Opportunity Knocks But Once: Delayed Disclosure of Financial Items in Earnings Announcements and Neglect of Earnings News

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Abstract

We define the delayed disclosure ratio (DD) as the fraction of 10-Q/K financial statement items that are withheld at the earlier earnings announcement, and examine the relation between DD and how investors and analysts respond to earnings news. We predict and find that a higher DD is associated with a greater delay in investor (and analyst) response to earnings surprises. Specifically, when companies delay financial item disclosures until the 10-Q/K filing: (i) the fraction of total market reaction to earnings news realized around the earnings announcement (after the 10-Q/K filing) is on average smaller (greater); and (ii) analysts are more likely to defer issuing forecasts from immediately after the earnings announcement to after the 10-Q/K filing. Consistent with our limited attention model, the catchup associated with DD is incomplete even after the delayed items are fully disclosed at the 10-Q/K filing date and persists until the next earnings announcement date. Our findings suggest that the market tends to neglect earnings more when additional information that can help interpret earnings is not disclosed during the focal periods—earnings announcement periods—when investors and analysts are paying the most attention.

Keywords: Delayed disclosure, Analyst and investor underreaction, Earnings response coefficient, Post-earnings announcement drift, Limited attention, Market efficiency

JEL Codes: G14, G18, G28, G29, G38, M41, M45

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Brutus:
There is a tide in the affairs of men.
Which, taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat,
And we must take the current when it serves,
Or lose our ventures.
Julius Caesar Act 4, scene 3, 218–224

1. Introduction

Earnings press releases are a major channel through which companies release financial information to investors, financial analysts, and other market participants. The earnings press release usually precedes the filing of Form 10-Q/K with the Securities and Exchange Commission by more than two weeks. Because earnings press releases are more timely sources of information than 10-Q/K filings, investors and analysts react more strongly to earnings announcements than filing date disclosures. For example, in our sample, market reactions and analyst revisions are almost twice as large at the earnings announcement as at the filing dates. [1]

Nevertheless, past evidence indicates that investors and analysts underreact to earnings news even at the earnings announcement date. The resulting post-event delayed reaction, commonly referred to as the post-earnings announcement drift (PEAD), is robust to various research design choices and sample periods (Ball and Brown 1968; Foster, Olsen, and Shevlin 1984; Bernard and Thomas 1989; Livnat and Mendenhall 2006). The literature has generally concluded from PEAD that investors and analysts are inefficient processors of information contained in current earnings news that has implications for future earnings (Bernard and Thomas 1990; Abarbanell and Bernard 1992; Zhang 2008). In this paper, we examine the role of the availability of financial statement items in the earnings press release

[1] Specifically, the mean absolute market-adjusted abnormal return is 6.32% around earnings announcements and 3.70% around 10-Q/K filings. The mean absolute analyst earnings forecast revision is 0.58% around earnings announcements and 0.31% around 10-Q/K filings (untabulated).

and limited attention of investors and analysts in explaining this inefficiency. Specifically, we define the *delayed disclosure ratio*, DD, as the ratio of the number of 10-Q/K financial statement items that are withheld in the earnings press release to the total number of distinct financial statement items reported in the 10-Q/K filing. We hypothesize that, and test whether DD is associated with dampened investor and analyst response to earnings news at the earnings announcement date, and greater PEAD. We also examine whether any underreaction at earnings announcement date associated with DD is eliminated at the 10-Q/K filing date, or whether it persists beyond the filing date. In other words, if the financial statement information supporting the earnings news does not 'strike while the iron is hot,' will its effect be suppressed until after the next earnings announcement? We provide a limited attention model that has this surprising implication, and test for this effect.

Delayed disclosure of supporting financial statement items in earnings announcements has been of concern to financial market regulators, information intermediaries, and the professional investing world. The S.E.C.'s Committee on Improvements in Financial Reporting (also commonly called the Pozen committee, 2008) and the Chartered Financial Analyst (CFA) Institute (2007) have called for fuller financial statement disclosures in earnings press releases in recent years.[2] The National Investor Relations Institute's (NIRI) statement on the Standards of Practice for Investor Relations in 2008, and recently updated in 2013, specifically urges firms to include in their entirety all three key financial statements—income statement, balance sheet, and statement of cash flows—in the earnings release.

Consistent with the perspective above, these agencies argue that full financial

[2] The importance of timing of financial information dissemination has also been raised in a recent S.E.C. Concept Release in April 2016. The Commission has raised questions about the costs and benefits of quarterly reporting, including the question: 'Should we revise or eliminate our rules requiring quarterly reporting?' The S.E.C mandated quarterly reports in 1970. However, even prior to adopting the quarterly Form 10-Q, more than seventy percent of public companies produced quarterly reports (S.E.C. Concept Release. April 2016).

statement disclosures in the earnings announcements reduce information acquisition and attention costs, which lessens the informational disadvantage for less sophisticated participants, and encourages greater informational efficiency of the capital market. The greater financial statement disclosure at the earnings announcement also helps market participants obtain earlier access to information and increases credibility of the bottom line earnings numbers since more detailed disclosure limits managers' degree of freedom to manage earnings (Hirst, Koonce, and Venkataraman 2007; D'Souza, Ramesh, and Shen 2010; Chen, Miao, and Shevlin 2015).

Fully rational investors and analysts should react immediately to earnings surprises, regardless of whether some financial statement items supporting the earnings news are missing from the earnings press releases. If there is missing information at the time of the earnings announcement, a rational observer uses available information items to make unbiased inferences about the delayed information items and of future earnings. Conditional upon the earnings surprise at the announcement date, the forecasts of a rational observer are equal to the conditional expectation of earnings, though the absence of delayed information items may increase error variance. So, investor expectations and analyst forecasts (setting aside agency problems) will be unbiased, and the equity market will be efficient.

Extensive empirical literature, including evidence of PEAD, suggests that investors are imperfectly rational in processing earnings-related information. Hirshleifer, Lim, and Teoh (2011) offer a limited attention theory for investors' inefficient use of information contained in earnings news to explain PEAD. Building on this approach, we provide a limited attention model with predictions about how the availability of supporting information from financial statement items affects investor delayed reaction. We also provide intuitive arguments about how delayed disclosure will affect analyst reactions.

The key distinction of our paper from previous studies is that we examine the

importance of supporting information arriving during the focal period when the earnings surprise signal is being processed for explaining investor and analyst reaction to earnings news at the announcement date and PEAD. As such, this paper provides insight into the effects of the release of financial statement items in installments rather than all at once, and the importance and relevance of matching disclosure timing to when observers are maximally attentive such as at key events that occur at periodic intervals.

To derive implications about reactions to earnings news, we begin with the premise that investors have limited attention, which has been offered as an explanation for evidence of underreaction to earnings news mentioned earlier. As in the model of Hirshleifer, Lim, and Teoh (2011), the announcement date underreaction and PEAD can be explained by the presence of a subset of investors who are inattentive to earnings news. To analyze how delayed timing of financial statement items affects the announcement date price reaction to earnings surprises and subsequent PEAD, the model in Section 2 compares the equilibrium prices in two regimes. In the timely disclosure TD-Regime, the firm's earnings and financial statement information are revealed at the earnings announcement date; in the delayed disclosure DD-Regime, only earnings are disclosed at the earnings announcement date, and other financial statement information is revealed at the filing date.

A prediction from this stylized model is that the sensitivity to earnings news at the announcement date is lower, and PEAD is higher, in the DD-Regime than in the TD-Regime. Intuitively, under the DD-Regime, attentive investors assess a higher conditional variance of the firm's value. Since investors are risk averse, it follows that under the DD-Regime, attentive investors on average trade less aggressively based on their beliefs, and therefore have lower weight in market price, than under the TD-Regime. So underreaction is on average more severe.

Under the further assumption that the fraction of attentive investors is lower at the

filing date than at the earnings announcement date, the model offers the surprising implication of incomplete catch-up of price reactions at the filing date in the DD-Regime relative to the TD-Regime. Completion of the catch-up occurs only at the next earnings announcement date when investors again pay greater attention to the firm.

The delayed and incomplete catch-up reflects the old maxim: "Opportunity knocks but once." A firm has a special opportunity to convey value relevant financial statement information to investors when their attention is most heavily focused — at the earnings announcement date. If it misses this opportunity, either inadvertently or intentionally, by disclosing value-relevant financial information in installments over the two event dates, the earnings information that is disclosed at the earnings announcement date is less fully impounded into investor valuation than if the other financial information had been disclosed at the same time. Furthermore, under our hypotheses, even when the information is revealed at the later 10-Q/K filing date, it may not be impounded into prices as heavily as if it had been disclosed together .

Analysts similarly have attention constraints and when there are high fixed costs of analyzing firm financial statements and issuing forecasts, analysts with limited information processing resources may not choose to develop forecasts at the earnings announcement date and at the filing date when further new information is revealed. Given the advantage of timeliness, we expect a tendency for analysts to allocate attention and issue forecasts more often after the earnings announcement than the filing date, all else equal. However, when disclosure of value relevant information is delayed, making the forecasting task at the earnings announcement date more challenging, some analysts may choose to revise only after the filing date, and some who do revise at the earnings announcement date may forego a second revision at the filing date. So we expect delayed disclosure to lead to fewer forecasts after earnings announcements, greater average forecast underreaction to earnings surprises,

lower forecast accuracy, and (owing to differences in interpretation of earnings news when other financial information is withheld) greater forecast dispersion.

Two interfering forces could potentially lead to results opposing our predictions. First, firms may disclose more financial statement items other than earnings when bottom-line earnings are less informative.[3] In this case, the delayed disclosure ratio is low but investor and analyst reaction to earnings news may also be relatively weak because earnings are relatively less important. Second, investors and analysts may need more time to analyze and process information from expanded disclosures. This idea contrasts sharply with our argument above that having *less* information makes the forecasting problem for analysts harder, reducing the probability that an analyst issues a forecast at a given date. If, however, bottom-line earnings are very good summary statistics for future firm cash flows, disclosure of the full set of financial statement items could be close to redundant and may be even counterproductive by distracting market participants and slowing or delaying reaction to earnings news (Hirshleifer, Lim, and Teoh 2009). Thus, whether delayed disclosure is associated with lower speed and efficiency of investor and analyst reaction to earnings news remains an empirical question.

In the empirical analysis, we use the Compustat Preliminary History database to identify financial statement items that are disclosed in quarterly earnings press releases and the Compustat Quarterly and Annual database to identify items that are reported in the 10-Q/K filing.[4] Our final sample for the market reaction tests covers over 150,000 earnings announcements made between 1990 and 2011. All our tests use firm and time fixed effects to control for potential omitted variables.

Consistent with our predictions, we find that there is no association between DD and

[3] For example, Chen, DeFond, and Park (2002) find that companies disclose balance sheets in earnings press releases when current earnings are likely to be less informative or when future earnings are more uncertain.
[4] Similar to prior research on delayed reaction to earnings news, our main analysis uses all fiscal quarters. In an additional analysis, we examine separately fourth-quarter and non-fourth-quarter earnings announcements.

the total market reaction to earnings news, and that DD is negatively associated with the immediate market reaction and positively associated with PEAD after the 10-Q/K filing. So DD is a predictor of the timing of market reactions to earnings news but not the total market reaction. When supporting information is delayed, the market reaction to earnings news is partly delayed from immediately around the earnings announcement to after the 10-Q/K filing. This suggests that the market is slow to fully incorporate earnings news until corroborating information arrives (which in our model reduces the risk to attentive investors of trading aggressively based on public earnings information). Most interestingly, the delayed reaction persists even after the 10-Q/K filing and is fully corrected only at the next earnings announcement. This tests confirms our model implication that `opportunity knocks but once.' As robustness checks, we confirm that similar results hold when we use a change specification and when residual DD is calculated from the regression of DD on an expanded set of explanatory variables.

We next examine the association between delayed disclosure and analyst reactions to earnings news. We find that delayed disclosure of financial statement items is associated with a greater delay in analyst forecasts following earnings announcements. Specifically, for firms with a high delayed disclosure ratio, DD, the portion of earnings forecasts made within two trading days of the earnings announcement date tends to be low, while the portion of earnings forecasts made after the 10-Q/K filing is high. For high DD firms, the delay in issuance of earnings forecasts is not fully resolved within a few days after the additional financial information is disclosed at the 10-Q/K filing. The delayed reaction persists to the next quarter's earnings announcements. We also find that DD is associated with a larger magnitude of analyst underreaction to the earnings surprise, larger analyst forecast dispersion, and lower analyst forecast accuracy measured over the post-filing window.

We mention some caveats regarding our method and inferences. In testing our

predictions, we try to use a simple and objective measure of overall delay in financial statement disclosure. It is possible that in some industries and economic conditions particular financial items are relatively more important and so a measure that assigns greater weights to these items could have higher power. Consistent with prior research, we assume that greater disclosure of financial statement information is useful to outsiders (Chen et al. 2002; Hirst et al. 2007; Hewitt 2007; D'Souza et al. 2010). However, it is conceivable that in some cases management incentives are so perverse that disclosure may have a negative effect. Finally, as in most empirical studies, endogeneity is challenging to control for adequately. Although our results are robust to using firm fixed effects, residual DD, and a change specification, it is possible that companies make timely disclosure in response to changes in the demand for such disclosure from investors and analysts who react quickly to earnings news.

Our study contributes to the literature on investor and analyst reaction to earnings news. Prior studies find that investors exhibit a delayed reaction to earnings news and that delayed reaction may be caused by investors' failure to fully understand and incorporate implications of current earnings for future earnings (Ball and Brown 1968; Foster, Olsen, and Shevlin 1984; Bernard and Thomas 1989, 1990). The research also shows that part of investor delayed reaction to earnings news can be traced to *analyst* delayed reaction to earnings news (Abarbanell and Bernard 1992; Zhang 2008). This paper shows that when companies delay disclosure of financial statement information till the later 10-Q/K filing a portion of investor and analyst reaction to earnings announcements is delayed until after the 10-Q/K filing.

The paper also contributes to the research on the financial statement disclosure during earnings announcements. Past research shows that firms are less likely to disclose financial statement items when managers engage in earnings management (D'Souza et al. 2010) and more likely to disclose balance sheet items when earnings are likely to be less informative

(Chen, DeFond, and Park 2002). Other studies show that the temporal increase in concurrent financial statement disclosure helps explain the secular increase in the information content of earnings press releases, as measured by absolute abnormal returns around earnings announcements (Francis, Schipper, and Vincent 2002; Collins, Li, and Xie 2009). Past research also shows that when accruals information is disclosed at the earnings announcement, investors discount accruals more and returns earned by an accrual-based trading strategy are lower (Levi 2008; Louis, Robinson, and Sbaraglia 2008; Miao, Teoh, and Zinan 2016). In this paper, we examine reaction to earnings news that is always disclosed in earnings press releases and show that investor and analyst reaction to earnings news is delayed when companies delay disclosure of supporting financial information.

The rest of the paper is organized as follows. Section 2 describes the sample, hypotheses, and research design. Section 3 presents descriptive statistics and results of empirical tests. Section 4 provides several robustness tests and Section 5 concludes.

2. Limited Attention Predictions and Hypotheses

Our key variable of interest is delay in financial statement disclosure from the earnings press release date to the 10-Q/K filing date. We use a limited attention model to derive predictions for how our delay ratio measure, DD, affects investor reaction to earnings news, and we hypothesize based on other intuitive arguments how DD may affect the timing, accuracy and other properties of analyst forecasts in reaction to earnings news.

2.1 A Limited Attention Model of Delayed Price Reactions to Earnings News

Building upon the limited attention models of Hirshleifer and Teoh (2003) and Hirshleifer, Lim and Teoh (2011), consider a setting in which investors are risk-averse, fraction f of investors is inattentive to the earnings and balance sheet disclosures, and fraction $1 - f$ of investors is attentive to all publicly available information. There is a market for a single risky security (stock) which can be exchanged for cash.

Let P_0 denote the stock price at date 0 before the earnings announcement. At date 1, which corresponds to the earnings announcement date, investors receive public information about the terminal value of the stock. At date 2, which corresponds to the filing date, investors may receive further public information about the terminal value of the stock. At date 3, stockholders receive the terminal payoff of the stock. Assuming for modeling convenience that the stock is in zero net supply, Hirshleifer and Teoh (2003) show that there is no risk premium and that the equilibrium stock price at date 1 can be written as a weighted average of the beliefs of the two investor groups conditional on information available at date 1,

$$P_1 = \kappa E^I[P_3|\phi]+(1-\kappa)E^A[P_3|\phi], \tag{1}$$

where the superscript I or A denotes the belief of inattentive or attentive investors, respectively, and κ is an increasing function of f, the fraction of inattentive investors, and decreasing in the variances:

$$\kappa = \frac{\dfrac{f}{\mathrm{var}^I(P_3)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{1-f}{\mathrm{var}^A(P_3)}}. \tag{2}$$

Equations (1) and (2) follow from the market-clearing condition that at date 1 investor demands for the risky asset sum to the outstanding supply.

Consider two alternative regimes. In TD-Regime, the date 1 information set ϕ consists of earnings e and an additional financial statement item δ. In DD-Regime, ϕ consists of earnings e only and δ is withheld at date 1 and only reported at date 2. Attentive investors update their priors upon the arrival of the information at date 1, but inattentive investors ignore the information and stick with their priors. Therefore, the price movement at date 1 reflects only the Bayesian updates of attentive investors. In TD-Regime, the price at date 1 is

$$P_1(e,\delta) = \kappa^{\delta} E^I[P_3 \mid e,\delta] + (1-\kappa^{\delta}) E^A[P_3 \mid e,\delta] = \kappa^{\delta} E[P_3] + (1-\kappa^{\delta}) E[P_3 \mid e,\delta], \quad (3)$$

where the first expectation is the prior expectation for the terminal value P_3 and the second expectation is the fully rational Bayesian update for P_3 conditional on observing both pieces of information e and δ, and the effective weight on the inattentive beliefs in the pricing equation is given by:

$$\kappa^{\delta} = \frac{\dfrac{f}{\mathrm{var}^I(P_3)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{1-f}{\mathrm{var}^A(P_3 \mid e,\delta)}}. \quad (4)$$

In Case 2, the price at date 1 when only e is observed is given by

$$P_1(e) = \kappa^{\omega} E^I[P_3 \mid e] + (1-\kappa^{\omega}) E^A[P_3 \mid e] = \kappa^{\omega} E[P_3] + (1-\kappa^{\omega}) E[P_3 \mid e] \quad (5)$$

As before, the first expectation for the inattentive investors is just the prior expectation of terminal value P_3 and the second expectation is the fully rational Bayesian update for the terminal value based only on e, and the effective weight for the beliefs of inattentive investors is given by

$$\kappa^{\omega} = \frac{\dfrac{f}{\mathrm{var}^I(P_3)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{1-f}{\mathrm{var}^A(P_3 \mid e)}}. \quad (6)$$

Since $\mathrm{var}^A(P_3|e) > \mathrm{var}^A(P_3|e,\delta)$, attentive risk-averse investors on average trade less aggressively in DD-Regime, where there is less information, than in TD-Regime. Therefore the weight κ^{ω} on inattentive investors' beliefs in setting price at date 1 is higher in DD-Regime than the weight on inattentive investors' beliefs κ^{δ} in TD-Regime. The price reaction at date 1 upon the arrival of earnings news e - $\bar{e}$ depends on the expectation of price at date 1 conditional on e - $\bar{e}$ as follows:

TD-Regime:

$$E[P_1(e,\delta) - P_0 | e - \bar{e}] = \kappa^{\delta} E[P_3] + \left(1 - \kappa^{\delta}\right) E[P_3|e] - P_0 \quad (7)$$

DD-Regime:

$$E[P_1(e) - P_0|e - \bar{e}] = \kappa^{\omega} E[P_3] + (1 - \kappa^{\omega}) E[P_3|e] - P_0 \tag{8}$$

Differentiating (7) and (8) with respect to earnings news e - $\bar{e}$, we obtain the earnings response coefficients (ERCs) in the two cases:

TD-Regime:

$$\frac{d\, E[P_1(e,\delta) - P_0|e - \bar{e}]}{de} = \left(1 - \kappa^{\delta}\right) \frac{d\, E[P_3|e]}{de} = \left(1 - \kappa^{\delta}\right) \beta_{P_{3,e}} \tag{9}$$

DD-Regime:

$$\frac{d\, E[P_1(e) - P_0|e - \bar{e}]}{de} = (1 - \kappa^{\omega}) \frac{d\, E[P_3|e]}{de} = (1 - \kappa^{\omega})\, \beta_{P_{3,e}} \tag{10}$$

The term $\beta_{P_{3,e}}$ is the ERC that would apply if all investors were fully attentive. Comparing (9) and (10), the actual ERCs differs between the two cases by the difference between κ^{δ} and κ^{ω}. As explained above $\mathrm{var}^A(P_3 \,|\, e) > \mathrm{var}^A(P_3 \,|\, e, \delta)$, so $\kappa^{\omega} > \kappa^{\delta}$, and thus the ERC given in (10) is less than the ERC given in (9). We therefore have:

Proposition 1: *The ERC to earnings news is lower when disclosure is delayed, that is when DD is high.*

To derive implications for post-earnings announcement drift (PEAD), we calculate the price change from the earnings announcement to the next earnings announcement. In TD-Regime where both e and δ are disclosed, the expected price change conditional on the earnings news e - $\bar{e}$ is

$$E[P_3 - P_1(e,\delta)|e - \bar{e}] = \kappa^{\delta}[E[P_3|e] - E[P_3]] \tag{11}$$

Differentiating (11) with respect to e, the PEAD coefficient is

$$\frac{d\kappa^{\delta}[E[P_3|e] - E[P_3]]}{de} = \kappa^{\delta} \frac{d[E[P_3|e]}{de} = \kappa^{\delta}\, \beta_{P_{3,e}} \tag{12}$$

If all investors were attentive, κ^{δ} would zero, so that PEAD would be zero. When some investors are inattentive, PEAD is positive even in this case of full disclosure. The magnitude of PEAD increases with the fraction *f* of inattentive investors.

Consider DD-Regime, in which only *e* is disclosed at the earnings announcement date and the additional financial statement items δ are disclosed only at the filing date. The expectation for the price change from the earnings announcement to the next earnings announcement, conditional on the earnings news is

$$E[P_3 - P_1(e)|e - \bar{e}] = \kappa^{\omega}[E[P_3|e] - E[P_3]] \tag{13}$$

Differentiating (13) with respect to *e*, we obtain the prediction for the PEAD coefficient as

$$\frac{d\kappa^{\omega}[E[P_3|e] - E[P_3]]}{de} = \kappa^{\omega}\,\beta_{P_3,e} \tag{14}$$

Comparing (12) and (14), PEAD is larger in DD-Regime than in TD-Regime because the effective inattention weight κ^{ω} is larger than κ^{δ}.

Proposition 2: *Comparing PEAD between full disclosure (TD-Regime) or delayed disclosure (DD-Regime) at date 1,* $\kappa^{\omega} > \kappa^{\delta}$*, so PEAD is larger in DD-Regime when disclosure of additional financial items is delayed.*

Now consider the price reaction at filing date 2. In TD-Regime, the price reaction of both inattentive and attentive investors will remain unchanged at date 2. Inattentive investors ignore information at the earnings announcement date and continue to ignore information at filing date 2. Since both piece of information were disclosed at the earlier earnings announcement date 1, the attentive investors already have reacted fully to the information, and therefore there is no further reaction at filing date 2.

In contrast, in the DD-Regime, there is an additional reaction at date 2. Recall that *f* is

the fraction of inattentive investors at date 1. We denote f' as the fraction of inattentive investors at the filing date, and given fixed costs of attending, it is reasonable that $f' > f$ so there are more inattentive investors at date 2 than at date 1. Inattentive investors I at date 1 will continue to be inattentive at date 2. Investors attending at date 1 observe e but not δ as it is unavailable, and investors attending at date 2 observe both e and δ. Thus, fraction $1 - f'$ attend to both e and δ, and an additional fraction $f' - f$ attend only to e. We use superscripts I, e, and (e, δ) to denote the three investor groups. The pricing equation at date 2 is a weighted average of beliefs of these three groups of investors, and the weights depend on f and f' as well as the respective variances of the terminal value P_3 as perceived by them. We relegate the detailed expressions for P_2, κ^I, κ^e, and $\kappa^{e,\delta}$ to Appendix A.

The difference in the total price change from date 0 to date 2 between TD-Regime versus DD-Regime depends on the difference in the expectation of date 2 price $E[P_2|e, \delta]$ in the two cases. In the TD-Regime, this expectation is the same as the expectation at date 1 because both e and δ are available at date 1. This expectation is formed from fraction f of inattentive investors I setting price expectations at the prior as they do not update, and fraction $1-f$ of attentive investors that update based on both pieces of information.

In the DD-Regime, the fraction of inattentive investors remains at f. The fraction of investors attending to e remains the same as in the TD-Regime, $1 - f$. However, the fraction of investors attending to δ is $1 - f'$ which is smaller than in TD-Regime because $f' > f$. This difference drives the higher conditional variance for this subgroup in the delayed disclosure DD-Regime and therefore the effective weight on investors who are fully attentive to both e and δ is lower than in TD-Regime. Thus, there is a smaller catch-up investor reaction to earnings news in the delayed disclosure DD-Regime than in the timely disclosure TD-Regime. Because the sensitivity of total investor response to earnings news over dates 1 and 2 is lower in DD-Regime than in TD-Regime, correspondingly there is a greater sensitivity to earnings

news in the catchup investor reaction post-filing date in the DD-Regime than in the TD-Regime. (At the extreme, if all investors ignore filing date information, $f' = 1$, then in the DD-Regime, there is no catch-up reaction at filing date and all of the catch-up reaction occurs only at the next earnings announcement date when investors attend to information again.) This leads to the following proposition.

Proposition 3: *The total earnings response coefficient at earnings announcement date and filing date is lower, and the post-filing reaction to earnings news is higher, in DD-Regime than in TD-Regime.*

2.2 Hypotheses for Investor Immediate and Delayed Reaction to Earnings News

Propositions 1 and 2 in the model of the previous section show that the market reaction to earnings news, ERC, is more muted and post-earnings announcement drift (PEAD) is more pronounced when the disclosure of the financial statement item is delayed, that is when DD is high. Intuitively, delaying financial statement disclosure increases arbitrage risk by increasing the uncertainty about firm value at the earnings announcement date. As a result, attentive investors trade less aggressively at the earnings announcement leading to a lower immediate reaction to earnings news and a greater post-announcement drift. Thus, we have the following testable hypotheses:

H1a: The sensitivity of immediate stock returns to earnings news is lower when the firm delays financial statement disclosure in earnings press releases.

H1b: The sensitivity of delayed stock returns to earnings news is higher when companies delay financial statement disclosure in earnings press releases.

The prediction is related to past evidence on the link between investor attention and reaction to earnings news. Past studies have found that the market reacts to news in a faster and more informationally efficient manner when investors are more sophisticated, when

investor attention is greater, and when earnings information is presented in a more salient way (Bartov, Radhakrishnan, and Krinsky 2000; Hirshleifer, Lim, and Teoh 2009; Huang, Nekrasov, and Teoh 2016). Here, we test investor attention effects that are related to the timing of when firms disclose information—specifically whether firm disclosure of information is at the focal period when investor attention to the stock is highest.

To test (H1a) and (H1b), we estimate the following regressions of cumulative abnormal return over the earnings announcement window, *CAR_EA*, and over the post-earnings announcement window, *CAR_DRIFT*:

$$CAR\_EA_{jt} = \alpha + \beta_1 RSUE_{jt} + \beta_2 DD_{jt} + \beta_3 RSUE_{jt} * DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt}, \quad (1a)$$

$$CAR\_DRIFT_{jt} = \alpha + \beta_4 RSUE_{jt} + \beta_5 DD_{jt} + \beta_6 RSUE_{jt} * DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt}, \quad (1b)$$

where *CAR_EA* is the cumulative abnormal return over the three-day window centered on the earnings announcement date. *CAR_DRIFT* is the cumulative abnormal return over the period starting two days after the earnings announcement for quarter *t* and ending one day after the earnings announcement for quarter *t+1* [*+2, Next EA+1*].[5] *RSUE* is the decile rank of the standardized unexpected earnings. Control variables include firm size (*SIZE*), the market-to-book ratio (*MTB*), past stock returns (*RET*), analysts following (*ANA.FOLLOW*), institutional ownership (*INST.OWN*), the fourth fiscal quarter indicator (*FQ4*), and the decile of the number of same-day earnings announcements by other firms (*NRANK*). If delayed disclosure results in delayed investor response to earnings news we predict that the coefficient on *RSUE* * *DD* is negative, $\beta_3 < 0$, in regression (1a) and positive, $\beta_6 > 0$, in regression (1b).

We next examine the relation between DD and the market reaction to earnings news

[5] We include the return over the next earnings announcement window since past research shows that a substantial part of the delayed investor reaction is concentrated in that period (Bernard and Thomas 1990).

at the 10-Q/K filing date and the price drift after the filing date to the next earnings announcement. In Section 2, we derived the price at the filing date assuming that the fraction of inattentive investors at the filing date, f', is greater than the fraction of inattentive investors at the earnings announcement date: $f' > f$. We showed that in the delayed disclosure DD-Regime, there is investor reaction to earnings news at the filing date. However, the reaction does not fully catch-up at the filing date, and consequently there is a post-filing drift. This happens because financial statement disclosure at the time of relatively low investor attention (the filing date) is less effective in reducing arbitrage risk than disclosure at the time of relatively high investor attention (the earnings announcement date). Proposition 3 of the model predicts that DD is positively associated with a price reaction at the 10-Q/K filing date, and a post-filing drift. Thus, we have the following hypothesis:

H2: The earnings response coefficient at the filing date and the post-filing reaction to earnings news increase with DD.

To test these predictions, we estimate investor reaction within several subwindows: between the earnings announcement and the 10-Q/K filing, around the 10-Q/K, between the 10-Q/K and the next earnings announcement, and around the next earnings announcement date.

2.3 Hypotheses for Analyst Response to Earnings News

Analysts require cognitive effort and other information-processing resources to form earnings forecasts. Analysts are therefore are also subject to attention constraints. They potentially update their earnings forecasts following earnings announcements using information disclosed in the announcements. Given the advantage of timeliness, analysts tend to prefer to allocate attention and issue forecasts as soon as possible after the earnings announcement, all else equal. However, when there are high fixed costs of analyzing firm financial statements and issuing forecasts, analysts with limited resources may be able to

devote analytical attention to the firm only at either the earnings announcement date or the filing date each quarter, whereas analysts with less constrained resources are more able to analyze the firm on both event dates. The majority of analysts—around 71% of our sample analysts (untabulated)—issue earnings forecasts for a given firm only once a quarter.

When disclosures of valuation-relevant financial statement items is delayed until the subsequent 10-Q/K filing date, these resource-constrained analysts will have to choose between issuing forecasts after the earnings announcement versus after the 10-Q/K filing. Issuing forecasts earlier has the advantage of timeliness but the forecasts will be noisier and require more effort of estimating missing items. Delaying forecasts to after the 10-Q/K filing has the benefit of lower effort cost and higher forecast precision when information items used in the forecast are available. So, when the disclosure of financial statement items is delayed until the 10-Q/K filing, analysts are more likely to choose to delay forecasts to after the filing date. Thus, we have the following hypotheses (stated in alternative form):

H3a: When companies delay financial statement disclosure, the proportion of analyst earnings forecasts made immediately after the earnings announcement declines.

H3b: When companies delay financial statement disclosure, the proportion of analyst earnings forecasts made after the 10-Q/K filing rises.

To test these hypotheses, we estimate the following regressions:

$$\%FORECASTS_{jt} = \alpha_1 + \beta_1 DD_{jt} + Controls + \varepsilon_{jt} \quad (3)$$

where *%FORECASTS* is the proportion of earnings forecasts issued in a specific time subwindow relative to the total number of earnings forecasts issued in the period starting on the day of the earnings announcement and ending two days before the next earnings announcement. We calculate *%FORECASTS* in four subwindows: around the earnings announcement [0,+1] (we refer to this measure as *%FORECASTS_EA)*, between the earnings announcement and the 10-Q/K filing [+2, Filing Date -2], around the 10-Q/K [Filing Date -1,

Filing Date +1], and between the 10-Q/K and the next earnings announcement [Filing Date +2, Next EA -2]. The relative proportion of forecasts in different time windows is designed to capture the timing rather than the number of analyst earnings forecasts.

Controls is a set of control variables. We predict β_1 to be positive for each of the windows. To control for earnings news, we include the rank of standardized unexpected earnings (*RSUE*). We use firm size (*SIZE*), analysts following (*ANA.FOLLOW*), and the fourth fiscal quarter indicator (*FQ4*) to control for information environment. We include market-to-book ratio (*MTB*) to control for firm growth opportunity, past stock returns (*RET*) to control for changes in the expected future performance, and institutional ownership (*INST.OWN*) to control for investor base. We use the decile rank of the number of same-day earnings announcements by other firms as a distraction proxy suggested by Hirshleifer, Lim, and Teoh (2009) (*NRANK*). To control for potential omitted variables, we add firm fixed effects and time (year-quarter) fixed effects in all regressions. Detailed definitions of all variables are provided in Appendix C. We predict that the coefficient on the delayed disclosure ratio, DD, is negative ($\beta_1 < 0$) for *%FORECASTS* in the earnings announcement window (H3a) and positive ($\beta_1 > 0$) for *%FORECASTS* between the 10-Q/K and the next earnings announcement (H3b).

We turn next to hypotheses for forecast underreactions and accuracy. Consistent with limited analyst attention (or possibly with certain kinds of agency problems), previous studies show that analysts underreact to earnings news contained in earnings announcements (Mendenhall 1991; Abarbanell and Bernard 1992). Specifically, research finds that analyst earnings forecast errors for quarter $t+1$ are positively correlated with earnings surprises in quarter t. Analyst underreaction to earnings news is higher when it is more costly for analysts to obtain additional information needed for more efficient forecast, i.e., for small firms and firms with lower analyst coverage.

Furthermore, we expect the lack of relevant items at earnings announcements to impede development of earnings forecasts, which can lead to lower forecast accuracy and higher forecast dispersion across analysts. Therefore, we hypothesize that delayed disclosure will be associated with (i) greater analyst underreaction to earnings news, (ii) lower forecast accuracy, and (iii) higher forecast dispersion.

H4a: Analyst underreaction to earnings surprises is higher when companies delay financial statement disclosure in earnings press releases.

H4b: Analyst forecast accuracy is lower when companies delay financial statement disclosure in earnings press releases.

H4c: Analyst forecast dispersion is higher when companies delay financial statement disclosure in earnings press releases.

To test these hypotheses, we estimate the following regression equations respectively:

$$FUTURE.RSUE_{jt+1} = \alpha + \beta_1\, RSUE_{jt} + \beta_2\, DD_{jt} + \beta_3\, RSUE_{jt}*DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt} \quad (4a)$$

$$ABS.FE_{jt+1} = \alpha + \beta_1\, DD_{jt} + \beta_2\, ABS.FE_{jt} + \beta_3\, MISS_{jt} + \beta_4\, ABS.FE_{jt}*MISS_{jt} + Controls + \varepsilon_{jt} \quad (4b)$$

$$STD.EST_{jt+1} = \alpha + \beta_1\, DD_{jt} + \beta_2\, ABS.FE_{jt} + \beta_3\, MISS_{jt} + \beta_4\, ABS.FE_{jt}*MISS_{jt} + Controls + \varepsilon_{jt} \quad (4c)$$

where $FUTURE.RSUE_{jt+1}$ is the decile rank of the analyst earnings forecast error for quarter $t+1$ (Actual EPS_{jt+1} minus Forecasted EPS_{jt+1}) scaled by the stock price at the end of quarter t, where Forecasted EPS_{jt+1} is the median of all forecasts issued after the earnings announcement for quarter t and before the earnings announcement for quarter $t+1$. $ABS.FE_{jt+1}$ is the absolute value of analyst earnings forecast error for quarter $t+1$ (Actual EPS_{jt+1} minus Forecasted EPS_{jt+1}) scaled by the stock price at the end of quarter t. $STD.EST_{jt+1}$ is the standard error of analyst earnings forecasts for quarter $t+1$ scaled by the stock price at the end of quarter t. $MISS_{jt}$ equals one if quarter t earnings miss analyst forecast, and zero otherwise. *Controls* is the same set of control variables as in equation (1). We expect the coefficient on

$RSUE_{jt}$*DD in equation (4a), the coefficient on DD in equation (4b), and the coefficient on DD in equation (4c) to be positive.

3. Sample, Data and Empirical Results

3.1 Sample and Data

We obtain financial statement information included in quarterly earnings announcements from the Compustat Preliminary History database (Preliminary), company financial data in 10-Q/K filings from Compustat, stock returns and prices from CRSP, and analysts' earnings forecasts from I/B/E/S. Following prior literature, we exclude utilities and financial services firms (SIC codes 4900-4999 and 6000-6999). Our sample spans the period from 1990 through 2011 excluding 1999. We exclude 1999 because Compustat temporarily limited the collection of data items during that year, and 2011 is the latest year on our Compustat subscription. We drop observations where the earnings announcement date is before the fiscal quarter end or at least one of the three financial statements has less than five data items. We require at least three trading days between the earnings announcement date and the 10-Q/K filing date. The final sample for the market reaction tests consists of 159,249 firm-quarter observations. For the analyst response tests, we also require at least one forecast for the next quarter earnings issued after the current quarter's earnings announcement. The final sample for the analyst reaction tests consists of 83,363 observations. Appendix B describes the details of the sample selection.

3.2 Measure of Delayed Financial Statement Disclosure

To measure the delay of financial statement disclosure in earnings press releases, we calculate the delayed disclosure ratio, DD, which equals the number of financial statement items that are not disclosed in the earnings press release but reported in the corresponding 10-Q/K filing scaled by the number of financial statement items reported in the 10-Q/K filing.

The Preliminary database is used to identify which financial statement items are disclosed for a given firm-quarter earnings announcement.[6] We calculate DD as a simple fraction of delayed items rather than a dollar value-weighted ratio because market participants do not know the value of delayed items at the time of the earnings announcement. Also, it is not clear if items with relatively large magnitudes such as cost of goods sold and goodwill are more important than items with relatively small magnitudes such as operating income and inventory.[7]

In calculating DD, our goal is to construct a simple and objective measure that captures overall delay of financial statement information and link it to the delayed reaction to earnings news. An alternative approach would be to analyze delayed disclosure of individual items or groups of items with distinct functional roles. Our approach has two advantages over this alternative. First, which items are more (less) important likely depends on the industry, current economic conditions, the disclosure of related items, and many other factors. Second, firms that delay disclosure of some items are also more likely to delay disclosure of other items. The overlap makes it empirically difficult to classify delayed items into categories with distinct roles. This also suggests that DD is a reasonable construct of overall delay in financial statement disclosure.

3.3 Descriptive Statistics

Table 1 presents descriptive statistics. The average fraction financial statement items

[6] Delayed disclosure is measured by comparing the disclosure in the earnings press release with the disclosure in the same quarter 10-Q/K filing. As a robustness check, we also calculate DD by comparing items disclosed in the earnings press release with items reported in the 10-Q/K filing for the same quarter last year. The correlation between this DD and our main measure is 0.9982. All our results are qualitatively and quantitatively similar when using this alternative DD measure (untabulated).

[7] Nevertheless, most of the results hold when using dollar value-weighted DD. Higher dollar value-weighted DD is negatively (positively) associated with the fraction of analyst forecasts issued immediately after the earnings announcement (after the 10-Q/K filing) and the market reaction to earnings news immediately around the earnings announcement (after the 10-Q/K filing) (untabulated).

that are delayed till the 10-Q/K filing, DD, is 57.6%.[8] The average number of analysts issuing earnings forecasts immediately after the earnings announcement, *FORECASTS_EA*, is 4.011. The average proportion of such forecasts relative to all forecasts, *%FORECASTS_EA*, is 39.3%. The average proportion of earnings forecasts issued after the 10-Q/K, *%FORECASTS_[Filing+2, Next EA-2]*, is 35.8%. As in other studies that use analyst forecasts, firms in our sample are relatively large, with a mean (median) market capitalization, *MV*, of 2,318.5 (292.8).

DD exhibits a significant variation with the interquartile range from 0.432 and 0.813. Most of this variation is due to cross-sectional rather than within-firm variation. Individual firms typically do not make big period-to-period changes in the amount of information that is delayed till the 10-Q/K filing. The correlation between DD in the current quarter and DD in the same quarter last year is 0.71 (untabulated). All our tests focus on within-firm changes in DD by using firm fixed effects. In additional analysis, we also estimate tests using change specification.

Table 2 reports correlations among variables. Consistent with H3a and H3b, DD is negatively associated with the proportion of earnings forecasts issued immediately after the earnings announcement, *%FORECASTS_EA*, and positively associated with the proportion of earnings forecasts issued after the 10-Q/K filing (correlations -30.1% and 16.0%, respectively). DD is also negatively associated with firm size, analyst following, and institutional ownership (correlations -26.9%, -23.7%, and -33.6%, respectively).[9]

Figure 1 shows graphically *%FORECASTS* for firms in the bottom decile of DD (the solid blue line) and firms in the top decile of DD (the dashed red line). The horizontal axis shows time intervals between the current earnings announcement and next earnings

[8] The average percentage of delayed income statement, balance sheet, and cash flow statement items is 24.9%, 52.0%, and 86.5%, respectively (untabulated). The descriptive statistics are comparable with those in D'Souza et al. (2010).

[9] Together, firm size, institutional ownership, and analyst following explain 12.1% of the variation in DD based on regression R^2 (untabulated).

announcement. The vertical axis shows the portion of earnings forecasts that are issued by the indicated point in time: *%FORECASTS*_[0, τ], where τ = +1, Filing Date-2, Filing Date+1, or Next EA-1. As the figure reveals, the portion of earnings forecasts issued within two trading days is notably lower when DD is high (13.8% for high DD vs. 51.7% for low DD). Conversely, the portion of analyst forecasts delayed until after the 10-Q/K filing is greater when DD is high (49.7% for high DD vs. 31.1% for low DD).[10]

3.4 Main Results

Our first test examines whether investor immediate reaction to earnings news is weaker for firms that delay financial statement disclosure (H1a). Table 3 shows the results of the regression of the firm stock return on *RSUE*DD* and control variables. To check whether total reaction to earnings news is different for firms with high DD, we first examine the total investor reaction over the window that covers both the announcement and post-announcement windows (columns 1 and 2). The coefficient on *RSUE*DD* is small and insignificant (-0.001, p = 0.886) which suggests that there is no significant difference in the informativeness of earnings news between firms with high and low DD. The remaining four columns show results for investor immediate reaction. Results in columns 3 and 4 establish the baseline for the average ERC in our sample. Consistent with other studies, announcement window returns are positively associated with earnings surprise (coefficient = 0.076, p <0.001). Consistent with H1a, the coefficient on *RSUE*DD* is negative and significant (-0.028, p <0.001) which indicates that the immediate price reaction to earnings surprises is weaker when firms delay financial statement disclosure. An increase of DD from zero to one corresponds to a decrease in ERC by approximately 37% (-0.028/0.076=-37%). The fact that total reaction is not different for firms with high DD suggests that the lower immediate

[10] While Figure 1 also suggests that the gap between high and low DD decreases in the period between the earnings announcement and the filing date, *[EA+2, Filing Date -2]*, the results in the next section show that there is no significant association between DD and delay in analyst forecasts in the multivariate analysis.

reaction for these firms is due to delayed response to earnings news rather than differences in earnings informativeness.

Table 4 directly tests the relation between DD and investor delayed reaction to earnings news (H1b). If firms with higher DD experience greater delay in investor reaction to earnings news, we expect a stronger association between earnings surprise, *RSUE*, and abnormal return after the earnings announcement, *CAR_DRIFT*. Panel A reports results of the regression of *CAR_DRIFT* on *RSUE*DD* and control variables. The first two columns establish the benchmark for the magnitude of the average delayed reaction in our sample. Consistent with the post-earnings announcement drift documented in prior literature, the coefficient on *RSUE* is positive and significant (0.040, p <0.001). Consistent with H1b, the coefficient on *RSUE*DD* in the last two columns is positive and significant (0.027, p =0.001) suggesting investor delayed reaction to earnings news is greater when DD is high.

We next examine in greater detail when investor delayed reaction is corrected. If inattentive investors are not focusing on the firm at the 10-Q/K filing date, then the delayed reaction associated with DD will not be eliminated immediately at the filing date (H2). Instead, the association between DD and the post-earnings announcement drift will continue even after the remaining information becomes publicly available.

Table 4 Panel B shows the results of the return tests for the following subwindows: between the earnings announcement and the 10-Q/K filing (columns 1 and 2), around the 10-Q/K (columns 3 and 4), between the 10-Q/K and the next earnings announcement (columns 5 and 6), and around the next earnings announcement (columns 7 and 8). Consistent with the delayed reaction to earnings news being due to the delay of supporting financial information till the 10-Q/K filing, there is no significant correction before the 10-Q/K. There is also no immediate correction at the time of the 10-Q/K, which is consistent with the idea that investors do not pay as much attention to 10-Q/K filings as they do to earnings

announcements. The correction of the delayed reaction takes place only after the 10-Q/K filing. The coefficient on *RSUE*DD* is positive and significant after the 10-Q/K filing (0.021, p =0.002) and around the next earnings announcement (0.008, p =0.014). The results indicate that the link between DD and investor reaction to earnings news extends beyond the time of arrival of the delayed information.

Figure 2 shows graphically the timing of investor reaction to earnings news for firms with *DD*=0 (the solid blue line) and firms with *DD*=1 (the dashed red line).[11] Consistent with the results in Tables 5 and 6, the delayed reaction starts at the earnings announcement. The delayed reaction is not corrected before or immediately at the time of the 10-Q/K filing but persists beyond the filing date and disappears only after the next earnings announcement. As a result, firms that have a greater portion of financial disclosure delayed till the 10-Q/K filing also have a greater portion of the total market reaction delayed until after the filing. Specifically, 46.1% (27.9%) of reaction is delayed until after the filing when *DD*=1 (*DD*=0).

Given the finding that on average there is no significant immediate correction around the 10-Q/K filing, we also examine the reaction in the extended window around the filing *[Filing Date -1, Filing Date +10]* in subsamples with high and low institution ownership and subsamples with at least one and no analyst forecast issued around the filing *[Filing Date -1, Filing Date +10]*. The extended window is designed to capture immediate as well as delayed investor reaction to the 10-Q/K filing. Since institutional investors are more likely to pay attention and react to the arrival of the delayed information than individual investors, we expect the relation between *RSUE*DD* and abnormal returns around the filing to be more pronounced when institutional ownership is high. Similarly, given the analysts' role as information intermediaries that help investors process financial information, we expect investor are more likely to respond to the delayed information when analysts issue forecasts

[11] The notes to Figure 2 provide details on how the graph is constructed.

following the 10-Q/K filing. The results in Table 4 Panel C are consistent with these expectations. The coefficient on *RSUE*DD* is positive and significant when institutional ownership is high (0.013, p =0.033) or when there is at least one analyst forecast (0.020, p =0.026). *RSUE*DD* is insignificant when institutional ownership is low (0.005, p =0.469) or when there is no analyst forecast (-0.005, p =0.521).[12]

We next test the association between delayed disclosure and analyst delayed response to earnings news (H3a and H3b). Table 5 columns 1 and 2 show the results for the portion of forecasts issued in the earnings announcement window, *%FORECASTS_EA*. Consistent with H3a, the coefficient on DD is negative and significant (-0.017, p <0.001). This indicates that when firms delay financial statement disclosure, the portion of timely analyst forecasts decreases.

The remaining columns show the results for the proportion of delayed analyst forecasts issued in three post-announcement subwindows: between the earnings announcement and the 10-Q/K filing (columns 3 and 4), around the 10-Q/K (columns 5 and 6), and between the 10-Q/K and the next earnings announcement (columns 7 and 8). There is a significant negative relation between DD and *%FORECASTS* between the earning announcement and the 10-Q/K (-0.013, p =0.033), suggesting that even relatively less timely analysts (i.e. analysts who issue forecasts after the earnings announcement window) are more likely to delay their forecasts until after the 10-Q/K filing. The results in columns 5 and 6 indicate that there is no significant immediate response to the 10-Q/K filing (0.002, p =0.447), while the positive and highly significant coefficient in the last two columns indicate that analysts respond to the arrival of information in the 10-Q/K filing with a delay (0.029, p <0.001).

Overall, the results in Table 5 are consistent with (H3a) and (H3b). When firms delay

[12] In all four subsamples, the reaction in the short-window around the 10-Q/K filing *[Filing Date -1, Filing Date +1]* is not significant (untabulated).

financial statement disclosure, analysts are less likely to issue earnings forecasts following the earnings announcement and more likely to do so after the 10-Q/K. The relation between DD and the timing of earnings forecasts does not disappear immediately when the delayed information arrives in the 10-Q/K filing but persists beyond the filing date.

We next test whether delayed disclosure is associated with the magnitude of analyst underreaction to earnings news (H4a), analyst forecast accuracy (H4b), and analyst forecast dispersion (H4c). Table 6 Panel A presents the results of the regression of future earnings forecast error, *FUTURE.RSUE*, on current earnings surprise, *RSUE*, the interaction variable of interest, *RSUE*DD*, and control variables. To establish the baseline for the magnitude of average analyst underreaction in our sample, we first estimate a regression of *FUTURE.RSUE* on *RSUE* and control variables (columns 1 and 2). Consistent with the prior research, current earnings surprise is significantly positively associated with future earnings forecast error (coefficient = 0.171, p <0.001). Consistent with H4a, the coefficient on *RSUE*DD* is positive and significant (0.055, p = 0.011). When compared to the average analyst underreaction, the magnitude of the coefficient on *RSUE*DD* indicates that an increase in DD from zero to one corresponds to an increase in the analyst underreaction by approximately 32% (0.055/0.171= 32%). The last four columns show the results for the subwindow before the 10-Q/K filing (columns 5 and 6) and after the 10-Q/K filing (columns 7 and 8). The coefficient on *RSUE*DD* is more significant before the filing than after the filing (0.064, p =0.005 vs. 0.062, *p value*=0.014).[13] Notably, the underreaction persists even after the arrival of supporting information in the 10-Q/K to the next earnings announcement date.

The results of the regression of absolute analyst forecast errors on DD reveal a similar pattern (Panel B of Table 6). Consistent with H4b, the coefficient on DD is positive and

[13] The difference in the before and after filing coefficients on *RSUE*DD* is not statistically significant (untabulated).

significant (0.002, $p < 0.001$), suggesting that analyst forecast accuracy is lower when firms delay financial statement disclosure. It is noteworthy that the coefficient on DD is not only significant in the window before the filing date (0.002, $p < 0.001$), but is also significant after the filing date (0.002, $p < 0.001$).

In Panel C, we find a positive association between *DD* and analyst forecast standard errors (0.001, $p < 0.001$), which is consistent with disclosure delay increasing forecast dispersion (H4c). *DD* effects again persist after the filing of 10-Q/K, as evidenced by a positive coefficient on *DD* in the post-filing window (0.001, $p < 0.001$).

4. Robustness Tests

4.1Adding Further Controls and Using Residual Delayed Disclosure Ratio

To examine whether the relation between DD and investor and analyst response to earnings news is incremental to other factors that may affect the choice of DD, we perform the following two-stage analysis. In the first stage, we regress DD on an expanded set of explanatory variables and calculate residual DD, *RES.DD*. In the second-stage, we re-estimate the investor and analyst response tests using *RES.DD*. The first-stage regression is as follows:

$$\begin{aligned} DD_{jt} = \alpha + \beta_1 RSUE_{jt} + \beta_2 SIZE_{jt} + \beta_3 MTB_{jt} + \beta_4 RET_{jt} + \beta_5 ANA.FOLLOW_{jt} + \beta_6 \\ INST.OWN_{jt} + \beta_7 INST.OWN_{jt} + \beta_8 FQ4_{jt} + \beta_9 SMOOTH_{jt} \\ + \beta_{10} JMOB_{jt} + \beta_{11} EARN.VOL_{jt} + \beta_{12} LOSS_{jt} + \beta_{13} HIGH.TECH_{jt} \\ + \beta_{14} MERGER_{jt} + \beta_{15} YOUNG_{jt} + \beta_{16} RET.VOL_{jt} + \beta_{17} BIG4_{jt} + \varepsilon_{jt} \end{aligned} \quad (5)$$

In addition to the base set of control variables used in the main analysis (*SIZE*, *MTB*, *RET*, *ANA.FOLLOW*, *INST.OWN*, *NRANK*, *FQ4*), we include a proxy of income smoothing (*SMOOTH*) and an indicator of firm just meeting or beating earnings expectations (*JMOB*) to proxy for managerial incentives to intervene in the earnings reporting process and the eff(D'Souza et al. 2010). Following Chen et al. (2002), we also include variables to capture settings in which current earnings are less likely to be a sufficient valuation metric: earnings

volatility (*EARN.VOL*), indicator of negative earnings (*LOSS*), high-tech industry indicator (*HIGH.TECH*), indicator of merger and acquisition activity (*MERGER*), young firm indicator (*YOUNG*), and indicator of high return volatility (*RET.VOL*). To proxy for the effect of auditor, we include the indicator of a big 4 auditor (*BIG4*). All variables are defined in Appendix C.

The results of the estimation of equation (5) are reported in Table 7 Panel A. The results are generally consistent with the findings in Chen et al. (2002) and D'Souza et al. (2010). DD is positively associated with proxies of earnings smoothing and just meeting or beating earnings expectations, suggesting that managers who have incentives to intervene in the reporting process delay financial statement disclosure. DD tends to be lower for large firms, firms with greater analyst following, institutional ownership, and firms with big 4 auditors, suggesting that firms with richer information environment disclose more financial statement items at earnings announcements. DD also tends to be lower for firms with higher earnings volatility, firms with losses, high-tech firms, and young firms, suggesting that managers provide supplemental disclosures when the current earnings may be not be a good indicator of future performance.

Panel B contains the results of investor and analyst response tests using the residual DD variable. Consistent with the results in Tables 3-6, *RES.DD* is negatively associated with the immediate market reaction to earnings news (-0.035, p<0.001) and *%FORECASTS* around the earnings announcement (-0.016, p=0.003). *RES.DD* is positively associated with PEAD after the filing date [*Filing Date +2, Next EA -2*] (0.029, p=<0.001), PEAD around the next earnings announcement (0.012, p=<0.001), *%FORECASTS_[Filing+2, Next EA-2]* (0.030, p<0.001), analyst underreaction to earnings news (0.049, p=0.034), absolute analyst forecast errors (0.002, p<0.001), and forecast dispersion (0.001, p<0.001)*pp*. Therefore, our previous results are robust to adding further controls and using the residual DD measure.

4.2 Robustness Tests Using Year-Over-Year Changes

Our main tests use firm fixed effects to isolate within-firm variation in delayed disclosure and control for potential omitted variables. We re-estimate our tests using the change specification as an alternative. Specifically, for each dependent and independent variable, we calculate the year-over-year change and estimate regression using these changes.[14] Untabulated results are consistent with the results using firm fixed effects. Delayed disclosure is negatively associated with the immediate market reaction to earnings news (-0.025, p<0.001) and fewer forecasts around earnings announcement period *%FORECASTS_EA* (-0.034, p=0.002); positively associated with PEAD (0.022, p=0.035) and more forecasts in the post-filing peeriod *%FORECASTS_[Filing+2, Next EA-2]* (0.020, p =0.096); and with greater analyst underreaction to earnings news (0.063, p=0.079), greater absolute analyst forecast errors (0.002, p=0.006), and larger forecast dispersion (0.001, p=0.032).

4.3 Management Guidance

Firms that delayed financial disclosures may be less likely to provide earnings guidance, which in turn may affect investor and analyst response to earnings news. To ascertain whether DD effect is incremental to the effect of guidance, we include the interaction of SUE with an indicator variable that equals one if the firm provides guidance during the earnings announcement and zero otherwise in our previous tests in Tables 3-6. The sample for this analysis starts in 1994, the first year in which consistent coverage of earnings guidance is available on I/B/E/S. Untabulated results show that previous results in Tables 3-6 are robust to the inclusion of guidance. DD is negatively associated with the immediate market reaction to earnings news (-0.022, p<0.001) and *%FORECASTS* around

[14] Compared to firm fixed effects, the approach based on change specification yields a more efficient estimator if the model residuals follow a random walk, while firm fixed effects produce a more efficient estimator if the residuals are serially uncorrelated (Greene 2003).

the earnings announcement (-0.016, p=0.010), and positively associated with PEAD after the filing date (0.021, p=0.021), *%FORECASTS_[Filing+2, Next EA-2]* (0.018, p<0.001), analyst underreaction to earnings news (0.063, p=0.007), absolute analyst forecast errors (0.003, p<0.001), and forecast dispersion (0.001, p<0.001). In sum, our results are robust to controlling for earnings guidance.

4.4 Earnings Surprises Estimated Using A Seasonal Random Walk Model

Since earnings surprises are based on analyst forecasts prior to the earnings announcement that are in turn affected by delayed disclosure in the previous quarter, we repeat the investor reaction tests using earnings surprises based on a seasonal random walk instead of analyst forecasts. Untabulated results are consistent with the results in Tables 3 and 4. DD is negatively associated with the immediate market reaction to earnings news (-0.007, p=0.024) and positively associated with PEAD after the filing date (0.017, p=0.014)).

4.5 Quarterly vs. Annual Earnings Surprises

Similar to prior studies on investor and analyst underreaction to earnings news, our main tests pool data for all fiscal quarters. Since Q4/annual financial statements are audited while Q1, Q2, and Q3 statements are not, audit completeness and quality may affect annual financial statement disclosures and investor and analyst response to annual earnings news, but not quarterly disclosures (Schroeder, 2016).[15] To examine whether our results differ between the first three quarters versus the annual earnings disclosures, we repeat the tests separately for annual and quarterly earnings announcements. Untabulated results reveal that with the exception of an insignificant association between DD and PEAD for annual

[15] Schroeder (2016) finds that complete audits at the earnings announcement date attenuate the information content of additional financial statement items at the earnings announcement. Our study differs from Schroeder in that we study quarterly earnings which do not have audit-related issues, and our limited attention approach affords predictions for post-event investor reactions whereas the credibility effect from complete audits in Schroeder (2016) predicts only earnings announcement period reactions and not post-event reactions.

announcements all results hold for both annual and quarterly earnings announcements.[16] The insignificant association between DD and PEAD in the fourth quarter could be a result of a significantly lower PEAD in that quarter (0.019, $p<0.001$ versus 0.053, $p<0.001$ for annual and quarterly announcements respectively).[17]

5. Conclusion

A large body of research finds that investors and analysts are slow in updating expectations about future earnings following earnings news announced in earnings press releases. This study examines the link between the delay of investor and analyst reaction to earnings news and delayed financial statement disclosure in earnings press releases. We show that for companies that delay financial statement disclosure until the 10-Q/K filing, investor immediate reaction to earnings is weaker, and investor delayed reaction to earnings after the 10-Q/K is stronger, analysts are less likely to issue earnings forecasts after the earnings announcement and more likely to issue forecasts after the 10-Q/K filing. Delayed disclosure is also positively associated with analyst underreaction to earnings news and forecast dispersion and negatively associated with forecast accuracy. Overall, the results suggest that when firms delay financial statement disclosure in earnings announcements, investors, as well as important information intermediaries such as analysts, have greater difficulty to process and respond to earnings news efficiently.

Our study complements the research on the expanded financial statement disclosure in earnings press releases. Prior research has examined the role of expanded disclosure as a source of additional information news, which in some cases can be viewed as competing with earnings when earnings are relatively less value relevant. Our study contributes to this literature by showing that delayed financial statement disclosure is associated not only with a

[16]Specifically, DD is positively associated with PEAD for quarterly announcements (0.038, $p < 0.001$) and is insignificant for annual announcements (-0.003, $p = 0.848$).
[17] Lower PEAD in the fourth quarter is consistent with prior research (Rangan and Sloan 1998).

lower amount of information contained in earnings press releases but also with a delay in the investor and analyst reaction to earnings news that continues even after the financial information is disclosed in the 10-Q/K filings. The findings are consistent with alleged benefits in the call for greater financial statement disclosure in earnings press releases by regulators and financial intermediaries.

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Appendix A: Date 2 Price for Delayed Disclosure DD-Regime

This appendix describes date 2 price in the model of Section 2. Date 1 is the earnings announcement, date 2 is the 10-Q/K filing, and date 3 is the next earnings announcement. The fraction of inattentive investors is f at date 1 and f' at date 2. Given fixed costs of attending, it is reasonable that $f' > f$ so there are more inattentive investors at date 2 than at date 1. Inattentive investors I at date 1 will continue to be inattentive at date 2. Investors attending at date 1 observe e but not δ as it is unavailable, and investors attending at date 2 observe both e and δ. Thus, fraction $1 - f'$ attend to both e and δ, and an additional fraction $f' - f$ attend only to e. We use superscripts I, e, and (e, δ) to denote the three investor groups.

The date 2 price follows by market clearing, so that total demand and supply for the risky asset are equated. The pricing equation at date 2 will be a weighted average of beliefs of these three groups of investors, and the weights depend on f and f' as well as the respective variances of the terminal value P_3 as perceived by them. It follows that the price at date 2 is the weighted average of beliefs of these three groups of investors, and the weights depend on f and f' as well as the respective variances of the terminal value P_3 as perceived by them:

$$P_2(e,\delta) = \kappa^I E^I[P_3] + \kappa^e E^e[P_3 \mid e] + \kappa^{e,\delta} E^{e,\delta}[P_3 \mid e,\delta] \tag{15}$$

where

$$\kappa^I = \frac{\dfrac{f}{\mathrm{var}^I(P_3)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{f'-f}{\mathrm{var}^e(P_3 \mid e)} + \dfrac{1-f'}{\mathrm{var}^{e,\delta}(P_3 \mid e,\delta)}} \tag{16}$$

$$\kappa^e = \frac{\dfrac{f'-f}{\mathrm{var}^e(P_3 \mid e)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{f'-f}{\mathrm{var}^e(P_3 \mid e)} + \dfrac{1-f'}{\mathrm{var}^{e,\delta}(P_3 \mid e,\delta)}} \tag{17}$$

$$\kappa^{e,\delta} = \frac{\dfrac{1-f'}{\mathrm{var}^{e,\delta}(P_3 \mid e,\delta)}}{\dfrac{f}{\mathrm{var}^I(P_3)} + \dfrac{f'-f}{\mathrm{var}^e(P_3 \mid e)} + \dfrac{1-f'}{\mathrm{var}^{e,\delta}(P_3 \mid e,\delta)}} \tag{18}$$

Appendix B: Sample Selection

Firm-quarter observations from the Compustat Preliminary History database over 1990-2011, excluding year 1999	430,164
minus: Utilities and financial services firms (SIC codes 4900-4999 and 6000-6999)	(102,473)
minus: Earnings announcement date is before the fiscal quarter end or less than three trading days before the 10-Q/K filing date	(93,076)
minus: 10-Q/K financial statements have less than 5 data items	(3,286)
minus: No preliminary data	(6,949)
minus: Missing stock return data from CRSP	(65,131)
Sample for Market Reaction Tests	**159,249**
minus: No I/B/E/S analyst earnings forecasts for the next quarter after the current quarter's earnings announcement	(75,886)
Sample for Analyst Reaction Tests	**83,363**

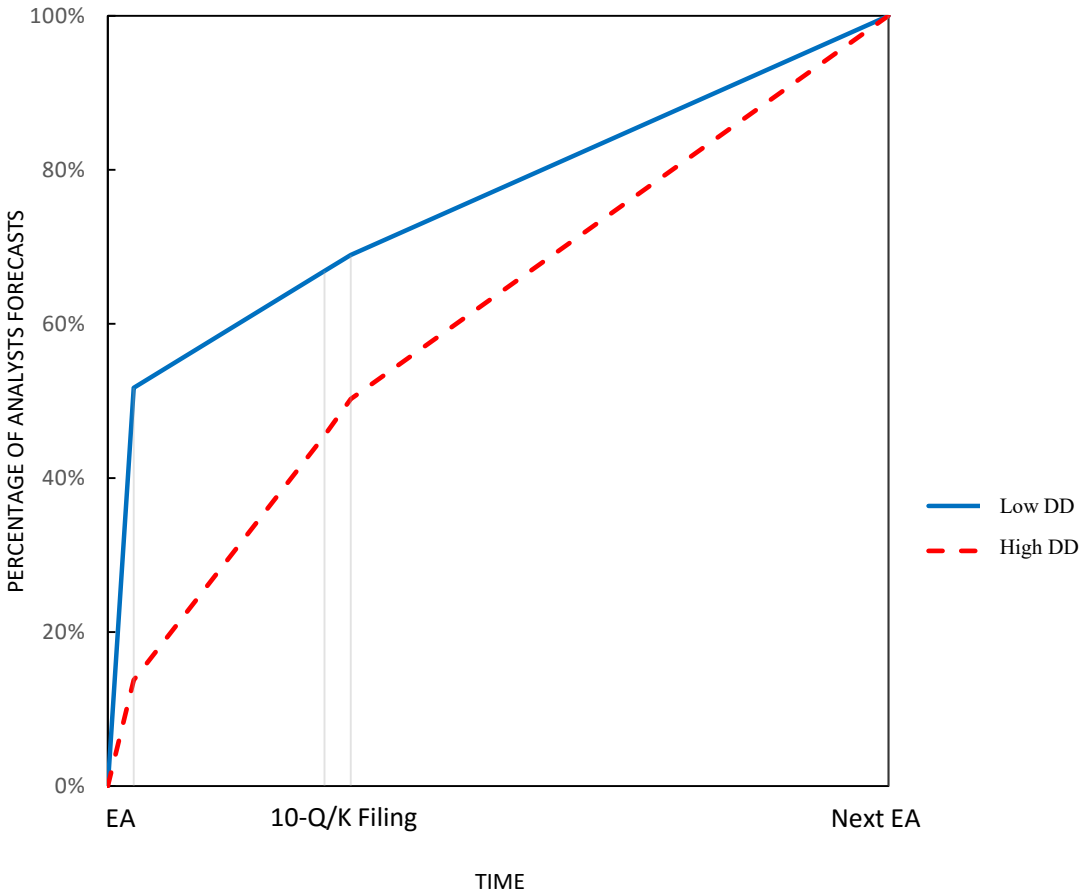
Appendix C: Variable Definitions

Variable	Definition
DD	The delayed disclosure ratio, calculated as the number of financial statement items that are missing in the earnings announcement but reported in the corresponding 10-Q/K filing for a given firm-quarter scaled by the number of non-missing financial statement items reported in the corresponding 10-Q/K filing.
%FORECASTS_[window]	The number of analyst earnings forecasts issued in a given subwindow divided by the total number of earnings forecasts issued in the window starting on the day of the earnings announcement and ending two days before the earnings announcement for quarter t+1. Four subwindows are used: around the earnings announcement [0,+1], between the earnings announcement and the 10-Q/K filing [+2, Filing Date -2], around the 10-Q/K filing [Filing Date -1, Filing Date +1], and between the 10-Q/K filing and the next earnings announcement [Filing Date +2, Next EA -2].
%FORECASTS_EA	*%FORECASTS* for the earnings announcement window [0,+1].
RSUE	The decile rank of standardized unexpected earnings, *SUE*, where *SUE* is calculated as the difference between announced earnings as reported by I/B/E/S and the consensus earnings forecast, scaled by stock price at the end of previous fiscal quarter. When consensus analyst forecast is not available, *SUE* is calculated as EPS for quarter *t* minus EPS for quarter *t-4*, both, scaled by stock price at the end of fiscal quarter *t*.
FUTURE.RSUE	The decile rank of the analyst earnings forecast error for quarter *t+1* (Actual EPS_{jt+1} minus Forecasted EPS_{jt+1}) scaled by the stock price at the end of quarter *t*, where Forecasted EPS_{jt+1} is the median of all forecasts issued after the earnings announcement for quarter *t* and before the earnings announcement for quarter *t+1*. Forecasts errors in two subwindows are also examined: before the 10-Q/K filing, [0, Filing Date -2], and after the 10-Q/K filing, [Filing Date, Next EA-2].
ABS.FE	The absolute value of earnings forecast error for quarter *t+1* (Actual EPS_{jt+1} minus Forecasted EPS_{jt+1}) scaled by the stock price at the end of quarter *t*. Forecasted EPS_{jt+1} is the median of all forecasts issued after quarter *t* earnings announcement and before the earnings announcement for quarter *t+1*. Forecasts errors in two subwindows are also examined: before the 10-Q/K filing, [0, Filing Date -2], and after the 10-Q/K filing, [Filing Date, Next EA-2].
STD.EST	The standard error of analyst forecasts for quarter *t+1* EPS that are issued after quarter *t* earnings announcement and before the earnings announcement for quarter *t+1*, scaled by the stock price at the end of quarter *t*. Standard errors of forecasts in two

	subwindows are also examined: before the 10-Q/K filing, [0, Filing Date -2], and after the 10-Q/K filing, [Filing Date, Next EA-2].
SIZE	The natural logarithm of market value of equity at the end of the fiscal quarter t.
MTB	The market-to-book ratio measured at the end of the fiscal quarter *t*.
RET	The stock returns prior to the earnings announcement measured over the window [-60,-3].
FQ4	The indicator variable that equals one if quarter *t* is the fourth quarter of the fiscal year, and 0 otherwise.
ANA.FOLLOW	Analyst following, measured as the natural logarithm of the number of analysts following the firm.
INST.OWN	Institutional ownership, measured as the sum of all institutional holdings of the stock scaled by the number of shares outstanding. The measure is based on the most recent institutional ownership data available in month *t-1*.
NRANK	The decile rank of the number of same-day earnings announcements by other firms.
CAR[window]	The cumulative abnormal return over a given time window. Five subwindows are used: around the earnings announcement [-1,+1], between the earnings announcement and the 10-Q/K filing [+2, Filing Date -2], around the 10-Q/K [Filing Date -1, Filing Date +1], between the 10-Q/K and the next earnings announcement [Filing Date +2, Next EA -2], and around the next earnings announcement [Next EA -1, Next EA +1]. The abnormal return is calculated as the raw stock return minus the return on the respective Fama-French reference portfolio based on size and book-to-market ratio (six portfolios are formed based on size and book-to-market, 2 x 3).
CAR_EA	*CAR* for the earnings announcement window [-1,+1].
CAR_DRIFT	*CAR* for the period starting two days after the earnings announcement for quarter *t* and ending one day after the earnings announcement for quarter t+1 [+2, Next Earnings Announcement Date +1].
MISS	The indicator variable that equals one if quarter *t* earnings is below the analyst forecast, and zero otherwise.
SMOOTH	The correlation between change in total accruals and change in operating cash flows over past eight quarters, multiplied by -1.
JMOB	The indicator variable that equals one if the current earnings surprise is between 0 and 3 cents per share, and 0 otherwise.
EARN.VOL	The standard deviation of earnings before extraordinary items scaled by total assets, calculated over past eight quarters.

LOSS	The indicator variable that equals one if the firm reports a negative net income before extraordinary items in the current quarter, and 0 otherwise.
HIGH.TECH	The indicator variable that equals one for firms in the following industries: drugs (SIC code 2833–2836), R&D services (8731–8734), programming (7371–7379), computers (3570–3577), electronics (3600–3674), and precise measurement instruments (3810–3845).
MERGER	The indicator variable that equals one if the firm engages in merger and acquisition activities in the current quarter, and 0 otherwise.
YOUNG	The indicator variable that equals one if the firm's age is below the 2-digit SIC industry median, and 0 otherwise. Firm age is the number of years from initial public listing to the current fiscal quarter.
RET.VOL	The indicator variable that equals one if the standard deviation of daily stock returns over prior 250 days is above industry median and 0 otherwise.
BIG4	The indicator variable that equals one if the firm's annual financial statement was audited by Deloitte, PricewaterhouseCoopers, Ernst & Young, or KPMG.

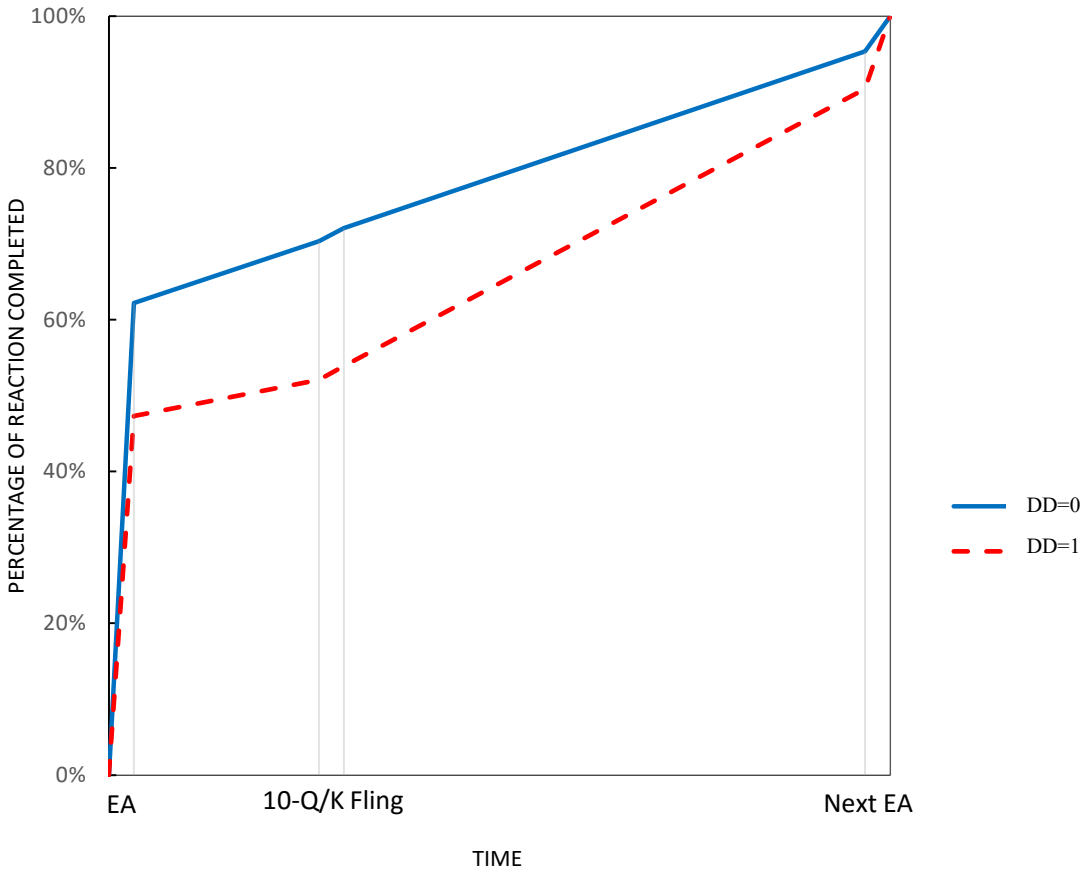
Figure 1: Analyst Delayed Response to Earnings Announcements



	EA-1	EA+1	Filing-1	Filing+1	Next EA-1
Low DD	0.0%	51.7%	66.9%	68.9%	100.0%
High DD	0.0%	13.8%	45.5%	50.3%	100.0%

This figure shows the timing of analyst earnings forecasts for firms with DD in the bottom decile (the solid blue line) and firms with DD in the top decile (the dashed red line). The horizontal axis shows time intervals between the current earnings announcement and next earnings announcement. The vertical axis shows the fraction of total forecasts that are issued by the indicated point in time: *%FORECASTS*_[0, τ], where τ = +1, Filing Date-2, Filing Date+1, or Next EA-1. All variables are defined in Appendix C.

Figure 2: Delayed disclosure and timing of investor reaction to earnings news



	EA-1	EA+1	Filing-1	Filing+1	Next EA-1	Next EA+1
DD=0	0.0%	62.2%	70.3%	72.1%	95.3%	100.0%
DD=1	0.0%	47.3%	52.1%	53.9%	90.4%	100.0%

This figure shows the timing of investor reaction to earnings news for firms with DD=0 (the solid blue line) and firms with DD=1 (the dashed red line). The vertical axis shows the percentage of total reaction completed. The horizontal axis shows time intervals between the current earnings announcement and next earnings announcement. The graph is constructed in the following way. We run regressions $CAR = \alpha + \beta_1\ RSUE + \beta_2\ DD + \beta_3\ RSUE * DD + Controls + \varepsilon$ with *CAR* over different windows [-1, τ], where τ = +1, Filing Date-2, Filing Date+1, Next EA-1, or Next EA+1. All variables are defined in Appendix C. For firms with DD=0, the reaction up to time τ relative to the total reaction is β_1[-1, τ]/β_1[-1, Next EA+1]. For firms with DD=1, the reaction up to time τ relative to the total reaction is (β_1[-1, τ]+ β_3[-1, τ])/(β_1[-1, Next EA+1]+β_3[-1, Next EA+1]).

Table 1 Descriptive Statistics

Variable	Mean	Median	Std.Dev.	P25	P75
DD	0.576	0.571	0.255	0.432	0.813
SUE	0.002	0.000	0.041	-0.001	0.003
#FORECASTS_EA	4.011	2.000	4.646	1.000	6.000
%FORECASTS_EA	0.393	0.364	0.323	0.067	0.667
%FORECASTS_[Filing+2, Next EA-2]	0.358	0.333	0.295	0.100	0.550
CAR_EA	0.004	0.001	0.087	-0.040	0.046
CAR_DRIFT	-0.005	-0.007	0.229	-0.129	0.115
MV	2318.5	292.8	7170.5	76.1	1181.1
MTB	2.972	2.078	3.047	1.278	3.478
RET	0.029	0.018	0.226	-0.094	0.138
#Analysts	4.568	3.000	5.186	0.000	6.000
INST.OWN	0.608	0.610	0.351	0.311	0.883
#EA	216.2	194.0	133.2	106.0	309.0

Notes: The table reports descriptive statistics of key variables over the sample period, 1990 to 2011. *#FORECASTS_EA* is the number of forecasts issued within two trading days of the earnings announcement date [0,+1]. *%FORECASTS_[Filing +2, Next EA -2]* is *%FORECASTS* for the window between the 10-Q/K and the next earnings announcement. *Mkt.Cap.* is the market value of equity at the end of the fiscal quarter, in millions. *#Analysts* is the number of analysts following the firm. #EA is the number of same date earnings announcements. All other variables are defined in Appendix C.

Table 2 Correlations among Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) *DD*											
(2) *SUE*	0.002										
(3) *%FORECASTS_EA*	**-0.301**	**0.032**									
(4) *%FORECASTS_[Filing +2, Next EA -2]*	**0.160**	**-0.013**	**-0.575**								
(5) *CAR_EA*	0.003	**0.126**	0.003	0.000							
(6) *CAR_DRIFT*	**-0.023**	**0.041**	**0.044**	**-0.078**	**0.048**						
(7) *SIZE*	**-0.269**	**-0.041**	**0.122**	-0.001	**-0.023**	**-0.036**					
(8) *MTB*	**-0.044**	**0.008**	**0.018**	-0.004	**-0.025**	-0.004	**0.286**				
(9) *RET*	**0.012**	**0.096**	-0.003	**-0.008**	**-0.035**	-0.002	**-0.053**	**0.089**			
(10) *ANA.FOLLOW*	**-0.237**	**-0.063**	**0.026**	**0.098**	**-0.008**	**-0.022**	**0.712**	**0.148**	**-0.096**		
(11) *INST.OWN*	**-0.336**	**-0.040**	**0.226**	**-0.091**	**0.012**	**0.009**	**0.598**	**0.058**	**-0.053**	**0.552**	
(12) *NRANK*	**-0.149**	**0.010**	**0.065**	-0.002	**-0.011**	**0.007**	**0.126**	**0.067**	**-0.022**	**0.133**	**0.116**

Notes: The table reports Pearson correlations among key variables. Correlations significant at the 10% level or lower are reported in bold. All the variables are as defined in Appendix C.

Table 3 Total and Immediate Market Reaction to Earnings News

$$CAR\_TOT \text{ or } CAR\_EA = \alpha + \beta_1 RSUE_{jt} + \beta_2 DD_{jt} + \beta_3 RSUE_{jt}*DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt} \quad (1a)$$

	Total Reaction				Immediate Reaction						
	[0, Next EA+1]			Pred.	*[-1,+1]*			*[-1,+1]*			
	Coeff.		*p-value*	sign	*Coeff.*		*p-value*	*Coeff.*		*p-value*	
	(1)		(2)		(3)		(4)	(5)		(6)	
RSUE	0.169	***	<0.001	+	0.076	***	<0.001	0.107	***	<0.001	
*RSUE*DD*	-0.001		0.886	H1a: -				-0.028	***	<0.001	
DD	-0.005		0.406					0.012	***	<0.001	
SIZE	-0.085	***	<0.001		-0.012	***	<0.001	-0.008	***	<0.001	
MTB	0.004	***	<0.001		0.000	**	0.012	-0.000		0.347	
RET	-0.115	***	<0.001		-0.031	***	<0.001	-0.037	***	<0.001	
ANA.FOLLOW	-0.006	***	0.002		0.005	***	<0.001	-0.008	***	<0.001	
INST.OWN	0.042	***	<0.001		0.011	***	<0.001	-0.000		0.833	
NRANK	0.011	**	0.019		-0.001		0.530	0.004	***	0.006	
FQ4	0.051	***	<0.001		0.002	***	<0.001	0.011	***	<0.001	
*RSUE*SIZE*	-0.012	***	<0.001					-0.008	***	<0.001	
*RSUE*MTB*	-0.001		0.124					0.001	***	0.001	
*RSUE*RET*	0.074	***	<0.001					0.010	***	0.007	
*RSUE*ANA.FOLLOW*	0.022	***	<0.001					0.026	***	<0.001	
*RSUE*INST.OWN*	0.019	**	0.028					0.022	***	<0.001	
*RSUE*NRANK*	-0.007		0.310					-0.010	***	<0.001	
*RSUE*FQ4*	-0.062	***	<0.001					-0.018	***	<0.001	
Firm FE	Yes				Yes			Yes			
Year-Quarter FE	Yes				Yes			Yes			
#obs	159,249				159,249			159,249			
R^2	0.150				0.143			0.152			

Notes: The table reports results of the regression to test the association between the delayed disclosure ratio and total and immediate market reaction to earnings news. All variables are as defined in Appendix C. The *p*-values are based on two-tailed test with standard errors clustered by firm and quarter. *, **, *** denote significance at the 10%, 5%, and 1% level, respectively, based on two-tailed tests.

Table 4 Delayed Investor Reaction to Earnings News

Panel A: Overall delayed investor reaction

$$CAR\_DRIFT = \alpha + \beta_1\, RSUE_{jt} + \beta_2\, DD_{jt} + \beta_3\, RSUE_{jt} * DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt} \quad (1b)$$

	Predicted sign	*[+2, Next EA+1]* *Coeff.*		*p-value*	*[+2, Next EA+1]* *Coeff.*		*p-value*
		(1)		(2)	(3)		(4)
RSUE	+	0.040	***	<0.001	0.063	***	<0.001
*RSUE*DD*	H1b: +				0.027	***	0.001
DD					-0.017	***	0.002
SIZE		-0.080	***	<0.001	-0.077	***	<0.001
MTB		0.003	***	<0.001	0.004	***	<0.001
RET		-0.043	***	<0.001	-0.078	***	<0.001
ANA.FOLLOW		0.001		0.526	0.002		0.221
INST.OWN		0.040	***	<0.001	0.042	***	<0.001
NRANK		0.008	***	0.003	0.006		0.140
FQ4		0.017	***	<0.001	0.040	***	<0.001
*RSUE*SIZE*					-0.004	**	0.042
*RSUE*MTB*					-0.002	***	0.006
*RSUE*RET*					0.065	***	<0.001
*RSUE*ANA.FOLLOW*					-0.004		0.199
*RSUE*INST.OWN*					-0.003		0.705
*RSUE*NRANK*					0.002		0.754
*RSUE*FQ4*					-0.044	***	<0.001
Firm FE		Yes			Yes		
Year-Quarter FE		Yes			Yes		
#obs		159,249			159,249		
R^2		0.120			0.121		

Panel B: Delayed investor reaction within subwindows

	[+2, Filing Date -2]			*[Filing Date -1, Filing Date +1]*			*[Filing Date +2, Next EA -2]*			*[Next EA -1, Next EA +1]*		
	Coeff.		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*
	(1)		(2)	(3)		(4)	(5)		(6)	(7)		(8)
RSUE	0.014	***	0.003	0.003		0.223	0.040	***	<0.001	0.008	**	0.038
*RSUE*DD*	-0.006		0.107	-0.000		0.992	0.021	***	0.002	0.008	**	0.014
DD	0.001		0.701	0.000		0.806	-0.011	***	0.009	-0.004	**	0.024
SIZE	-0.015	***	<0.001	-0.003	***	<0.001	-0.047	***	<0.001	-0.010	***	<0.001
MTB	0.000	*	0.052	0.000	**	0.048	0.003	***	<0.001	0.001	***	0.002
RET	-0.027	***	<0.001	-0.006	***	<0.001	-0.045	***	<0.001	0.001		0.638
ANA.FOLLOW	-0.001		0.180	0.000		0.372	0.003	*	0.069	-0.000		0.694
INST.OWN	0.009	***	0.001	0.006	***	<0.001	0.017	***	0.001	0.011	***	<0.001
NRANK	0.004	*	0.061	0.001		0.223	0.005		0.167	-0.002		0.286
FQ4	0.002	*	0.083	0.001		0.228	0.032	***	<0.001	0.006	***	<0.001
*RSUE*SIZE*	-0.001		0.361	0.000		0.275	-0.001		0.328	-0.002	***	0.009
*RSUE*MTB*	-0.001	**	0.018	-0.000		0.119	-0.001		0.440	-0.000		0.262
*RSUE*RET*	0.019	***	<0.001	0.003		0.256	0.042	***	<0.001	0.002		0.655
*RSUE*ANA.FOLLOW*	0.005	***	<0.001	-0.000		0.739	-0.007	***	0.006	-0.002		0.156
*RSUE*INST.OWN*	0.009	**	0.017	-0.003	*	0.066	-0.007		0.328	-0.002		0.595
*RSUE*NRANK*	-0.004		0.210	0.001		0.391	0.002		0.754	0.001		0.564
*RSUE*FQ4*	-0.002		0.421	-0.002	*	0.097	-0.032	***	<0.001	-0.009	***	<0.001
Firm FE	Yes			Yes			Yes			Yes		
Year-Quarter FE	Yes			Yes			Yes			Yes		
#obs	159,249			159,249			159,249			159,249		
R^2	0.077			0.069			0.105			0.073		

Panel C: Investor reaction in the window *[Filing Date -1, Filing Date +10]* for subsamples based on institution ownership and analyst forecast issuance

	Low Institutional Ownership			*High Institutional Ownership*			*No Analyst Forecast*			*At Least One Analyst Forecast*		
	Coeff.		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*
	(1)		(2)	(3)		(4)	(5)		(6)	(7)		(8)
RSUE	0.005		0.531	0.007		0.568	0.035	***	0.002	-0.007		0.637
*RSUE*DD*	0.005		0.469	0.013	**	0.033	-0.005		0.521	0.020	**	0.026
DD	-0.004		0.488	-0.007	**	0.038	0.002		0.701	-0.010	*	0.070
SIZE	-0.020	***	<0.001	-0.016	***	<0.001	-0.016	***	<0.001	-0.018	***	<0.001
MTB	0.001		0.109	-0.000		0.536	0.000		0.474	0.000		0.399
RET	-0.018	***	<0.001	-0.022	***	<0.001	-0.020	***	<0.001	-0.023	***	0.004
ANA.FOLLOW	0.001		0.680	0.003	*	0.057	0.007	***	0.008	0.002		0.359
INST.OWN	0.018	**	0.045	0.004		0.489	0.023	***	<0.001	0.003		0.695
NRANK	-0.008	**	0.021	0.004		0.238	-0.003		0.412	0.001		0.778
FQ4	0.008	***	<0.001	0.006	***	0.008	0.009	***	0.001	0.002		0.636
*RSUE*SIZE*	0.001		0.679	0.000		0.821	-0.002		0.335	0.003	*	0.096
*RSUE*MTB*	-0.001		0.105	-0.000		0.866	<0.001		0.927	-0.001		0.180
*RSUE*RET*	0.013	**	0.050	0.021	**	0.038	0.012		0.208	0.034	**	0.017
*RSUE*ANA.FOLLOW*	-0.001		0.720	-0.000		0.931	-0.004		0.346	-0.007	*	0.077
*RSUE*INST.OWN*	0.003		0.788	-0.009		0.314	-0.017	**	0.012	0.005		0.627
*RSUE*NRANK*	0.008		0.100	-0.004		0.436	0.005		0.458	-0.003		0.737
*RSUE*FQ4*	-0.010	***	0.003	-0.000		0.980	-0.006		0.191	-0.007		0.239
Firm FE	Yes			Yes			Yes			Yes		
Year-Quarter FE	Yes			Yes			Yes			Yes		
#obs	52,760			52,580			50,399			33,926		
R^2	0.152			0.108			0.174			0.221		

Notes: The table reports results of the regression to test the association between the delayed disclosure ratio and delayed investor reaction to earnings news. The dependent variable in Panel A is the cumulative abnormal return over the period starting two days after the earnings announcement for quarter *t* and ending one day after the earnings announcement for quarter *t+1*. In Panel B, the dependent variable is the cumulative abnormal return over the indicated subwindow. In Panel C, the dependent variable is the cumulative abnormal return over the window starting one day before the 10-Q/K filing and ending ten days after the filing *[Filing Date -1, Filing Date +10]*. The regressions

in Panel C are estimated within the specified subsamples. Columns 1 and 2 (3 and 4) show the results for firm-quarters in the bottom (top) tercile of institutional ownership in the respective quarter. Columns 5 and 6 (7 and 8) show the results for firm-quarters with zero (at least one) analyst earnings forecast issued in the window *[Filing Date -1, Filing Date +10]*. All variables are as defined in Appendix C. *, **, *** denote significance at the 10%, 5%, and 1% level, respectively, based on two-tailed tests.

Table 5 Analyst Delayed Response to Earnings Announcements

$$\%FORECASTS_{jt} = \alpha + \beta_1 DD_{jt} + Controls + \varepsilon_{jt} \quad (3)$$

	Time Windows											
	Pred. Sign	*[0, +1]*		Pred. Sign	*[+2, Filing Date -2]*		Pred. Sign	*[Filing Date -1, Filing Date +1]*		Pred. Sign	*[Filing Date +2, Next EA -2]*	
		Coeff.	*p-value*		*Coeff.*	*p-value*		*Coeff.*	*p-value*		*Coeff.*	*p-value*
		(1)	(2)		(3)	(4)		(5)	(6)		(7)	(8)
DD	H3a: -	-0.017***	0.002	?	-0.013**	0.033	?	0.002	0.447	H3b: +	0.029***	<0.001
RSUE		0.020***	<0.001		0.006	0.127		-0.002	0.238		-0.024***	<0.001
SIZE		-0.002	0.166		-0.020***	<0.001		-0.001**	0.049		0.023***	<0.001
MTB		-0.002***	<0.001		0.001***	0.002		0.000	0.496		0.001***	0.002
RET		-0.011**	0.022		0.012***	0.004		0.001	0.414		-0.003	0.485
ANA. FOLLOW		0.009***	<0.001		0.016***	<0.001		-0.002**	0.047		-0.024***	<0.001
INST.OWN		0.014**	0.027		0.009	0.133		-0.001	0.634		-0.022***	0.001
NRANK		-0.015***	<0.001		0.020***	<0.001		-0.002	0.206		-0.003	0.496
FQ4		0.015***	<0.001		0.164***	<0.001		-0.003***	0.001		-0.175***	<0.001
Firm FE		Yes			Yes			Yes			Yes	
Year-Quarter FE		Yes			Yes			Yes			Yes	
#obs		83,363			83,363			83,363			83,363	
R^2		0.519			0.354			0.158			0.335	

Notes: The table reports results of the test of analyst delayed response to earnings news. The dependent variable is the proportion of analyst earnings forecasts made in the indicated time window relative to the total number of forecasts made between the current earnings announcement and next earnings announcement. All variables are defined in Appendix C. *, **, *** denote significance at the 10%, 5%, and 1% level, respectively, based on two-tailed tests.

Table 6 Analyst Underreaction to Earnings News and Forecast Accuracy

Panel A: Analyst Underreaction to Earnings news

$$FUTURE.RSUE_{jt+1} = \alpha + \beta_1\ RSUE_{jt} + \beta_2\ DD_{jt} + \beta_3\ RSUE_{jt}*DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt} \quad (4a)$$

	Pred. Sign	*[0, Next EA -2]*				*[0, Filing Date -2]*		*[Filing Date , Next EA -2]*	
		Coeff.	*p-value*	*Coeff.*	*p-value*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RSUE	+	0.171***	<0.001	0.006	0.820	0.001	0.982	0.031	0.366
*RSUE*DD*	H4a: +			0.055**	0.011	0.064***	0.005	0.062**	0.014
DD				-0.023*	0.073	-0.032**	0.015	-0.035**	0.016
SIZE		-0.035***	<0.001	-0.047***	<0.001	-0.053***	<0.001	-0.037***	<0.001
MTB		0.002***	<0.001	0.002**	0.018	0.004***	0.001	-0.000	0.930
RET		0.111***	<0.001	0.084***	<0.001	0.111***	<0.001	0.037**	0.015
ANA.FOLLOW		-0.003	0.237	0.003	0.608	0.004	0.489	0.005	0.528
INST.OWN		-0.021**	0.010	-0.049***	<0.001	-0.035***	0.006	-0.054***	<0.001
NRANK		0.010*	0.052	0.004	0.712	0.006	0.540	0.013	0.256
FQ4		0.018***	<0.001	0.082***	<0.001	0.092***	<0.001	0.078***	<0.001
*RSUE*SIZE*				0.024***	<0.001	0.031***	<0.001	0.014***	0.004
*RSUE*MTB*				0.000	0.904	-0.002	0.417	0.001	0.532
*RSUE*RET*				0.054**	0.015	0.049**	0.034	0.069**	0.012
*RSUE*ANA.FOLLOW*				-0.014	0.219	-0.020*	0.094	-0.003	0.798
*RSUE*INST.OWN*				0.057***	0.002	0.039**	0.044	0.047**	0.034
*RSUE*NRANK*				0.015	0.356	0.008	0.656	0.004	0.842
*RSUE*FQ4*				-0.132***	<0.001	-0.132***	<0.001	-0.119***	<0.001
Firm FE		Yes		Yes		Yes		Yes	
Year-Quarter FE		Yes		Yes		Yes		Yes	
#obs		83,363		83,363		76,885		65,733	
R^2		0.177		0.180		0.187		0.186	

Panel B: Analyst Forecast Accuracy

$$ABS.FE_{jt+1} = \alpha + \beta_1\, DD_{jt} + \beta_2\, ABS.FE_{jt} + \beta_3\, MISS_{jt} + \beta_4\, ABS.FE_{jt}*MISS_{jt} + Controls + \varepsilon_{jt} \quad (4b)$$

	Pred. Sign	*[0, Next EA -2]*			*[0, Filing Date -2]*			*[Filing Date , Next EA -2]*		
		Coeff.		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*
		(1)		(2)	(3)		(4)	(5)		(6)
DD	H4b: +	0.002	***	<0.001	0.002	***	<0.001	0.002	***	<0.001
ABS.FE		0.002	***	<0.001	0.002	***	<0.001	0.002	***	<0.001
MISS		-0.005	***	<0.001	-0.004	***	<0.001	-0.004	***	<0.001
*ABS.FE*MISS*		0.015	***	<0.001	0.015	***	<0.001	0.012	***	<0.001
SIZE		-0.007	***	<0.001	-0.007	***	<0.001	-0.005	***	<0.001
MTB		-0.000		0.602	-0.000		0.287	0.000		0.600
RET		-0.004	***	<0.001	-0.004	***	<0.001	-0.003	***	<0.001
ANA.FOLLOW		0.002	***	<0.001	0.002	***	<0.001	0.001	***	<0.001
INST.OWN		-0.009	***	<0.001	-0.010	***	<0.001	-0.007	***	<0.001
NRANK		0.000		0.774	0.000		0.840	0.000		0.171
FQ4		-0.000	***	0.008	-0.000	**	0.011	-0.000	*	0.076
Firm FE		Yes			Yes			Yes		
Year-Quarter FE		Yes			Yes			Yes		
#obs		83,363			76,885			65,733		
R^2		0.613			0.609			0.609		

Panel C: Analyst Forecast Dispersion

$$STD.EST_{jt+1} = \alpha + \beta_1\ DD_{jt} + \beta_2\ ABS.FE_{jt} + \beta_3\ MISS_{jt} + \beta_4\ ABS.FE_{jt}*MISS_{jt}\ + Controls + \varepsilon_{jt} \quad (4c)$$

	Pred. Sign	*[0, Next EA -2]*			*[0, Filing Date -2]*			*[Filing Date , Next EA -2]*		
		Coeff.		*p-value*	*Coeff.*		*p-value*	*Coeff.*		*p-value*
		(1)		(2)	(3)		(4)	(5)		(6)
DD	H4c: +	0.001	***	<0.001	0.001	***	<0.001	0.001	***	<0.001
ABS.FE		0.001	***	<0.001	0.001	***	<0.001	0.001	***	<0.001
MISS		-0.002	***	<0.001	-0.001	***	<0.001	-0.001	***	<0.001
*ABS.FE*MISS*		0.006	***	<0.001	0.005	***	<0.001	0.005	***	<0.001
SIZE		-0.003	***	<0.001	-0.002	***	<0.001	-0.002	***	<0.001
MTB		-0.000	***	0.008	0.000		0.579	-0.000	***	0.001
RET		-0.001	***	<0.001	-0.001	***	<0.001	-0.001	***	<0.001
ANA.FOLLOW		0.001	***	<0.001	0.001	***	<0.001	0.001	***	<0.001
INST.OWN		-0.004	***	<0.001	-0.003	***	<0.001	-0.003	***	<0.001
NRANK		0.000		0.348	0.000	**	0.010	0.000		0.363
FQ4		0.000		0.162	0.000	***	<0.001	-0.000		0.114
Firm FE		Yes			Yes			Yes		
Year-Quarter FE		Yes			Yes			Yes		
#obs		75,569			64,771			48,707		
R^2		0.664			0.664			0.619		

Notes: Panel A reports results of the test of the association between the delayed disclosure ratio and analyst underreaction to earnings news. Panel B reports results of the test of the association between the delayed disclosure ratio and analyst forecast accuracy. Panel C reports results of the test of the association between the delayed disclosure ratio and analyst forecast dispersion. All variables are as defined in Appendix C. *, **, *** denote significance at the 10%, 5%, and 1% level, respectively, based on two-tailed tests.

Table 7 Additional Analysis: Using Residual Delayed Disclosure

Panel A: First-stage estimation

$$DD_{jt} = \alpha + \beta_1 RSUE_{jt} + \beta_2 SIZE_{jt} + \beta_3 MTB_{jt} + \beta_4 RET_{jt} + \beta_5 ANA.FOLLOW_{jt} + \beta_6 INST.OWN_{jt} + \beta_7 INST.OWN_{jt} + \beta_8 FQ4_{jt} + \beta_9 SMOOTH_{jt} + \beta_{10} JMOB_{jt} + \beta_{11} EARN.VOL_{jt} + \beta_{12} LOSS_{jt} + \beta_{13} HIGH.TECH_{jt} + \beta_{14} MERGER_{jt} + \beta_{15} YOUNG_{jt} + \beta_{16} RET.VOL_{jt} + \beta_{17} BIG4_{jt} + \varepsilon_{jt} \quad (5)$$

	Predicted sign	*Coeff.* (1)		*p-value* (2)
RSUE	?	-0.000		0.870
SIZE	-	-0.011	***	<0.001
MTB	?	0.001	***	<0.001
RET	?	0.003		0.204
ANA.FOLLOW	-	-0.016	***	<0.001
INST.OWN	-	-0.063	***	<0.001
FQ4	+	0.012	***	<0.001
SMOOTH	+	0.003	**	0.013
JMOB	+	-0.000		0.855
EARN.VOL	-	-0.358	***	<0.001
LOSS	-	-0.011	***	<0.001
HIGH.TECH	-	-0.010	***	<0.001
MERGER	-	0.002	*	0.091
YOUNG	-	-0.025	***	<0.001
RET.VOL	-	-0.009	***	<0.001
BIG4	-	-0.016	***	<0.001
Industry FE		Yes		
Year FE		Yes		
#obs		158,873		
R^2		0.347		

Panel B: Second-stage estimation

	Pred. Sign	Time Window Coeff.	Time Window p-value	Pred. Sign	Time Window Coeff.	Time Window p-value
Immediate and Delayed Market Reaction to Earnings News						
$CAR = \alpha + \beta_1 RSUE_{jt} + \beta_2 RES.DD_{jt} + \beta_3 RSUE_{jt}*RES.DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt}$						
		[0, +1]			*[+2, Filing Date -2]*	
*RES.DD*RSUE*	-	-0.035***	<0.001	?	-0.010***	0.005
#obs		158,873			158,873	
R^2		0.132			0.067	
		[Filing Date -1, Filing Date +1]			*[Filing Date +2, Next EA -2]*	
*RES.DD*RSUE*	?	0.001	0.714	+	0.029***	<0.001
#obs		158,873			158,873	
R^2		0.068			0.081	
		[Next EA -1, Next EA +1]				
*RES.DD*RSUE*	+	0.012 ***	<0.001			
#obs		158,873				
R^2		0.067				
Analyst Delayed Response to Earnings Announcements						
$\%FORECASTS_{jt} = \alpha + \beta_1 RES.DD_{jt} + Controls + \varepsilon_{jt}$						
		[0, +1]			*[+2, Filing Date -2]*	
RES.DD	-	*-0.016* ***	*0.003*	?	*-0.015* **	*0.017*
#obs		83,159			83,159	
R^2		0.518			0.317	
		[Filing Date -1, Filing Date +1]			*[Filing Date +2, Next EA -2]*	
RES.DD	?	*0.001*	*0.521*	+	*0.030* ***	*<0.001*
#obs		83,159			83,159	
R^2		0.156			0.298	
Analyst Underreaction to Earnings News						
$FUTURE.RSUE_{jt} = \alpha + \beta_1 RSUE_{jt} + \beta_2 RES.DD_{jt} + \beta_3 RSUE_{jt}*RES.DD_{jt} + Controls + RSUE_{jt} * Controls + \varepsilon_{jt}$						
		[0, Filing Date -2]			*[Filing Date , Next EA -2]*	
*RES.DD*RSUE*	+	0.049**	0.034	?	0.051**	0.042
#obs		76,698			65,594	
R^2		0.171			0.179	
Analyst Forecast Errors						
$ABS.FE_{jt+1} = \alpha + \beta_1 RES.DD_{jt} + Controls + \varepsilon_{jt}$						
		[0, Filing Date -2]			*[Filing Date , Next EA -2]*	
RES.DD	+	0.002 ***	<0.001	?	0.002 ***	<0.001
#obs		76,686			65,580	
R^2		0.575			0.576	

Panel B: Second-stage estimation (continued)

Analyst Forecast Dispersion

$STD.EST_{jt+1} = \alpha + \beta_1 RES.DD_{jt} + Controls + \varepsilon_{jt}$

		[0, Filing Date -2]			*[Filing Date , Next EA -2]*	
RES.DD	+	0.001 ***	<0.001	?	0.001 ***	<0.001
#obs		64,622			48,604	
R^2		0.619			0.582	

Notes: Panel A reports the results of the regression of delayed disclosure ratio, *DD*, on a set of explanatory variables. Panel B reports the results of the tests using the residual delayed disclosure ratio, *RES.DD*, estimated from the regression in Panel A. Panel B regressions include the base set of control variables (*SIZE*, *MTB*, *RET*, *ANA.FOLLOW*, *INST.OWN*, *NRANK*, *FQ4*), their respective interactions with *RSUE*, and firm and year-quarter fixed effects. All variables are as defined in Appendix C. *, **, *** denote significance at the 10%, 5%, and 1%