

# The Benefits of Mandatory Disclosure: Evidence from Regulation S-X Article 11

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## ABSTRACT

The SEC mandates disclosure of Article 11 pro forma financial statements (pro formas) for acquisitions that exceed one of three bright-line materiality thresholds. Motivated by two theories of mandated disclosure, I test whether pro formas improve analyst forecasts or mitigate incentive alignment problems. Using a fuzzy regression discontinuity design, I provide evidence that pro formas reduce post-acquisition forecast errors and improve target selection. The improvement in forecast accuracy (target selection) is concentrated in acquirers with low analyst following (acquisitions involving third-party advisors), suggesting that benefits to mandated pro forma disclosure depend on the pre-existing information environment.

**Keywords:** accuracy enhancement; acquisition; incentive alignment; pro forma disclosure

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## I. INTRODUCTION

Few transactions generate as much public attention and academic research as mergers and acquisitions (M&A) (Betton et al. 2008). M&A generates significant gains or losses for shareholders (Moeller et al. 2005), reallocates resources within the economy, generates billions in annual advisory fees (Golubov et al. 2012), and increases uncertainty (Erickson et al. 2012). Acquiring firms spend significant resources to obtain information about target quality, identify and estimate synergies, and forecast results of the combined enterprise, resulting in asymmetric information between managers and shareholders (Li et al. 2018; Golubov et al. 2012). Prior research shows asymmetric information and incentive misalignment play an important role in explaining acquisition structure (Travlos 1987), the allocation merger gains (Betton et al. 2008), the existence of fairness opinions (Kisgen and Song 2009), shareholder voting (Li et al. 2018), and governance mechanisms (Masulis et al. 2007). Article 11 of Regulation S-X (Article 11) requires SEC registrants to provide pro forma financial information for acquisitions that exceed one of three 20% materiality thresholds based on the relative sizes of the bidder and target (the asset test, income test, and investment test). Bidders whose acquisitions lie just above the threshold are required to provide pro formas, while otherwise similar bidders whose acquisitions lie just below the threshold have no required disclosure. For acquisitions with required pro forma disclosure, the acquirer must provide an as-if consolidated balance sheet and income statement, with separate columns presenting historical acquirer financial statements, historical target financial statements, pro forma adjustments, and pro forma results. The economic importance of M&A, combined with disclosure rules that apply only to certain acquisitions, make the setting well-suited for testing the benefits of event-based mandated disclosure.

Prior literature considers at least two objectives of disclosure regulation. First, the accuracy enhancement hypothesis posits that mandatory disclosure provides information that is useful in valuing securities, and absent a mandate, firms would not provide the information (Coffee Jr 1984; Admati and Pfleiderer 2000). Under this hypothesis, the requirement to provide pro forma disclosure does not affect an acquirer's acquisition decision but does affect market participants' ability to value the combined enterprise. Second, the incentive alignment hypothesis posits that mandated disclosure alleviates an agency problem by aligning incentives (Mahoney 1995). Managers may wish to invest in low-quality projects rather than return capital to shareholders (Jensen 1986; Chen 2019), or managers may face perverse incentives as the capital market is less informed (Kanodia and Lee 1998). If managers lack acquisition expertise, they may hire an outside advisor, such as an investment bank, who receives a contingent fee on deal closing, creating misaligned incentives (Mahoney 1995; Buffett 2018). Mandated disclosure may alleviate these problems by increasing transparency and reputational concerns (Chemmanur and Fulghieri 1994), or by providing an ex post measure of target selection which disciplines ex ante investment decisions (Kanodia and Lee 1998). Under the incentive alignment hypothesis, firms modify acquisition decisions (e.g., choose different targets, adjust payment terms, etc.) knowing that pro formas will provide transparency into target selection. Prior research (Bushman et al. 2006; Mahoney 1995; Paul 1992; Gjesdal 1981) shows that mandated disclosure theories may be complementary, competing, or independent, which suggests that I may find support in favor of both, one, or neither hypothesis.

I test my hypotheses using a sample of 3,080 acquisitions between 2002 and 2016, with an aggregate transaction consideration of over 2 trillion dollars. To address endogeneity concerns, I use a fuzzy regression discontinuity (RD) design around the 20% investment test

threshold. Below the 20% investment threshold, only 19.5% of acquirers file pro formas, either voluntarily or because they cross another unobservable threshold. Above the investment test threshold, 94.6% of acquirers file pro formas.

First, I test the accuracy enhancement hypothesis that pro formas improve market participants' ability to forecast future earnings, consistent with the SEC's claim that pro formas help investors predict the "financial condition and results of operations of the combined entity following the acquisition" (SEC 2015). Under the null hypothesis, firms have strong incentives to provide informative voluntary disclosure (Grossman 1981; Grossman and Hart 1980) and, even in the absence of full disclosure, it is unlikely that mandated uniform disclosure will provide precisely the type of information that is needed to forecast future earnings (Stigler 1964; Mahoney 1995). Moreover, pro forma disclosure is unaudited, does not contain a forecast, and only allows for the presentation of factually supportable synergies, which may limit its usefulness (CFA Institute 2016; SEC 2019). Finally, the existing information environment, including other mandated filings and information produced by other market participants, may already contain all information included in Article 11 pro formas, leading to the prediction that forecasting benefits depend on the amount of information produced absent a mandate.

I test the accuracy enhancement hypothesis by examining analyst forecast errors in the post-combination period. I show that forecast errors increase in the post-acquisition period, and using a fuzzy RD design, I provide evidence pro formas mitigate the increase in post-acquisition analyst forecast errors. The coefficient magnitudes suggest that for acquisitions right above the 20% threshold, the provision of pro formas may fully offset the increase forecast errors. I show the results are robust to weighting observations, alternative specifications, and two measures of common and total uncertainty from Barron et al. (1998).

I conduct two tests to determine whether the forecasting benefit of pro formas depends on the pre-existing information environment. First, I split the sample by analyst following and find a forecasting benefit only for firms with below-median analyst following. This result suggests that information necessary to forecast earnings is produced even without a disclosure mandate for firms with above-median analyst following. Second, I examine the effect of pro formas on forecast errors for different target types as forecasting difficulty may vary with target pre-acquisition information. I find a negative association between pro formas and three (two of three) outcome measures in the subsample of private and subsidiary targets (public targets). Overall, the evidence is consistent with the accuracy enhancement hypothesis.

Next, I test whether pro forma disclosure mitigates an incentive alignment problem by providing information about target selection. I define high (low) quality target selection as acquisitions with a higher (lower) net present value. Following Bao and Edmans (2011), I use 3-day announcement returns as a proxy for target quality and show pro forma income statement metrics (pro forma EPS, purchase price to revenue, and pro forma operating margin) explain variation in announcement returns. Using multiple specifications, I show that the provision of pro formas is associated with higher quality target selection. I show this result is concentrated in acquisitions of non-public targets involving an outside advisor, and I find that acquirers using an outside advisor are less likely to complete acquisitions that are accretive to pro forma EPS. Overall, the evidence is consistent with mandated pro forma disclosure mitigating an incentive problem between outside advisors and shareholders by improving transparency.

While mandated disclosure is a first-order policy issue (Stigler 1964; Coffee Jr 1984; Leuz and Wysocki 2016), Healy and Palepu (2001) note limited research on disclosure regulation before 2000. Leuz and Wysocki (2016) review a growing number of regulatory studies focused

on a small number of well-known changes in the 2000s (IFRS adoption, Regulation FD, or Sarbanes-Oxley) and discuss inference limitations due to commonalities in design. In many cases, regulatory changes are in response to a financial or economic crisis (e.g., Enron), occur at the same time as other institutional changes (e.g., changes in enforcement as discussed in Christensen et al. (2013)), and apply to most firms in an economy making it difficult to identify counterfactuals. I contribute to this literature by studying a new type of disclosure mandate, in a new setting, using a design with different strengths and weaknesses. With regard to limitations, the main concern is that acquirers manipulate transactions to avoid the threshold. While I make research design choices to mitigate the possibility of manipulation and conduct tests to address the concern, I cannot rule out a selection or manipulation threat. Moreover, the choice of a bandwidth requires a tradeoff between sample size and comparability of acquisitions. With regard to strengths, treatment occurs consistently throughout my sample period, reducing validity threats from contemporaneous economic shocks or changes in enforcement, and across the spectrum of firm size and characteristics. A large firm with high analyst following could be a treatment firm in one year and a control firm in the next year. By conducting both large-sample tests focused on identification and subsample analysis using hand-collected disclosure, I am able more closely link disclosure attributes to outcomes. Finally, this setting allows for diversification of empirical evidence and helps identify the conditions under which disclosure regulation is, or is not, likely to improve outcomes (Leuz and Wysocki 2016).

My paper makes the following contributions. First, the SEC is considering amendments to the pro forma guidance as part of a larger project on disclosure effectiveness, and there is no academic research on the costs or benefits of pro formas (SEC 2015, 2019). I provide evidence on potential benefits of pro forma disclosure, which may be useful to the SEC (Leuz 2018).

Second, I contribute to the literature on mandated financial disclosure by examining event-based pro forma disclosure (Stigler 1964; Benston 1969; Bushee and Leuz 2005; Greenstone et al. 2006). I provide evidence on the forecasting (Ramnath et al. 2008) and incentive alignment (Jensen 1986; Mahoney 1995; Chen 2019) benefits of pro forma disclosure and contribute to the literature on M&A advisors (Bao and Edmans 2011; Golubov et al. 2012). My incentive alignment tests compliment Chen (2019), who shows Rule 3-05 disclosure of target historical financial is associated with better post-acquisition operating performance. Finally, I contribute to the literature on acquisition announcement returns by showing that pro forma metrics, which exclude anticipated synergies, explain variation in announcement returns (Betton et al. 2008).

This study proceeds as follows. Section 2 provides background, Section 3 discusses hypothesis development and Section 4 provides sample selection. Section 5 tests accuracy enhancement, section 6 tests incentive alignment, and Section 7 concludes.

## **II. BACKGROUND ON ARTICLE PRO FORMA DISCLOSURE**

In 1982, the SEC added Article 11 to Regulation S-X (Article 11). Article 11 requires SEC registrants to provide pro forma financial information, including a balance sheet, income statements, and footnotes, for material transactions. The objective of pro forma information is to “help investors understand the impact of a significant transaction, such as a business combination or disposition, by showing how it might have affected the historical financial statements (Young 2016).” In this paper, I focus on M&A pro forma disclosures.

The SEC and FASB acknowledge that “information about a reporting entity is more useful if it can be compared with similar information about other entities and with similar information about the same entity for another period or another date (FASB 2010, QC 20).” After an acquisition, the post-acquisition financial statements of the acquirer are less comparable

to prior periods. To improve comparability, the SEC mandates disclosure of pro forma information, specifically, an as-if consolidated balance sheet and income statement, with separate columns presenting historical financial statements of the acquirer, historical financial statements of the target, pro forma adjustments, and pro forma results (Young 2016). Article 11 requires disclosure of pro forma financial information when an acquisition is probable or completed. The form requiring pro forma disclosure depends on the nature of the transaction. In transactions requiring a vote by the shareholders (Li et al. 2018), or requiring the registration of new shares (Deloitte 2018), acquirers provide Article 11 pro formas in the prospectus or registration statements (typically, a Form S-4). In these cases, investors have access to pro forma financial statements before the acquisition closing. In addition, firms must file pro formas in a Form 8-K within 4 business days of acquisition closing, with an optional 71 calendar day extension. If the acquirer files pro formas before acquisition closing, either in Form 8-K or a registration statement, the acquirer may file updated pro formas in the post-closing period or may incorporate by reference the previous pro formas. The SEC requires Article 11 pro forma disclosure if an acquisition is material at the 20% threshold under the following 3 tests:

- Asset Test – The ratio of the target’s pre-acquisition assets to the acquirer’s pre-acquisition assets, as of the most recently completed fiscal year.
- Investment test – The ratio of the purchase price, as defined in US GAAP, to the acquirer’s pre-acquisition total assets.
- Income test – The ratio of the target’s income before taxes to the acquirer’s income before taxes, subject to certain adjustments.<sup>1</sup>

Pro forma financial statements are required if the largest ratio from the three tests is greater than 20%. Registrants must provide the same pro forma information, whether barely exceeding one

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<sup>1</sup> Income in this test is defined as the absolute value of “income from continuing operations before income taxes, extraordinary items and cumulative effect of a change in accounting principle (Young 2016).” If current acquirer income is 10% less than the 5 year average, then the 5 year average should be used (SEC 2015).



threshold or greatly exceeding all three thresholds. While some firms may voluntarily provide pro formas, other firms with an obligation to provide pro formas may seek relief from the SEC.

Pro forma financial statements require condensed presentation of the income statement and balance sheet, including columnar presentation of the following:

- Historical financial statements of the acquirer
- Historical financial statement of the target
- Pro-forma adjustments
- Pro-forma results that reflect the sum of the historical financial statements and pro forma adjustments

For public acquirers, the historical financial statements are already publicly available, and the availability of pre-acquisition target financial statements depends on the target's pre-acquisition reporting requirements. If the historical financial statements of the target are not publicly available, Rule 3-05 requires the acquirer to disclose audited financial statements of the target.<sup>2</sup> Target financial statements reflect the target's historical accounting and may be prepared in a different currency, using a different basis of GAAP, and in certain situations, current practice allows for abbreviated presentation (Young 2016; Deloitte 2018; SEC 2019; Young 2019).

Adding the target and acquirer's historical financial statements will not result in a balance sheet or income statement that is comparable to the combined entity, as the acquirer must apply purchase accounting, and certain known adjustments will cause historical financial statements to differ from future financial statements. To address these issues, a pro forma adjustment column presents adjustments that meet the following criteria:

1. Directly attributable to the transaction
2. Have a continuing effect on income, and
3. Factually supportable

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<sup>2</sup> Unlike Rule 3-05 financial statements, Article 11 pro formas are unaudited. While not subject to an audit, the registrant's auditor must still comply with professional auditing standards (for example, PCAOB AU 550 requires auditors to review pro formas to ensure they are not "inconsistent" with the audited financial statements), and auditors may perform procedures requested by 3<sup>rd</sup> parties (e.g. comfort letters). (Young 2016)

While the most common pro forma adjustment is the application of purchase accounting, firms recognize pro forma adjustments for other known changes, such as adjustments to capital structure.<sup>3</sup> The directly attributable criterion requires adjustments to be directly related to the acquisition. For example, suppose a firm incurs a large restructuring expense and then completes an unrelated acquisition. The directly attributable criterion prohibits a pro forma adjustment to remove the restructuring expense, as it is not directly attributable to the acquisition. The 2<sup>nd</sup> criterion requires pro forma adjustments to have a continuing effect on income. Pro forma income statements exclude transaction costs, inventory fair value adjustments, and short-term favorable/unfavorable contract amortization. The 3<sup>rd</sup> criterion, factually supportable, is the most contentious as it prevents registrants from including anticipated synergies as they are not factually supportable (Young 2016).<sup>4</sup>

Appendix A provides an illustrative example of a pro forma income statement for the AT&T acquisition of DirectTV. Since DirectTV was a public company prior to the acquisition, the only new information contained in the disclosure is pro forma adjustments. Examples of AT&T pro forma adjustments include conforming accounting policies, eliminating intercompany sales, and applying purchase accounting (AT&T 2015). Since purchase accounting is not complete, AT&T shows how property, plant, and equipment fair value changes will affect future depreciation. Since AT&T financed the acquisition with debt and equity, AT&T shows the new interest expense and the effect of equity issuances on earnings per share (AT&T 2015).

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<sup>3</sup> The E&Y business combination guidance provides illustrative examples of 18 different types of pro forma adjustments in business combinations, including the treatment of transaction costs, compensation, disposals, taxes, restructuring, accounting policy changes, impairment, deferred revenue, and inventory valuation (Young 2016).

<sup>4</sup> In 2015, the SEC issued a request for feedback on the usefulness of pro formas (SEC 2015). Several respondents raised concerns about the application of the factually supportable criterion (Respondents 2015). These respondents stated that pro formas would be more useful if firms were permitted to include adjustments met some lower standard such as “reasonably estimable and reasonably expected to occur” (Young 2019; SEC 2019).

### III. HYPOTHESIS DEVELOPMENT AND RESEARCH DESIGN

While there is no current unifying theory that explains the problem solved by mandated disclosure (Verrecchia 2001; Beyer et al. 2010), securities laws in most developed economies require extensive disclosure (Mahoney 2009; Berger 2011). The benefits to mandatory disclosure are widely debated and depend on the information produced absent a mandate (Stigler 1964; Coffee Jr 1984; Mahoney 2009; Dye 1990). The empirical literature on mandated disclosure begins with research on the Securities Act of 1933 and the Exchange Act of 1934 (the Securities Acts). While early academic research generally found no benefit to the Securities Acts (Stigler 1964; Benston 1969, 1973), later critiques discuss methodological concerns and design limitations that limit inferences (Friend and Herman 1964; Seligman 1983). Subsequent research tests the market response to expanding the Securities Acts to OTC or OTCBB firms (Greenstone et al. 2006; Bushee and Leuz 2005). While Greenstone et al. (2006) find a positive market response to mandated disclosure regulation, Bushee and Leuz (2005) document a negative market response, and show 76% of firms choose to delist, suggesting that costs outweigh the benefits for firms of a certain size.<sup>5</sup>

Prior research on mandated disclosure in an M&A setting focuses on the 1968 Williams Act issued in response to perceived abuses, such as “Saturday night raids,” where acquirers secretly purchased shares from large blockholders. Congress passed the Williams Act to protect target shareholders by requiring an orderly auction process (e.g., minimum 20 day offer period) and mandating disclosure in a Form 14D (Betton et al. 2008). Research on the Williams Act documents higher target premiums (Jarrell and Bradley 1980) and a reduction to quasi-rents

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<sup>5</sup> The studies compare newly regulated OTC or OTCBB firms to existing SEC registrants. Greenstone et al. (2006) suggest that differences in results are due to differential size of treatment firms, as their average (median) treatment firm is approximately 7 (8) times larger than the treatment firms in Bushee and Leuz (2005).

available to acquirers (Schipper and Thompson 1983), but is unable to determine whether the effects are due to mandated disclosure or changes in the tender process (Betton et al. 2008). My study examines one type of disclosure mandated by the Securities Acts not explored in prior literature, the requirement to provide event-based Article 11 pro formas.

Two common explanations for mandated disclosure are accuracy enhancement (Coffee Jr 1984; SEC 2013; Admati and Pfleiderer 2000; Barth et al. 2001) and incentive alignment (Mahoney 1995; Kothari et al. 2010). Prior research on disclosure regulation usually focuses on capital market effects, such as improved liquidity or forecasting ability, or real effects (Healy and Palepu 2001; Leuz and Wysocki 2016). Similarly, I use these two theories to motivate my hypotheses on mandated pro forma disclosure. Analytical research shows that it is possible to have a financial measure that is useful for valuing the firm but not addressing agency problems (Paul 1992; Gjesdal 1981; Lambert 2001, Section 3.5). Mahoney (1995, 2008) argues that accuracy enhancement and agency cost are competing hypotheses, while Bushman et al. (2006) show a positive association between the value of earnings in valuation and contracting, suggesting the possibility of complementarities. Based on these differing perspectives, it seems possible that I may find support for one hypothesis, both hypotheses, or neither hypothesis.

### **The Accuracy Enhancement Hypothesis**

The accuracy enhancement hypothesis argues a market failure prevents voluntary disclosure of all information necessary to price securities and that the purpose of mandated disclosure is to provide information that is useful in determining the value of the firm.<sup>6</sup> Given the link between earnings and firm value (Ohlson 1995), I test whether pro forma information

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<sup>6</sup> Coffee Jr (1984) and Simon (1989) argue that financial information is similar to a public good and the free-rider problem may lead to underproduction. Easterbrook and Fischel (1996) argue that free-rider problems are more prominent when information produced by one firm is used by investors of another firm. Verrecchia (1983) shows disclosure may reveal proprietary information which prevents full unraveling.

improves market participants' ability to forecast earnings, consistent with the SEC's claim that pro formas help investors predict the "financial condition and results of operations of the combined entity (SEC 2015)." Following prior literature (Bradshaw et al. 2017), I use analyst forecasts as a proxy for the market's expectation of future earnings. The pro forma requirement to only include items with a recurring effect on income appears consistent with analyst forecasts, which often exclude transitory items (Bradshaw et al. 2018). In addition, there is anecdotal evidence that analysts use pro formas. When discussing the AT&T acquisition of Time Warner, Bank of America analyst David Barden stated: "We expect AT&T to file pro forma financial statements in the coming weeks which should improve Street models... and add conviction to numbers" (Franck 2018). This reasoning leads to my first hypothesis:

**H1A:** Article 11 pro forma financial statements reduce analyst forecast errors

There are several reasons why Article 11 pro forma disclosure may not reduce analyst forecast errors. First, pro formas are unaudited, and investors may have concerns about reliability.<sup>7</sup> If the purpose of mandatory disclosure is to confirm more informative voluntary disclosure, then unaudited pro forma disclosure may provide little value (Gigler and Hemmer 1998). Second, some view the current pro forma requirements as too restrictive to be useful. For example, the CFA stated, "investors are primarily interested in understanding how a company will look going forward... Thus, the current limitations on significant planned changes by the acquirer, such as workforce reductions, facility closings, actually hinder, rather than help, the investor (CFA Institute 2016)." Third, firms may provide more informative voluntary disclosure (Grossman and Hart 1980; Grossman 1981). Even if firms do not disclose all relevant information, prior

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<sup>7</sup> Teoh and Wong (1993) show equity investors place more weight on audited earnings, and Francis et al. (1999) show that high quality auditors are associated with more credible reporting.

literature argues that it is unlikely that a regulator can design a uniform disclosure rule requiring precisely the type of information that investors need to forecast earnings, but firms wish to withhold (Stigler 1964, 1971; Mahoney 1995). Finally, the existing information environment may already contain all information included in Article 11 pro formas. In addition to Article 11 pro formas, firms must file merger agreements in a Form 8-K, and ASC 805-10-50, *Business Combinations* requires disclosure of the purchase price allocation, pro forma revenue, and pro forma earnings calculated on a different basis.<sup>8</sup> Market participants, including sell-side analysts, have strong incentives to gather information, raising the possibility that market participants produce information contained in pro formas even absent a mandate (Bradshaw et al. 2017; Kothari et al. 2016; Grossman and Stiglitz 1980). Moreover, some targets are publicly traded and covered by analysts before the acquisition. Thus, the forecasting benefit to pro formas may depend on the pre-existing information environment, which leads to the following hypothesis:

**H1B:** The effect of Article 11 pro forma financial statements on analyst forecast errors depends on the pre-existing information environment of the target and acquirer

### **The Incentive Alignment Hypothesis**

Prior academic literature discusses two potential incentive problems in an M&A setting. First, managers with misaligned incentives may wish to invest in low-quality projects rather than return capital to shareholders (Jensen 1986; Morck et al. 1990; Chen 2019). Second, managers may lack acquisition experience and hire an outside advisor whose incentives are not aligned with shareholders (Mahoney 1995; Kosnik and Shapiro 1997; Buffett 2018). Both of these incentive problems may lead to acquisitions with a lower net present value or internal rate of return, the two

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<sup>8</sup> Ernst and Young describe ASC 805 pro formas as “different from and substantially less detailed than the information required [by] Article 11” and the PwC Business Combination guide discusses differences in format, content, the level income statement disaggregation, and treatment of non-recurring transactions (PwC 2014).

most common metrics used by managers to evaluate investment projects (Graham and Harvey 2001). Warren Buffet expressed similar concerns in his 2017 shareholder letter:

*"Once a CEO hungers for a deal, he or she will never lack for forecasts that justify the purchase. Subordinates will be cheering, envisioning enlarged domains and the compensation levels that typically increase with corporate size. Investment bankers, smelling huge fees, will be applauding as well. (Don't ask the barber whether you need a haircut.) If the historical performance of the target falls short of validating its acquisition, large "synergies" will be forecast." (Buffett 2018)*

Mahoney (1995) argues the purpose of mandated disclosure is to reduce agency conflicts, and that information designed to address agency problems should be limited in scope, precise, and not overly costly to produce. These criteria appear consistent with pro forma disclosure, which is substantially shorter than periodic financial statements, the factually supportable criterion ensures that adjustments have high precision, and pro forma information is potentially a subset of the entire information set management used to evaluate the acquisition and thus not overly costly to produce. Kanodia and Lee (1998) show disclosure that helps investors identify low-quality investment ex post will discipline managers' ex ante investment choices. Consistent with this framework, Chen (2019) shows that acquirers who provide target audited financial statements experience better post-acquisition fundamental performance (ROA, 3-year abnormal returns, and lack of goodwill impairment). Chemmanur and Fulghieri (1994) show reputational concerns can alleviate an incentive problem between shareholders and the 3<sup>rd</sup> party advisors. Shareholders may evaluate the target quality using pro forma information, leading to increased transparency and reputational concerns.<sup>9</sup> This reasoning leads to my second set of hypotheses:

**H2A:** Article 11 pro forma financial statements mitigate an incentive alignment problem between managers and firm shareholders

**H2B:** Article 11 pro forma financial statements mitigate an incentive alignment problem between third party advisors and firm shareholders

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<sup>9</sup> In the absence of pro forma disclosure, investors will learn about acquisition performance in the post-acquisition financial statements. These financial statements will reflect both the quality of target selection and the realization of forecasted synergies, and thus will be a noisier signal regarding target selection.

There are several reasons why I may fail to find support for H2A or H2B. First, pro formas do not require disclosure of conflicts of interest or 3<sup>rd</sup> party fee arrangements even though these are the types of disclosures Mahoney (1995) argues are most useful in addressing agency conflicts. Second, acquisitions are widely publicized events (Golubov et al. 2012), and other disclosures, such as fairness opinions, may increase transparency and leave little role for pro forma disclosure.<sup>10</sup> Golubov et al. (2012) show that top-tier investment banks deliver higher announcement date returns on public acquisitions due to increased publicity, raising the question of whether mandated disclosure can increase transparency for acquisitions of non-public targets. Finally, respondents to the SEC’s 2015 request for feedback rarely discuss the incentive alignment perspective, and proposed amendments would allow pro forma disclosure to include forward looking information (SEC 2019; Young 2019), suggesting that the SEC may not have designed Article 11 to address incentive alignment problems.

## RESEARCH DESIGN

I use the following empirical specification to test my hypotheses:

$$Outcome_{i,j} = \beta_1 ProForma_{i,j} + \beta_2 Investment\ Test_{i,j} + \sum_c \alpha_c Controls^c_{i,j} + \delta_t + \varphi_k + \epsilon \quad [1]$$

The test variable (*ProForma*) is an indicator variable equal to one if firm *i* files Article 11 pro formas related to acquisition *j*. *Investment Test* is the ratio of purchase price to acquirer’s pre-acquisition total assets. When testing H1A and H1B, the dependent variable is the change in analyst forecast errors (*AFE Change*) measured as the absolute value of post-acquisition forecast errors less the absolute value of pre-acquisition forecast errors averaged over four quarters,

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<sup>10</sup> Both the target and acquirer may obtain a fairness opinion. Prior research usually focuses on target fairness opinions, which are not intended to solve an acquiring firm incentive problem (Shaffer 2018; Bowers 2001). Research on acquirer fairness opinions provides mixed evidence, with studies showing they are associated with lower target premiums but also lower acquirer returns (Bowers and Latham 2006; Kisgen and Song 2009).



scaled by pre-acquisition average EPS.<sup>11</sup> I exclude the acquisition quarter to ensure that acquirers file pro formas before measuring forecast errors. When testing H2A and H2B, I use 3-day abnormal announcement returns as a measure of target selection quality. Following Bao and Edmans (2011), I calculate announcement returns as the three-day cumulative abnormal return (CAR) over the CRSP value-weighted index (*ARET*).

To test H1, I predict a negative coefficient on  $ProForma_{i,j}$  if the provision of pro formas reduce analyst forecast errors. I control for deal and acquirer characteristics from prior literature (Erickson et al. 2012; Betton et al. 2008).<sup>12</sup> To test H2, I predict a positive coefficient on  $ProForma_{i,j}$  if pro forma disclosure improves target quality by mitigating an incentive alignment problem. When testing H2, I include control variables from prior literature on M&A announcement returns (Chen 2019; Golubov et al. 2012; Bao and Edmans 2011).<sup>13</sup> Finally, I include industry ( $\varphi_k$ ) and year ( $\delta_t$ ) fixed effects. Appendix B provides variable definitions.

I face three empirical challenges. First, since pro formas are costly to prepare, the SEC only requires disclosure on material transactions (i.e., those that exceed one 20% threshold). Prior research shows a positive association between acquisition materiality and post-acquisition uncertainty (Haw et al. 1994; Erickson et al. 2012), and a negative association between acquisition size and announcement returns (Chang 1998; Andrade et al. 2001), two associations

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<sup>11</sup> Using analyst forecasts as proxy for investor expectations assumes unbiased analyst forecasts. Prior literature notes potential conflicts of interests in an attempt to cross-sell more profitable investment banking services (Bradshaw et al. 2017). My sample is concentrated in the post Global Settlement period, where conflicts of interest are less common (Kadan et al. 2008), and I conduct robustness tests to address this concern.

<sup>12</sup> Deal characteristics include abnormal returns, foreign targets, public targets, subsidiary targets (private targets are the omitted group), cash consideration, the natural log of diligence days, diversifying deals, and an indicator variable if the purchase price exceeds cash-on-hand (*External Financing*). Acquirer characteristics include analyst coverage, acquirer size, pre-acquisition goodwill, Tobin's Q, Big 4 auditor and an indicator for serial acquirers. Since any set of covariates is likely incomplete, I use a fuzzy RD design to address endogeneity concerns.

<sup>13</sup> In announcement return regressions, I control for the use of a 3<sup>rd</sup> party advisor, foreign targets, public targets, subsidiary targets, cash consideration deals, diversifying deals, the need for external financing, Tobin's Q, leverage, the size of the acquirer (*Acq Size*), and the size of the target (*Tgt Size*).

that are opposite of my predictions, and that will bias against finding results.<sup>14</sup> Second, some firms may petition the SEC for exemptions from providing pro formas, while other firms may voluntarily provide pro formas, which creates selection concerns.<sup>15</sup> Finally, for a majority of firms in my sample, I only observe the investment test. The unobservable asset and income tests are likely correlated with my outcome measures, creating a correlated omitted variable.

To address these concerns, I use a fuzzy regression discontinuity design with the investment test threshold as an instrument to identify exogenous variation in pro forma financial statements. Conceptually, this design compares acquisitions right above the 20% threshold to those below the threshold. This fuzzy RD design differs from a sharp regression discontinuity design, where treatment is a deterministic function of a single forcing variable, as firms below (above) the investment test threshold may (not) provide pro formas. However, exceeding the investment test threshold does strictly increase in the probability of filing pro formas, creating a discontinuous increase in mandated pro forma disclosure. As suggested by Hahn et al. (2001), I estimate treatment effects using two-stage least-squares (also see Imbens and Wooldridge (2009) and Lee and Lemieux (2010)). I use the following first-stage model (FS) with investment test threshold (*Threshold*) as an instrument and then include *ProForma* in the second stage (SS).

$$Pro\,Forma_{i,j} = \beta_1 Threshold_{i,j} + \beta_2 Investment\,Test_{i,j} + \sum_c \alpha_c Controls^c_j + \delta_t + \varphi_k + \epsilon \quad [FS]$$

$$Outcome_{i,j} = \beta_1 \widehat{ProForma}_{i,j} + \beta_2 Investment\,Test_{i,j} + \sum_c \alpha_c Controls^c_j + \delta_t + \varphi_k + \epsilon \quad [SS]$$

*Threshold* is an indicator variable equal to one if acquisition j crosses the investment test threshold. The use of the investment test threshold meets the relevance criterion as crossing the

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<sup>14</sup> Appendix C provides a mathematical representation of this concern with regard to forecast errors.

<sup>15</sup> The SEC reports that in 2014 the staff received approximately 60 requests for relief from providing Rule 3-05 or Article 11 disclosure (SEC 2015). The staff may grant full relief, partial relief, or no relief, but does not provide statistics on how often they grant relief, or the nature of the relief.

threshold increases the probability of filing pro formas. The exclusion criterion requires that barely exceeding the investment test threshold at 20% does not result in a discontinuous change in analyst forecast errors or announcement returns, other than through the effect of pro forma disclosure. For private and subsidiary targets, I can only calculate the investment test, and thus the asset test and income test are included in the error term of the first-stage model. This raises the concern that the error term in the first stage might be correlated with the investment test threshold, which would violate the exclusion criterion. Formally stated, the investment test threshold would not be a valid instrument if either of the following occurs:

$$\text{cov}(\text{Invest Test Threshold}, \text{Asset Test Threshold} \mid \text{Invest test}) \neq 0 \text{ [EC1]}$$

$$\text{cov}(\text{Invest Test Threshold}, \text{Income Test Threhsold} \mid \text{Invest test}) \neq 0 \text{ [EC2]}$$

Including the investment test percentage in the first-stage controls for a linear relation between the excluded tests and the investment test. However, a non-linear relation between the investment test and the excluded tests would violate the exclusion criterion.

#### **IV. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS**

There is no commercially available database of pro forma financial statements, so I obtain a sample of acquisitions from SDC platinum and then hand-collect pro forma financial information from SEC filings. I start my sample in 2002 to avoid acquisitions accounted for under the pooling-of-interest method and the anomalous share-based technology acquisitions identified in Moeller et al. (2005).<sup>16</sup> I identify 25,120 acquisitions in SDC platinum, completed between January 1, 2002, and December 31, 2016, with a US publicly traded acquirer and SDC deal value greater than \$10 million. I include acquisitions of foreign and domestic public,

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<sup>16</sup> Starting the sample in 2002 alleviates concerns about analyst conflicts of interest during the 1990s which led to congressional investigations, the global settlement, and new regulations (Bradshaw et al. 2017; Kadan et al. 2008).

private, and subsidiary targets. I match each acquirer to Compustat, CRSP, and IBES, which reduces the sample to 12,140 observations. Following Chen (2019), I use the ratio of SDC deal value to acquirer's pre-acquisition assets from the most recently completed annual period as a proxy for the investment test. I remove all acquisitions with an investment test ratio below 5% or greater than 40%, which reduces the sample to 5,247. Given the importance of appropriately identifying firms above and below the 20% threshold, I verify the purchase price for acquisitions with a deal value between 15% and 25% of acquirer pre-acquisition assets. Since one of my main outcome variables is analyst forecast errors, I remove observations with acquirers covered by less than three analysts and without forecasts in all four pre and post-acquisition quarters. To reduce confounding effects from other acquisitions, I remove acquisitions in which the acquirer completes another transaction above 20% in either the 365 days before or after closing. Finally, I remove acquisitions completed by REITs or Real estate firms subject to the guidance Regulation S-X 3-14, which has different thresholds. My final sample is 3,080 observations.

For each of the 3,080 acquisitions, I determine whether the acquiring firm provides Article 11 pro forma financial statements. I conduct a keyword search of 8-K, S-4, and proxy statement filings to identify a sample of firms who reference pro forma financial statements.<sup>17</sup> I review every disclosure to ensure that the firm provides Article 11 pro formas. For all observations without pro forma disclosure that are above the investment test threshold, I manually search Edgar filings to ensure no disclosure. Ultimately, 1,128 firms provide Article 11 pro forma disclosure. Table 1 shows the sample:

[INSERT TABLE 1]

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<sup>17</sup> I search 8-K, S-4 and proxy statement filings with for the phrases "unaudited W/250 pro forma W/250 acquisition /merger/combin\*." I search 8-K filings in the 100 day post-acquisition period. I search S-4 and proxy statement filings between the acquisition announcement and closing date.

For each observation with pro forma disclosure, I hand-collect key balance sheet, annual income statement, and footnote information. I remove 164 observations with confounding events, such as a previous acquisition or disposition, or incomplete disclosure. I also remove 18 observations with no target revenue, as I use purchase price to revenue as a test variable.

## **Descriptive Statistics**

[INSERT TABLE 2 PANEL A]

Table 2 Panel A provides the number of acquisitions in 7 different investment test size bins, using 5% intervals. For each bin, I present the number of observations, the percentage of firms filing pro formas, the change in forecast errors, and the abnormal announcement return. I find 19.5% of observations below the threshold include pro formas, with the percentage increasing from 14.3% in the smallest bucket (5% to 10%) to 29.6% in the 15% to 20% size bucket. The importance of the threshold is observable in the data. The percentage of firms providing pro formas jumps from 29.6% right below the threshold, to 91.8% in the bucket right above the threshold (20 to 25%). Overall, 94.6% of firms above the 20% threshold file pro formas. I use the 20% threshold as an instrument, as crossing the threshold increases the probability of providing pro formas. Figure 1 provides a graphical illustration of the discontinuous increase in pro formas around the threshold.

[INSERT FIGURE 1]

The bottom of Table 2 Panel A shows that the average change in forecast errors is 5.0% below the 20% threshold and 5.1% above the threshold. In particular, the change in forecast errors falls to almost zero in the bin right above the threshold, and the average forecast error is smaller in the 25-30% bin than in the 10-15%. Examining announcement returns, the average return below the threshold is 1.0%, while the average return above the threshold is 1.9%.

A concern with using known thresholds as a source of exogenous variation is the possibility of manipulation around the threshold. For example, Li et al. (2018) show that acquiring firms alter the mix of cash and stock consideration, but not the amount of total consideration, to avoid shareholder votes. To manipulate the investment test, the acquiring firm shareholders must convince the target firm shareholders to accept a lower purchase price. Given an average price of \$665 million, an acquirer must convince target shareholders to accept \$13.3 million less to manipulate the investment test from 21% to 19%. However, there is anecdotal evidence of acquirers trying to avoid providing pro formas (Chen 2019), so I formally test whether manipulation is of concern in my setting.

Starting with McCrary (2008), economists have developed tests to examine whether there is a manipulation around a threshold. The general idea behind these tests is to examine whether there is an abnormal number of observations right above or below the threshold, which would not exist absent knowledge of the threshold (Cattaneo et al. 2018). Cattaneo et al. (2017) design a nonparametric manipulation test based on a local-polynomial density estimator. Figure 2 shows the Cattaneo et al. (2017) manipulation test.

[INSERT FIGURE 2]

Visually, figure 2 does not show manipulation around the threshold, and the test statistic is -1.26, which equates to a p-value of 0.21. I separately test for manipulation in the private target and subsidiary subsamples, and again find no evidence of manipulation around the threshold.

[INSERT TABLE 2 PANELS B AND C]

Table 2 Panel B (Panel C) shows the number of acquisitions by year and target type (industry). Table 2 Panel B shows 542 (17.6%) public target acquisitions, 1,425 (46.3%) private targets acquisitions, and 1,113 (36.1%) subsidiary target acquisitions. In each year, there is an

increase in post-acquisition forecast errors and positive announcement returns. The probability of filing pro formas conditional on being above (below) the investment test threshold is between 88.1% and 100% (14.9% and 28.7%) with no discernable yearly trends.

Table 2 Panel C shows variation in purchase price by industry, with utilities and telecommunications having the largest acquisitions. All industries have an increase in post-acquisition forecast errors, and every industry other than utilities has positive acquisition announcement returns. In industries other than finance, firms under (above) the 20% investment threshold file pro formas in less than 30% (more than 91%) of observations. In the finance industry, 55.3% of acquisitions below the threshold still file pro forma financial statements.<sup>18</sup> This suggests that using the investment test as an instrument is weakest in the finance industry, and I ensure all results are robust to dropping financial acquisitions.

Table 3 Panel A provides acquisition-level descriptive statistics. The average change in forecast errors is 5.0%, the average abnormal return is 1.2%, and 36.6% observations include pro formas. In 21.6% of cases, the acquisition falls above the investment test threshold, and the acquirer provides pro formas. In 13.0% of cases, the acquisition falls below the investment test threshold, but I verify that the acquisition crosses either the asset or income test threshold, and pro forma disclosure is required. Finally, in 2.1% of cases, the firm includes pro forma financial statements, but hand-collected data from the disclosure does not show the acquisition exceeding one of the three thresholds.<sup>19</sup> The target is foreign in 18.5% of observations and in a different industry in 28.7% of observations. 10.5 (8) analysts cover the average (median) acquirer.

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<sup>18</sup> This is likely due to the structure of bank acquisitions, as the acquiring bank assumes all assets and liabilities and banks have high leverage, thus making it relatively more likely that the asset test is greater than 20%.

<sup>19</sup> I use historical target information contained in pro formas to determine whether pro forma disclosure below the investment test threshold is mandated or voluntary. My classification likely contains measurement error as the test calculations are complicated with multiple exceptions (SEC FRM 2017).

Table 3 Panel B shows the Pearson correlation matrix. There is an insignificant 0.01 correlation between my main outcomes measures (post-acquisition forecast errors and abnormal returns). There is a positive correlation of 0.04, significant at the 5% level, between *Pro Forma* and the change in post-acquisition forecast errors, inconsistent with H1A. As discussed above, this positive association is not surprising as the SEC requires pro formas for larger transactions, where forecasting earnings is likely more difficult. *Pro Forma* and announcement returns have a positive correlation of 0.06, significant at the 0.01 level, consistent with H2A and H2B.

Finally, Table 3 Panel C describes pro forma disclosure using hand-collected data. While all pro formas contain an annual income statement, only 77.2% contain an interim income statement, and only 89.9% contain a balance sheet.<sup>20</sup> On average, pro formas contain 13.9 notes, although the average pro forma note is only a few sentences. On a pro forma basis, 37.6% of acquisitions are accretive to EPS, and 45.6% increase net income. The average (median) purchase price to revenue multiple is 5.10 (2.02). In 39.2% of observations, there is a negative pro forma operating margin, and conditional on having a positive operating margin, the average pro forma operating margin is 18.0%. The bottom of Table 3 Panel C compares historical target financial metrics to historical plus pro forma financial metrics to provide evidence on the magnitude of pro forma adjustments. On average, target revenue only changes by 2.5%, and in 66.0% of observations, there are no pro forma adjustments to target revenue. However, the change in target operating income and net income both exceed 100%. On average, firms recognize downward pro forma adjustments to revenue, operating income, and net income, which is not surprising due to the application of purchase accounting.

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<sup>20</sup> A pro forma balance sheet is not required if the acquirer has filed a balance sheet reflecting the acquisition in a 10-K or 10-Q filing (SEC FRM 2017, Section 3220).



## V. A TEST OF THE ACCURACY ENHANCEMENT HYPOTHESIS

The accuracy enhancement hypothesis predicts a negative association between pro forma disclosure and post-acquisition forecast errors. To test H1A, I estimate Equation 1 with the change in forecast errors as the dependent variable for each of the four post-acquisition quarters. Table 4 presents the results.

[INSERT TABLE 4]

In column 1, I estimate Equation 1 using OLS and find an insignificant coefficient on *Pro Forma*. Using a fuzzy RD design in column 2, I find a negative coefficient on *Pro Forma IV*, significant at the 0.01 level. For brevity, I do not present the first-stage model, but unsurprisingly the F-statistic from the first stage is 285.8, suggesting no concerns about a weak instrument. In column 3, I weight observations by 1 minus the absolute value of the distance to the threshold, which places greater weight on observations closer to the threshold, and I continue to document a negative association, significant at the 0.01 level. In columns 4 and 5, I split the sample by post-acquisition quarters, with the first two quarters in column 4 and the second two quarters in column 5, to test whether the documented effect is stronger in the quarters immediately after the acquisition. In both subsamples, the coefficient on *Pro Forma IV* is negative and significant, and coefficient estimates are of similar magnitude.<sup>21</sup> In column 6, I only include observations within the 15 to 25% window, which reduces the sample size to 2,548 (a reduction of 79.3%), and the coefficient on *Pro Forma IV* remains negative but is insignificant at the 0.10 level. The first stage F-Test is only 27.7, suggesting that the insignificant coefficient might be related to the well documented weak instrument problem (Gow et al. 2016; Feir et al.

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<sup>21</sup> The fact that coefficient estimates do not attenuate in quarters 3 and 4 is of some concern, as one would expect the effects of pro forma to attenuate as more post-acquisition consolidated financial information becomes available. To address this concern, I re-run the analysis using quarters in the year after the acquisition (t+5 to t+8) and in untabulated results, find insignificant coefficient estimates.

2016).<sup>22</sup> In column 8, I include an interaction term for the investment test threshold and the investment test, which allows for the slope on the forcing variable to change when crossing the threshold (Wooldridge 2010, pg 958). Again, I find a negative association between post-acquisition forecast errors and *Pro Forma IV*.

In Table 4, the coefficient magnitude on *Pro Forma IV* is between -0.109 and -0.129, which translates to a 10.9% to 12.9% decrease in the forecast errors. The coefficient on *investment test* suggests that for an acquisition right at the 20% threshold, there is an increase in analyst forecast errors of 6.9% to 9.0% ( $0.344 \times 0.2 = 6.9\%$  and  $0.450 \times 0.2 = 9.0\%$ ). Thus, for an acquisition right above the threshold, there is no post-acquisition increase in forecast errors.

In my main test I focus on analyst forecast errors, while prior literature often uses both forecast errors and dispersion as measures of uncertainty (Ramnath et al. 2008). Barron et al. (1998) show how researchers can use analyst forecasts to measure total uncertainty as the sum of idiosyncratic uncertainty (dispersion in forecasts) and common uncertainty (squared forecast errors – dispersion/number of analysts). To examine the robustness of results to alternative dependent variables, I use the Barron et al. (1998) *Total Uncertainty*, *Common Uncertainty*, and *Idiosyncratic Uncertainty* measures to test the accuracy enhancement hypothesis. I predict that pro formas reduce *Total Uncertainty* and *Common Uncertainty*, but do not forward a hypothesis related to dispersion as analytical models show that analyst forecast dispersion depends on the analysts' private information and differential ability to interpret public information (Barron et al. 1998; Harris and Raviv 1993; Kandel and Pearson 1995). Table 5 presents the results.

[INSERT TABLE 5]

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<sup>22</sup> Feir et al. (2016) note that the first-stage F-test rule of thumb of 10 used to identify weak instruments is not suitable for identifying weak instrument in a fuzzy RD setting.

Table 5 shows a negative effect of pro forma disclosure on Barron et al. (1998) *Total Uncertainty*, significant at the 0.01 level, using unweighted (column 1) or distance-weighted regressions (column 2). Column 3 restricts the sample to observations between 15 and 25%, and the coefficient on *Pro Forma IV* remains negative, significant at the 0.10 level. To interpret economic magnitude, I compare the column 1 *Pro Forma IV* coefficient (-.057) to an acquisition at the 20% threshold ( $20\% * 0.22 = 0.0432$ ) and find that pro formas offset the increase in overall uncertainty. When the dependent variable is *Common Uncertainty* in columns 4 through 6, the coefficient on *Pro Forma IV* is negative and significant at the 0.01 or 0.10. In columns 6-9, the dependent variable is *Idiosyncratic Uncertainty*, and the coefficient *Pro Forma IV* is indistinguishable from zero at the 0.10 level. Collectively, the evidence in Tables 4 and 5 suggest that pro formas reduce post-acquisition forecast errors, but do not affect dispersion.<sup>23</sup>

#### **A Test of H1B - Benefits Conditional on Pre-Existing Information Environment**

To test whether the forecasting benefit of pro formas depends on the information environment, I split the sample by analyst following and target type (public, private, subsidiary). Following Botosan (1997), I test whether the results in Table 4 (forecast accuracy) and Table 5 (total and common uncertainty) differ based on the acquirer's analyst following. Prior literature shows that analysts both interpret public information and create new information (Asquith et al. 2005; Ivković and Jegadeesh 2004), which raises the possibility that analysts can produce the information contained in pro formas absent mandated disclosure. Table 6 presents the results.

[INSERT TABLE 6]

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<sup>23</sup> The analysis in Tables 4 and 5 rely on plausibly exogenous variation in the mandatory requirement to provide pro formas, but do not tie characteristics of pro forma disclosure to forecast errors. In the online appendix Table A1, I show that analyst forecast errors are larger when pro forma earnings are less predictive of future earnings.

The top (bottom) panel presents results for acquirers with below (above) median analyst following. For each outcome measure (*AFE Change* in columns 1-3, *Total Uncertainty* in columns 4-6, and *Common Uncertainty* in columns 7-9), I present results using an unweighted regression, distance-weighted regression, and using the 15-25% window. In eight of the nine columns in the top panel (low analyst following), the coefficient on *Pro Forma IV* is negative and significant at the 0.01 or 0.10 level. Statistical significance is similar to Tables 4 and 5, even though the sample is half the size. In the bottom panel (high analyst following), the coefficient on *Pro Forma IV* is indistinguishable from zero in all 9 columns. These results suggest that pro formas benefit firms with low analyst following. For firms with high analyst following, it appears that the information contained in pro formas is produced even absent a mandate.

Next, I conduct subsample analysis by target type as pre-acquisition information and potential benefits to disclosure may differ for public, private, and subsidiary targets. For example, it might be more difficult to forecast post-acquisition earnings for private targets without historical financial statements or analyst coverage. For subsidiary and private targets, I continue to use the investment test threshold as my instrument. For public targets, I observe all three tests and use the three thresholds as instruments. Table 7 presents the results.

[INSERT TABLE 7]

For the subsample of private (subsidiary) targets, columns 1 through 3 (4 through 6) show the coefficient on *Pro Forma IV* is negative and significant at the 0.05 (0.10) level. For public targets, the coefficient on *Pro Forma IV* is negative in column 7 but insignificant at conventional levels. The smaller subsample of public targets weakens my test, but observing all three thresholds increases the strength of my instrument (the first stage F test is 303.4, higher than the first stage F of 160.9 or 84.6 for private and subsidiary targets, respectively). In column

8 (column 9), when the dependent variable is total uncertainty (common uncertainty), the coefficient on *Pro Forma IV* is negative and significant at the 0.10 level.

Overall, I interpret the results Tables 4 through 7 as evidence consistent with the accuracy enhancement hypothesis. Using a fuzzy RD design, I find that pro formas reduce forecast errors, total uncertainty, and common uncertainty. The benefits to pro forma disclosure appear concentrated in firms with a weaker pre-existing information environment. In the online appendix (Table A2), I show that results are robust to measuring outcomes using percentile ranks (Panel A), excluding acquirers hiring an investment bank which may create conflicts of interests (Panel B), including high order polynomials of the forcing variable (Panel C), and removing observations close to the threshold possibly subject to manipulation (Panel D).

## VI. A TEST OF THE INCENTIVE ALIGNMENT HYPOTHESIS

The incentive alignment hypothesis predicts that pro formas are useful in mitigating an agency problem by providing information about target quality. To test H2A and H2B, I first examine whether information in pro forma financial statements explains variation in acquisition returns (i.e., can be used to identify low-quality projects) by estimating the following equation

$$ARET_{i,j} = \beta_1 PF Vars_{i,j} + \sum_c \alpha_c Controls^c_{i,j} + \delta_t + \varphi_k + \epsilon \quad [2]$$

Where *PF Vars* is either an indicator variable equal to 1 if the acquisition increases pro forma EPS (*Accretive EPS*), or the decile rank of the purchase price to pro forma revenue (*Price to Revenue*) and the decile rank of pro forma operating margin (*PF Op Margin*). While firms file pro formas after the announcement date, many firms discuss the acquisition on a conference call or in a press release (Kimbrough and Louis 2011). I include industry ( $\varphi_k$ ) and year ( $\delta_t$ ) fixed effects, and cluster standard errors by firm. Table 8 presents the results.

[INSERT TABLE 8]

Table 8 column 1 presents the results without any pro forma variables. Consistent with prior literature (Golubov et al. 2012; Bao and Edmans 2011; Chen 2019), there are negative coefficients on *Public Tgt*, *Tobin Q*, *Size*, and *Serial Acq*. The adjusted  $R^2$  of 5.3% is similar to prior literature that documents an adjusted  $R^2$  between 3.6 and 6.0% using firm and deal characteristics (Golubov et al. 2015). In column 2, I include *EPS Accretive*. The coefficient on *EPS Accretive* is positive, significant at the 0.05 level, and suggests 1.1% higher announcement returns on acquisitions that are accretive to pro forma EPS. In column 3, I include *Price to Revenue* and *PF Op Margin*. The negative coefficient on *Price to Revenue* suggests a negative market reaction when the acquirer pays more for target historical revenue, and the positive coefficient on *PF Op Margin* suggests higher returns when pro forma operating margins are higher. In column 3, the adjusted  $R^2$  increases to 7.6%, a relative increase of 43.4% compared to column 1. Columns 1-3 include all acquisitions, even though traditional accounting metrics may not explain some acquirer returns. For example, a biotechnology firm might purchase a target to obtain in-process research and development (IPR&D), and the acquirers' stock might not trade based on accounting fundamentals. To address this concern, I repeat the analysis on the subset of acquirers who either have a current, or 5-year average, unlevered PE ratio between zero and 50 (columns 4-6). In this smaller subsample, results are qualitatively similar.

Having established that pro formas provide a measure of target quality, I proceed to test H2A and H2B. I predict a positive coefficient on *Pro Forma* if pro forma disclosure mitigates an incentive alignment problem. Table 9 Panel A (Table 9 Panel B) presents results using value-weighted (Market model, Fama-French 3-Factor, and a 4-factor model) abnormal returns.

[INSERT TABLE 9 PANELS A AND B]

In Table 9 Panel A, column 1 (column 2) presents results when adding *Pro Forma* (and the investment test ratio) to the standard announcement return model. In both cases, the coefficient on pro forma is positive, significant at the 0.01 or 0.05 level, and suggests 0.7% to 0.9% higher returns when the acquirer provides pro formas. Since firms may voluntarily provide pro formas, I split the *Pro Forma* variable into mandated and voluntary disclosure. While the coefficients on both voluntary and mandatory pro forma are positive and similar in magnitude, only the coefficient on *PF Mandatory* is significant at the 0.10 level. So far, the evidence is consistent with both H2A and H2B. To provide evidence on the type of incentive alignment problem, I split the sample by target type and whether the acquirer engages a 3<sup>rd</sup> party advisor.

For the acquisition of public targets, reputational incentives due to greater publicity might mitigate any agency problem (Golubov et al. 2012). In column 4, I restrict the sample to public targets and find the coefficient on *PF Mandatory* is indistinguishable from zero. Columns 5 and 6 split the sample non-public targets into those with no 3<sup>rd</sup> party advisor (column 5) and those with a 3<sup>rd</sup> party advisor (column 6). In column 5 (column 6), the coefficient on *PF Mandatory* is positive, significant at the 0.05 (0.01) level. In column 6 (private target acquisitions involving a 3<sup>rd</sup> party advisor), the coefficient magnitude suggests a 1.7% larger returns when pro forma disclosure is required.

In columns 1-6, I use OLS to facilitate comparison with prior literature (Golubov et al. 2012; Chen 2019). However, unobservable acquisition characteristics might bias the pro forma coefficient estimates. For example, pro formas are more likely when the target has high historical earnings due to the income test, and Table 8 shows higher earnings are associated with higher announcement returns, creating a correlated omitted variable. To address this concern, I use a fuzzy RD design with the investment test as a threshold. Columns 7-9 presents the results.

In column 7 (public target subsample), the coefficient on the pro forma test variable is insignificant at the 0.10 level, similar to column 4. Column 8 presents the results for the private target sample without an 3<sup>rd</sup> party advisor. The coefficient on *Pro Forma IV* is indistinguishable from zero, a change from column 5. In column 9, I continue to find a positive coefficient on the pro forma variable in the subsample of non-public target acquisitions with outside advisors. Table 9 Panel B shows similar inferences using three different return measures.

### **Conditioning on Analyst Following**

Section 5 provides evidence that information contained within pro formas is produced even without a mandate for acquirers with high analyst following and the forecasting benefit of pro formas is concentrated in acquirers with low analyst following. Prior literature uses low analyst following as a measure of high information asymmetry (Brennan and Subrahmanyam 1995; Armstrong et al. 2011) and shows incentive alignment problems are more pronounced when there is high information asymmetry (Francis and Martin 2010). For these reasons, I split the sample by analyst following and repeat the analysis in Table 9. Table 10 presents the results.

[INSERT TABLE 10]

The top (bottom) panel presents results for acquirers with below (above) median analyst following. In columns 1 through 3, the coefficient on *Pro Forma* is positive and significant at the 0.01 level in the low analyst subsample, and statistically indistinguishable from zero in the high analyst subsample. In the low analyst subsample, the coefficient *PF Mandatory (Pro Forma IV)* is positive and significant in columns 5 and 6 (column 9), consistent with Table 9 Panels A and B. In contrast, in the high analyst subsample, the coefficient on pro forma switch from negative and significant (column 4) to positive and significant (column 6), and is otherwise indistinguishable from zero (columns 5, 7, 8, and 9). Overall, Table 10 suggests the incentive



alignment benefit is concentrated in the subsample of acquirers with low analyst following, the same subsample in which I find a forecasting benefit to Article 11 pro forma disclosure.

### **Additional Analysis**

Collectively, the evidence points towards a positive association between pro forma disclosure and target quality in acquisitions of non-public targets. Results differ based on acquirer analyst following and the involvement of outside advisors. To provide evidence on the characteristics of acquisitions involving an outside advisor, I estimate the following equation

$$PF\ Vars_{i,j} = \beta_1 Acq\ Advisor_{i,j} + \sum_c \alpha_c Controls^c_{i,j} + \delta_t + \varphi_k + \epsilon \quad [3]$$

Where *PF Vars* are the same three pro forma metrics from Equation 2 and Table 8, the test variable is *Acq Advisor*, and I include controls and fixed effects.<sup>24</sup> Table 11 presents the results.

[INSERT TABLE 11]

Columns 1 and 2 (columns 3 and 4) present the results when the dependent variable is *Accretive EPS* using a linear probability model (Logit). In all 4 columns, the coefficient on *Acq Advisor* is negative and statistically significant. In column 1 (column 2), the 0.071 (0.067) magnitude suggests acquisitions with an outside advisor are 7.1% (6.7%) less likely to be accretive to EPS on a pro forma basis, an 18.9% (17.8%) decrease compared to the unconditional mean of 37.6%. Columns 5 and 6 show no association between outside advisor involvement and the revenue multiple paid in the acquisition. Columns 7 and 8 show outside advisor involvement is associated with lower pro forma operating margins; both coefficient estimates are significant at the 0.01 level. Together, the results suggest that advisor-assisted acquisitions are less likely to

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<sup>24</sup> Unfortunately I can only conduct this analysis on the subsample of acquisitions with pro formas. If an incentive alignment problem does exist and is mitigated by pro forma disclosure, then analysis on the subsample of acquisitions with pro formas may find no remaining differences between advisor and non-advisor deals.

be accretive to pro forma EPS, not because the acquirer pays a higher multiple for revenue, but instead because advisor-assisted acquisitions have lower operating margins.

I interpret the results in Tables 8 through 11 as follows. Pro forma disclosure contains information that is useful in understanding the quality of target selection. Mandated pro forma disclosure is also associated with higher acquisition returns, concentrated in acquisitions of non-public targets with the use of a 3<sup>rd</sup> party advisors. This evidence is consistent with pro forma disclosure alleviating an incentive alignment problem between shareholders and firm advisors.

## **VII. CONCLUSION**

The purpose of, and benefits to, mandatory disclosure are widely debated and depend on the nature of information production without a mandatory requirement (Stigler 1964; Coffee Jr 1984; Mahoney 2009; Dye 1990). In a sample of 3,080 acquisitions, I test whether mandated pro forma disclosure reduces analyst forecast errors, as predicted by the accuracy enhancement hypothesis, or alleviates an incentive alignment problem. Using a fuzzy RD design, I provide evidence that mandated pro forma disclosure improves analysts' forecast accuracy. I find a reduction in forecast errors only for firms with below-median analyst following, suggesting that the benefits to pro forma disclosure depend on the pre-existing information environment. Using announcement returns as a measure of target quality, I document higher quality target selection in acquisitions with pro forma disclosure, concentrated in acquisitions of non-public targets with outside advisors. I interpret the evidence as mandated pro forma disclosure mitigating an incentive alignment problem between outside advisors and shareholders by improving transparency regarding target selection. My results make a contribution to the literature on mandated disclosure (Leuz and Wysocki 2016) and provide evidence on an issue important to the SEC's project on disclosure effectiveness (SEC 2015).

## REFERENCES

- Admati, A. R., and P. Pfleiderer. 2000. Forcing firms to talk: Financial disclosure regulation and externalities. *The Review of Financial Studies* 13 (3):479-519.
- Andrade, G., M. Mitchell, and E. Stafford. 2001. New evidence and perspectives on mergers. *Journal of economic perspectives* 15 (2):103-120.
- Armstrong, C. S., J. E. Core, D. J. Taylor, and R. E. Verrecchia. 2011. When does information asymmetry affect the cost of capital? *Journal of Accounting Research* 49 (1):1-40.
- Asquith, P., M. B. Mikhail, and A. S. Au. 2005. Information content of equity analyst reports. *Journal of Financial Economics* 75 (2):245-282.
- AT&T. 2015. AT&T Unaudited Pro Forma Condensed Combined Financial Statements.
- Bao, J., and A. Edmans. 2011. Do investment banks matter for M&A returns? *The Review of Financial Studies* 24 (7):2286-2315.
- Barron, O. E., O. Kim, S. C. Lim, and D. E. Stevens. 1998. Using analysts' forecasts to measure properties of analysts' information environment. *Accounting Review*:421-433.
- Barth, M. E., W. H. Beaver, and W. R. Landsman. 2001. The relevance of the value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics* 31 (1-3):77-104.
- Benston, G. J. 1969. The value of the SEC's accounting disclosure requirements. *The Accounting Review* 44 (3):515-532.
- . 1973. Required disclosure and the stock market: An evaluation of the Securities Exchange Act of 1934. *The American Economic Review* 63 (1):132-155.
- Berger, P. G. 2011. Challenges and opportunities in disclosure research—A discussion of ‘the financial reporting environment: Review of the recent literature’. *Journal of Accounting and Economics* 51 (1-2):204-218.
- Betton, S., B. E. Eckbo, and K. S. Thorburn. 2008. Corporate takeovers. *Handbook of Corporate Finance: Empirical Corporate Finance* 2:291-430.
- Beyer, A., D. A. Cohen, T. Z. Lys, and B. R. Walther. 2010. The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics* 50 (2):296-343.
- Botosan, C. A. 1997. Disclosure level and the cost of equity capital. *Accounting Review*:323-349.
- Bowers, H., and W. R. Latham. 2006. Information asymmetry, litigation risk, uncertainty and the demand for fairness opinions: Evidence from US mergers and acquisitions, 1980-2002. *Working Paper*.
- Bowers, H. M. 2001. Fairness opinions and the business judgment rule: an empirical investigation of target firms' use of fairness opinions. *Nw. UL Rev.* 96:567.
- Bradshaw, M., Y. Ertimur, and P. O'Brien. 2017. Financial analysts and their contribution to well-functioning capital markets. *Foundations and Trends® in Accounting* 11 (3):119-191.
- Bradshaw, M. T., T. E. Christensen, K. H. Gee, and B. C. Whipple. 2018. Analysts' GAAP earnings forecasts and their implications for accounting research. *Journal of Accounting and Economics* 66 (1):46-66.
- Brennan, M. J., and A. Subrahmanyam. 1995. Investment analysis and price formation in securities markets. *Journal of Financial Economics* 38 (3):361-381.
- Buffett, W. 2018. Berkshire Hathaway 2017 Annual Shareholder Letter.

- Bushee, B. J., and C. Leuz. 2005. Economic consequences of SEC disclosure regulation: evidence from the OTC bulletin board. *Journal of Accounting and Economics* 39 (2):233-264.
- Bushman, R., E. Engel, and A. Smith. 2006. An analysis of the relation between the stewardship and valuation roles of earnings. *Journal of Accounting Research* 44 (1):53-83.
- Cattaneo, M. D., M. Jansson, and X. Ma. 2017. Simple Local Polynomial Density Estimators. ———. 2018. Manipulation testing based on density discontinuity. *The Stata Journal* 18 (1):234-261.
- Chang, S. 1998. Takeovers of privately held targets, methods of payment, and bidder returns. *The Journal of Finance* 53 (2):773-784.
- Chemmanur, T. J., and P. Fulghieri. 1994. Investment bank reputation, information production, and financial intermediation. *The Journal of Finance* 49 (1):57-79.
- Chen, C. W. 2019. The disciplinary role of financial statements: evidence from mergers and acquisitions of privately held targets. *Journal of Accounting Research*.
- Christensen, H. B., L. Hail, and C. Leuz. 2013. Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics* 56 (2):147-177.
- Coffee Jr, J. C. 1984. Market failure and the economic case for a mandatory disclosure system. *Virginia Law Review*:717-753.
- Comment, R. t. S. R. f. *Comments on Request for Comment on the Effectiveness of Financial Disclosures about Entities Other than the Registrant* 2015 [cited. Available from <https://www.sec.gov/comments/s7-20-15/s72015.shtml>].
- Deloitte. 2018. A Roadmap to SEC Reporting Considerations for Business Combinations. In *Roadmap Series*.
- Dye, R. A. 1990. Mandatory versus voluntary disclosures: The cases of financial and real externalities. *Accounting Review*:1-24.
- Easterbrook, F. H., and D. R. Fischel. 1996. *The economic structure of corporate law*: Harvard University Press.
- Erickson, M., S.-W. Wang, and X. F. Zhang. 2012. The change in information uncertainty and acquirer wealth losses. *Review of Accounting Studies* 17 (4):913-943.
- FASB. 2010. Conceptual Framework for Financial Reporting. Statement of Financial Accounting Concepts No. 8: FASB Norwalk, CT.
- Feir, D., T. Lemieux, and V. Marmer. 2016. Weak identification in fuzzy regression discontinuity designs. *Journal of Business & Economic Statistics* 34 (2):185-196.
- Francis, J. R., and X. Martin. 2010. Acquisition profitability and timely loss recognition. *Journal of Accounting and Economics* 49 (1-2):161-178.
- Francis, J. R., E. L. Maydew, and H. C. Sparks. 1999. The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice & Theory* 18 (2):17-34.
- Franck, T. *Bank of America upgrades AT&T on Time Warner merger, sees little risk deal overturned* 2018 [cited 5/21/2019. Available from [https://www.cnbc.com/2018/07/30/att-upgraded-at-bank-of-america-time-warner-tax-cuts-buoy-outlook.html?\\_source=yahoo%7Cfinance%7Cheadline%7Cstory%7C&par=yahoo&ypr=yahoo](https://www.cnbc.com/2018/07/30/att-upgraded-at-bank-of-america-time-warner-tax-cuts-buoy-outlook.html?_source=yahoo%7Cfinance%7Cheadline%7Cstory%7C&par=yahoo&ypr=yahoo)].
- Friend, I., and E. S. Herman. 1964. The SEC through a glass darkly. *The Journal of Business* 37 (4):382-405.

- Gigler, F., and T. Hemmer. 1998. On the frequency, quality, and informational role of mandatory financial reports. *Journal of Accounting Research* 36:117-147.
- Gjesdal, F. 1981. Accounting for stewardship. *Journal of Accounting Research* 19 (1):208-231.
- Golubov, A., D. Petmezas, and N. G. Travlos. 2012. When it pays to pay your investment banker: New evidence on the role of financial advisors in M&As. *The Journal of Finance* 67 (1):271-311.
- Golubov, A., A. Yawson, and H. Zhang. 2015. Extraordinary acquirers. *Journal of Financial Economics* 116 (2):314-330.
- Gow, I. D., D. F. Larcker, and P. C. Reiss. 2016. Causal inference in accounting research. *Journal of Accounting Research* 54 (2):477-523.
- Graham, J. R., and C. R. Harvey. 2001. The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics* 60 (2-3):187-243.
- Greenstone, M., P. Oyer, and A. Vissing-Jorgensen. 2006. Mandated disclosure, stock returns, and the 1964 Securities Acts amendments. *The Quarterly Journal of Economics* 121 (2):399-460.
- Grossman, S. J. 1981. The informational role of warranties and private disclosure about product quality. *The Journal of Law and Economics* 24 (3):461-483.
- Grossman, S. J., and O. D. Hart. 1980. Disclosure laws and takeover bids. *The Journal of Finance* 35 (2):323-334.
- Grossman, S. J., and J. E. Stiglitz. 1980. On the impossibility of informationally efficient markets. *The American Economic Review* 70 (3):393-408.
- Hahn, J., P. Todd, and W. Van der Klaauw. 2001. Identification and estimation of treatment effects with a regression-discontinuity design. *Econometrica* 69 (1):201-209.
- Harris, M., and A. Raviv. 1993. Differences of opinion make a horse race. *The Review of Financial Studies* 6 (3):473-506.
- Haw, I.-M., K. Jung, and W. Ruland. 1994. The accuracy of financial analysts' forecasts after mergers. *Journal of Accounting, Auditing & Finance* 9 (3):465-483.
- Healy, P. M., and K. G. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31 (1-3):405-440.
- Imbens, G. W., and J. M. Wooldridge. 2009. Recent developments in the econometrics of program evaluation. *Journal of economic literature* 47 (1):5-86.
- Institute, C. 2016. Re: File No. S7-20-15, Request for Comment on the Effectiveness of Financial Disclosures About Entities Other Than the Registrant – Regulation S-X.
- Ivković, Z., and N. Jegadeesh. 2004. The timing and value of forecast and recommendation revisions. *Journal of Financial Economics* 73 (3):433-463.
- Jarrell, G. A., and M. Bradley. 1980. The economic effects of federal and state regulations of cash tender offers. *The Journal of Law and Economics* 23 (2):371-407.
- Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review* 76 (2):323-329.
- Kadan, O., L. Madureira, R. Wang, and T. Zach. 2008. Conflicts of interest and stock recommendations: The effects of the global settlement and related regulations. *The Review of Financial Studies* 22 (10):4189-4217.
- Kandel, E., and N. D. Pearson. 1995. Differential interpretation of public signals and trade in speculative markets. *Journal of Political Economy* 103 (4):831-872.

- Kanodia, C., and D. Lee. 1998. Investment and disclosure: The disciplinary role of periodic performance reports. *Journal of Accounting Research* 36 (1):33-55.
- Kimbrough, M. D., and H. Louis. 2011. Voluntary disclosure to influence investor reactions to merger announcements: An examination of conference calls. *The Accounting Review* 86 (2):637-667.
- Kisgen, D. J., and W. Song. 2009. Are fairness opinions fair? The case of mergers and acquisitions. *Journal of Financial Economics* 91 (2):179-207.
- Kosnik, R. D., and D. L. Shapiro. 1997. Agency conflicts between investment banks and corporate clients in merger and acquisition transactions: Causes and remedies. *Academy of Management Perspectives* 11 (1):7-20.
- Kothari, S., K. Ramanna, and D. J. Skinner. 2010. Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics* 50 (2):246-286.
- Kothari, S. P., E. So, and R. Verdi. 2016. Analysts' forecasts and asset pricing: A survey. *Annual Review of Financial Economics* 8:197-219.
- Lambert, R. A. 2001. Contracting theory and accounting. *Journal of Accounting and Economics* 32 (1):3-87.
- Lee, D. S., and T. Lemieux. 2010. Regression discontinuity designs in economics. *Journal of economic literature* 48 (2):281-355.
- Leuz, C. 2018. Evidence-based policymaking: promise, challenges and opportunities for accounting and financial markets research. *Accounting and Business Research* 48 (5):582-608.
- Leuz, C., and P. D. Wysocki. 2016. The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research* 54 (2):525-622.
- Li, K., T. Liu, and J. Wu. 2018. Vote avoidance and shareholder voting in mergers and acquisitions. *The Review of Financial Studies* 31 (8):3176-3211.
- Mahoney, P. G. 1995. Mandatory disclosure as a solution to agency problems. *The University of Chicago Law Review* 62 (3):1047-1112.
- . 2009. The development of securities law in the United States. *Journal of Accounting Research* 47 (2):325-347.
- Masulis, R. W., C. Wang, and F. Xie. 2007. Corporate governance and acquirer returns. *The Journal of Finance* 62 (4):1851-1889.
- McCrary, J. 2008. Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of econometrics* 142 (2):698-714.
- Moeller, S. B., F. P. Schlingemann, and R. M. Stulz. 2005. Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *The Journal of Finance* 60 (2):757-782.
- Morck, R., A. Shleifer, and R. W. Vishny. 1990. Do managerial objectives drive bad acquisitions? *The Journal of Finance* 45 (1):31-48.
- Ohlson, J. A. 1995. Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research* 11 (2):661-687.
- Paul, J. M. 1992. On the efficiency of stock-based compensation. *The Review of Financial Studies* 5 (3):471-502.
- PwC. 2014. Business combinations and noncontrolling interests: Application of the U.S. GAAP and IFRS Standards.

- Ramnath, S., S. Rock, and P. Shane. 2008. The financial analyst forecasting literature: A taxonomy with suggestions for further research. *International Journal of Forecasting* 24 (1):34-75.
- Schipper, K., and R. Thompson. 1983. The impact of merger-related regulations on the shareholders of acquiring firms. *Journal of Accounting Research*:184-221.
- SEC. *About the SEC: What We Do* 2013 [cited 5/21/2019. Available from <https://www.sec.gov/Article/whatwedo.html>].
- . 2015. Request for comment of the effectiveness of financial disclosures about entities other than the registrant
- . 2017. Financial Reporting Manual.
- . 2019. Amendments to Financial Disclosures about Acquired and Disposed Businesses.
- Seligman, J. 1983. The historical need for a mandatory corporate disclosure system. *J. Corp. L.* 9:1.
- Shaffer, M. 2018. Truth and Bias in M&A Target Fairness Valuations: Appraising the Appraisals. *Working Paper*.
- Simon, C. J. 1989. The effect of the 1933 Securities Act on investor information and the performance of new issues. *The American Economic Review*:295-318.
- Stigler, G. J. 1964. Public regulation of the securities markets. *The Journal of Business* 37 (2):117-142.
- . 1971. The theory of economic regulation. *The Bell Journal of Economics and Management Science*:3-21.
- Teoh, S. H., and T. Wong. 1993. Perceived auditor quality and the earnings response coefficient. *Accounting Review*:346-366.
- Travlos, N. G. 1987. Corporate takeover bids, methods of payment, and bidding firms' stock returns. *The Journal of Finance* 42 (4):943-963.
- Verrecchia, R. E. 1983. Discretionary disclosure. *Journal of Accounting and Economics* 5:179-194.
- . 2001. Essays on disclosure. *Journal of Accounting and Economics* 32 (1-3):97-180.
- Wooldridge, J. M. 2010. *Econometric analysis of cross section and panel data*: MIT press.
- Young, E. 2016. SEC Financial Reporting Series: Pro forma financial information.
- Young, E. a. 2019. To the Point: SEC proposes changing disclosure requirements for acquisitions and disposals of businesses.

**TABLE 1**  
**SAMPLE SELECTION**

	<b>Exclusions</b>	<b>Remaining Obs</b>
Acquisitions in SDC during sample period with SDC value > \$10		25,120
Less observations without Compustat or CRSP data	-10,001	15,119
Less observations without I/B/E/S data	-2,979	12,140
Less observations where deal value is below 5% or above 40%	-6,893	5,247
Less observations with acquirer analyst coverage below 3	-1,051	4,196
Less observations without analyst coverage in the 4 pre-acquisition quarters	-292	3,904
Less observations with another 20% acquisition in 1 year pre/post period	-647	3,257
Less REITS, real estate firms, or real estate acquisitions	-177	
<b>Initial sample</b>		<b>3,080</b>
No pro forma disclosure		1,952
Pro forma disclosure and investment test below 20% threshold (A)		463
Pro forma disclosure and investment test above 20% threshold (B)		665
<b>Total acquisitions with Article 11 pro forma disclosure (A+B)</b>		<b>1,128</b>
Less observations with confounding events, acquisitions or incomplete disclosure		-164
Less acquisitions of targets with zero revenue		-18
<b>Hand-collected pro forma sample</b>		<b>946</b>

Note: I use the SDC platinum to obtain an initial sample of acquisitions based on the following screens: 1) completed between 1/1/2002 and 12/31/2016, 2) Form of deal is merger (M), acquisition (A), acquisition of majority interest (AM) or acquisition of assets (AA), 3) deal value greater than 10 million, 4) acquirer nation is the US, 5) percentage shares owned after transaction greater than 90% and less than 20% held 6 months prior to transaction, 6) target is public, private or subsidiary. I then match observations to Compustat, CRSP, and I/B/E/S. For the full sample of observations, I use Intelligize to search firm filings for reference to Article 11 pro forma financial statements. Specifically, I search 8-K, S-4 and proxy statement filings for the phrases "unaudited W/250 pro forma W/250 acquisition (or) merger (or) combin\*." I review each pro forma disclosure to ensure accurate matches. For all acquisitions above the 20% threshold and without the disclosure, I review all firm filings after the acquisition date to ensure no pro-forma disclosure using different terminology. For the hand-collected pro forma sample, I require each observation to have an annual income statement, only one pro forma acquisition, and the target to have revenue greater than zero.



**TABLE 2 PANEL A**  
DESCRIPTIVE STATISTICS BY INVESTMENT TEST SIZE

Investment Test	Obs	% Obs	%	AFE Change	ARET
5% < Investment Test < 10%	1,247	40.5%	14.3%	3.5%	1.0%
10% ≤ Investment Test < 15%	715	23.2%	23.1%	7.3%	1.1%
15% ≤ Investment Test < 20%	415	13.5%	29.6%	5.7%	0.6%
20% ≤ Investment Test < 25%	219	7.1%	91.8%	0.2%	1.4%
25% ≤ Investment Test < 30%	192	6.2%	96.4%	6.4%	2.0%
30% ≤ Investment Test < 35%	159	5.2%	96.2%	8.1%	2.1%
35% ≤ Investment Test < 40%	133	4.3%	94.7%	7.9%	2.2%
<b>Total / Average</b>	<b>3,080</b>	<b>100%</b>	<b>36.8%</b>	<b>5.0%</b>	<b>1.2%</b>
Below Investment Test threshold	2,377	77.2%	19.5%	5.0%	1.0%
Above Investment Test threshold	703	22.8%	94.6%	5.1%	1.9%
Difference			75.1%	0.1%	0.9%
Difference - narrow subsample			62.1%	-5.5%	0.8%

Note: The sample selection procedure is described in Table 1. This table presents the number of observations, percentage of observations with pro forma financial statements, the average change in post-acquisition forecast errors, and abnormal announcement date returns for 7 different size bins based on the investment test. I calculate the investment test as purchase price scaled by acquirer assets from the most recent fiscal year, consistent with the requirements in S-X Rule 1-02(w) and Article 11. For any investment test ratio within 5% of the threshold (i.e. 15 to 25%), I verify the purchase price to ensure accurate calculate of the investment test ratio. For acquisitions below the 20% threshold, pro forma disclosure may still be required if the acquisition exceeds either the asset or income test, which are unobservable for private and subsidiary transactions, or the acquirer may voluntarily provide pro forma disclosure. For acquisition above the threshold, firms may petition the SEC for relief from pro forma disclosure, explaining why the percentage is less than 100%.

**TABLE 2 PANEL B**  
**DESCRIPTIVE STATISTICS AND TARGET TYPE BY YEAR**

Year	Target Type			Average	Median	Pr(PF   Below	Pr(PF   Above	Threshold	AFE	ARET
	Public	Private	Subsidiary	Purchase Price	Purchase Price	Threshold)	Threshold)	Jump	Change	
2002	37	96	91	\$217	\$90	24.3%	100.0%	75.7%	3.3%	1.1%
2003	43	80	65	\$281	\$100	28.7%	95.6%	66.9%	5.8%	2.1%
2004	49	120	70	\$838	\$117	19.7%	98.0%	78.4%	4.4%	0.9%
2005	38	108	85	\$549	\$100	19.7%	98.1%	78.5%	8.3%	1.0%
2006	42	109	80	\$818	\$128	20.6%	95.1%	74.5%	0.5%	1.3%
2007	61	112	65	\$538	\$155	22.5%	88.2%	65.8%	7.0%	0.5%
2008	30	109	58	\$487	\$112	17.2%	91.3%	74.1%	9.7%	0.9%
2009	20	50	37	\$363	\$110	14.9%	100.0%	85.1%	2.3%	1.1%
2010	38	72	65	\$1,069	\$202	16.5%	88.1%	71.6%	3.2%	0.8%
2011	23	102	70	\$633	\$164	17.6%	95.2%	77.6%	0.1%	0.9%
2012	28	104	93	\$740	\$175	16.2%	97.8%	81.6%	7.7%	1.3%
2013	34	81	84	\$555	\$158	24.2%	95.7%	71.5%	4.4%	1.5%
2014	35	114	90	\$486	\$199	18.8%	91.4%	72.6%	8.6%	1.5%
2015	36	91	71	\$1,333	\$222	17.5%	96.4%	78.9%	4.8%	1.5%
2016	28	77	89	\$1,027	\$225	14.9%	90.0%	75.1%	3.0%	1.5%
<b>Total/Ave</b>	<b>542</b>	<b>1,425</b>	<b>1,113</b>	<b>\$665</b>	<b>\$142</b>	<b>19.5%</b>	<b>94.6%</b>	<b>75.1%</b>	<b>5.0%</b>	<b>1.2%</b>

Note: The sample selection procedure is described in Table 1. This table presents the number of observations per year for each target type (subsidiary, private, public). The column Pr(PF | Below Threshold) presents the probability of pro forma disclosure conditional on the acquisition being below the investment test threshold. The column Pr(PF | Above Threshold) presents the probability of pro forma disclosure conditional on the acquisition being above the investment test threshold. Threshold Jump is the difference between Pr(PF | Above Threshold) and Pr(PF | Below Threshold). Average AFE change presents the average change in analysts forecast errors (AFE) in the 4 post-acquisition quarters, compared the 4 pre-acquisition quarters, scaled by pre-acquisition average EPS. Abnormal announcement returns are measured in measured in the 3-day window (-1,0,1) centered on the acquisition announcement date. Following Bao and Edmans (2011), I compute the abnormal return as the acquirer's CAR over the CRSP value weighted index.

**TABLE 2 PANEL C**  
**DESCRIPTIVE STATISTICS BY INDUSTRY**

Industry Classification	Obs	Average Purchase Price	Median Purchase Price	Pr(PF Below Threshold)	Pr(PF Above Threshold)	Threshold Jump	AFE Change	ARET
FF 1 - Consumer NonDurables - Food, Textiles, Apparel, Toys	165	\$695	\$210	14.8%	91.9%	77.0%	2.9%	2.8%
FF2 - Consumer Durables - Cars, TV's, Furniture, Appliances	59	\$276	\$143	4.5%	100.0%	95.5%	0.7%	1.2%
FF 3 - Manufacturing - Machinery, Trucks, Planes, Furniture	395	\$471	\$172	10.6%	95.3%	84.6%	3.2%	1.8%
FF 4 - Oil, Gas, and Coal Extraction and Products	197	\$1,277	\$231	23.5%	93.8%	70.3%	9.1%	1.2%
FF 5 - Chemicals and Allied Products	58	\$628	\$322	18.2%	100.0%	81.8%	1.1%	1.0%
FF 6 - Business Equipment - Computers, Software, Electronics	909	\$437	\$88	17.4%	94.8%	77.4%	6.4%	0.5%
FF 7 - Telephone and Television Transmission	87	\$1,969	\$250	19.4%	95.0%	75.6%	1.1%	0.6%
FF 8 - Utilities	48	\$2,382	\$889	27.3%	93.3%	66.1%	4.2%	-0.6%
FF 9 -Wholesale, Retail, and Some Service (Laundries, Repair)	258	\$465	\$146	13.2%	98.1%	84.9%	2.0%	1.9%
FF 10 - Healthcare, Medical Equipment, and Drugs	285	\$780	\$123	14.8%	93.4%	78.6%	6.3%	0.8%
FF 11 - Finance	223	\$1,401	\$218	55.3%	93.9%	38.7%	2.6%	0.7%
FF 12 - Other -- Mines, Constr, Trans, Hotels, Serv, Entertain	396	\$263	\$105	19.7%	92.1%	72.4%	7.3%	1.8%
<b>Total / Average</b>	<b>3,080</b>	<b>\$665</b>	<b>\$142</b>	<b>19.5%</b>	<b>94.6%</b>	<b>75.1%</b>	<b>5.0%</b>	<b>1.2%</b>

Note: The sample selection procedure is described in Table 1. This table presents the number of observations per year for each Fama-French 12 industry. The column Pr(PF | Below Threshold) presents the probability of pro forma disclosure conditional on the acquisition being below the investment test threshold. The column Pr(PF | Above Threshold) presents the probability of pro forma disclosure conditional on the acquisition being above the investment test threshold. Threshold Jump is the difference between Pr(PF | Above Threshold) and Pr(PF | Below Threshold). Average AFE change presents the average change in analysts forecast errors (AFE) in the 4 post-acquisition quarters, compared the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. Abnormal announcement returns are measured in measured in the 3-day window (-1,0,1) centered on the acquisition announcement date. Following Bao and Edmans (2011), I compute the abnormal return as the acquirer's CAR over the CRSP value weighted index.

**TABLE 3 PANEL A**  
**DESCRIPTIVE STATISTICS FOR VARIABLES IN EQUATION 1**

Variable Name	Ind/Cont	N=3,080 Acquisitions				
		Mean	SD	P25	P50	P75
<b>Dependent Variables</b>						
AFE Change	C	5.0%	0.31	-3.8%	0.8%	7.6%
ARET	C	1.2%	0.06	-1.8%	1.0%	3.9%
<b>Test Variables</b>						
Pro Forma	I	36.6%	0.5	0.0	0.0	1.0
Above and Mandatory	I	21.6%	0.4	0.0	0.0	0.0
Below and Mandatory	I	13.0%	0.3	0.0	0.0	0.0
Below and Voluntary	I	2.1%	0.1	0.0	0.0	0.0
Investment Test	C	14.7%	0.1	7.8%	11.9%	18.9%
<b>Deal Characteristics</b>						
Foreign Tgt	I	18.5%	0.4	0	0	0
Public Tgt	I	17.6%	0.4	0	0	0
Subsidiary Tgt	I	36.1%	0.5	0	0	1
Cash Deal	I	56.1%	0.5	0	1	1
Diversifying Deal	I	28.7%	0.5	0	0	1
External Financing	I	51.3%	0.5	0	1	1
Diligence Days	C	59.5	72.9	7.0	37.0	77.0
<b>Acquirer Characteristics</b>						
Analyst Coverage	C	10.5	6.9	5.0	8.0	14.0
Size	C	7.1	1.5	6.1	7.0	8.1
Pre-acq Goodwill	C	16.7%	0.16	0	0	0
Serial Acquirer	I	15.5%	0.4	0	0	0
Big 4 Auditor	I	89.6%	0.3	1.0	1.0	1.0
Loss Firm	I	15.2%	0.36	0	0	0
Tobin Q	C	2.03	1.13	1.30	1.70	2.38

Note: The sample selection procedure is described in Table 1. This table presents descriptive statistics for test and control variables at the acquisition level. The column Ind/Cont shows whether a variable is an indicator variable ("I") or a continuous/count variable ("C"). Continuous variables are winsorized at the 1 and 99 percentile. Appendix B provides variable definitions.

**TABLE 3 PANEL B**  
**PEARSON CORRELATION MATRIX**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 AFE Change	1.00																			
2 ARET	0.01	1.00																		
3 Pro Forma	0.04**	0.06***	1.00																	
4 PF Mandatory	0.03*	-0.01	0.51***	1.00																
5 PF Voluntary	0.02	-0.00	0.19***	-0.06***	1.00															
6 Investment Test	0.02	0.06***	0.62***	-0.13***	-0.01	1.00														
7 Foreign tgt	0.03	-0.01	-0.08***	-0.07***	0.02	-0.03*	1.00													
8 Public tgt	-0.05**	-0.13***	0.22***	0.17***	0.05**	0.09***	-0.04**	1.00												
9 Subsidiary tgt	0.00	0.13***	-0.04**	-0.06***	-0.00	0.00	0.03	-0.35***	1.00											
10 Cash Deal	-0.02	0.00	-0.13***	-0.13***	-0.03	-0.04**	0.06***	-0.04**	0.07***	1.00										
11 Diversify Deal	0.00	0.02	-0.06***	-0.08***	-0.01	-0.02	0.04**	-0.09***	0.03*	0.05***	1.00									
12 Ext Financing	-0.03*	0.06***	0.19***	0.05**	-0.01	0.21***	-0.09***	0.07***	0.15***	-0.09***	0.00	1.00								
13 Diligence Days	-0.08***	-0.01	0.22***	0.11***	0.03*	0.15***	-0.07***	0.40***	0.06***	-0.07***	-0.09***	0.20***	1.00							
14 Analyst Cov	-0.03*	-0.08***	-0.09***	-0.07***	-0.00	-0.06***	0.01	0.15***	-0.02	0.03*	-0.10***	-0.12***	0.22***	1.00						
15 Size	-0.09***	-0.07***	-0.06***	0.03	0.01	-0.15***	-0.00	0.35***	0.09***	0.02	-0.03	0.19***	0.47***	0.55***	1.00					
16 Pre-acq Gdwl	-0.04**	0.01	-0.12***	-0.13***	-0.02	-0.05***	0.04**	-0.03*	-0.02	0.11***	0.06***	0.14***	-0.08***	0.01	0.09***	1.00				
17 Serial Acquirer	0.02	-0.00	-0.06***	-0.03	0.01	-0.03	-0.02	-0.06***	0.00	-0.04**	-0.01	0.03	-0.07***	-0.02	-0.08***	0.06***	1.00			
18 Big 4 Auditor	0.00	-0.02	-0.12***	-0.15***	-0.00	-0.04**	0.06***	-0.07***	0.07***	0.11***	0.05***	-0.05***	0.02	0.14***	0.16***	0.09***	-0.01	1.00		
19 Loss firm	0.06***	-0.00	0.09***	0.09***	-0.03*	0.06***	-0.03*	-0.03	-0.02	-0.09***	-0.06***	-0.13***	-0.02	-0.03*	-0.19***	-0.11***	0.03	-0.02	1.00	
20 Tobin Q	0.02	-0.07***	-0.09***	-0.14***	-0.04**	0.07***	0.08***	-0.09***	-0.14***	0.10***	0.02	-0.28***	-0.16***	0.23***	-0.19***	-0.05***	0.00	0.04**	0.01	1.00

Note: The sample selection procedure is described in Table 1. This table presents Pearson correlations for variables in equation 1 or equation 2. Appendix B provides variable definitions. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 3 PANEL C**  
**PRO FORMA SUBSAMPLE DESCRIPTIVE STATISTICS**

Variable Name	Ind/Cont	N	Mean	SD	P25	P50	P75
<b>Pro Forma Characteristics</b>							
Annual Income Statement	I	946	100.0%	0.0	1.0	1.0	1.0
Interim Income Statement	I	946	77.2%	0.4	1.0	1.0	1.0
Income Statement Rows	C	946	17.1	5.7	13.0	16.0	20.0
Income Statement Columns	C	946	4.3	0.6	4.0	4.0	4.0
Balance Sheet	I	946	89.9%	0.3	1.0	1.0	1.0
Pro Forma Notes	C	946	13.9	6.7	9.0	13.0	18.0
<b>Deal Characteristics</b>							
EPS Accretive	I	946	37.6%	0.5	0.0	0.0	1.0
Net Income Accretive	I	946	45.6%	0.5	0.0	0.0	1.0
Price to Revenue	C	946	5.10	11.97	0.97	2.02	4.25
Neg Operating Margin	I	946	39.2%	0.5	0.0	0.0	1.0
PF Op Margin   Positive Op Margin	C	572	18.0%	0.20	4.9%	10.1%	22.8%
Tax Rate Increase	I	946	15.0%	0.4	0.0	0.0	0.0
Tax Rate Decrease	I	946	22.2%	0.4	0.0	0.0	0.0
Asset FV Increase	I	850	73.9%	0.4	0.0	1.0	1.0
Leverage Change	I	844	4.9%	0.1	0.0	0.0	0.1
<b>Pro Forma vs Historical Metrics</b>							
Abs Tgt Revenue Change	C	946	2.5%	6.6%	0.0%	0.0%	1.1%
% Tgt Revenue Increase	I	946	8.3%	0.3	0.0	0.0	0.0
% Tgt Revenue Decrease	I	946	25.8%	0.4	0.0	0.0	1.0
No Tgt Revenue Change	I	946	66.0%	0.5	0.0	1.0	1.0
Abs Tgt Op Income Change	C	944	139.5%	398%	9%	34%	98%
% Tgt Op Income Increase	I	946	20.5%	0.4	0.0	0.0	0.0
% Tgt Op Income Decrease	I	946	72.2%	0.4	0.0	1.0	1.0
Abs Tgt Net Income Change	C	946	174.9%	412%	27%	66%	133%
% Tgt Net Income Increase	I	946	22.9%	0.4	0.0	0.0	0.0
% Tgt Net Income Decrease	I	946	75.4%	0.4	1.0	1.0	1.0

Note: The sample selection procedure is described in Table 1. All pro forma filings include an annual income statement, but pro formas may exclude a balance sheet if the acquirer has already filed financial statements (i.e. a 10-K or 10-Q) reflecting the acquisition. The column Ind/Cont shows whether a variable is an indicator variable ("I") or a continuous/count variable ("C"). Continuous variables are winsorized at the 1 and 99 percentile. Appendix B provides variable definitions.

**TABLE 4**  
**TEST OF H1A – PRO FORMA DISCLOSURE AND ANALYST FORECAST ERRORS**

	OLS	Fuzzy Regression Discontinuity Estimated Using 2SLS					
	1	Baseline		Split by Post-Acq Qtr		Alt Specification	
		2	3	4	5	6	7
Pro Forma	0.0203 (1.49)						
Pro Forma IV		<b>-0.115***</b> <b>(-3.00)</b>	<b>-0.116***</b> <b>(-3.01)</b>	<b>-0.109**</b> <b>(-2.49)</b>	<b>-0.123***</b> <b>(-2.67)</b>	-0.163 (-1.30)	<b>-0.129**</b> <b>(-2.16)</b>
Investment Test	-0.0383 (-0.49)	<b>0.391***</b> <b>(2.89)</b>	<b>0.397***</b> <b>(2.91)</b>	<b>0.344**</b> <b>(2.22)</b>	<b>0.450***</b> <b>(2.75)</b>	0.879 (0.68)	<b>0.400***</b> <b>(2.94)</b>
Investment * Threshold							0.0316 (0.24)
<b>Deal Characteristics</b>							
Abnormal Ret	-0.00852 (-0.09)	0.0232 (0.25)	0.0322 (0.35)	0.0227 (0.24)	0.0416 (0.37)	0.150 (0.81)	0.0342 (0.37)
Foreign Tgt	0.0203* (1.90)	0.0160 (1.47)	0.0154 (1.42)	0.0114 (0.94)	0.0194 (1.45)	0.0208 (0.76)	0.0150 (1.39)
Public Tgt	-0.00640 (-0.48)	0.0131 (0.89)	0.0128 (0.86)	0.00604 (0.39)	0.0195 (1.00)	0.0377 (1.11)	0.0147 (0.87)
Subsidiary Tgt	0.00223 (0.21)	0.00225 (0.21)	0.00133 (0.12)	0.000155 (0.01)	0.00251 (0.19)	-0.00349 (-0.14)	0.00139 (0.13)
Cash Deal	-0.00872 (-0.93)	-0.0147 (-1.52)	-0.0148 (-1.54)	-0.0142 (-1.38)	-0.0155 (-1.27)	-0.0204 (-1.02)	-0.0153 (-1.55)
Diversifying Deal	0.00217 (0.24)	0.00132 (0.14)	0.00123 (0.13)	-0.00211 (-0.21)	0.00457 (0.39)	0.0121 (0.54)	0.00108 (0.11)
External Financing	0.000168 (0.02)	0.00577 (0.53)	0.00525 (0.48)	0.00848 (0.73)	0.00203 (0.14)	-0.0256 (-1.12)	0.00596 (0.52)
Diligence Days	-0.00658** (-2.19)	-0.00448 (-1.46)	-0.00464 (-1.51)	-0.00247 (-0.72)	-0.00681* (-1.83)	-0.0127* (-1.66)	-0.00441 (-1.35)
<b>Acquirer Characteristics</b>							
Analyst Coverage	0.000588 (0.74)	0.000305 (0.38)	0.000336 (0.41)	0.000107 (0.11)	0.000565 (0.56)	0.000236 (0.12)	0.000320 (0.39)
Size	-0.00969* (-1.94)	-0.0105** (-2.04)	-0.0103** (-2.01)	-0.00358 (-0.59)	-0.0170*** (-2.72)	0.00501 (0.45)	-0.0105** (-2.03)
Pre-acq Goodwill	-0.0346 (-1.21)	-0.0590** (-2.01)	-0.0570* (-1.95)	-0.0202 (-0.66)	-0.0938** (-2.55)	0.00351 (0.05)	-0.0597* (-1.96)
Serial Acquirer	-0.00463 (-0.35)	-0.00892 (-0.67)	-0.00977 (-0.74)	-0.0107 (-0.82)	-0.00879 (-0.53)	-0.0265 (-1.03)	-0.00997 (-0.75)
Big 4 Auditor	0.0137 (0.74)	0.00153 (0.08)	0.000562 (0.03)	-0.00423 (-0.20)	0.00535 (0.25)	-0.0419 (-1.10)	-0.000627 (-0.03)
Loss Firm	0.0119 (0.57)	0.0220 (1.06)	0.0196 (0.95)	0.00604 (0.27)	0.0331 (1.35)	-0.0661* (-1.85)	0.0205 (0.95)
Tobin Q	0.00187 (0.39)	-0.00287 (-0.58)	-0.00321 (-0.65)	0.000415 (0.07)	-0.00684 (-1.13)	0.00295 (0.25)	-0.00368 (-0.73)
Observations	12,320	12,320	12,320	6,160	6,160	2,548	12,320
First Stage F-Test	N/A	285.8	279.2	278.3	278.3	27.7	246.8
Acq Sample	Full	Full	Full	Full	Full	15-25% window	Full
Post Acq Quarters	All	All	All	1 & 2	3 & 4	All	All
Weighting	None	None	Distance	Distance	Distance	Distance	Distance
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1. The sample selection procedure is provided in Table 1. The dependent variable is *AFE Change*, which is the post acquisition quarterly forecast error, less the average forecast error in the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. *Pro Forma* is an indicator variable equal to 1 if the firm files pro forma financial statements. In columns 2 through 7, *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 5**  
**TEST OF H1A USING BKLS UNCERTAINTY DECOMPOSITION**

	DV = Total Uncertainty			DV = Common Uncertainty			DV = Idiosyncratic Uncertainty		
	1	2	3	4	5	6	7	8	9
Pro Forma IV	<b>-0.0566***</b>	<b>-0.0575***</b>	<b>-0.105*</b>	<b>-0.0394***</b>	<b>-0.0402***</b>	<b>-0.0812*</b>	-0.00828	-0.00801	0.0240
	<b>(-3.12)</b>	<b>(-3.14)</b>	<b>(-1.70)</b>	<b>(-3.00)</b>	<b>(-3.04)</b>	<b>(-1.85)</b>	(-0.40)	(-0.39)	(0.37)
Investment Test	0.216***	0.221***	0.697	0.137***	0.141***	0.542	0.112	0.110	-0.243
	(3.35)	(3.37)	(1.13)	(2.91)	(2.96)	(1.23)	(1.59)	(1.56)	(-0.35)
Observations	12,320	12,320	2,548	12,320	12,320	2,548	12,320	12,320	2,548
First Stage F-Test	285.8	279.2	27.7	285.8	279.2	27.7	285.8	279.2	27.7
Acq Sample	Full	Full	15-25% window	Full	Full	15-25% window	Full	Full	15-25% window
Weighting	None	Distance	Distance	None	Distance	Distance	None	Distance	Distance
Deal and Acquirer Chars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1 using the Barron et al. 1998 (BKLS) measures of analyst uncertainty. In columns 1-3, the dependent variables is the post-acquisition change in BKLS *Total Uncertainty*, which is measured as  $(1-1/\text{number of analysts}) \times \text{forecast dispersion} + \text{squared forecast errors}$ . In columns 4-6, the dependent variable is the post-acquisition change in BKLS *Common Uncertainty*, which is measured as  $\text{squared forecast errors} - \text{forecast dispersion} / \text{number of analysts}$ . In columns 7-9, the dependent variables is the post-acquisition change in *Idiosyncratic Uncertainty*, which is measured using analyst forecast dispersion. *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.



**TABLE 6**  
**TEST OF H1B – ANALYSIS BASED ON ANALYST FOLLOWING**

	DV = AFE Change			DV = Total Uncertainty			DV = Common Uncertainty		
	1	2	3	4	5	6	7	8	9
Below Median Analyst Following									
Pro Forma IV	<b>-0.165***</b>	<b>-0.169***</b>	-0.412	<b>-0.0932***</b>	<b>-0.0956***</b>	<b>-0.300*</b>	<b>-0.0636***</b>	<b>-0.0652***</b>	<b>-0.197*</b>
	<b>(-2.73)</b>	<b>(-2.78)</b>	(-1.49)	<b>(-3.16)</b>	<b>(-3.19)</b>	<b>(-1.78)</b>	<b>(-2.89)</b>	<b>(-2.92)</b>	<b>(-1.67)</b>
Investment Test	0.507**	0.526**	3.250	0.302***	0.312***	2.584	0.192**	0.199**	1.668
	(2.44)	(2.50)	(1.14)	(3.02)	(3.06)	(1.49)	(2.53)	(2.57)	(1.37)
Observations	6,224	6,224	1,384	6,224	6,224	1,384	6,224	6,224	1,384
First Stage F-Test	143.6	139.1	7.8	143.6	139.1	7.8	143.6	139.1	7.8
Above Median Analyst Following									
Pro Forma IV	-0.0548	-0.0545	-0.00355	-0.00774	-0.00781	0.0520	-0.00721	-0.00763	0.00903
	(-1.17)	(-1.17)	(-0.03)	(-0.39)	(-0.40)	(1.12)	(-0.53)	(-0.57)	(0.28)
Investment Test	0.212	0.210	-0.536	0.0619	0.0621	-0.698	0.0400	0.0418	-0.222
	(1.24)	(1.22)	(-0.39)	(0.82)	(0.82)	(-1.38)	(0.78)	(0.82)	(-0.63)
Observations	6,096	6,096	1,164	6,096	6,096	1,164	6,096	6,096	1,164
First Stage F-Test	147.1	145.6	15.7	147.1	145.6	15.7	147.1	145.6	15.7
Acq Sample	Full	Full	15-25% window	Full	Full	15-25% window	Full	Full	Full
Weighting	None	Distance	Distance	None	None	Distance	Distance	Distance	Distance
Deal and Acquirer Chars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1 separately for below median analyst following (top panel) and above median analyst following (bottom panel). In columns 1-3, the dependent variable is *AFE Change*, which is the post acquisition quarterly forecast error, less the average forecast error in the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. In columns 4-6 (7-9) the dependent variables is the post-acquisition change in *Total Uncertainty* (*Common Uncertainty*) from Barron et al. 1998 (see appendix B or Table 5 for calculation details). *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 7**  
TEST OF H1B – ANALYSIS BY TARGET TYPE

	Private Targets			Subsidiary Targets			Public Targets		
	AFE Change	Total Uncertainty	Common Uncertainty	AFE Change	Total Uncertainty	Common Uncertainty	AFE Change	Total Uncertainty	Common Uncertainty
	1	2	3	4	5	6	7	8	9
Pro Forma IV	<b>-0.135**</b> (-2.21)	<b>-0.0538**</b> (-2.02)	<b>-0.0394**</b> (-2.02)	<b>-0.0991*</b> (-1.69)	<b>-0.0527*</b> (-1.87)	<b>-0.0349*</b> (-1.68)	-0.0358 (-0.95)	<b>-0.0358*</b> (-1.79)	<b>-0.0287*</b> (-1.87)
Investment Test	0.436* (1.95)	0.183* (1.90)	0.129* (1.83)	0.476** (2.05)	0.293*** (2.71)	0.189** (2.33)	-0.0393 (-0.25)	0.0321 (0.32)	0.000876 (0.01)
Asset Test							-0.0270 (-0.45)	-0.0188 (-0.76)	-0.0139 (-0.64)
Income Test							0.0302 (1.27)	0.0141 (1.20)	0.0121 (1.36)
Observations	5,700	5,700	5,700	4,452	4,452	4,452	2,036	2,036	2,036
First Stage F-Test	160.9	160.9	160.9	84.6	84.6	84.6	303.4	303.4	303.4
Acq Sample	Full	Full	Full	Full	Full	Full	Full	Full	Full
Weighting	Distance	Distance	Distance	Distance	Distance	Distance	Distance	Distance	Distance
Deal and Acquirer Chars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1 separately for each target type (private targets in columns 1-3, subsidiary targets in columns 4-6, and public targets in columns 7-9). The dependent variable in columns 1,4 and 7 is *AFE Change*, which is the post acquisition quarterly forecast error, less the average forecast error in the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. The dependent variables in columns 2, 5, and 8 (3, 6 and 9) is the post-acquisition change in *Total Uncertainty* (*Common Uncertainty*) from Barron et al. 1998 (see appendix B or Table 5 for calculation details). *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. In columns 7-9, since the target is a public firm, I am able to observe pre-acquisition target assets and earnings, and use all three thresholds (asset test, investment test, income test) as instruments for pro forma disclosure. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 8**  
**PRO FORMA FINANCIAL METRICS AND ACQUISITION ANNOUNCEMENT RETURNS**

	Full Sample			Normal PE Ratio Subsample		
	1	2	3	4	5	6
EPS Accretive		<b>0.0109**</b> (2.11)			<b>0.00970*</b> (1.77)	
Price to Revenue			<b>-0.00369***</b> (-4.22)			<b>-0.00387***</b> (-4.16)
PF Op Margin			<b>0.00206**</b> (2.28)			<b>0.00223**</b> (2.31)
<b>Controls</b>						
Foreign tgt	-0.000969 (-0.15)	-0.00139 (-0.21)	-0.00139 (-0.21)	-0.00319 (-0.47)	-0.00337 (-0.50)	-0.00427 (-0.63)
Public tgt	-0.0156** (-2.52)	-0.0144** (-2.31)	-0.0184*** (-2.98)	-0.0136** (-1.99)	-0.0125* (-1.82)	-0.0163** (-2.40)
Subsidiary tgt	0.0131** (2.13)	0.0126** (2.05)	0.00866 (1.43)	0.0148** (2.20)	0.0142** (2.11)	0.0105 (1.58)
Cash Deal	-0.000550 (-0.11)	-0.000760 (-0.15)	-0.000380 (-0.08)	0.00433 (0.80)	0.00410 (0.75)	0.00533 (0.99)
Diversifying Deal	-0.00548 (-0.98)	-0.00600 (-1.07)	-0.00411 (-0.75)	-0.00508 (-0.88)	-0.00546 (-0.95)	-0.00250 (-0.44)
External Financing	0.000186 (0.03)	-0.000545 (-0.09)	-0.00514 (-0.84)	0.00279 (0.44)	0.00222 (0.35)	-0.00174 (-0.27)
TobinQ	-0.00468* (-1.95)	-0.00436* (-1.82)	-0.00203 (-0.84)	-0.00767*** (-2.71)	-0.00742*** (-2.62)	-0.00479* (-1.69)
Size	-0.0108* (-1.95)	-0.0107* (-1.94)	-0.0133** (-2.38)	-0.0105* (-1.76)	-0.0107* (-1.78)	-0.0138** (-2.25)
Serial Acq	-0.0156** (-2.39)	-0.0155** (-2.37)	-0.0161** (-2.50)	-0.0156** (-2.34)	-0.0157** (-2.32)	-0.0164** (-2.43)
Leverage	0.0179 (1.18)	0.0172 (1.14)	0.0195 (1.32)	0.0108 (0.69)	0.0101 (0.65)	0.0138 (0.90)
Tgt Size	0.00427 (0.84)	0.00439 (0.86)	0.00776 (1.49)	0.00378 (0.70)	0.00410 (0.75)	0.00804 (1.43)
Observations	946	946	946	790	790	790
Adj R-Squared	5.3%	5.7%	7.6%	7.5%	7.8%	9.9%
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: The sample selection procedure is described in Table 1. For the Pro Forma subsample, this table presents the results of estimating Equation 2 which tests whether financial metrics from pro forma financial statements explain variation in target selection quality, where target quality is measured using announcement date returns. In all, columns, the dependent variables is 3-day market adjusted announcement returns (*ARET*). Columns 4-6 presents the results for a subsample of acquirers which have an unlevered PE ratio between 0 and 50 in the prior year, or an average unlevered PE ratio between 0 and 50 over the past 5 years. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 9 PANEL A**  
**TEST OF H2 – PRO FORMA DISCLOSURE AND TARGET SELECTION**

	Full Sample			Public	Priv/Sub Tgt	Priv/Sub Tgt	Public	Priv/Sub Tgt	Priv/Sub Tgt
	1	2	3	Tgt	& No Advsiors	& Advsiors	Tgt	& No Advsiors	& Advsiors
Pro Forma	<b>0.00880***</b> (2.98)	<b>0.00709**</b> (2.25)							
PF Voluntary			0.00396 (0.68)	0.00607 (0.50)	<b>0.0132*</b> (1.67)	-0.00588 (-0.52)			
PF Mandatory			<b>0.00745**</b> (2.23)	-0.00510 (-0.73)	<b>0.0102**</b> (2.00)	<b>0.0171***</b> (2.91)			
Pro Forma IV							-0.00726 (-0.35)	-0.00891 (-0.68)	<b>0.0315*</b> (1.95)
Investment Test		<b>0.0820**</b> (2.06)	<b>0.0791*</b> (1.94)	0.0885 (1.36)	0.0378 (0.55)	0.124 (1.56)	0.0913 (1.22)	0.113 (1.32)	0.0978 (1.08)
<b>Controls</b>									
Acq advisor	-0.000269 (-0.11)	-0.000314 (-0.13)	-0.000340 (-0.14)	-0.000170 (-0.03)	-	-	0.000178 (0.03)	-	-
Foreign tgt	-0.000225 (-0.08)	-0.000298 (-0.11)	-0.000244 (-0.09)	0.00319 (0.48)	-0.000577 (-0.16)	0.000163 (0.03)	0.00290 (0.44)	-0.000943 (-0.25)	0.00000921 (0.00)
Public tgt	-0.0139*** (-3.96)	-0.0139*** (-3.98)	-0.0139*** (-3.97)	-	-	-	-	-	-
Subsidiary tgt	0.00940*** (3.79)	0.00929*** (3.76)	0.00930*** (3.76)	-	0.00808*** (2.79)	0.00971** (2.11)	-	0.00808*** (2.80)	0.00911** (1.97)
Cash Deal	0.000928 (0.40)	0.00111 (0.48)	0.00109 (0.47)	0.0243*** (3.65)	-0.00399 (-1.36)	-0.00292 (-0.68)	0.0233*** (2.98)	-0.00408 (-1.40)	-0.00208 (-0.46)
Diversify Deal	-0.000671 (-0.29)	-0.000764 (-0.33)	-0.000765 (-0.33)	0.00148 (0.23)	0.000431 (0.15)	-0.00586 (-1.33)	0.00158 (0.26)	0.000293 (0.10)	-0.00595 (-1.38)
External Fin	-0.00000429 (-0.00)	-0.000309 (-0.13)	-0.000348 (-0.14)	0.00364 (0.64)	-0.000103 (-0.03)	-0.000989 (-0.21)	0.00361 (0.65)	0.0000525 (0.02)	-0.000681 (-0.15)
TobinQ	-0.00299*** (-2.64)	-0.00308*** (-2.72)	-0.00309*** (-2.72)	-0.00187 (-0.72)	-0.00233 (-1.54)	-0.00524*** (-2.65)	-0.00207 (-0.77)	-0.00277* (-1.82)	-0.00426** (-2.04)
Size	-0.00376 (-1.48)	0.00745 (1.42)	0.00718 (1.35)	0.00264 (0.30)	0.00325 (0.38)	0.0202* (1.78)	0.00232 (0.27)	0.00457 (0.53)	0.0245** (2.20)
Serial Acq	-0.00140 (-0.62)	-0.00123 (-0.54)	-0.00120 (-0.53)	-0.00257 (-0.38)	0.00105 (0.35)	-0.00296 (-0.75)	-0.00182 (-0.28)	0.0000733 (0.02)	-0.00250 (-0.62)
Leverage	0.0134** (1.99)	0.0132** (1.98)	0.0132** (1.97)	0.0258 (1.41)	-0.00386 (-0.48)	0.0285** (2.22)	0.0266 (1.50)	-0.00268 (-0.34)	0.0284** (2.26)
Tgt Size	0.00111 (0.44)	-0.00992* (-1.87)	-0.00964* (-1.80)	-0.00687 (-0.81)	-0.00491 (-0.56)	-0.0231** (-1.96)	-0.00665 (-0.81)	-0.00659 (-0.75)	-0.0272** (-2.37)
Observations	3,080	3,080	3,080	542	1,536	1,002	542	1,536	1,002
Adj R-Squared	5.3%	5.4%	5.4%	12.6%	5.9%	10.3%	12.6%	4.6%	9.2%
Tgt Type	All	All	All	Public	Private / Sub	Private / Sub	Public	Private / Sub	Private / Sub
Acq Advisor	All	All	All	All	No	Yes	All	No	Yes
Ind & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1 to test the agency cost hypotheses (H2A and H2B). The dependent variables is 3-day market adjusted announcement returns, measured as the acquirer's (-1,0,+1) CAR over the value-weighted index (*ARET*). Table 9 Panel B presents results using 3 different methodologies to calculate abnormal returns. In columns 7 through 9, *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 9 PANEL B**  
**PRO FORMA DISCLOSURE AND TARGET SELECTION – ALTERNATIVE RETURN MEASURES**

	Full Sample			Pub Tgt	Priv / Sub Tgt & No Advsiors	Priv / Sub Tgt & Advsiors	Pub Tgt	Priv / Sub Tgt & No Advsiors	Priv / Sub Tgt & Advsiors
	1	2	3	4	5	6	7	8	9
Market Model									
Pro Forma	<b>0.00972***</b> (3.25)	<b>0.00856***</b> (2.67)							
PF Mandatory			<b>0.00901***</b> (2.64)	-0.00542 (-0.80)	<b>0.0110**</b> (2.09)	<b>0.0205***</b> (3.44)			
Pro Forma IV							-0.0148 (-0.67)	-0.00739 (-0.57)	<b>0.0354**</b> (2.13)
Fama-French 3 Factor Returns									
Pro Forma	<b>0.00969***</b> (3.22)	<b>0.00835***</b> (2.59)							
PF Mandatory			<b>0.00847**</b> (2.47)	-0.00533 (-0.79)	<b>0.00979*</b> (1.84)	<b>0.0202***</b> (3.39)			
Pro Forma IV							-0.0187 (-0.86)	-0.0107 (-0.84)	<b>0.0358**</b> (2.16)
Fama-French 3 Factor Plus Momentum									
Pro Forma	<b>0.00980***</b> (3.21)	<b>0.00844***</b> (2.59)							
PF Mandatory			<b>0.00846**</b> (2.44)	-0.00289 (-0.42)	<b>0.00928*</b> (1.73)	<b>0.0202***</b> (3.35)			
Pro Forma IV							-0.0112 (-0.50)	-0.0116 (-0.90)	<b>0.0334**</b> (2.01)
Observations	2,981	2,981	2,981	511	1,499	971	511	1,499	971
Tgt Type	All	All	All	Public	Private / Sub	Private / Sub	Public	Private / Sub	Private / Sub
Acq Advisor	All	All	All	All	No	Yes	All	No	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 1 to test the agency cost hypotheses (H2A and H2B). The top panel presents results using abnormal returns from a market model, the middle panel presents results from a Fama-French 3 Factor model, and the bottom panel presents results from a 4-Factor including momentum. In columns 7 through 9, *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 10**  
TEST OF H2 - CONDITIONAL ON ANALYST FOLLOWING

	Full Sample			Pub Tgt	Priv / Sub Tgt & No Advsiors	Priv / Sub Tgt & Advsiors	Pub Tgt	Priv / Sub Tgt & No Advsiors	Priv / Sub Tgt & Advsiors
	1	2	3	4	5	6	7	8	9
Below Median Analyst Following									
Pro Forma	<b>0.0151***</b> (3.51)	<b>0.0138***</b> (3.07)							
PF Mandatory			<b>0.0140***</b> (2.93)	0.0197 (1.56)	<b>0.0160***</b> (2.67)	<b>0.0170*</b> (1.71)			
Pro Forma IV							0.0375 (1.18)	-0.00221 (-0.14)	<b>0.0559*</b> (1.86)
Observations	1,556	1,556	1,556	220	897	439	220	897	439
Adj R-Squared	7.0%	7.1%	7.1%	26.7%	10.2%	12.9%	25.9%	9.0%	8.1%
Above Median Analyst Following									
Pro Forma	0.00256 (0.59)	0.000427 (0.09)							
PF Mandatory			0.000637 (0.13)	<b>-0.0204**</b> (-2.35)	0.00126 (0.13)	<b>0.0185**</b> (2.40)			
Pro Forma IV							-0.0292 (-1.14)	-0.0201 (-0.84)	0.0139 (0.75)
Observations	1,524	1,524	1,524	322	639	563	322	639	563
Adj R-Squared	5.7%	6.0%	6.0%	20.5%	4.8%	14.2%	19.7%	2.9%	13.8%
Tgt Type	All	All	All	Public	Private / Sub	Private / Sub	Public	Private / Sub	Private / Sub
Acq Advisor	All	All	All	All	No	Yes	All	No	Yes
Ind & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

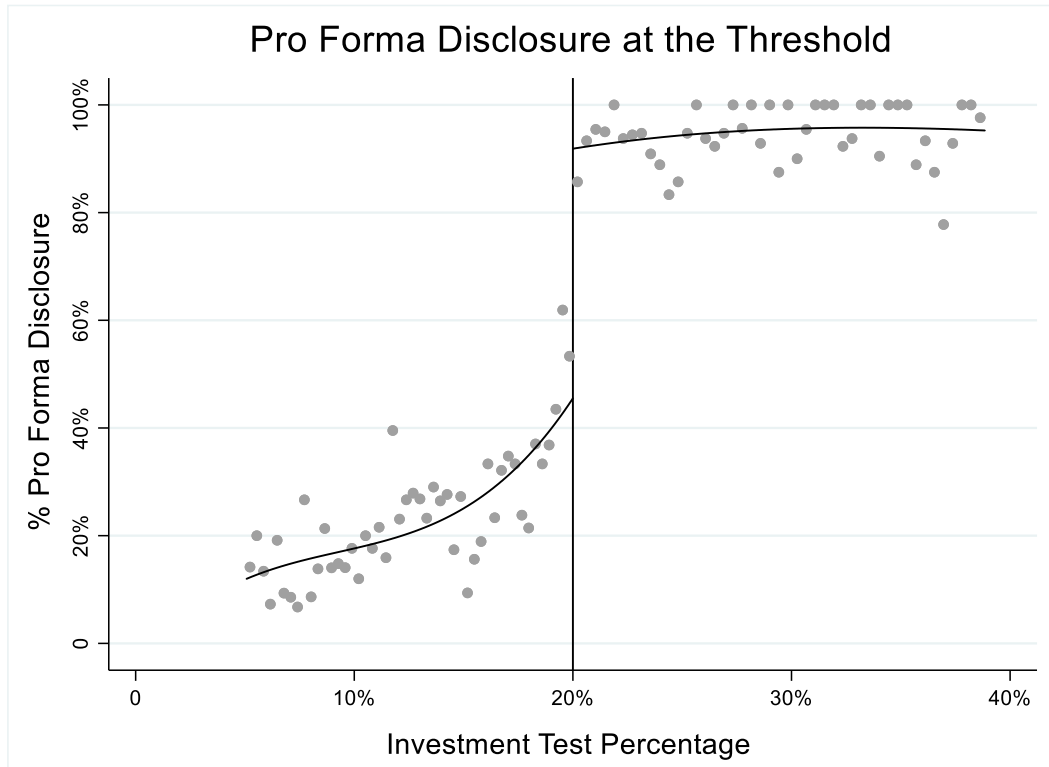
Note: This table presents the results of testing the agency cost hypotheses (H2A and H2B) separately for below median analyst following (top panel) and above median analyst following (bottom panel). The dependent variables is 3-day market adjusted announcement returns, measured as the acquirer's (-1,0,+1) CAR over the value-weighted index (ARET). In columns 7 through 9, *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

**TABLE 11**  
**ACQUIRER ADVISORS AND PRO FORMA METRICS**

	EPS Accretive				Price to Revenue		PF Op Margin	
	LPM		LOGIT		OLS		OLS	
	1	2	3	4	5	6	7	8
Acq Advisor	<b>-0.0707**</b> (-1.98)	<b>-0.0671*</b> (-1.68)	<b>-0.340*</b> (-1.91)	<b>-0.316*</b> (-1.66)	0.151 (0.71)	0.209 (0.89)	<b>-0.637***</b> (-2.92)	<b>-0.837***</b> (-3.51)
<b>Controls</b>								
Foreign tgt	0.0424 (0.98)	0.0216 (0.44)	0.234 (1.09)	0.130 (0.56)	0.0341 (0.15)	-0.175 (-0.67)	0.318 (1.25)	0.233 (0.87)
Public tgt	-0.0938** (-2.26)	-0.0991** (-2.06)	-0.490** (-2.24)	-0.503** (-2.09)	-0.975*** (-3.77)	-0.924*** (-3.26)	-0.223 (-0.88)	-0.173 (-0.61)
Subsidiary tgt	0.0522 (1.30)	0.0653 (1.43)	0.237 (1.26)	0.294 (1.41)	-1.043*** (-4.48)	-0.986*** (-3.95)	0.403* (1.71)	0.313 (1.21)
Cash Deal	0.0161 (0.52)	0.0197 (0.55)	0.0805 (0.52)	0.101 (0.60)	0.0471 (0.24)	0.174 (0.82)	-0.0375 (-0.20)	-0.221 (-1.04)
Diversifying Deal	0.0464 (1.21)	0.0402 (0.96)	0.225 (1.25)	0.191 (0.99)	0.435* (1.84)	0.679*** (2.72)	0.105 (0.48)	0.0469 (0.20)
External Financing	0.0612 (1.62)	0.0535 (1.27)	0.307 (1.62)	0.266 (1.29)	-0.484** (-2.01)	-0.180 (-0.65)	1.644*** (7.11)	1.627*** (6.36)
TobinQ	-0.0325** (-2.32)	-0.0270 (-1.34)	-0.187** (-2.23)	-0.152 (-1.40)	0.554*** (5.47)	0.597*** (4.51)	-0.333*** (-3.60)	-0.271** (-2.26)
Acq Size	-0.00548 (-0.16)	0.0202 (0.51)	-0.0290 (-0.18)	0.0913 (0.50)	-0.416* (-1.94)	-0.507** (-2.17)	0.460** (2.15)	0.575** (2.38)
Serial Acq	-0.00638 (-0.15)	0.00531 (0.11)	-0.0167 (-0.08)	0.0395 (0.17)	-0.0407 (-0.16)	-0.125 (-0.48)	0.184 (0.64)	0.150 (0.47)
Leverage	0.0631 (0.61)	0.0661 (0.58)	0.248 (0.49)	0.283 (0.52)	0.690 (1.22)	1.076* (1.79)	0.434 (0.78)	0.389 (0.65)
Tgt Size	0.0000449 (0.00)	-0.0250 (-0.67)	-0.00307 (-0.02)	-0.119 (-0.69)	0.787*** (3.87)	0.872*** (3.99)	-0.145 (-0.72)	-0.251 (-1.12)
N	946	790	946	790	946	790	946	790
Adj R-Squared	11.4%	10.1%	-	-	11.5%	13.4%	12.1%	10.7%
Sample	Full	Normal PE	Full	Normal PE	Full	Normal PE	Full	Normal PE
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of estimating Equation 3. In columns 1-4 through dependent variable is *EPS Accretive*, an indicator variable equal to 1 for acquisition which are accretive to EPS on a pro forma basis. In columns 5 and 6, the dependent variable is *Price to Revenue*, which is the decile rank of purchase price to target revenue. In columns 7 and 8, the dependent variable is *PF Op Margin*, which is the decile rank of the pro forma operating margin. The test variable *Acq Advisor* is an indicator variable equal to 1 if the acquiring firm uses a 3rd party investment advisor. Columns 2, 4, 6, and 8 present the results for a subsample of acquirers which have an unlevered PE ratio between 0 and 50 in the prior year, or an average unlevered PE ratio between 0 and 50 over the past 5 years. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

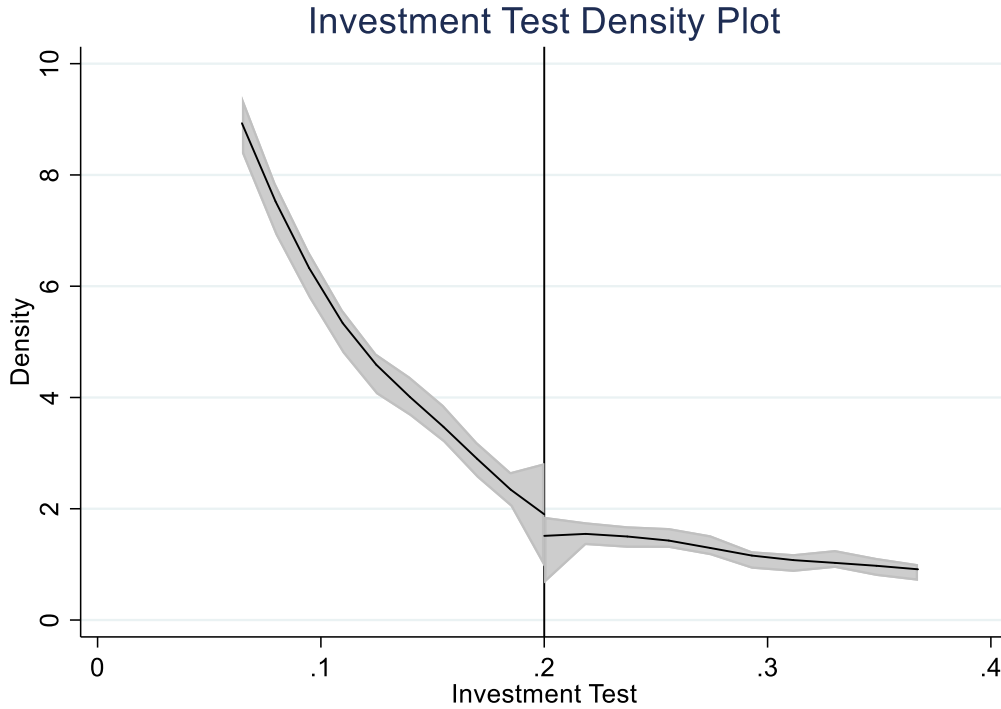
**FIGURE 1**  
PRO FORMA DISCLOSURE AROUND THE INVESTMENT TEST THRESHOLD



Note: These graphs present observations above and below the 20% investment test threshold who provide Article 11 pro forma financial statements, providing a graphical illustration of the data in Table 2 Panel A.



**FIGURE 2**  
**THRESHOLD MANIPULATION TEST**



Note: The figure above presents the Cattaneo et al. (2017) nonparametric manipulation test which is designed to test for an abnormal number of observations right above or below the 20% investment test threshold. The test statistics is -1.26 which equates to a p-value of 0.21, and I reject manipulation around the threshold. The grey bands surrounding the fitted lines overlap around the 20% investment test threshold, providing visual evidence that there is no statistical evidence of manipulation around the threshold. The table below presents the test statistics for different subsamples.

Sample	Test Statistic	P-Value	Evidence of Manipulation
Full	-1.26	0.21	No
Private Tgt	-1.46	0.15	No
Public Tgt	-0.38	0.71	No
Subsidiary Tgt	-0.57	0.57	No
Non-Public Tgt & Outside Advisor	-1.23	0.22	No
Non-Public Tgt & No Outside Advisor	0.34	0.73	No

**APPENDIX A – ILLUSTRATIVE EXAMPLE**  
**AT&T Pro Forma Income Statement for DirectTV Acquisition**

AT&T INC.

UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF INCOME  
FOR THE YEAR ENDED DECEMBER 31, 2014

	Historical		Pro Forma	
	AT&T	DIRECTV	Adjustments	Combined
<b>Total Operating Revenues</b>	\$ 132,447	\$ 33,260	\$ (112)	\$ 165,595
<b>Operating Expenses</b>				
Cost of services and sales (exclusive of depreciation and amortization shown separately below)	60,145	17,680	(1,529) (b2) (112) (c2) 786 (c3) 30 (c6) 58 (c8)	77,058
Selling, general and administrative	39,697	7,228	(786) (c3) (203) (c4) 19 (c6)	45,955
Asset abandonment and currency devaluation charge	2,120	281		2,401
Depreciation and amortization	18,273	2,943	(54) (b3) 5,771 (b5) (44) (c5)	26,889
<b>Total Operating Expenses</b>	120,235	28,132	3,936	152,303
<b>Operating Income</b>	12,212	5,128	(4,048)	13,292
Interest expense	3,613	898	(101) (c7) (15) (c8) 512 (c9)	4,907
Other income (expense) – net	1,756	218	(50) (b7)	1,924
<b>Income Before Income Taxes</b>	10,355	4,448	(4,494)	10,309
Income tax expense	3,619	1,673	(1,708) (e)	3,584
<b>Net Income</b>	6,736	2,775	(2,786)	6,725
<b>Less: Net income attributable to Noncontrolling Interest</b>	(294)	(19)	-	(313)
<b>Net Income Attributable to Registrant</b>	\$ 6,442	\$ 2,756	\$ (2,786)	\$ 6,412
<b>Basic Earnings Per Share</b>				
Attributable to Registrant	\$ 1.24	\$ 5.46		\$ 1.04 (d)
<b>Diluted Earnings Per Share</b>				
Attributable to Registrant	\$ 1.24	\$ 5.40		\$ 1.04 (d)
<b>Weighted Average Common Shares Outstanding (000,000)</b>				
Basic	5,205	505		6,160 (d)
Diluted	5,221	510		6,185 (d)

\* For brevity, I omit the pro forma balance sheet and footnotes explaining each adjustment. This filing can be found at the following link [https://www.sec.gov/Archives/edgar/data/732717/000073271715000101/ex99\\_1.htm](https://www.sec.gov/Archives/edgar/data/732717/000073271715000101/ex99_1.htm)

## APPENDIX B – DEFINITION OF VARIABLES

Variable	Description	Source*
<b>Dependent Variables and Test Variables – In order of the Tables</b>		
AFE Change	The change in analyst forecast errors (AFE) in the 4 post-acquisition quarters, compared to the 4 pre-acquisition quarters, scaled by pre-acquisition average EPS. In descriptive tables, I present the average of this variable across the four post-acquisition quarters. In empirical tests, I measure this variable separately for each post-acquisition quarter (t+1 through t+4).	IBES
ARET	The three-day cumulative abnormal return (CAR) over the CRSP value-weighted index.	CRSP
Pro Forma	An indicator variable equal to 1 if the acquiring firm files pro forma financial statements for the acquisition, and zero otherwise.	HC
Pro Forma IV	Predicted <i>Pro Forma</i> from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage.	HC
PF Mandatory	An indicator variable equal to 1 if the acquiring firm files pro forma financial statements for the acquisition and the acquisition exceeds one of the three thresholds, and zero otherwise.	HC
PF Voluntary	An indicator variable equal to 1 if the acquiring firm files pro forma financial statements for the acquisition, but I find no evidence that the acquisition exceeds one of the three thresholds, and zero otherwise.	HC
Common Uncertainty	The change in Barron et al. (1998) (BKLS) common uncertainty in the 4 post-acquisition quarters, compared to the 4 pre-acquisition quarters, where BKLS common uncertainty = squared forecast errors – forecast dispersion/number of analysts.	IBES
Idiosyncratic Uncertainty	The change in post-acquisition forecast dispersion compared to pre-acquisition forecast dispersion.	
Total Uncertainty	The change in BKLS total uncertainty in the 4 post-acquisition quarters, compared to the 4 pre-acquisition quarters. BKLS total uncertainty is measured as (1-1/number of analysts)*forecast dispersion + squared forecast errors.	IBES
EPS Accretive	An indicator variable equal to 1 if Pro Forma EPS is greater than historical EPS.	HC
Price to Revenue	The purchase price to target pro forma revenue multiple, measured as acquisition purchase price divided by target historical revenue plus pro forma revenue adjustments. In regressions, this variable is measured using decile ranks.	HC
PF Op Margin	The pro forma operating margin. In regressions, this variable is measured using decile ranks.	HC
<b>Control Variables – Presented in alphabetical order</b>		
Analyst Coverage	The number of analysts covering the acquirer in the period of the acquisition.	IBES
Asset Test	The target's pre-acquisition total assets scaled by the acquirer's pre-acquisition total assets, both measured as of the most recently completed fiscal year.	Compustat/ SDC
Big 4 Auditor	An indicator variable equal to 1 if the acquiring firm is audited by a Big 4 auditor (KPMG, Deloitte, E&Y or PwC) or Arthur Anderson, and zero otherwise.	Compustat
Cash Deal	An indicator variable equal to 1 if the purchase consideration is all cash, and zero otherwise.	SDC
Diligence Days	The number of days between the acquisition announcement date and acquisition closing date. In regressions, I use the natural log of diligence days.	SDC
Diversifying Deal	An indicator variable to one if the target firm and acquiring institution are in different Fama-French 12 digit industries, and zero otherwise.	Compustat/ SDC
External Financing	An indicator variable equal to 1 if the acquirer's cash balance as of the most recently completed fiscal period is less than the acquisition purchase price, and zero otherwise.	Compustat
Foreign Tgt	An indicator variable equal to one if the target firm was foreign, and zero otherwise.	SDC

Variable	Description	Source*
Income Test	The target's most recent pre-acquisition annual test income scaled by the acquirer's most recent pre-acquisition annual test income. Test income is equal to earnings before taxes, adjusted for earnings attributable to minority interest holders, subject to a 5-year lookback test. For negative earnings, I use the absolute value of earnings.	SDC/HC/ Compustat
Investment test	The purchase price scaled by the acquirer's pre-acquisition total assets from the most recently completed fiscal year.	SDC/HC/ Compustat
Leverage	The acquirer's pre-acquisition leverage, measured as total liabilities scaled by total assets.	Compustat
Loss Firm	An indicator variable equal to one if the acquirer has a loss in the year prior to the acquisition.	Compustat
Pre-acq Goodwill	The amount of pre-acquisition goodwill scaled by pre-acquisition total assets.	Compustat
Private Tgt	An indicator variable equal to one if the target firm was private, and zero otherwise.	SDC
Public Tgt	An indicator variable equal to one if the target firm was public, and zero otherwise.	SDC
Serial Acquirer	An indicator variable equal to one if the acquirer completes a different acquisition below the 20% threshold within 365 days of acquisition closing.	SDC
Size	The natural log of acquirer total assets in the quarter prior to the acquisition.	Compustat
Subsidiary Tgt	An indicator variable equal to one if the target firm was a subsidiary, and zero otherwise.	SDC
Tobin Q	Market value of the acquirer's assets divided by total assets. Market value of assets is calculated as the book value of assets, plus market value of common stock, minus the book value of common stock, minus balance sheet deferred taxes.	Compustat

**Pro Forma Variables – Presented in alphabetical order**

Abs Net Income Change	The absolute value of pro forma adjustments to target net income scaled by target net income. % Tgt Net Income Increase (Decrease) is an indicator variable equal to one if pro forma adjustment increase (decrease) target net income, and zero otherwise.	HC
Abs Op Income Change	The absolute value of pro forma adjustments to target operating income scaled by target operating income. % Tgt Op Income Increase (Decrease) is an indicator variable equal to one if pro forma adjustment increase (decrease) target operating income, and zero otherwise.	HC
Abs Tgt Revenue Change	The absolute value of pro forma adjustments to target revenue scaled by target revenue. % Tgt Revenue Increase (Decrease) is an indicator variable equal to one if pro forma adjustment increase (decrease) target revenue, and zero otherwise. No Tgt Revenue Change is an indicator variable equal to one if there are no pro forma adjustment to target revenue, and zero otherwise.	HC
Asset FV Increase	An indicator variable equal to one if there is the fair value of acquired assets, including goodwill, is greater than the target's historical cost basis, and zero otherwise.	HC
Balance Sheet	An indicator variable equal to one if the acquirer includes a pro forma balance sheet, and zero otherwise.	HC
EPS Accretive	An indicator variable equal to one if pro forma diluted EPS is greater than pre-acquisition EPS, and zero otherwise.	HC
Interim Income statement	An indicator variable equal to 1 if acquirer files an interim income statement, and zero otherwise.	HC
Income Statement Columns	The count of annual income statement columns in the pro formas. The standard four column presentation includes the historical acquirer, historical target, pro forma adjustments and pro forma combined amounts. Firms may present additional columns to show financing, disposals of acquired assets, target GAAP conversions, or other transactions.	HC
Income Statement Rows	The count of annual income statement rows in the pro formas.	HC

<b>Variable</b>	<b>Description</b>	<b>Source*</b>
Leverage Change	The change in leverage, measured as pro forma total liabilities scaled by pro forma total assets minus acquirer historical liabilities scaled by acquirer historical assets.	HC
Neg Op Margin	An indicator variable equal to 1 if the pro forma operating margin is negative, and zero otherwise.	HC
Pro Forma Notes	The count of pro forma notes. Each separate letter or number is considered a different pro forma note.	HC
Tax Rate Decrease	An indicator variable equal to one if the pro forma tax rate is smaller than the acquirer's pre-acquisition tax rate by 5% or more.	HC
Tax Rate Increase	An indicator variable equal to one if the pro forma tax rate is greater than the acquirer's pre-acquisition tax rate by 5% or more.	HC

\*HC indicates that the data was hand-collected.

## APPENDIX C – ILLUSTRATION OF ONE EMPIRICAL CHALLENGE

I present a simple model of mandated disclosure to illustrate one empirical challenge in an event-based mandated disclosure setting. This model incorporates four features of securities regulation pertinent to my setting; the regulator mandates disclosure for certain transactions, firms incur a disclosure cost, investors incur a cost from uncertainty, and the benefit of disclosure is reduced uncertainty.

The model is as follows. A firm acquires target  $i$  and expects the acquisition to increase future cash flows by  $x$ . Investors face uncertainty about the future cash flows which depend on the nature of the transaction  $\theta \in [L, H]$ . Absent mandated disclosure, when  $\theta = H$  (i.e. high uncertainty acquisitions), which occurs with probability  $p_i$ , then uncertainty is high ( $\sigma_H$ ), which causes investors to incur a loss of  $\alpha$ . When  $\theta = L$ , which occurs with probability  $1-p_i$ , then uncertainty is low ( $\sigma_L$ ), and investors incur no cost. Absent disclosure regulation, the value equals the expected increase in future cash flows ( $E[x]$ ) less the cost of high uncertainty.

$$V_{No\ Disclosure} = E[x] - p_i\alpha$$

Now suppose a security regulator can mandate disclosure, which has a cost of  $c$ . The benefit of mandated disclosure is that with probability ( $\lambda$ ) it results in low post-acquisition uncertainty ( $\sigma_L$ ) and with probability  $1-\lambda$  it has no effect on uncertainty. This assumption is consistent with disclosure potentially reducing uncertainty, but never increasing uncertainty, because investors can ignore the disclosure. Assume the security regulator requires disclosure conditional on the nature of the transaction. The security regulator does not require disclosure when uncertainty is low, but may mandate disclosure when uncertainty is high. The value of the firm with mandated disclosure is

$$V_{Mandated} = E[x] - p_i\alpha(1 - \lambda) - c$$

The security regulator mandates disclosure when  $p_i\alpha\lambda > c$ . This condition suggests that a security regulator is more likely to mandate disclosure when the probability of high uncertainty increases ( $p_i$ ), the cost of disclosure decreases ( $c$ ), the cost of uncertainty increases ( $\alpha$ ), or the probability that disclosure reduces uncertainty increases ( $\lambda$ ); four conditions that appear consistent with SEC disclosure mandates. Assume the security regulator mandates disclosure, and this results in the following possible outcomes

State	Mandated disclosure	Probability	Ending Uncertainty
Low uncertainty	No ( $d=0$ )	$1 - p_i$	$\sigma_L$
High uncertainty, mandated disclosure reduces uncertainty	Yes ( $d=1$ )	$p_i\lambda$	$\sigma_L$
High uncertainty, mandated disclosure doesn't reduce uncertainty	Yes ( $d=1$ )	$p_i(1 - \lambda)$	$\sigma_H$

Suppose a researcher examining the event-mandated disclosure estimates the following regression.

$$Y = \beta_1 Disclosure + \epsilon$$

If the outcome variable is analyst forecast errors, one type of uncertainty, then in the coefficient on  $\beta_1$  will be positive, even though the true effect of mandated disclosure is to reduce uncertainty (forecast errors).

## INTERNET APPENDIX A1: THE ASSOCIATION BETWEEN PRO FORMA FORECAST ERRORS AND ANALYST FORECAST ERRORS

	DV = AFE Change						
	Baseline		Split by Analyst Following		Split by Target Type		
	1	2	3	4	5	6	7
Naïve PF Forecast Error	<b>0.00561**</b> (2.07)	<b>0.00605**</b> (2.36)	<b>0.00784**</b> (2.44)	0.00283 (0.90)	0.000638 (0.16)	<b>0.00649*</b> (1.78)	<b>0.00888***</b> (2.62)
Investment Test		-0.0725 (-0.61)	-0.163 (-1.00)	0.00913 (0.06)	-0.236 (-1.31)	0.131 (0.61)	-0.118 (-0.59)
<b>Deal Characteristics</b>							
Abnormal Ret		0.201 (1.45)	0.231 (1.09)	0.143 (0.78)	0.0374 (0.16)	0.114 (0.41)	0.0911 (0.44)
Foreign tgt		0.00178 (0.08)	0.00834 (0.24)	-0.0174 (-0.72)	0.0831* (1.66)	-0.0209 (-0.56)	0.00935 (0.22)
Public tgt		-0.0131 (-0.47)	-0.0523 (-1.23)	0.0496 (1.47)			
Subsidiary tgt		0.0336 (1.36)	0.0296 (0.89)	0.0553* (1.75)			
Cash Deal		-0.0348* (-1.93)	-0.0714** (-2.54)	0.0101 (0.48)	0.0248 (0.80)	-0.0272 (-0.89)	-0.0840*** (-2.87)
Diversifying Deal		0.0464** (2.19)	0.0706** (2.33)	0.0179 (0.68)	0.0396 (0.81)	0.0430 (1.37)	0.0699** (2.39)
External Financing		-0.0101 (-0.42)	-0.0173 (-0.49)	-0.00253 (-0.09)	0.0256 (0.70)	0.0545 (1.34)	-0.104** (-2.44)
Diligence Days		-0.00886 (-1.31)	-0.00407 (-0.43)	-0.00806 (-0.69)	-0.0147 (-0.51)	0.00709 (0.61)	-0.0152 (-1.52)
<b>Acquirer Characteristics</b>							
Analyst Coverage		0.00207 (1.14)	-0.00284 (-0.32)	0.00231 (1.02)	0.00342 (1.23)	0.00297 (0.73)	-0.000126 (-0.04)
Size		-0.00645 (-0.70)	-0.00387 (-0.22)	-0.0151 (-1.35)	-0.00271 (-0.20)	-0.0381** (-2.32)	0.0195 (0.80)
Pre-acq Goodwill		0.0613 (0.84)	0.206* (1.80)	-0.124* (-1.96)	0.0414 (0.39)	0.173 (1.33)	0.0525 (0.45)
Serial Acquirer		-0.0106 (-0.33)	-0.0478 (-1.06)	0.0451 (1.16)	-0.0936 (-1.62)	0.0289 (0.65)	-0.00415 (-0.08)
Big 4 Auditor		-0.0121 (-0.34)	-0.00435 (-0.10)	-0.0463 (-0.95)	0.0357 (0.89)	-0.109 (-1.11)	-0.00271 (-0.05)
Loss firm		-0.0389 (-1.09)	-0.0951* (-1.93)	0.0164 (0.44)	-0.0970* (-1.86)	0.0523 (0.79)	-0.0559 (-1.09)
Tobin Q		0.0170 (1.52)	0.0147 (0.80)	0.0133 (0.98)	0.0379 (1.28)	0.0410* (1.74)	0.00183 (0.15)
Observations	3,768	3,768	2,172	1,596	1,024	1,292	1,452
Adj R-Squared	0.9%	3.4%	5.4%	4.9%	9.7%	9.8%	6.2%
Acq Sample	Full	Full	Below Median Analysts	Above Median Analysts	Public Tgt	Subsidiary Tgt	Private Tgt
Industry and Year FE	No	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table examines the association between analyst forecast errors and pro forma forecast errors in the subsample of firms who file pro forma financial statements. The sample selection procedure is provided in Table 1. The dependent variable is *AFE Change*, which is the post-acquisition quarterly forecast error, less the average forecast error in the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. The test variable is *Naïve PF Forecast Error* which is the absolute value of the difference between post-acquisition earnings before special items and predicted earnings, where predicted earnings is the sum of historical earnings in the 4 pre-acquisition quarters, plus target earnings and pro forma adjustments as presented in the pro forma financial statements. Appendix B provides variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.

## INTERNET APPENDIX A2: ACCURACY ENHANCEMENT ROBUSTNESS TESTS

	DV = AFE Change			DV = Total Uncertainty			DV = Common Uncertainty		
	1	2	3	4	5	6	7	8	9
Panel A - Measuring the Dependent Variable in Percentile Ranks									
Pro Forma IV	<b>-7.057**</b> <b>(-2.07)</b>	<b>-7.021**</b> <b>(-2.05)</b>	-6.172 (-0.60)	<b>-8.544**</b> <b>(-2.39)</b>	<b>-8.472**</b> <b>(-2.36)</b>	-1.717 (-0.16)	<b>-7.662**</b> <b>(-2.18)</b>	<b>-7.599**</b> <b>(-2.16)</b>	-5.595 (-0.54)
Investment Test	21.06* (1.79)	21.07* (1.77)	28.66 (0.27)	29.80** (2.39)	29.69** (2.36)	-20.82 (-0.19)	22.33* (1.84)	22.15* (1.81)	17.91 (0.17)
Observations	12,320	12,320	2,536	12,320	12,320	2,536	12,320	12,320	2,536
First Stage F-Test	288.2	281.4	26.8	288.2	281.4	26.8	288.2	281.4	26.8
Panel B - Non-Advisor Acquisitions Subsample Robustness Test									
Pro Forma IV	<b>-0.140**</b> <b>(-2.31)</b>	<b>-0.140**</b> <b>(-2.30)</b>	-0.0729 (-0.39)	<b>-0.0633**</b> <b>(-2.45)</b>	<b>-0.0640**</b> <b>(-2.45)</b>	-0.139 (-1.41)	<b>-0.0420**</b> <b>(-2.23)</b>	<b>-0.0429**</b> <b>(-2.25)</b>	-0.109 (-1.50)
Investment Test	0.460** (2.08)	0.463** (2.07)	-0.276 (-0.12)	0.249** (2.56)	0.254** (2.57)	1.366 (1.20)	0.150** (2.10)	0.156** (2.13)	1.056 (1.25)
Observations	6,512	6,512	1,160	6,512	6,512	1,160	6,512	6,512	1,160
First Stage F-Test	157.0	154.4	16.5	157.0	154.4	16.5	157.0	154.4	16.5
Panel C - Including Higher Order Polynomials of the Investment Test									
Pro Forma IV	<b>-0.113***</b> <b>(-3.02)</b>	<b>-0.115***</b> <b>(-3.05)</b>	-0.146 (-1.30)	<b>-0.0558***</b> <b>(-3.21)</b>	<b>-0.0566***</b> <b>(-3.23)</b>	<b>-0.0983*</b> <b>(-1.83)</b>	<b>-0.0392***</b> <b>(-3.07)</b>	<b>-0.0399***</b> <b>(-3.11)</b>	<b>-0.0736*</b> <b>(-1.91)</b>
Investment Test	0.406 (1.61)	0.401 (1.58)	4.879 (0.78)	0.239** (2.00)	0.244** (2.02)	2.857 (0.94)	0.146* (1.72)	0.151* (1.76)	2.735 (1.25)
Investment Test <sup>2</sup>	-0.0503 (-0.09)	-0.0202 (-0.04)	-10.58 (-0.72)	-0.0628 (-0.25)	-0.0643 (-0.25)	-5.616 (-0.81)	-0.0226 (-0.12)	-0.0252 (-0.13)	-5.741 (-1.14)
Observations	12,320	12,320	2,536	12,320	12,320	2,536	12,320	12,320	2,536
First Stage F-Test	356.6	347.9	38.3	356.6	347.9	38.3	356.6	347.9	38.3
Panel D - Removing Observations Close (within 1%) of the Threshold									
Pro Forma IV	<b>-0.105***</b> <b>(-2.77)</b>	<b>-0.105***</b> <b>(-2.79)</b>	-0.0749 (-0.69)	<b>-0.0498***</b> <b>(-2.81)</b>	<b>-0.0502***</b> <b>(-2.83)</b>	-0.0637 (-1.03)	<b>-0.0348***</b> <b>(-2.62)</b>	<b>-0.0353***</b> <b>(-2.65)</b>	-0.0601 (-1.27)
Investment Test	0.362** (2.74)	0.365** (2.76)	0.0856 (0.08)	0.194** (3.13)	0.197** (3.15)	0.316 (0.53)	0.123** (2.61)	0.126** (2.65)	0.352 (0.75)
Observations	11,912	11,912	2,128	11,912	11,912	2,128	11,912	11,912	2,128
First Stage F-Test	309.2	306.1	38.2	309.2	306.1	38.2	309.2	306.1	38.2
Acq Sample	Full	Full	15-25% window	Full	Full	15-25% window	Full	Full	Full
Weighting	None	Distance	Distance	None	None	Distance	Distance	Distance	Distance
Deal and Acquirer Chars	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results four robustness tests related to the accuracy enhancement hypothesis. Panel A shows results measuring outcome variables using percentile ranks. Panel B excludes acquisitions involving an investment bank which may create a conflict of interest. Panel C includes investment test squared. As suggested by Almond et al. (2011), Panel D removes observations close to the threshold possibly subject to manipulation. In columns 1-3, the dependent variable is *AFE Change*, which is the post acquisition quarterly forecast error, less the average forecast error in the 4 pre-acquisition quarters, scaled by pre-acquisition average earnings. In columns 4-6 (7-9) the dependent variables is the post-acquisition change in *Total Uncertainty* (*Common Uncertainty*) from Barron et al. 1998 (see appendix B or Table 5 for calculation details). *Pro Forma IV* is predicted *Pro Forma* from 2SLS where the investment test is used as an instrument for pro forma disclosure in the first stage. Standard errors are clustered by firm. \*\*\*, \*\*, \* represent statistical significance at the 1%, 5%, and 10% levels.