyst forecast errors and bog-index (readability) in the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | (1) | (2) |
|---|---|---|
| VARIABLES | acq CAR (-2 to +2) | acq CAR (-2 to +2) |
| Forecast error (acquirer) | | 0.1570** |
| | | (0.068) |
| Bog Index (acquirer) | | 0.0002 |
| | | (0.000) |
| Leverage (acquirer) | 0.0052 | 0.0008 |
| | (0.004) | (0.005) |
| Firm Size (acquirer) | -0.0051*** | -0.0038*** |
| | (0.001) | (0.001) |
| Sales Growth (acquirer) | -0.0044** | -0.0040* |
| | (0.002) | (0.002) |
| Firm Age (acquirer) | 0.0001 | -0.0000 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | 0.0032 | 0.0037 |
| | (0.002) | (0.003) |
| Institutional Ownership (acquirer) | -0.0114*** | -0.0058 |
| | (0.003) | (0.004) |
| Public Target Dummy | -0.0059*** | -0.0064*** |
| | (0.002) | (0.002) |
| Percentage Cash | 0.0001*** | 0.0001*** |
| | (0.000) | (0.000) |
| Related Deal | 0.0068*** | 0.0072*** |
| | (0.001) | (0.002) |
| Constant | 0.0554*** | 0.0413*** |
| | (0.011) | (0.016) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 12,428 | 9,040 |
| R-squared | 0.046 | 0.041 |

## Table 5: Acquirer's informational uncertainty and deal abnormal returns

Table 5 illustrates the relationship between the acquirer's uncertainty as the independent variable and the deal abnormal returns as the dependent variable. The regression models also include various control variables. 'acq CAR (-2 to +2)' is the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2). Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds analyst forecast errors and bog-index (readability) in the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| VARIABLES | (1)<br>acq CAR (-2 to +2) | (2)<br>acq CAR (-2 to +2) |
|---|---|---|
| Forecast error (acquirer) | | 0.1428** |
| | | (0.068) |
| Bog Index (acquirer) | | 0.0001 |
| | | (0.000) |
| Uncertainty (acquirer) | 0.0314** | 0.0437** |
| | (0.015) | (0.017) |
| Leverage (acquirer) | 0.0058 | 0.0015 |
| | (0.004) | (0.005) |
| Firm Size (acquirer) | -0.0048*** | -0.0034*** |
| | (0.001) | (0.001) |
| Sales Growth (acquirer) | -0.0050*** | -0.0050** |
| | (0.002) | (0.002) |
| Firm Age (acquirer) | 0.0001* | 0.0000 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | 0.0034 | 0.0037 |
| | (0.002) | (0.003) |
| Institutional Ownership (acquirer) | -0.0110*** | -0.0054 |
| | (0.003) | (0.004) |
| Public Target Dummy | -0.0058*** | -0.0063*** |
| | (0.002) | (0.002) |
| Percentage Cash | 0.0001*** | 0.0001*** |
| | (0.000) | (0.000) |
| Related Deal | 0.0067*** | 0.0071*** |
| | (0.001) | (0.002) |
| Constant | 0.0500*** | 0.0364** |
| | (0.011) | (0.016) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 12,425 | 9,040 |
| R-squared | 0.046 | 0.043 |

## Table 6: Target's analyst forecast error and target's abnormal returns

Table 6 illustrates the relationship between the target's forecast error/ uncertainty as the independent variable and the target's deal abnormal returns as the dependent variable. The regression models also include various control variables. 'tar CAR (-2 to +2)' is the cumulative sum of stock returns by the target firm around the announcement period (-2, +2). Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds uncertainty to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | (1) | (2) |
|---|---|---|
| VARIABLES | tar CAR (-2 to +2) | tar CAR (-2 to +2) |
| Forecast error (target) | -0.4972** | -0.5080** |
| | (0.246) | (0.249) |
| Uncertainty (target) | | 0.0440 |
| | | (0.093) |
| Leverage (target) | 0.0332 | 0.0335 |
| | (0.032) | (0.032) |
| Firm Size (target) | -0.0339*** | -0.0335*** |
| | (0.004) | (0.004) |
| Sales Growth (target) | -0.0130 | -0.0136 |
| | (0.013) | (0.013) |
| Firm Age (target) | -0.0004 | -0.0004 |
| | (0.000) | (0.000) |
| Big-4 Auditor (target) | 0.0286 | 0.0281 |
| | (0.018) | (0.018) |
| Institutional Ownership (target) | 0.0333 | 0.0342 |
| | (0.025) | (0.025) |
| Percentage Cash | -0.0000 | -0.0000 |
| | (0.000) | (0.000) |
| Related Deal | -0.1040*** | -0.1036*** |
| | (0.012) | (0.012) |
| Constant | 0.2664*** | 0.2601*** |
| | (0.079) | (0.080) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 1,851 | 1,851 |
| R-squared | 0.205 | 0.205 |

## Table 7: Acquirer's forecast error and Acquisition Probability – considering all firms (non-financial and financial)

Table 7 illustrates the relationship between forecast error as the independent variable and acquiring probability as the dependent variable (considering both non-financial and financial firms). The regression models also include various control variables. 'Acquisition_dummy' = 1, if a firm has made at least one acquisition in the next fiscal year. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 the Bog index, model 3 examines forecast error and the Bog index, model 4 tests for uncertainty, and model 5 includes all forecast error, the Bog index, and uncertainty variables. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

Panel A presents the results of simple logistic regressions, whereas Panel B presents the results of Panel data logistic regressions.

**Panel A: Logistic Regressions (without Panel considerations)**

| VARIABLES | (1) Acquisition_ dummy | (2) Acquisition_ dummy | (3) Acquisition_ dummy | (4) Acquisition_ dummy | (5) Acquisition_ dummy |
|---|---|---|---|---|---|
| Forecast error (acquirer) | -6.8397*** | | -5.4550*** | | -4.8824*** |
| | (0.696) | | (0.690) | | (0.676) |
| Bog Index | | 0.0024 | 0.0032 | | 0.0053* |
| | | (0.003) | (0.003) | | (0.003) |
| Uncertainty | | | | -1.1630*** | -1.9428*** |
| | | | | (0.234) | (0.294) |
| Leverage | 0.1571* | 0.0799 | 0.0578 | 0.1565* | 0.0375 |
| | (0.094) | (0.082) | (0.094) | (0.080) | (0.094) |
| Firm Size | 0.2292*** | 0.3744*** | 0.3609*** | 0.2051*** | 0.3400*** |
| | (0.013) | (0.012) | (0.014) | (0.011) | (0.014) |
| Sales Growth | 0.1721*** | 0.1311*** | 0.1103*** | 0.2266*** | 0.1441*** |
| | (0.025) | (0.022) | (0.027) | (0.019) | (0.027) |
| Firm Age | 0.0073*** | 0.0002 | 0.0020* | 0.0061*** | 0.0012 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Big-4 Auditor | -0.1584*** | -0.1184** | -0.1541*** | -0.1577*** | -0.1480** |
| | (0.056) | (0.048) | (0.057) | (0.044) | (0.057) |
| Institutional Ownership | 1.2943*** | 0.5261*** | 0.3209*** | 1.5933*** | 0.2979*** |
| | (0.073) | (0.070) | (0.079) | (0.061) | (0.079) |
| Constant | -2.2139*** | -3.3131*** | -2.9979*** | -2.3725*** | -2.8261*** |
| | (0.250) | (0.300) | (0.351) | (0.225) | (0.348) |
| Year fixed-effect | Yes | Yes | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes | Yes | Yes |
| Pseudo R-squared | 0.0983 | 0.1177 | 0.1003 | 0.1161 | 0.1017 |
| Observations | 53,778 | 62,090 | 43,119 | 82,825 | 43,114 |

**Panel B: Logistic Regressions (Panel Data Regression)**

| VARIABLES | (1)<br>Acquisition_dummy | (2)<br>Acquisition_dummy | (3)<br>Acquisition_dummy |
|---|---|---|---|
| Forecast error (acquirer) | -5.8736*** | | -4.3773*** |
| | (0.676) | | (0.690) |
| Bog Index | | -0.0038 | -0.0045 |
| | | (0.003) | (0.003) |
| Uncertainty | -0.9927*** | -1.1165*** | -1.3806*** |
| | (0.307) | (0.258) | (0.313) |
| Leverage | -0.4716*** | -0.4554*** | -0.4511*** |
| | (0.099) | (0.088) | (0.100) |
| Firm Size | 0.2544*** | 0.4383*** | 0.4054*** |
| | (0.015) | (0.013) | (0.016) |
| Sales Growth | 0.1827*** | 0.1424*** | 0.1344*** |
| | (0.029) | (0.026) | (0.031) |
| Firm Age | 0.0049*** | -0.0029** | -0.0006 |
| | (0.002) | (0.001) | (0.001) |
| Big-4 Auditor | -0.1271** | -0.0852* | -0.1157* |
| | (0.059) | (0.049) | (0.059) |
| Institutional Ownership | 1.2717*** | 0.4742*** | 0.3314*** |
| | (0.078) | (0.073) | (0.083) |
| Constant | -2.0084*** | -3.0716*** | -2.4776*** |
| | (0.369) | (0.362) | (0.453) |
| Year fixed-effect | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes |
| Wald Chi-square | 2235.39 | 3257.27 | 2170.45 |
| Probability > Wald Chi-square | 0.000 | 0.000 | 0.000 |
| Observations | 53,770 | 62,015 | 43,114 |
| Number of unique firms | 8,225 | 9,316 | 6,951 |

## Table 8: Acquirer's forecast error and Acquisition Probability – considering only non-financial firms

Table 8 illustrates the relationship between forecast error as the independent variable and acquiring probability as the dependent variable (considering only non-financial firms). The regression models also include various control variables. 'Acquisition_dummy' = 1, if a firm has made at least one acquisition in the next fiscal year. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 the Bog index, model 3 examines forecast error and the Bog index, model 4 tests for uncertainty and model 5 includes all forecast error, the Bog index, and uncertainty variables. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

Panel A presents the results of simple logistic regressions, whereas Panel B presents the results of Panel data logistic regressions.

**Panel A: Logistic Regressions (without Panel considerations)**

| VARIABLES | (1) Acquisition_ dummy | (2) Acquisition_ dummy | (3) Acquisition_ dummy | (4) Acquisition_ dummy | (5) Acquisition_ dummy |
|---|---|---|---|---|---|
| Forecast error (acquirer) | -6.2788*** | | -5.1542*** | | -4.5768*** |
| | (0.755) | | (0.771) | | (0.753) |
| Bog Index | | 0.0051* | 0.0046 | | 0.0067** |
| | | (0.003) | (0.003) | | (0.003) |
| Uncertainty | | | | -1.1282*** | -2.2216*** |
| | | | | (0.256) | (0.322) |
| Leverage | 0.1939* | 0.0242 | 0.0164 | 0.1636* | -0.0047 |
| | (0.102) | (0.090) | (0.102) | (0.089) | (0.102) |
| Firm Size | 0.2255*** | 0.3737*** | 0.3580*** | 0.2034*** | 0.3316*** |
| | (0.015) | (0.013) | (0.015) | (0.012) | (0.015) |
| Sales Growth | 0.1535*** | 0.0799*** | 0.0742** | 0.2041*** | 0.1215*** |
| | (0.027) | (0.025) | (0.029) | (0.021) | (0.029) |
| Firm Age | 0.0097*** | 0.0030** | 0.0048*** | 0.0084*** | 0.0037*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Big-4 Auditor | -0.0894 | -0.0813 | -0.0925 | -0.1137** | -0.0903 |
| | (0.063) | (0.053) | (0.065) | (0.049) | (0.065) |
| Institutional Ownership | 1.3234*** | 0.4617*** | 0.2885*** | 1.5794*** | 0.2431*** |
| | (0.080) | (0.077) | (0.086) | (0.067) | (0.086) |
| Constant | -2.2858*** | -3.5268*** | -3.1436*** | -2.4186*** | -2.9000*** |
| | (0.257) | (0.317) | (0.371) | (0.230) | (0.368) |
| Year fixed-effect | Yes | Yes | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes | Yes | Yes |
| Pseudo R-squared | 0.103 | 0.1197 | 0.1035 | 0.1203 | 0.1055 |
| Observations | 43,504 | 48,148 | 34,381 | 65,529 | 34,376 |

**Panel B: Logistic Regressions (Panel Data Regression)**

| VARIABLES | (1)<br>Acquisition_dummy | (2)<br>Acquisition_dummy | (3)<br>Acquisition_dummy |
|---|---|---|---|
| Forecast error (acquirer) | -5.5182*** | | -4.0741*** |
| | (0.740) | | (0.766) |
| Bog Index | | -0.0020 | -0.0039 |
| | | (0.003) | (0.003) |
| Uncertainty | -0.9218*** | -1.3301*** | -1.5957*** |
| | (0.330) | (0.283) | (0.338) |
| Leverage | -0.4952*** | -0.5058*** | -0.4879*** |
| | (0.106) | (0.096) | (0.107) |
| Firm Size | 0.2477*** | 0.4331*** | 0.3965*** |
| | (0.017) | (0.014) | (0.017) |
| Sales Growth | 0.1815*** | 0.0996*** | 0.1198*** |
| | (0.031) | (0.029) | (0.034) |
| Firm Age | 0.0087*** | 0.0010 | 0.0032** |
| | (0.002) | (0.001) | (0.001) |
| Big-4 Auditor | -0.0744 | -0.0607 | -0.0724 |
| | (0.065) | (0.054) | (0.066) |
| Institutional Ownership | 1.2485*** | 0.3382*** | 0.2393*** |
| | (0.084) | (0.080) | (0.089) |
| Constant | -2.0394*** | -3.1134*** | -2.4825*** |
| | (0.371) | (0.375) | (0.463) |
| Year fixed-effect | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes |
| Wald Chi-square | 1890.89 | 2639.03 | 1841.04 |
| Probability > Wald Chi-square | 0.000 | 0.000 | 0.000 |
| Observations | 43,497 | 48,080 | 34,376 |
| Number of unique firms | 6,634 | 7,276 | 5,512 |

## Table 9: Acquirer's analyst forecast error and deal abnormal returns

Table 9 illustrates the relationship between the acquirer's forecast error as the independent variable and the deal abnormal returns as the dependent variable. The regression models also include various control variables. 'acq CAR (-2 to +2)' is the cumulative sum of stock returns by the acquiring firm around the announcement period (-2, +2). Model 1 includes the traditional firm-specific and deal-specific variables to the regression set-up only for non-public target firms. Model 2 considers the same variables only for public target firms. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | Non-Public Targets only | Public Targets only |
|---|---|---|
| | (1) | (2) |
| VARIABLES | acq CAR (-2 to +2) | acq CAR (-2 to +2) |
| Forecast error (acquirer) | 0.1359* | 0.1285 |
| | (0.072) | (0.140) |
| Bog Index (acquirer) | 0.0002 | 0.0001 |
| | (0.000) | (0.000) |
| Uncertainty (acquirer) | 0.0495** | 0.0077 |
| | (0.019) | (0.038) |
| Leverage (acquirer) | 0.0019 | -0.0025 |
| | (0.006) | (0.010) |
| Firm Size (acquirer) | -0.0034*** | -0.0037*** |
| | (0.001) | (0.001) |
| Sales Growth (acquirer) | -0.0056** | -0.0024 |
| | (0.002) | (0.005) |
| Firm Age (acquirer) | 0.0000 | -0.0001 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | 0.0041 | 0.0014 |
| | (0.003) | (0.006) |
| Institutional Ownership (acquirer) | -0.0050 | -0.0046 |
| | (0.004) | (0.008) |
| Percentage Cash | 0.0000 | 0.0003*** |
| | (0.000) | (0.000) |
| Related Deal | 0.0046** | 0.0107*** |
| | (0.002) | (0.003) |
| Constant | 0.0220 | 0.0523 |
| | (0.017) | (0.035) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 6,752 | 2,288 |
| R-squared | 0.037 | 0.113 |

## Table 10: Acquirer's analyst forecast error and target's forecast error

Table 10 illustrates the relationship between the acquirer's forecast error as the independent variable and the target's forecast error as the dependent variable. The regression models also include various control variables. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds uncertainty to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| VARIABLES | (1)<br>Forecast error<br>(target) | (2)<br>Forecast error<br>(target) |
|---|---|---|
| Forecast error (acquirer) | 0.8400*** | 0.8343*** |
| | (0.070) | (0.070) |
| Bog Index (acquirer) | -0.0001 | -0.0001 |
| | (0.000) | (0.000) |
| Uncertainty (acquirer) | | 0.0160 |
| | | (0.015) |
| Leverage (acquirer) | -0.0017 | -0.0016 |
| | (0.004) | (0.004) |
| Firm Size (acquirer) | -0.0007 | -0.0006 |
| | (0.001) | (0.001) |
| Sales Growth (acquirer) | 0.0004 | 0.0000 |
| | (0.002) | (0.002) |
| Firm Age (acquirer) | -0.0000 | -0.0000 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | 0.0028 | 0.0025 |
| | (0.002) | (0.002) |
| Institutional Ownership (acquirer) | 0.0031 | 0.0033 |
| | (0.003) | (0.003) |
| Percentage Cash | -0.0000 | -0.0000 |
| | (0.000) | (0.000) |
| Related Deal | -0.0046*** | -0.0046*** |
| | (0.002) | (0.002) |
| Constant | 0.0129 | 0.0112 |
| | (0.009) | (0.009) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 1,492 | 1,492 |
| R-squared | 0.386 | 0.387 |

## Table 11: Acquirer's analyst forecast error and target firm's performance (ROA-EBIT)

Table 11 illustrates the relationship between the acquirer's forecast error as the independent variable and the target firm's ROA_EBIT as the dependent variable. The regression models also include various control variables. 'tar ROA_EBIT' is the measure of the target firm's performance which is the ratio of the acquiring firm's EBIT to its total assets. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds the bog-index (readability) to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | (1) | (2) |
|---|---|---|
| VARIABLES | tar ROA_EBIT | tar ROA_EBIT |
| Forecast error (acquirer) | -1.1193*** | -1.0929*** |
| | (0.250) | (0.258) |
| Bog Index (acquirer) | | -0.0018** |
| | | (0.001) |
| Uncertainty (acquirer) | -0.4537*** | -0.3346*** |
| | (0.101) | (0.110) |
| Leverage (acquirer) | 0.0229 | 0.0434 |
| | (0.028) | (0.027) |
| Firm Size (acquirer) | 0.0020 | 0.0070** |
| | (0.004) | (0.003) |
| Sales Growth (acquirer) | -0.0095 | -0.0023 |
| | (0.018) | (0.020) |
| Firm Age (acquirer) | -0.0001 | -0.0003 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | -0.0337** | -0.0301** |
| | (0.014) | (0.014) |
| Institutional Ownership (acquirer) | 0.0353 | 0.0134 |
| | (0.025) | (0.026) |
| Percentage Cash | 0.0002 | 0.0003** |
| | (0.000) | (0.000) |
| Related Deal | 0.0348*** | 0.0334*** |
| | (0.009) | (0.010) |
| Constant | 0.1291** | 0.2333*** |
| | (0.060) | (0.076) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 2,149 | 1,790 |
| R-squared | 0.277 | 0.286 |

## Table 12: Acquirer's analyst forecast error and target firm's performance (OCF/T-Assets)

Table 12 illustrates the relationship between the acquirer's forecast error as the independent variable and the target firm's ROA_EBIT as the dependent variable. The regression models also include various control variables. 'tar OCF/T-Assets' is the measure of the target firm's performance which is the ratio of the acquiring firm's operating cash flow to its total assets. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds the Bog-index (readability) to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | (1) | (2) |
|---|---|---|
| VARIABLES | tar OCF/T-Asset | tar OCF/T-Assets |
| Forecast error (acquirer) | -1.0785*** | -1.0853*** |
| | (0.319) | (0.324) |
| Bog Index (acquirer) | | -0.0011 |
| | | (0.001) |
| Uncertainty (acquirer) | -0.3277*** | -0.2059* |
| | (0.103) | (0.107) |
| Leverage (acquirer) | -0.0122 | -0.0098 |
| | (0.038) | (0.041) |
| Firm Size (acquirer) | 0.0005 | 0.0043 |
| | (0.004) | (0.003) |
| Sales Growth (acquirer) | -0.0279 | -0.0096 |
| | (0.024) | (0.024) |
| Firm Age (acquirer) | -0.0001 | -0.0004 |
| | (0.000) | (0.000) |
| Big-4 Auditor (acquirer) | -0.0229 | -0.0168 |
| | (0.017) | (0.017) |
| Institutional Ownership (acquirer) | 0.0583** | 0.0389 |
| | (0.027) | (0.028) |
| Percentage Cash | 0.0002 | 0.0002* |
| | (0.000) | (0.000) |
| Related Deal | 0.0426*** | 0.0398*** |
| | (0.010) | (0.011) |
| Constant | -0.0589 | -0.0064 |
| | (0.108) | (0.121) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 2,109 | 1,754 |
| R-squared | 0.212 | 0.210 |

## Table 13: Acquirer's analyst forecast error/ uncertainty and related deals

Table 13 illustrates the relationship between the acquirer's forecast error as the independent variable and related deal as the dependent variable. The regression models also include various control variables. 'Related deal' is a dummy variable that takes the value one if acquiring and target firms are from the same industry and 0 if not. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds the Bog-index (readability), and model 3 adds the uncertainty to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

Panel A presents the results for all target firms, including non-public and public firms, Panel B presents the results for only non-public firms, and Panel C presents the results for public firms.

**Panel A: Including all target firms (non-public and public)**

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | Related deal | Related deal | Related deal |
| Forecast error (acquirer) | -0.7201 | 0.0115 | -0.5476 |
| | (1.401) | (1.491) | (1.487) |
| Bog Index (acquirer) | | -0.0059 | -0.0070 |
| | | (0.005) | (0.005) |
| Uncertainty (acquirer) | | | 1.4317*** |
| | | | (0.493) |
| Leverage (acquirer) | 0.0057 | -0.0679 | -0.0503 |
| | (0.167) | (0.182) | (0.180) |
| Firm Size (acquirer) | -0.0834*** | -0.0882*** | -0.0727*** |
| | (0.023) | (0.023) | (0.024) |
| Sales Growth (acquirer) | -0.1181** | -0.0939* | -0.1283** |
| | (0.048) | (0.057) | (0.058) |
| Firm Age (acquirer) | -0.0071*** | -0.0065*** | -0.0060*** |
| | (0.002) | (0.002) | (0.002) |
| Big-4 Auditor (acquirer) | 0.0207 | 0.0422 | 0.0464 |
| | (0.096) | (0.103) | (0.102) |
| Institutional Ownership (acquirer) | 0.5083*** | 0.4334*** | 0.4385*** |
| | (0.134) | (0.140) | (0.140) |
| Public Target Dummy | 0.9719*** | 0.9955*** | 0.9981*** |
| | (0.057) | (0.063) | (0.063) |
| Constant | -0.1266 | 0.7666 | 0.6061 |
| | (0.702) | (0.816) | (0.825) |
| Year fixed-effect | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes |
| Pseudo R-squared | 0.0969 | 0.0998 | 0.1006 |
| Observations | 14,914 | 12,754 | 12,753 |

**Panel B: Including only non-public target firms**

| VARIABLES | (1)<br>Related deal | (2)<br>Related deal | (3)<br>Related deal |
|---|---|---|---|
| Forecast error (acquirer) | 0.0075 | 0.9402 | 0.2185 |
| | (1.601) | (1.731) | (1.726) |
| Bog Index (acquirer) | | -0.0064 | -0.0078 |
| | | (0.005) | (0.005) |
| Uncertainty (acquirer) | | | 1.8327*** |
| | | | (0.543) |
| Leverage (acquirer) | -0.0266 | -0.0920 | -0.0703 |
| | (0.183) | (0.200) | (0.196) |
| Firm Size (acquirer) | -0.0280 | -0.0333 | -0.0129 |
| | (0.025) | (0.026) | (0.027) |
| Sales Growth (acquirer) | -0.1177** | -0.1039* | -0.1477** |
| | (0.051) | (0.062) | (0.062) |
| Firm Age (acquirer) | -0.0083*** | -0.0076*** | -0.0069*** |
| | (0.002) | (0.002) | (0.002) |
| Big-4 Auditor (acquirer) | -0.0261 | 0.0077 | 0.0216 |
| | (0.107) | (0.115) | (0.114) |
| Institutional Ownership (acquirer) | 0.3964*** | 0.3241** | 0.3270** |
| | (0.147) | (0.156) | (0.154) |
| Constant | -0.5648 | 0.4247 | 0.2057 |
| | (0.825) | (0.930) | (0.943) |
| Year fixed-effect | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes |
| Pseudo R-squared | 0.0867 | 0.09 | 0.0915 |
| Observations | 11,734 | 10,100 | 10,099 |

**Panel C: Including only public target firms**

| VARIABLES | (1)<br>Related deal | (2)<br>Related deal | (3)<br>Related deal |
|---|---|---|---|
| Forecast error (acquirer) | -3.2708 | -2.8808 | -2.4724 |
| | (2.389) | (2.424) | (2.475) |
| Bog Index (acquirer) | | -0.0121 | -0.0113 |
| | | (0.009) | (0.009) |
| Uncertainty (acquirer) | | | -1.1538 |
| | | | (1.045) |
| Leverage (acquirer) | 0.4657 | 0.4185 | 0.4046 |
| | (0.298) | (0.321) | (0.321) |
| Firm Size (acquirer) | -0.2156*** | -0.2239*** | -0.2363*** |
| | (0.036) | (0.037) | (0.038) |
| Sales Growth (acquirer) | -0.1999* | -0.1376 | -0.1025 |
| | (0.112) | (0.133) | (0.136) |
| Firm Age (acquirer) | -0.0020 | -0.0018 | -0.0023 |
| | (0.003) | (0.004) | (0.004) |
| Big-4 Auditor (acquirer) | 0.0470 | 0.0338 | 0.0523 |
| | (0.191) | (0.202) | (0.202) |
| Institutional Ownership (acquirer) | 0.6877*** | 0.6769** | 0.6580** |
| | (0.252) | (0.269) | (0.270) |
| Constant | 2.7333*** | 3.8315*** | 3.9503*** |
| | (0.917) | (1.110) | (1.112) |
| Year fixed-effect | Yes | Yes | Yes |
| Industry fixed-effect | Yes | Yes | Yes |
| Pseudo R-squared | 0.0961 | 0.0995 | 0.0999 |
| Observations | 3,171 | 2,639 | 2,639 |

## Table 14: Acquirer's analyst forecast error/ uncertainty and payment method

Table 14 illustrates the relationship between the acquirer's forecast error as the independent variable and percentage cash as the dependent variable. The regression models also include various control variables. 'Percentage Cash' is the portion of the deal financed by cash. Model 1 includes the traditional firm-specific and deal-specific variables in the regression set-up. Model 2 adds the uncertainty to the regression set-up. 'Forecast error' is the difference between the actual earnings announced by the firm in each year and consensus scaled by the end of the fiscal year share price. 'Bog Index' is a multifaceted measure of plain English readability. A higher level of the Bog index represents a lower readable document. 'Uncertainty' is defined as the standard deviation of the past 60 monthly returns of the firm'. Other variable definitions and descriptions are provided in Table 1. All the models control for the year and Fama-French 48 industry fixed effects. Robust standard errors (clustered by firms) are in parentheses. *, **, *** show the p-value of <0.10, 0.05, and 0.01, respectively.

| | (1) | (2) |
|---|---|---|
| VARIABLES | Percentage Cash | Percentage Cash |
| Forecast error (acquirer) | -93.5824*** | -75.4612*** |
| | (27.997) | (28.042) |
| Bog Index (acquirer) | -0.0920 | -0.0514 |
| | (0.096) | (0.095) |
| Uncertainty (acquirer) | | -52.8080*** |
| | | (9.102) |
| Leverage (acquirer) | 0.6809 | -0.1918 |
| | (3.141) | (3.122) |
| Firm Size (acquirer) | 1.2546*** | 0.6862 |
| | (0.459) | (0.465) |
| Sales Growth (acquirer) | -6.0193*** | -4.8230*** |
| | (1.230) | (1.217) |
| Firm Age (acquirer) | 0.0850** | 0.0636* |
| | (0.035) | (0.035) |
| Big-4 Auditor (acquirer) | 2.8741* | 2.7906 |
| | (1.730) | (1.728) |
| Institutional Ownership (acquirer) | 8.3448*** | 7.8215*** |
| | (2.374) | (2.342) |
| Public Target Dummy | 0.9002 | 0.7549 |
| | (1.133) | (1.132) |
| Related Deal | 3.0310*** | 3.1743*** |
| | (0.940) | (0.937) |
| Constant | 40.9406*** | 46.5802*** |
| | (10.988) | (10.833) |
| Year fixed-effect | Yes | Yes |
| Industry fixed-effect | Yes | Yes |
| Observations | 9,398 | 9,397 |
| R-squared | 0.219 | 0.224 |