Eleventh-Hour Earnings Management and Financial Reporting Timeliness

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ABSTRACT

Prior studies find that firms that delay earnings announcements tend to release unfavorable news, and investors consequently react negatively when firms delay earnings announcements. However, these findings do not explain why investors discount delayed earnings, even after controlling for the earnings news, and why firms sometimes announce good news late. Motivated by theory in Trueman (1990) that attempts to explain these two phenomena, we examine whether firms announcing earnings abnormally late is indicative of last-minute earnings manipulation. Consistent with post fiscal year-end activities driving announcement delays, we find no relation between measures of real earnings management and late announcements. However, we find evidence that late announcers with good news exhibit higher discretionary accruals. Using a last-chance earnings management measure based on tax expense manipulation, we find strong evidence that firms announcing good news with a delay tend to engage in more income-increasing eleventh-hour earnings management. Consistent with Trueman's (1990) theory that last-minute earnings management helps explain why investors discount delayed earnings announcements, even after holding fixed unexpected earnings news, we find that the negative relation between earnings announcement returns and announcement delays is driven by late announcing firms relying on tax expense manipulation to beat analysts' expectations.

Keywords: earnings calendar; announcement timing; earnings management; effective tax rate (ETR).

JEL Classification: G10; G11; G14; M40; M41.

Data Availability: All data are publicly available from the sources cited in the text.

1. Introduction

The timing of earnings announcements conveys information. On average, 80 percent of early announcers deliver positive earnings surprises; whereas, late announcers deliver negative earnings surprises more than 70 percent of the time (Cohen, Dey, Lys, and Sunder 2007). Prior research suggests that investors anticipate that delayed announcers are more likely to provide bad news, and consequently react negatively when earnings announcements are delayed (Bagnoli, Kross, and Watts 2002; Begley and Fischer 1998; Chambers and Penman 1984; Cohen et al. 2007; Johnson and So 2018; Noh 2018). However, the "good news early and bad news late" framework does not explain why late-announcing firms experience abnormally negative stock price returns, even after controlling for the sign and magnitude of reported earnings surprises (Bagnoli et al. 2002; Cohen et al. 2007; Johnson and So 2018; Kross and Schroeder 1984). Further, it does not adequately explain why some companies with good news delay announcing earnings, given that investors discount delayed announcements.

Theory in Trueman (1990) suggests that these two puzzling empirical findings could both be explained by late announcers engaging in last-chance earnings management. In this study, we empirically test this theory by examining the association between earnings management and abnormally late earnings announcements of good news and whether this association varies based on the time-sensitivity of the earnings management method. By empirically testing the theory in Trueman (1990), we extend the prior empirical work, which largely focuses on the *earnings content* of delayed announcements, by examining the *earnings quality* of delayed announcements.

We examine the relation between firms that report good news late and proxies for three earnings management methods that vary in the extent to which we expect they capture last-chance earnings management. We present the analysis in order of increasing likelihood that the earnings

management method is used for last-minute earnings management. First, as a falsification test, we examine proxies for real earnings management. Because real earnings management is limited in time by the fiscal year end, managers cannot use it to manipulate earnings just prior to announcing earnings. Second, we examine annual discretionary accruals. While this earnings management measure captures some manipulation that could occur after the fiscal year end, it is not specifically identified as a form of last-minute earnings management. Third, we examine earnings management through tax expense via the change in firms' estimate of their annual effective tax rate (ETR) from the third quarter to year-end (fourth quarter). We expect this form of earnings management to be the one most strongly associated with earnings announcement delays as it is commonly referred to as last-chance earnings management (Dhaliwal et al. 2004; Nelson et al. 2003).

Because we investigate whether late announcements of good news are indicative of last-minute earnings manipulation, we attempt to identify earnings management methods that are most likely to occur at the last-minute. Prior studies argue that tax expense manipulation provides a powerful way to examine last-minute earnings management (Dhaliwal et al. 2004). Due to its inherent reliance on pre-tax income, combined with its accounting complexity, tax expense is one of the last accounts to be closed and audited before firms announce their earnings, making it an ideal account to identify last-minute earnings manipulation (Nelson et al. 2002). If late announcements with good news point to last-minute earnings manipulation, we expect to find that they are most strongly correlated with proxies of earnings management techniques, such as ETR changes, that are most likely to be used at the last-minute.

It is important to note that we are not arguing that the only explanation for an association between tax expense manipulation and late announcements of good news is that manipulating tax expense takes significant time to execute. Rather, we argue that there are multiple reasons for why

a firm's desire to manage earnings may result in late announcements, and manipulation of tax expense provides an ideal method to manage earnings at the last-minute. For example, if managers desire to manipulate earnings by a specific amount, this may require waiting for the arrival and collection of key information, such as the closing of certain accounts for updated balances or peer earnings forecasts. This required waiting may result in tax expense being the only account still open and available for manipulation when managers manage earnings. In addition, managers may have a general desire to manipulate earnings via various accrual accounts including taxes. The actions, planning, and waiting involved in accruals management may demand time and effort, including time related to passing the scrutiny of auditors. This general earnings manipulation resulting in delayed earnings announcements could manifest in multiple accounts including tax expense. In a similar vein, Trueman (1990) argues that late earnings announcements may indicate last-minute earnings manipulation because successfully managing earnings through accruals may take extra time, thereby causing an announcement delay or because managers may deliberately delay the release of earnings news until industry-wide news is released in order to inform their own last-chance earnings management decisions.

To address our research question, we estimate a pooled, cross-sectional regression for each of our earnings management measures as a function of the abnormal delay in announcement timing, the sign of the earnings news, and relevant controls. As expected, we find no relation between announcement delays and real earnings management activities. Because firms cannot execute real earnings management activities after the fiscal-year end, this non-result is consistent with the notion that earnings announcement delays are associated only with last-minute firm activities that occur after the fiscal year-end. This null result is important because it provides validating evidence that late-announcing firms use earnings management methods that are available after the fiscal-

year end. This placebo test also helps us to rule out the possibility that results in other tests merely capture potential spurious correlations with factors that may be related to general earnings management incentives but not specifically to last-minute earnings manipulation.

We find that late announcers of good news exhibit significantly more income-increasing discretionary accruals relative to firms that report good news early and firms that report bad news late. We also find strong evidence that late announcers with good news exhibit significant income-increasing ETR changes relative to firms that report good news early and firms that report bad news late. Consistent with late announcers managing earnings at the last-minute and fourth quarter ETR changes providing a superior measure of last-minute earnings management relative to annual discretionary accruals, we find that the ETR results are statistically stronger than the discretionary accrual results. In additional analysis, we use an alternative specification where abnormal announcement delays are a function of earnings management and the sign of the earnings news. While this approach differs from that commonly used in the announcement timing literature, it allows us to simultaneously examine the relation between all forms of earnings management and announcement delays. Consistent with the main results, we find that income-increasing earnings management via income tax expense is associated with announcement delays when firms announce good news. Collectively, our results suggest that abnormally late earnings announcements of good news indicate last-minute earnings manipulation.

To shed light on the question of why investors discount delayed earnings announcements, we provide empirical evidence that the negative market discount on late announcements documented in prior studies (Bagnoli et al. 2002; Kross and Schroeder 1984) may be partially explained by the fact that late-announcing firms have lower quality earnings as they are more likely

to have manipulated earnings, as theorized by Trueman (1990).[1] Gleason and Mills (2008) provide evidence the market reward for beating analysts' consensus forecasts is lower when firms need a tax decrease to beat forecasts. Following an approach similar to Gleason and Mills (2008), we examine the capital market consequences of late announcing firms that beat analyst expectations by relying on abnormal fourth quarter tax expense reductions. We find that the negative relation between earnings announcement returns and late announcements is isolated to late announcing firms that use tax expense manipulation to beat analysts' expectations. This result suggests that the negative relation prior studies document between returns and announcement timing is attributable to late announcing firms reporting lower quality earnings.

To partially address causality and to more fully examine the relation between announcement timing and earnings management, we examine a shock to firms' cost of manipulating earnings. Specifically, we examine the effect of the Sarbanes-Oxley Act (SOX) on earnings management, because of the compelling evidence that the increased regulation and audit quality in the post-SOX period made it more costly to manipulate earnings, generally through discretionary accruals and specifically through tax expense.[2] We hypothesize that the increased costs (more demanding compliance rules, increased auditor scrutiny, and potentially fewer easily manipulable accounts) that led to decreased earnings management will also result in a given level

[1] We address the existing puzzles in the announcement timing literature by empirically testing the earnings management hypothesis in Trueman (1990). As such, we are primarily interested in documenting that late announcers of good news engage in earnings management rather than in documenting the exact mechanism for this relation. While one of Trueman's (1990) two theories argues that the time required to execute earnings management may cause announcement delays, we are careful to not make causal claims based on our results. While we make several research design choices to provide persuasive evidence that good news announced late signals last-minute earnings management, such as using a firm-specific measure of abnormal announcement delays to help control for firm characteristics that could relate to both announcement timing and earnings management, the research design may not demonstrate causal inferences.

[2] Cohen et al. (2008) and Gilliam et al. (2015) both find evidence that earnings management via accruals became costlier after SOX. Further, Cook et al. (2008) provide evidence that SOX may have had an effect on the audit quality with respect to firms' opportunistic management of tax expense. Related to our study, Cazier et al. (2015) argue that SOX significantly increased the scrutiny of internal controls over the financial reporting of income taxes, yet they find that firms continue to manage earnings via income taxes after SOX.

of earnings management requiring more time after SOX. We find that the relation between abnormal announcement timing and earnings management (both via discretionary accruals and tax expense manipulation) is stronger after SOX. Thus, while increased audit quality after SOX seems to have decreased the overall use of accrual manipulation, we find evidence that late-announcing firms with good news engage in greater income-increasing accruals and tax expense manipulation. With caution, we interpret this stronger correlation after SOX as evidence that our main results are at least partially driven by earnings management taking time. In a similar vein, we also examine whether our findings are a result of internal control weaknesses causing both a delay in earnings announcements and increased last-chance earnings management. Inconsistent with this concern, we find that our results hold even when excluding firm-years with internal control weaknesses.

Another hypothesis for our main results may be that bad news or unexpected shocks require more time to audit and hence delay earnings announcements. However, as Trueman (1990) observes, this explanation by itself does not explain why investors discount late announcements after holding the unexpected earnings fixed. In our market reaction tests, we find that the negative market reaction to late announcements obtains when the late announcers beat earnings forecasts using tax expense management. Further, our main results hold after controlling for economic events such as M&A transactions, special items, and employee turnover (untabulated).

We make several contributions to the literature. Most notably, ours is one of the first studies to identify predictable variation in *news quality* as opposed to the *news content* with respect to the timing of earnings releases. Earlier studies investigating the timing of corporate earnings announcements focus on the "good news early and bad news late" hypothesis or the "limited attention and market timing of disclosure" perspective. However, these studies focus their research exclusively on the disclosed information content and its associated market pricing. We argue that

focusing solely on the sign and magnitude of earnings news reported with a delay leaves out an important piece of the story: delayed earnings announcements with good news indicate poorer earnings quality. Further, we base our predictions on a concrete and novel eleventh-hour earnings management hypothesis developed in Trueman (1990), which partially reconciles the unexplained market pricing puzzles of earnings announcement timing. We are one of the first to provide empirical evidence in support of the theory in Trueman (1990), which hypothesizes that earnings manipulation is associated with earnings that beat expectations but are announced abnormally late.

In addition, to the best of our knowledge, we are one of the first to directly exploit the eleventh-hour timing feature of income-shifting via tax expense manipulation. The eleventh-hour availability argument made in Dhaliwal et al. (2004) that the tax expense is the last account audited and closed prior to the earnings announcement is an interesting institutional feature uniquely associated with ETR adjustment-based earnings management. Many studies use the manipulation of estimated ETR to identify earnings management generally. However, we are one of the first to provide evidence supporting the notion that firms' ETR estimates are adjusted late in the chronology of the accounting process, right before announcing earnings, confirming that this form of earnings management is aptly viewed as last-chance earnings management.

Furthermore, we are one of the first to provide evidence suggesting that specific types of earnings manipulation occur immediately before earnings announcements. Recent studies examine how timing constraints around the fiscal year-end explain the methods used to manipulate income. For example, examining the sequential nature of real earnings management and accrual management, Zang (2012) finds that managers' accrual management activities are determined by their real earnings management activities, suggesting that accruals are used to fine-tune earnings after the fiscal year-end when real earnings management is no longer an option. Relatedly, Gilliam

(2014) finds that managers use order backlog to shift revenue between fiscal years to reach year-end revenue targets. We complement this literature examining earnings management behavior around fiscal year-ends by documenting that another deadline, the date of firms' earnings announcement, affects a specific form of earnings management: tax expense manipulation.

2. Background and predictions

On average, firms that delay their earnings announcement tend to release unfavorable news, and investors consequently react negatively when firms delay earnings announcements (Bagnoli et al. 2002; Begley and Fischer 1998; Chambers and Penman 1984; Kross and Schroeder 1984). Despite this general pattern, the "good news early and bad news late" framework leaves a considerable portion of firms' timing of earnings disclosure unexplained: 20% of early announcers report negative earnings surprises; whereas, nearly 30% of late announcers deliver positive earnings surprises (Cohen et al. 2007). Prior studies, such as Skinner (1994), examine the early reporting of bad earnings news and hypothesize that firms preemptively disclose bad news act to mitigate shareholder litigation risk. In contrast, prior empirical studies have largely left the late reporting of favorable earnings news unexamined and unexplained.

While several studies document the "good news early and bad news late" phenomenon, some of the results of prior earnings announcements timing studies remain puzzling. First, the negative price reaction associated with late announcements is identified even after controlling for the sign and magnitude of realized earnings (Bagnoli et al. 2002; Kross and Schroeder 1984). The magnitude of the negative price reaction increases with the length of the delay (Bagnoli et al. 2002). These results suggest that investors perceive an unexpected delay in the earnings announcement schedule to be associated with a negative characteristic (or event) unrelated to the surprise in

reported earnings.[3] Given these results, it is surprising that managers with good news would delay announcing earnings. Second, a significant negative price reaction occurs both when firms miss their expected announcement dates and when they release their earnings at the actual announcement date (Bagnoli et al. 2002; Chambers and Penman 1984; Cohen et al. 2007; Johnson and So 2018; Kross and Schroeder 1984). As these studies document a persistent negative price drift until the actual announcement date for delayed reports, it is questionable whether investors fully unravel the negative news content embedded in unexpected delays in a timely manner.[4]

In order to reconcile such empirical findings with theories explaining the timing of earnings announcements and its associated market reactions, Trueman (1990) proposes a model where the last-minute action of earnings management takes extra time resulting in an unexpected earnings announcement delay. Trueman (1990) argues that there are two ways that last-minute earnings management may lead to delayed earnings announcements. First, aggressive earnings management through accruals may take extra time, thereby causing an announcement delay. Second, managers may deliberately delay the release of earnings news until industry-wide news is released (e.g., Bratten et al. 2016; Gong et al. 2019; Kedia et al. 2015; Tse and Tucker 2010).[5] This provides the manager with more information to strategically manage earnings relative to peer firms' earnings.

[3] Holding constant the news content (earnings surprise), the market reward has been documented to be more positive the earlier the announcement is made (Kross and Schroder 1984).

[4] Bagnoli et al. (2002) report that 91% of the time, analysts do not alter their (public) EPS forecasts in response to a missed expected report date. However, in contrast to analysts, investors generally do respond; average abnormal returns cumulated over the missed expected report date and the next trading day are negative (and significantly different from zero). Furthermore, when the late news is finally released, the stock price further reacts, suggesting that the news was not fully anticipated.

Using firm-initiated advances and delays disclosed through earnings calendar data, Johnson and So (2018) document, on average, that advancers outperform the market by 1.3% and delayers underperform by 1.3% in the month after schedule revisions. Specifically, advancers systematically outperform delayers by over 260 basis points in the month following earnings calendar revisions in their study. This also implies a substantial delay in price response to the information predictable through schedule shifts.

[5] A significant literature investigates such industry-wide dynamics affecting the timing of earnings announcements. For instance, Bratten et al. (2016) provide evidence that firms' earnings management decisions are affected by the reported performance of firms who announce earnings before them in calendar time. However, they do not examine whether there is a relation between unexpected announcement delays and earnings manipulation.

Consistent with this conjecture, Gong et al. (2019) find that firms with relative performance evaluation (RPE) compensation schemes announce earnings later, relative to peer firms, and later announcing firms with RPE schemes are more likely to barely meet or beat the performance benchmark set by peers.[6] In sum, the two explanations underlying Trueman (1990)'s model predict that the lower quality earnings associated with unexpected delays in announcements and indications of last-minute earnings management potentially explain the negative market reaction to unexpectedly late announcements (even after controlling for the amount of earnings). Motivated by this theory, we test whether earnings announcement delays are associated with eleventh-hour earnings manipulation.

While Trueman (1990) suggests that late announcers may be managing earnings until the last-minute, he does not theorize as to which method of earnings management firms may be using. We seek to identify forms of earnings management that are likely to best capture last-chance earnings management. Dhaliwal et al. (2004) argue that tax expense captures last-minute earnings management because managers estimate and negotiate tax expense with their auditors immediately prior to earnings announcements. They document evidence supporting the notion that managers lower their estimated effective tax rates (ETRs) when they are about to miss the consensus analyst forecast – consistent with firms decreasing their tax expense if non-tax sources of earnings management are insufficient to achieve targets. Consequently, when managers fall short of a key earnings target, tax expense management provides an eleventh-hour solution as the earnings

[6] Our study differs from Gong et al. (2019) in two important ways. First, we focus on earnings announcement timing relative to the firm's own expected announcement date in a given year. Thus, we operationalize lateness as the unexpected delay within the firm's earnings calendar. The prior studies documenting the negative relation between announcement timing and returns, controlling for earnings news, largely focus on the unexpected nature of these delays. In contrast, Gong et al.'s (2019) measure lateness relative to peer announcements, which may not capture unexpected delays, as a firm may consistently report earnings later than its peers. Second, we focus on firm-specific earnings targets by using analysts' expectations. In contrast, Gong et al. (2019) examine whether firms with a RPE meet benchmarks based on peer firms. This difference is important because studies examining the market reaction to earnings announcements highlight the importance of the reported earnings surprise relative to analysts' expectations.

announcement nears. Furthermore, such last-minute negotiation of tax expense is perceived as relatively more flexible (schedule-wise) than pre-arranged annual audit field work, which are generally fixed well in advance due to the strong seasonality inherent in the audit industry. Anecdotal evidence suggests that Big N auditors typically rely on their tax department to approve the tax expense amount at the end of the audit.

Furthermore, recent literature documents a substitutive relation between different income management techniques with different timing constraints being non-trivial factors explaining the methods used to manipulate income. The argument made in these studies is that most firms likely do not know how close they are to their annual target until the end of the financial statement preparation process. Therefore, it is difficult to gauge early in the year whether they need to manage real earnings activities, such as research and development and advertising, to meet an earnings target (Zang 2012). Tax expense, however, provides a final opportunity for earnings management. In support of this view, Zang (2012) documents a substitutive relationship between real activities manipulation and accrual-based earnings management; accrual-based management of income is negatively associated with abnormal amounts of the real activities manipulation realized by the fiscal year-end. This highlights the sequential nature of the two earnings management activities and how managers fine-tune their accrual accounts contingent upon outcomes of earlier real activities management. On a more specific note, Gilliam (2014) documents evidence on managers' use of order backlog to shift revenue between fiscal years in order to reach revenue reporting targets at year-end. While these studies document a shift in the usage of earnings management techniques around fiscal year-ends, we do not know of any last-minute evidence documented in the literature specific to accruals-based income shifting.

3. Research design

Data and sample

We obtain our initial sample from the I/B/E/S database of analyst forecasts from 1989 to 2016. Beginning the sample in 1989 allows us to compute discretionary accruals using the statement of cash flows. We collect both forecasted and reported earnings from I/B/E/S in order to ensure consistency of computing earnings surprises. We collect earnings announcement dates and company fundamentals from Compustat for the same period to yield a maximum of 28 years of observations for each sample firm. We use firm-year rather than firm-quarter observations because we examine changes in annual effective tax rate estimates from Q3 to Q4. We obtain all other financial data and industry classification codes from Compustat, while we use data from CRSP for returns of individual securities and market indices.

To mitigate the effects of outliers, we exclude stocks with a share price less than $5 at the end of the fiscal year. As firms in regulated industries and financial institutions likely have different incentives in managing earnings through tax expenses and general accruals, we delete firms with SIC codes between 4400 and 5500 and between 6000 and 6500. As discretionary accruals are cross-sectionally estimated using the modified Jones (1991) model, the final sample excludes firm-years with less than ten observations in the same industry-year group to ensure sufficient data in estimating the normal process of accruals.[7] We exclude firms that are late with respect to their SEC filing requirements of 10-K reports to ensure that the delays we examine are unrelated to events leading to filings that do not occur within legal filing deadlines. We also exclude firms with annual effective tax rates below zero and firms with negative pre-tax income because the ETRs

[7] Given that announcement timing has been shown to be correlated with the news content (sign and magnitude) of earnings surprises, consistent with the "good news early and bad news late" hypothesis, we believe it is important to examine an abnormal accruals model adjusted with performance controls (Kothari et al. 2005) to mitigate concerns of identifying a spurious correlation.

for these firms are hard to interpret (Dhaliwal et al. 2004; Dyreng et al. 2008). We exclude firm-year observations where the firm makes acquisitions with transaction values greater than one percent of the firm's market capitalization, because complex transactions may affect both earnings quality and the timing of earnings announcements. Similar to prior studies that investigate changes in effective tax rates (e.g. Dhaliwal et al. 2004; Gleason and Mills 2008), we exclude observations in the top one-percent of third quarter ETR and the change in the ETR from the third quarter to the fourth quarter. Our sample selection process yields a sample of 4,460 unique firms and 24,480 firm-year observations. Table 1 describes the sample selection process in more detail.

Measures of earnings announcement timeliness

Many prior studies investigating earnings announcement timing use the prior year's same quarter announcement date as a measure of the firm's expected earnings announcement date. However, relying on this seasonal random-walk approach introduces a mechanical error in the timing measurement. Specifically, earnings announced at a normal time are likely to be identified as an abnormally early (or late) report if the previous year's earnings announcement was exceptionally late (or early). For instance, if 2011 Q4 earnings were announced unexpectedly early, a timely report in 2012 Q4 would incorrectly be classified as a late announcement. To mitigate such concerns, we adopt the Cohen et al. (2007) method of computing a firm's expected announcement date. In short, this approach adopts each firm's median announcement date (indexed in trading days) within pre-defined four-year sub-periods as a proxy for its own expected earnings announcement date. In their study, Cohen et al. (2007) hand-collect data from the "Earnings

Calendar" published by the Wall Street Journal to validate the accuracy of their methodology and find that the data from the Earnings Calendar reinforces the reliability of this approach.[8]

We measure the earnings announcement lag by measuring the distance between the actual and expected announcement date. This measure of announcement timing, labeled as *DAYSLATE*, counts the number of trading days between the actual and expected announcement date. For example, *DAYSLATE* = -3 would imply that the earnings were released three trading days earlier than its expected announcement date. We create a binary variable, *LATE*, which equals one if the actual announcement occurs more than three days after the expected announcement date and zero otherwise.[9] In our sample, 28% of the earnings announcements occur on their expected date, and 60% announce within one day of the expected date. Furthermore, 85% report earnings within three days of the expected date. These statistics are comparable with those in Cohen et al. (2007) and other closely related studies adopting alternative data and methodology in measuring the timing and expectations of earnings announcement dates (Bagnoli et al. 2002; Johnson and So 2018).

It is important to note that because a firm's expected announcement date is based on its own prior announcements, this measure captures unexpected or abnormal delays at the firm level. Measuring lateness this way helps to control for other firm characteristics that may determine announcement timing. This is important because it helps to rule out the possibility that the correlations we identify between announcement timing and earnings management are driven by

[8] Cohen et al. (2007) hand collect expected earnings announcement dates from the "Earnings Calendar" published in the Wall Street Journal during July of 2005. They identify a total of 2,047 expected earnings announcement dates in comparison with the 2,735 actual announcements obtained from Compustat during the same period, indicating that the "WSJ Earnings Calendar" provided an expected announcement date for only 75% of firms in Compustat that announced earnings during this period. Of these 2,047 firms covered in the WSJ Earnings Calendar, 59% announced earnings within one day of the date published in the Earnings Calendar. In comparison, Cohen et al. (2007) find that 62% of these same announcements occur within one day of the expected date based on their methodology. They claim that the similarity of these statistics reinforces the reliability of their expected earnings announcement date model. We note that, unlike relying on the WSJ Earnings Calendar for expected announcement dates, this approach does not result in firms being systematically excluded from the analysis due to lack of coverage by the Wall Street Journal.

[9] For robustness, we adopt a longer five-day rule in classifying *LATE* announcers and our inferences are unchanged.

spurious correlations between firm characteristics that are correlated with both announcement timing and earnings management. For example, more complex firms may be both more likely to announce earnings later than less complex firms and also more likely to manage earnings. However, because the lateness measure we employ is firm-specific, it captures an abnormal announcement delay based on when that specific firm is expected to announce, which already controls for the effect that firm-specific characteristics, such as firm complexity, could have on announcement timing. Thus, any relation we identify between abnormal lateness and earnings management is not spuriously driven by firm-specific characteristics like complexity.

Identification: Regression estimation

To test whether delays in earnings announcements by firms with good news are positively related to earnings management, we estimate regressions for each of our various earnings management proxies as functions of abnormal announcement delays and earnings news. We use this specification for several reasons. Most importantly, this specification is most consistent with that used in the prior studies most closely related to our study. Specifically, prior announcement timing studies typically place announcement timing measures on the right-hand-side of the regression.[10] This approach is also most comparable with the identification strategy of Dhaliwal, Gleason, and Mills (2004) and the large volume of follow-up studies analyzing earnings management through tax expense which place the change in ETR on the left-hand-side of the regression.

In addition to being most consistent with prior literature, there are econometric benefits of this approach that are specific to our setting. For example, prior literature has very little theory or empirical findings on the economic determinants of unexpected announcement delays making it

[10] For examples of studies that use specifications with measures of announcement timing as an independent variable see Chambers and Penman (1984), Kross and Schroeder (1984), Bagnoli et al. (2002), Cohen et al. (2007), and Johnson and So (2018).

difficult to develop a well-informed specification to predict abnormal announcement timing. On the other hand, there is a vast amount of theoretical and empirical research on the determinants of firms' earnings manipulation using real earnings management, discretionary accruals, and tax expense. Thus, we are more confident in using a specification that models earnings management with proper control variables compared to one for announcement timing. Further, having the announcement timing variable on the right-hand-side (RHS), as opposed to the various proxies for earnings management, is desirable due to asymmetric concerns over errors-in-variables associated with these empirical constructs.[11] In other words, because we expect less measurement error in the proxy for announcement timing relative to the earnings management proxies, this specification results in less biased coefficients.[12] Accordingly, we estimate the following regression:

$$EM_{it} = b_0 + b_1 LATE_{it} + b_2 GOOD\_NEWS_{it} + b_3 LATE_{it} \times GOOD\_NEWS_{it} + Controls_{kit+} + e_{it} \quad (1)$$

where *EM* is one the following five proxies of earnings management (all earnings management variables are constructed so that higher values represent income-increasing earnings management).[13]

R_CFO = Abnormal cash flow from operations estimated following Roychowdhury (2006);

R_DISX = Abnormal discretionary expenses estimated following Roychowdhury (2006);

[11] Many econometric textbooks discuss that assigning the variable with measurement error as the dependent variable rather than the independent variable may be beneficial when using OLS regression because it results in unbiased estimates. For example, see Cameron and Trivedi (2005) and Gujarati (2009).

[12] Studies such as Gerakos (2012) highlight that models estimating discretionary accruals do so with considerable measurement error that is likely correlated with firm characteristics

[13] The way that the change in estimated annual ETR, abnormal cash flow from operations, and abnormal discretionary expenses are typically constructed in the literature results in lower values representing income-increasing earnings management. To facilitate consistent interpretation, we construct these earnings management measures (multiply them by negative one) so that higher values indicate income-increasing earnings management for all measures.

R_PROD = Abnormal production costs estimated following Roychowdhury (2006);

DA = performance-matched discretionary accruals following Kothari et al. (2005);

$\Delta ETRQ4Q3_{it}$ = *ETRQ3 – ETRQ4*, which captures the change between firm *i*'s annual ETR (*ETRQ3*) estimate made in the third quarter and its fourth quarter estimate of ETR (*ETRQ4*) each calculated as total year-to-date tax expense (TXT) divided by accumulated pretax income (PI);

GOOD_NEWS = an indicator variable that equals one if actual reported earnings is greater than the I/B/E/S consensus forecast estimate one month prior to the earnings report date.

LATE = one of two measures (*LATE*, *DAYSLATE)* that capture abnormally late earnings announcements using the methodology in Cohen et al. (2007). *DAYSLATE* is the number of days the number of trading days between the actual and expected announcement date. *LATE* is an indicator variable equal to one for announcements that occur more than three days after the expected announcement date.

For all specifications, the coefficient of interest in equation (1) is the association between *EM* and the interaction of good news with an unexpected delay (β_3). This coefficient indicates the association between the use of earnings management by firms reporting good news and abnormal announcement delays. To make the directional interpretation of all earnings management variables consistent throughout our study, we construct earnings management variables so that higher values indicate greater income-increasing earnings management. Thus, in all regressions a positive coefficient indicates a positive correlation between abnormally late announcing firms with good news and income-increasing earnings management. For all specifications, we include year and industry (Fama-French 12 industries) fixed effects to control for common variation in time trends

and industry-wide cross-sections and cluster standard errors by firm and year. We winsorize all continuous variables at 1% and present definitions of variables in the Appendix.

In our analysis of real earnings management and discretionary accruals, we include controls that prior studies suggest relate to earnings management (return on assets, growth rate of assets, loss indicator, leverage, book-to-market, firm size (natural log of market capitalization), and institutional ownership). We examine three common proxies for real earnings management. We expect that β_3 will be insignificant for these specifications because real earnings management is limited by the fiscal year end and we hypothesize that announcement delays are driven by post-fiscal year-end activities. We hypothesize that one form of earnings management that firms with delayed earnings announcement could use is discretionary accruals because estimates and assumptions that are used to generate accruals are completed after the fiscal year-end. Thus, we predict that β_3 will be positive when discretionary accruals is the dependent variable.

As discussed previously, we argue that the earnings management measure that best captures last-minute earnings management is tax expense manipulation. Thus, we predict that the coefficient on the interaction term (β_3) will be significantly positive when $\Delta ETRQ4Q3$ is the dependent variable. A positive coefficient would indicate that late firms reporting good news have managed their tax expenses to increase earnings more than firms reporting good news on time or early and firms reporting bad news late. We further include several conditioning variables to capture economically predictable changes in tax expense from Q3 to Q4. Following recent studies investigating the determinants of effective tax rates changes (e.g., Powers et al. 2016; Dyreng et al. 2017), we include controls beyond those included in Dhaliwal et al. (2004) in an attempt to control for other economic changes from Q3 to Q4 that could result in ETR changes unrelated to

earnings management.[14] These include changes in liquidity (*ΔLIQ*), profitability (*ΔROA*), firm size (*ΔSIZE*), intangible assets (*ΔINTAN*), research and development expense (*ΔR&D*), leverage (*ΔLEV*), capital intensity (*ΔCAPX*), the book-to-market ratio (*ΔBM*), growth in sales (*ΔSALES*), the presence of tax loss carryovers (*NOL*) and the existence of foreign operations (*FOREIGN*). Because the dependent variable captures the change in the estimate of the annual ETR from Q3 to Q4, we calculate all change variables as the change in value from year-to-date Q3 to Q4.

4. Results

Descriptive statistics

Table 2, panel A provides summary statistics for the entire period. The full sample of firms comprises 4,460 unique firms and 24,480 firm-year observations spanning 1989–2016.[15] About 68% of our firm-year observations report earnings that beat analyst forecasted EPS benchmarks. On average, firms beat their forecast by less than a penny per share (mean *EARNINGS_SURPRISE* = 0.009). Lastly, the mean value of *ΔETRQ*4*Q*3 is -0.001 (median = 0.000), indicating that the average change in the Q3 to Q4 effective tax rate results in a decrease in earnings due to an increase in the effective tax rate of 0.1 percentage points.[16] Table 2, panels A, B, and C provide summary statistics for the entire sample period, the pre-SOX period, and post-SOX period, respectively. Table 3 presents both Pearson (bottom) and Spearman (top) correlation coefficients between our main variables of interest. Consistent with prior studies, we find a negative correlation between the sign of earnings news and announcement delays.

[14] In untabulated tests, we find that our inferences are unchanged if we include the *Induced ETR Change* variable from Dhaliwal, Gleason, and Mills (2004).

[15] This is the size of our full sample for our main discretionary accruals and tax expense manipulation tests. Further data requirements for calculating the real earnings management variables results in smaller sample sizes for tests involving those measures.

[16] As described previously, *ΔETRQ*4*Q*3 is constructed so that higher values represent income-increasing earnings management. Thus, a negative value for *ΔETRQ*4*Q*3 corresponds to an increase in ETR resulting in lower earnings.

We use the earnings announcement timing model of Cohen, Dey, Lys, and Sunder (2007) to classify earnings announcements as early, on-time, or late. About 6.1% of firm-year earnings announcements are more than three days later than predicted (*LATE*). About 85% of our sample firms announce earnings within the three-day window around the expected earnings announcement date, suggesting that most firms predictably announce earnings on time.

Main regression analysis

Abnormal earnings announcement delays and real earnings management

Table 4 presents regression results of three real earnings management proxies: abnormal cash flow from operations (*R_CFO*), abnormal discretionary expenses (*R_DISX*), and abnormal production costs (*R_PROD*). Given that real earnings management requires a firm to undertake actions before the fiscal year-end, we expect to find no relation between late earnings announcements and real earnings management if the announcement delay is linked to events occurring after the fiscal year-end. In all six of our regressions, we find no statistically significant association between late announcements of good news and any of the real earnings management proxies ($\beta_3 = 0$). Thus, good news reported with an unexpected delay show no relation to real earnings management activities which are physically bounded by fiscal year ends. This is consistent with the conjecture in Trueman (1990) that firms unexpectedly delay their earnings announcement due to last-minute earnings management because it indicates that announcement delays are related only to forms of earnings management that are available to firms at the last-minute. This is an important falsification test to perform because it helps rule out the possibility that results in other tests merely

capture potential spurious correlations with factors that may be related to earnings management generally but not specifically to last-minute earnings manipulation.

Abnormal earnings announcement delays and discretionary accruals

Table 5 presents estimates of the regression of discretionary accruals. We are interested in testing the hypothesis that late and positive earnings news are linked with more income-increasing discretionary accruals. Our primary coefficient of interest is β_3, which is the coefficient on the interaction between late announcements (*LATE* or *DAYSLATE*) and *GOOD_NEWS*. We find some evidence that late-announcing firms that announce positive earnings surprises have significantly higher discretionary accruals (coefficient on *LATE* × *GOOD_NEWS* = 0.076, *t*-stat = 1.76; coefficient on *DAYSLATE* × *GOOD_NEWS* = 0.004, *t*-stat = 1.49). Overall, the results offer supporting evidence that late announcers with good news engage in income-increasing earnings management via discretionary accruals.

Abnormal earnings announcement delays and tax expense management

We present our first evidence that firms engage in last-chance earnings management via tax expense in Figure 1. Figure 1 visually demonstrates univariate evidence of the relation between unexpected announcement timing and last-chance earnings manipulation via tax expense, segregated by the sign of the earnings news. The figure demonstrates that firms that report positive earnings news unexpectedly late exhibit the largest increases in income due to annual ETR changes from Q3 to Q4. This suggests that firms announcing good news unexpectedly late are more likely to have engaged in significant last-minute earnings management via tax expense.

We supplement the univariate evidence of last-chance earnings management via tax expense depicted in Figure 1 with multivariate analysis presented in Table 6. The controls in this specification differ from those in the real earnings management and discretionary accruals

specifications. We control for variables that prior studies find to be related to changes in effective tax rates from Q3 to Q4. As before, our coefficient of interest is on the interaction between *LATE (DAYSLATE)* × *GOOD_NEWS*. The coefficient on this interaction captures whether late-announcing firms that report good news are more likely to manage earnings via tax expense manipulation relative to early announcers with good news and late announcers with bad news.

Consistent with our expectation, we find that late-announcing firms that announce positive earnings surprises recognize significantly greater decreases in their annual ETR estimates (coefficient on *LATE* × *GOOD_NEWS* = 0.010, *t*-stat = 2.19; coefficient on *DAYSLATE* × *GOOD_NEWS* = 0.000, *t*-stat = 1.27). With respect to economic significance, the coefficient on *LATE* × *GOOD_NEWS* corresponds to an almost 2 cent increase of earnings per share, on average. It is interesting to note that the results examining Δ*ETRQ4Q3* are statistically stronger than the discretionary accruals analysis reported in Table 5, suggesting that ETR changes more cleanly capture last-minute earnings management associated with unexpected delays.

With respect to control variables, we find that *EARNINGS_SURPRISE* is significantly and positively related with Δ*ETRQ4Q3*, consistent with our prediction and prior literature. This result suggest that firms raise their income by lowering their tax expense. The coefficients on *LATE* and *DAYSLATE* are statistically indistinguishable from zero. Overall, the results in this section provide evidence that late announcers with good news exhibit greater income-increasing manipulation of ETR estimate adjustments.

Market reaction to earnings news and announcement timing

We next examine the capital market consequences associated with unexpected delays in announcements and tax expense manipulation. Using a regression of returns on earnings, Gleason and Mills (2008) find evidence that investors react to announcements of positive earnings surprises

with a discount when firms beat earnings benchmarks with abnormal decreases in fourth quarter tax expense accruals. We extend their estimation to allow for differing market responses to earnings news based on announcement timing and estimate the below regression for the two-day [0, 1] cumulative size-adjusted abnormal returns around the earnings announcement date:

$$CAR_{it} = b_0 + b_1 BEAT\_W\_TAX_{it} + b_2 EARNINGS\_SURP\_PRC_{it} + b_3 LATE_{it} + b_4 BEAT\_W\_TAX_{it} \times LATE_{it} + b_5 BM_{it} + b_6 LN\_TA_{it} + b_7 MOMENTUM_{it} + e_{it} \quad (2)$$

Following the variable constructs from Gleason and Mills (2008), we define *BEAT_W_TAX* as an indicator equal to one if a firm beats its after-tax consensus forecast using its annual ETR rate but would have missed forecasted earnings using its third-quarter ETR. In other words, this indicator sorts out the set of benchmark beaters, which would have otherwise fallen short of analyst forecasts in the absence of their fourth quarter reductions in ETR estimates.[17] *EARNINGS_SURP_PRC* is the firm's earnings surprise, scaled by the stock price at the end of the fiscal year. We include the book-to-market ratio (*BM*), log of total assets (*LN_TA*) and the cumulative size-adjusted returns for the sixty trading days preceding the earnings announcement (*MOMENTUM*). We cluster standard errors by industry and calendar quarter.

Table 7 summarizes our results. Our main coefficient of interest is b_4, which is associated with the interaction term *BEAT_W_TAX* × *LATE*. This coefficient captures the incremental discount associated with unexpected delays when tax accruals-based earnings management are

[17] In untabulated tests, we find that our inferences are unchanged if we include the firm-specific prior tax persistence variable from Schmidt (2006). Our inferences are also unchanged if we define *BEAT_W_TAX* as one if the company beats its after-tax earnings forecast but does not beat its before-tax earnings forecast, and zero otherwise.

used to manage earnings. The estimated coefficient is significantly negative (coefficient on *BEAT_W_TAX* × *LATE* = -0.009; *t*-stat = -2.15), consistent with an incremental discount on announcement delays when firms beat analyst forecasts through abnormal fourth quarter tax accruals. The statistical significance associated with *LATE* is subsumed by our additional interaction term, *BEAT_W_TAX* × *LATE*, implying that the price discount on *LATE* occurs only when the earnings are of lower quality. Consistent with Gleason and Mills (2008), we observe a significantly negative association between *CAR* and *MOMENTUM*. In sum, our market reaction tests provide evidence consistent with the theory in Trueman (1990) that earnings management provides at least a partial explanation for the earnings announcement timing pricing puzzles.

5. Additional analyses

Alternative specification

In our main analysis, we utilize a specification where proxies for earnings management are run individually as the dependent variable and the independent variables are announcement timing and the sign of the earning news. In additional analysis, we examine an alternative specification where the abnormal announcement delay is the dependent variable and is a function of earnings management and earnings news. While this approach differs from that typically used in related studies, it allows us to simultaneously examine the association between of all of the different earnings management measures, conditional on the sign of the earnings news and abnormal announcement delays.[18] As discussed previously, there is not a good economic model in prior literature to predict abnormally late earnings announcements. As such, we include the more general

[18] An aesthetic benefit of this approach is that part of the theory in Trueman (1990) argues that earnings management causes announcement delays, leading one to potentially expect the use of *LATE* as the dependent variable and earnings management proxies as the independent variables. We are attempting to establish a statistical correlation between two variables (abnormally late announcements and earnings management) and are not claiming causality. The side of the regression that each variable is on does not matter when attempting to identify correlation and there are several reasons, as discussed previously for why we use earnings management as the dependent variable in our main tests.

controls from our previous discretionary accruals tests rather than the more specific controls in the tax expense management tests.

We first estimate a linear probability model where our indicator variable *LATE* is the dependent variable and is a function of *GOOD_NEWS*, a measure of earnings management, and the interaction between the two for each of our earnings management measures individually.[19] Similar to our main analysis, our coefficient of interest is the interaction between *GOOD_NEWS* and the earnings management measure because it captures the use of earnings management by firms that are providing good news. If, as we predict, firms that announce good news and manage earnings are more likely to announce earnings abnormally late, then the coefficient on the interaction term will be positive. After estimating this model for each of our earnings management measures, we also estimate a model where we simultaneously include all of our earnings management measures and their interactions with *GOOD_NEWS*.

Table 8 reports results for our tests using the alternative specification where announcement delay is the dependent variable. The first three columns include each of the real earnings management variables we examine individually. Columns 4 and 5 respectively present the discretionary accrual and tax expense manipulation results individually. Column 6 presents a specification that includes all five forms of earnings management as independent variables. Consistent with prior literature, we find strong evidence across all six specifications that firms providing good news are less likely to announce earnings abnormally late.

With regards to the relation between late announcing firms with good news and different forms of earnings management, the results in Table 8 are generally consistent with our prior results.

[19] We employ a linear probability model because the fixed effects we include in our specification could result in biased and inconsistent coefficients if we used a maximum likelihood estimation approach such as a logit model. However, our results are robust to using a logit model rather than the linear probability model.

We find no evidence that firms with good news are more likely to announce earnings late because they are using real earnings management to increase earnings. The coefficient on each interaction term between the real earnings management measure and *GOOD_NEWS* is not significantly positive in any of the three specifications.[20] The results in column 5 support our prior results that firms that report good news and manage earnings via tax expense manipulation are more likely to report earnings abnormally late. Specifically, the coefficient on *GOOD_NEWS* interacted Δ*ETRQ4Q3* is significantly positive at the 5% level. In column 6, we continue to find a systematic positive relation for the tax expense manipulation when we include all forms of earnings management variables and their interactions with *GOOD_NEWS* as covariates. Specifically, the coefficients on *GOOD_NEWS* interacted with Δ*ETRQ4Q3* is positive at 10% level of significance. That only the interaction between Δ*ETRQ4Q3* and *GOOD_NEWS* is statistically significant, while the interaction between *DA* and *GOOD_NEWS* is insignificant, provides some evidence that tax expense may more cleanly capture the portion of discretionary accruals stemming from last-chance earnings management. Overall, the results of this analysis suggest that our results are robust to different specification types and provide further evidence that firms with good news that are manipulating earnings are more likely to announce earnings abnormally late.

Auditing, earnings management, and announcement delays

SOX and the relation between earnings management and announcement delays

We further perform three additional sets of analyses to provide insight into the role of auditing in the relation between earnings management and abnormally late earnings announcements. The importance auditing plays in earnings announcements and their timing has long been recognized in the literature. For example, Givoly and Palmon (1982, 491) find that "the single most important

[20] We do note that the coefficient on the interaction term in the first column is significantly negative. However, this negative sign is inconsistent with firms using real earnings management to increase earnings to provide good news.

determinant of the timeliness of the earnings announcement is the length of the audit." Until recently, it was believed that the financial statement information in the earnings announcement relied on information that was fully audited (SEC 2002, 2003).[21] Contrary to this belief, recent studies find that, in recent years, some firms announce earnings before completion of the audit (Krishnan and Yang 2009; Bronson et al. 2011; Schroeder 2016).

However, this finding does not mean that auditors play no role in earnings announcements and their timing. For example, available archival data makes it impossible to identify to what extent audits are actually incomplete when earnings are announced prior to the audit report date (Bhaskar et al. 2018).[22] Further, there is evidence that the audit report date, which is how these studies measure audit completion, no longer conveys as much information about audit completeness following regulation and professional auditing/accounting standards changes (Glover et al. 2018).[23] This suggests that we cannot conclude from these prior studies that significant audit work has not been completed prior to the earnings announcement, even if the audit report date occurs after the earnings announcement. Also, there is anecdotal evidence that the audit process plays a role in earnings announcements. For example, the audit committee typically meets to discuss and approve the draft earnings release before the earnings announcement and may discuss the work of the external auditor and ask if the external auditors are "comfortable" with the results the company is about to release (PwC 2014). Further, it seems unlikely that firms would announce earnings without some form of "soft" assurance from the auditor that there will not be material changes

[21] SEC rules that reduced the 10-K and 10-Q filing deadlines stated "We understand as a general matter that audit work is essentially completed and other steps have been taken to ensure the accuracy of the earnings announcement" (SEC 2002, 2003).

[22] It was worth noting that in their experiment examining auditing completion, Bhaskar et al. (2018) examine a component of tax expense (deferred-tax valuation allowance) because it is a subjective, complex estimate that is evaluated near the end of the audit.

[23] These regulatory and standard setting changes have led the audit report date to essentially correspond to the client's filing date. Thus, for firms that typically file near the regulatory deadline, the audit report date is not informative about audit completion.

because the reporting firm and its auditor are likely to incur significant costs if material adjustments are required between the announcement and the official filing.[24]

In our first set of analysis, we address the potentially causal relation between earnings management and announcement timing theorized in Trueman (1990), by examining the shock to firms' cost of manipulating earnings that occurred due to SOX. Prior studies indicate that SOX had a significant effect on corporate earnings management practices (Graham et al. 2005; Cohen et al. 2008; Gilliam et al. 2015).[25] These studies document a change in firms' substitution between real activities-based and accruals-based earnings management around SOX. Specifically, they provide evidence that the use of accruals to manipulate earnings has become costlier, likely due to more demanding compliance rules, increased auditor scrutiny, and potentially fewer manipulable accounts. Related to tax expense manipulation, Cook et al. (2008) provide evidence that SOX induced improvement in audit quality of tax expense accruals, implying less opportunistic third to fourth quarter changes of annual ETR estimates. Further, Cazier et al. (2015) argue that SOX significantly increased the scrutiny of internal controls over the financial reporting of income taxes, yet they find that firms continue to manage earnings via income taxes after SOX.

We hypothesize that the increased scrutiny after SOX that made accrual-based and tax expense manipulation costlier could result in such manipulation taking more time to execute resulting in a stronger relation between earnings management and abnormal announcement delays after SOX.[26] To test whether the relation between earnings management and announcement timing

[24] Haislip et al. (2017) find that occasionally earnings announced in unaudited earnings releases are subsequently revised, possibly due to year-end audit procedures. However, this is rare (only 225 observations identified between 2001 and 2014). Further, they find that the auditor and CFO incur significant costs if this occurs.

[25] Also related to our study is the fact that SOX changed filing date requirements, which potentially introduces a predictable regime shift in our measurement of expected earnings announcement dates. Our use of year fixed effects partially controls for this shift in filing date requirements.

[26] Such an effect may also occur if the additional scrutiny following SOX resulted in firms engaging in more complex arrangements or transactions to hide earnings management because complexity is positively associated with longer audits (Hoitash and Hoitash 2018; Ettredge et al. 2006).

changes around SOX, we partition the sample into pre- and post-SOX years and repeat our analyses of discretionary accruals and tax expense manipulation. We predict that if, as theorized by Trueman (1990), the time required to manage earnings leads to abnormal announcement delays, then the increased cost of earnings management after SOX will result in the relation between earnings management and announcement delays being stronger in the post-SOX period. It is important to note that we are not hypothesizing that there is more earnings management after SOX. Rather, we hypothesize that the association between earnings management and announcement delays could be stronger after SOX due to increased auditor scrutiny.

Table 9, panel A presents the tests of discretionary accruals partitioned by pre-SOX and post-SOX periods. In the pre-SOX period, we find no association between the timing of earnings announcements and discretionary accruals. However, in the post-SOX period, we find that the coefficients for the interaction terms for both proxies of lateness are significant and positive (coefficient on *LATE* × *GOOD_NEWS* = 0.170, *t*-stat = 1.86; coefficient on *DAYSLATE* × *GOOD_NEWS* = 0.013, *t*-stat = 2.18). These results suggest that the association between abnormally late announcements reporting positive news and income-increasing accrual manipulation is greater after SOX.

Our ETR results are very similar to our discretionary accruals results. Table 9, panel B presents our regression estimates of changes in ETR partitioned by pre- and post-SOX periods. In the pre-SOX specifications, the coefficients on *LATE* (*DAYSLATE*) × *GOOD_NEWS* remain positive, but are no longer statistically significant. In the post-SOX period, the coefficients for the interaction terms for both proxies of lateness are positive (coefficient on *LATE* × *GOOD_NEWS* = 0.017, *t*-stat = 2.42; coefficient on *DAYSLATE* × *GOOD_NEWS* = 0.001, *t*-stat = 1.30) and statistically significant when the interaction term is specified as *LATE* × *GOOD_NEWS*. These

results suggest that the association between abnormally late announcements reporting positive news and income-increasing manipulation of tax expense is greater after SOX.

Our results suggest that late announcers with good news are more likely to rely on earnings management via ETR and accruals after SOX relative to before SOX. We argue that one explanation for this result is that earnings management via accruals and ETR is costlier in the post-SOX period. Because such manipulation is more challenging and potentially more time-consuming after SOX, firms that engage in such forms of manipulation are more likely to delay announcing their earnings. This logic is consistent with prior studies documenting that the use of earnings management via accruals has become costlier (Cohen et al. 2008). Cook et al. (2008) document some evidence that SOX induces improvement in audit quality of tax expense accruals, which in the context of their study implies less opportunistic third to fourth quarter changes of annual ETR estimates. While we are careful to not claim that our results demonstrate causality, the results provide evidence that the relation between earnings management and announcement delays is stronger when earnings manipulation becomes costlier and potentially more time-consuming.

Internal control weaknesses, last-chance earnings management, and announcement delays

The second set of additional analysis we perform relates to internal control weaknesses. We perform this analysis to allay concerns of a spurious correlation between abnormally late earnings announcements and last-chance earnings management that is driven by internal control weaknesses rather than earnings management motives. While there is evidence that firms with internal control weaknesses that delay audit completions are associated with an increase in last-chance earnings management (Gleason et al. 2017), there is no evidence that internal control weaknesses result in

late earnings announcements.[27] Even though there is uncertainty as to whether internal control weaknesses lead to delayed earnings announcements, we address this potential alternative explanation by replicating our tax expense manipulation tests after excluding firm-years with an internal control weakness. If we obtain our main result in the subsample of firm-years that do not have an internal control weakness, this rules out the possibility that our findings are driven by internal control weaknesses rather than earnings management incentives.

Table 10 presents the replication of our tax expense manipulation tests in subsamples of firm-years with and without an internal control weakness. We use Audit Analytics to identify firm-years with an internal control weakness. Reliance on this data results in a lower sample size in these tests relative to our main tests. We find that our main result holds even in the subsample of firm-years with no internal control weakness. The coefficient on *GOOD_NEWS* × *LATE* is significantly positive at the 5% level in that subsample. When analyzing the sample of firms with internal control weakness reports, we find no meaningful statistical relation between delays in good news announcements and last-chance management of tax expenses. This suggests that our main results of a correlation between abnormal announcement delays of good news and last-chance earnings management are unlikely to be driven by internal control weaknesses. The analysis in this section helps rule out a plausible competing hypothesis explaining our main conclusion.

Annual announcements versus unaudited interim quarterly announcements

In our third set of additional analysis, we attempt to more directly examine the role of auditing and announcement timing by comparing the frequency of earnings announcement delays of interim quarters to fiscal year end periods. If auditing plays a role in causing abnormal delays in earnings

[27] In our sample period, we find a marginally positive correlation between firm-years with an internal control weakness and both *LATE* (.09) and *DAYSLATE* (.05). However, the fact that we continue to obtain our main results even when excluding firm-years with an internal control weakness helps to rule out that this relation is driving our main result.

announcements, we expect there to be more delays for fiscal year end periods that are audited compared to quarterly periods that are not audited. To identify whether quarterly earnings announcements are delayed, we follow the same methodology in our main analysis of annual earnings announcements to create an expected announcement date for each firm-quarter. To provide evidence that auditing plays a role in announcement delays, we compare the timeliness of earnings announcements of audited, annual periods to that of unaudited, interim quarterly periods.

In untabulated results, we find that firms are more likely to report annual earnings announcements abnormally late. This is the case for earnings announcements with both bad and good news. Most relevant to our study, we find that firms are about 40% more likely to report good news abnormally late during periods that are audited relative to periods that are unaudited. This result suggests that auditing plays a role in the timing of earnings announcements. We caveat this result by acknowledging that there are other differences between quarterly and annual periods such as year-end accounting procedures. However, we point out that the measure of announcement timing is firm-period specific (i.e. it is specific to when a specific firm typically announces during that specific fiscal period). Thus, it should account for typical accounting procedures that occur during that quarter or annual period for that specific firm.

6. Conclusion

Prior studies investigate how firms tend to delay the announcement of earnings when it is likely to be perceived as bad news by investors. However, the "good news early and bad news late" framework does not adequately explain the cases of good news reported with an unexpected delay. Furthermore, it does not explain why investors discount earnings announced with a delay, even after controlling for content of the earnings. In summary, the theory of earnings announcement delays is not yet fully-understood. To shed light on this earnings disclosure timing puzzle, we

empirically examine a theory developed by Trueman (1990) who argues that unexpected delays in earnings announcements may indicate eleventh-hour earnings management. We study whether positive earnings surprises announced with an unexpected delay are associated with last-chance earnings management. We examine several forms of earnings management that vary in the extent to which we expect that they are used for last-minute earnings management. Of the commonly used earnings management measures, we argue that tax expense manipulation provides the most natural context in which to study eleventh-hour earnings management because the accounting complexity and discretion involved with tax expense are relatively high and the tax expense account often remain open and available as an eleventh-hour alternative to meet targeted earnings benchmarks well after the firm agrees to pre-tax adjusting entries required by auditors.

Exploiting this unique instrument, we examine changes in the tax expense of firms identified as late announcers and find that late benchmark beaters tend to exhibit greater downward adjustments in estimates of effective tax rates, thus increasing their reported income. This finding supports the conjecture in Trueman (1990) that late announcers are associated with last-minute window dressing of earnings. Consistent with the belief that last-minute management of accruals account for a non-trivial portion of the annual sum of accruals management, we also find that discretionary accruals of late announcers with positive earnings surprises are generally more positive. We find no relation between measures of real earnings management and earnings announcement delays. These findings provide corroborating evidence that firms with delayed earnings announcements are engaging in last-minute earnings methods that are available to them after the fiscal year-end. Furthermore, we find that the market discount associated with announcement delays is most pronounced when firms beat market expectations through abnormal

fourth quarter tax accrual adjustments. This suggests that investors interpret unexpected delays of favorable news to be indicative of an earnings quality red flag.

We offer new insights by providing evidence of a tradeoff between earnings quality and earnings content when delays in earnings announcement appear to be driven by earnings management efforts. Our results also lend support to the belief that tax expense features a distinct chronological advantage as an earnings management tool when earnings fall short. From a regulatory standpoint, it is interesting to note that the relation between earnings management via tax expense (and discretionary accruals) and announcement schedule delays is stronger during the post-SOX period in our sample. One potential explanation for this result is that earnings management via accruals and tax expense manipulation is more costly in the post-SOX period. Because such manipulation is more challenging and potentially more time-consuming after SOX, firms that engage in such forms of manipulation are more likely to delay announcing their earnings after SOX. This line of thinking is consistent with the argument made in Trueman (1990): late announcers with good news may be announcing with a delay because it takes time to manage earnings.

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Appendix
Variable Definitions

Dependent Variables**:**

Δ*ETRQ4Q3*	*ETRQ3 – ETRQ4* is the change between firm *i*'s annual ETR (*ETRQ3*) estimate made in the third quarter and its fourth quarter estimate of ETR (*ETRQ4*) each calculated as total tax expense (TXT) divided by pretax income (PI). Constructed in the opposite manner of most prior studies, so that higher values indicate income-increasing earnings management via decreases in estimated annual ETR estimates.
DA	Performance-matched discretionary accruals cross-sectionally estimated using the modified Jones (1991) model following Kothari, Leone, and Wasley (2005).
R_CFO	Abnormal cash flow from operations estimated following Roychowdhury (2006), then multiplied by negative one so that higher values indicate income-increasing earnings management.
R_DISX	Abnormal discretionary expenses estimated following Roychowdhury (2006), then multiplied by negative one so that higher values indicate income-increasing earnings management.
R_PROD	Abnormal production costs estimated following Roychowdhury (2006).
CAR	Cumulative size-adjusted return around the earnings announcement (day 0 to day 1)

Control Variables:

GOOD_NEWS	An indicator variable that equals one if *EARNINGS_SURPRISE* is > 0, and zero otherwise.
EARNINGS_SURPRISE	Actual reported earnings less the I/B/E/S consensus forecast estimate one month prior to the earnings report date.
LATE	Indicator equal to one if the actual earnings announcement date is more than three days later than expected based on earnings announcement timing model of Cohen, Dey, Lys, and Sunder (2007).
DAYSLATE	Number of days that the actual earnings announcement date is later than expected based on the earnings announcement timing model of Cohen, Dey, Lys, and Sunder (2007).
ETRQ3	Cumulative 3rd quarter total tax expense divided by cumulative 3rd quarter pretax income.
ΔLIQ	Change in cash and investments (CHE) from Q3 to Q4 of year *t* deflated by total assets (ATQ) at Q3 of year *t*.
ΔROA	Change in pre-tax income (PI) from Q3 to Q4 of year *t* deflated by total assets (ATQ) at Q3 of year *t*.

ΔSIZE	Change in natural log of total assets (AT) from Q3 to Q4 of year *t*.
ΔINTAN	Change in intangible assets from Q3 to Q4 of year *t* deflated by total assets (ATQ) at Q3 of year *t*.
ΔR&D	Change in research and development expense (XRD) from Q3 to Q4 of year *t* divided by sales (SALE) at Q3 of year *t*.
LEV	Change in total debt from Q3 to Q4 of year *t* deflated by total assets (ATQ) at Q3 of year *t*.
ΔCAPX	Change in property, plant, and equipment (PPENT) from Q3 to Q4 of year *t* deflated by total assets (ATQ) at Q3 of year *t*.
ΔBM	Change in common equity (CEQ) from Q3 to Q4 of year *t* divided by market value of equity (PRCC_F × CSHO) at Q3 of year *t*.
ΔSALES	Change in sales (SALE) from Q3 to Q4 of year *t* divided by sales at Q3of year *t*.
FOREIGN	Indicator equal to one if foreign pre-tax income (PIFO) is not missing or zero at the end of year *t* and zero otherwise.
NOL	Indicator equal to one if tax carryovers (TLCF) are greater than zero at the end of year *t* and zero otherwise.
ROA_{t-1}	Income before extraordinary items from year *t* - 1 divided by total assets from year *t* - 2.
ΔTA_t	Growth rate of total assets (AT) from year *t* - 1 to year *t*.
$LOSS_t$	Indicator equal to one if income before extraordinary items (IB) is less than zero at the end of year *t* and zero otherwise.
LEV_{t-1}	Total debt (DLC + DLTT) divided by total assets (AT) of year *t* - 1.
BM_{t-1}	Common equity divided by market value of equity in year *t* - 1.
LN_MVE_{t-1}	Natural log of market value of equity in year *t* - 1.
IOR_t	Percentage of shares outstanding held by institutional investors at the end of year *t*.
BEAT_W_TAX	Indicator equal to one if *EARNINGS SURPRISE* > 0 and [Compustat annual pretax income * (1-ETRq3)/weighted average number of common shares outstanding] – I/B/E/S consensus forecast < 0; and zero otherwise.
EARNINGS_SURP_PRC	Actual reported earnings less the I/B/E/S consensus forecast estimate one month prior to the earnings report date, scaled by stock price at the end of the fiscal year.
LN_TA	Natural log of total assets.
MOMENTUM	Cumulative size- adjusted returns for the 60 trading days prior to the earnings announcement, ending on day -1.

Figure 1

ETR changes and announcement timing

This figure demonstrates the univariate relation between unexpected announcement timing and last-chance earnings manipulation via tax expense, segregated by the sign of the earnings news. The *y*-axis represents the mean Δ*ETRQ4Q3* for the sample of firms that fall in the bin of unexpected announcement timing along the *x*-axis. Time 0 corresponds to the expected announcement date based on the earnings announcement timing model of Cohen, Dey, Lys, and Sunder (2007). The periods are divided into five-day intervals centered around the date labeled on the *x*-axis. For example, 0 represents the five-day interval (-2, +2).

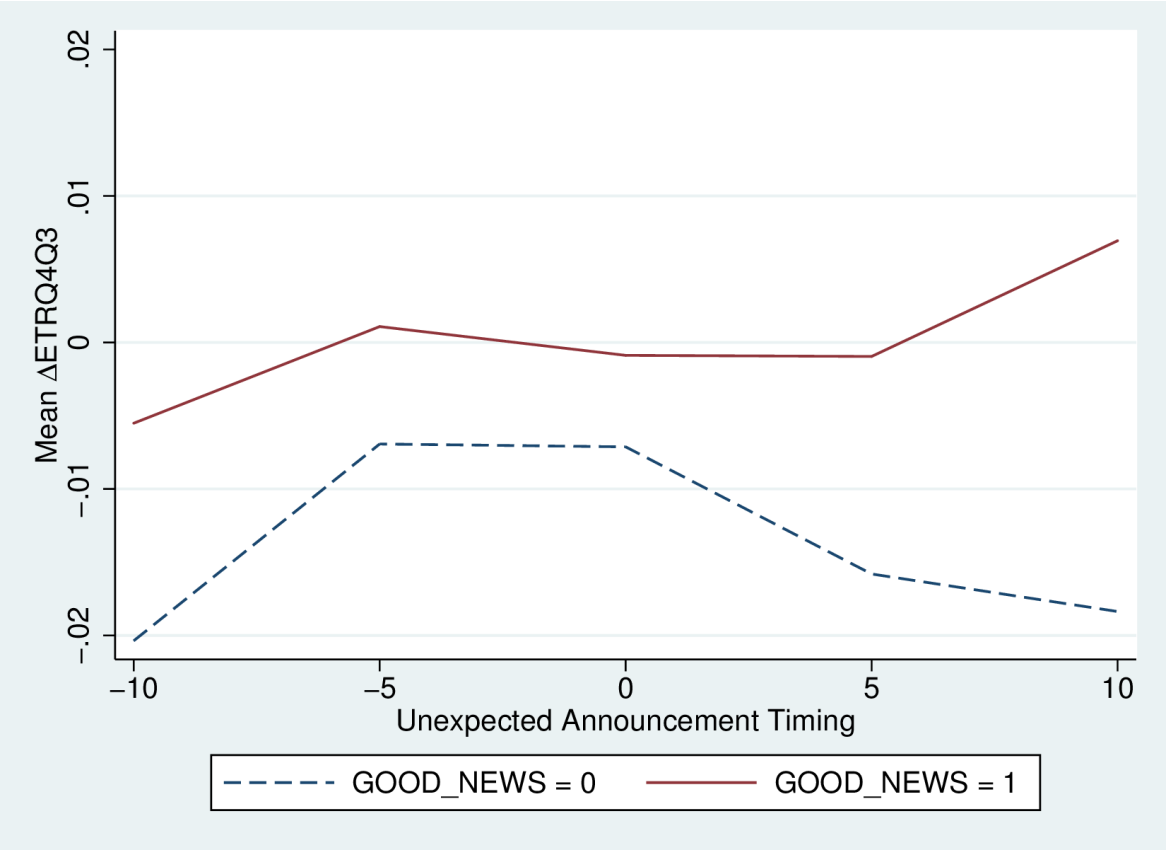

TABLE 1

Sample selection

This table describes our sample selection process. We start with the sample of firms at the intersection of Compustat, CRSP, I/B/E/S. The full sample comprises 24,480 firm-years with positive pre-tax income.

	Firm-Years
Initial Sample (Firm in Compustat, CRSP, I/B/E/S with fiscal years between 1989 and 2016)	108,872
Less: Firm-years with year-end stock price less than $5	(15,024)
Less: Firm-years with SIC between 4400-5500 and 6000-6500	(27,836)
Less: Firm-years with 10-K filing dates or late filings	(8,971)
Less: Firm-years with an annual effective tax rate below zero	(5,673)
Less: Firm-years with earnings announcement dates more than 25 days earlier or later than expected	(5,264)
Less: Firm-years with negative pre-tax income	(7,050)
Less: Firm-years with acquisitions greater than 1% of market value	(8,192)
Less: Firm-years with missing dependent variables and control variables	(5,886)
Less: Firm-years with Δ*ETRQ4Q3* or *ETRQ3* above the top 1%	(496)
Total Firm-Year Observations for Main Analysis	24,480

TABLE 2

Summary statistics

This table provides summary statistics of the variables used for the entire sample period (1989-2016), the pre-SOX period (1989-2002), and the post-SOX period (2003-2016) used in this study. All variables are defined in the Appendix.

Panel A: Entire sample period (1989 – 2016)

	N	Mean	Std Dev	Min	P25	P50	P75	Max
Δ*ETRQ4Q3*	24,480	-0.001	0.078	-1.153	-0.003	0.000	0.010	0.574
DA	24,480	-0.034	0.945	-4.995	-0.115	-0.009	0.085	4.604
R_CFO	21,394	-0.051	0.095	-0.333	-0.102	-0.046	0.003	0.217
R_DISX	20,183	-0.055	0.238	-0.896	-0.165	-0.02	0.075	0.551
R_PROD	20,183	-0.065	0.211	-0.684	-0.18	-0.06	0.046	0.591
GOOD_NEWS	24,480	0.677	0.468	0	0	1	1	1
EARNINGS_SURPRISE	24,480	0.009	0.138	-0.620	-0.020	0.010	0.050	0.530
LATE	24,480	0.061	0.239	0	0	0	0	1
DAYSLATE	24,480	-0.437	3.388	-25	-1	0	1	25
ETRQ3	24,480	0.329	0.108	-0.997	0.301	0.357	0.387	0.740
ΔLIQ	24,480	0.017	0.054	-0.120	-0.005	0.006	0.031	0.284
ΔROA	24,480	0.000	0.026	-0.094	-0.009	0.001	0.009	0.104
ΔSIZE	24,480	0.027	0.077	-0.182	-0.010	0.020	0.055	0.397
ΔINTAN	24,480	0.004	0.020	-0.022	0.000	0.000	0.000	0.149
ΔR&D	24,480	0.017	0.045	-0.026	0.000	0.000	0.011	0.281
ΔLEV	24,480	-0.002	0.043	-0.155	-0.011	0.000	0.002	0.201
ΔCAPX	24,480	0.009	0.022	-0.042	-0.001	0.004	0.013	0.121
ΔBM	24,480	0.012	0.034	-0.104	0.001	0.012	0.022	0.187
ΔSALES	24,480	0.059	0.182	-0.439	-0.027	0.040	0.119	0.859
FOREIGN	24,480	0.496	0.500	0	0	0	1	1
NOL	24,480	0.332	0.471	0	0	0	1	1
ROA_{t-1}	24,480	0.087	0.097	-0.217	0.037	0.075	0.125	0.471
ΔTA_t	24,480	0.149	0.250	-0.201	0.017	0.087	0.195	1.499
$LOSS_t$	24,480	0.002	0.049	0	0	0	0	1
LEV_{t-1}	24,480	0.192	0.178	0	0.020	0.164	0.306	0.756
BM_{t-1}	24,480	0.467	0.313	-0.084	0.248	0.403	0.615	1.631
LN_MVE_{t-1}	24,480	6.466	1.854	-0.049	5.111	6.343	7.663	11.311
IOR_t	24,480	0.582	0.254	0	0.389	0.614	0.792	0.984
CAR	24,480	0.004	0.070	-0.212	-0.031	0.003	0.039	0.218
BEAT_W_TAX	24,480	0.255	0.436	0	0	0	1	1
EARNINGS_SURP_PRC	24,480	-0.000	0.007	-0.036	-0.001	0.000	0.002	0.026
LN_TA	24,480	6.349	1.779	1.144	5.038	6.206	7.527	10.968
MOMENTUM	24,480	0.012	0.166	-0.456	-0.080	0.009	0.102	0.528

Panel B: Pre-SOX sample period (1989 – 2002)

	N	Mean	Std Dev	Min	P25	P50	P75	Max
Δ*ETRQ4Q3*	13,406	0.000	0.066	-1.153	-0.001	0.000	0.008	0.574
DA	13,406	-0.035	0.631	-4.995	-0.100	-0.009	0.072	4.604
R_CFO	11,811	-0.048	0.102	-0.333	-0.101	-0.043	0.011	0.217
R_DISX	10,956	-0.063	0.247	-0.896	-0.181	-0.025	0.075	0.551
R_PROD	10,956	-0.070	0.222	-0.684	-0.192	-0.06	0.052	0.591
GOOD_NEWS	13,406	0.651	0.477	0	0	1	1	1
EARNINGS_SURPRISE	13,406	-0.001	0.141	-0.620	-0.020	0.010	0.040	0.530
LATE	13,406	0.062	0.242	0	0	0	0	1
DAYSLATE	13,406	-0.580	3.691	-25	-2	0	1	25
ETRQ3	13,406	0.347	0.097	-0.909	0.330	0.370	0.3940	0.740
ΔLIQ	13,406	0.016	0.056	-0.120	-0.006	0.004	0.028	0.284
ΔROA	13,406	0.001	0.027	-0.094	-0.009	0.001	0.010	0.104
ΔSIZE	13,406	0.032	0.083	-0.182	-0.009	0.023	0.061	0.397
ΔINTAN	13,406	0.003	0.019	-0.022	0.000	0.000	0.000	0.149
ΔR&D	13,406	0.020	0.051	-0.026	0.000	0.000	0.014	0.281
ΔLEV	13,406	-0.002	0.048	-0.155	-0.014	0.000	0.005	0.201
ΔCAPX	13,406	0.012	0.025	-0.042	-0.001	0.005	0.017	0.121
ΔBM	13,406	0.015	0.035	-0.104	0.003	0.013	0.024	0.187
ΔSALES	13,406	0.066	0.189	-0.439	-0.024	0.045	0.129	0.859
FOREIGN	13,406	0.397	0.489	0	0	0	1	1
NOL	13,406	0.187	0.39	0	0	0	0	1
ROA_{t-1}	13,406	0.093	0.101	-0.217	0.039	0.080	0.133	0.471
ΔTA_t	13,406	0.181	0.277	-0.201	0.027	0.107	0.235	1.499
$LOSS_t$	13,406	0.001	0.037	0	0	0	0	1
LEV_{t-1}	13,406	0.196	0.177	0	0.029	0.170	0.314	0.756
BM_{t-1}	13,406	0.485	0.319	-0.084	0.260	0.418	0.636	1.631
LN_MVE_{t-1}	13,406	5.863	1.729	-0.049	4.596	5.706	6.935	11.311
IOR_t	13,406	0.481	0.221	0	0.309	0.489	0.656	0.984
CAR	13,406	0.004	0.066	-0.212	-0.028	0.002	0.035	0.218
BEAT_W_TAX	13,406	0.198	0.399	0	0	0	0	1
EARNINGS_SURP_PRC	13,406	0.000	0.008	-0.036	-0.001	0.000	0.002	0.026
LN_TA	13,406	5.790	1.655	1.144	4.577	5.620	6.842	10.968
MOMENTUM	13,406	0.016	0.187	-0.456	-0.094	0.014	0.121	0.528

Panel C: Post-SOX sample period (2003 – 2016)

	N	Mean	Std Dev	Min	P25	P50	P75	Max
Δ*ETRQ4Q3*	11,074	-0.002	0.089	-1.150	-0.006	0.001	0.014	0.557
DA	11,074	-0.032	1.221	-4.995	-0.152	-0.009	0.112	4.604
R_CFO	9,583	-0.055	0.086	-0.333	-0.103	-0.05	-0.006	0.217
R_DISX	9,227	-0.045	0.227	-0.896	-0.148	-0.017	0.074	0.551
R_PROD	9,227	-0.059	0.197	-0.684	-0.167	-0.061	0.039	0.591
GOOD_NEWS	11,074	0.709	0.454	0	0	1	1	1
EARNINGS_SURPRISE	11,074	0.020	0.132	-0.620	-0.010	0.020	0.050	0.530
LATE	11,074	0.058	0.235	0	0	0	0	1
DAYSLATE	11,074	-0.263	2.971	-24	-1	0	1	25
ETRQ3	11,074	0.307	0.117	-0.997	0.268	0.335	0.375	0.739
ΔLIQ	11,074	0.017	0.052	-0.120	-0.005	0.008	0.033	0.284
ΔROA	11,074	-0.000	0.025	-0.094	-0.009	0.000	0.008	0.104
ΔSIZE	11,074	0.021	0.069	-0.182	-0.011	0.017	0.048	0.397
ΔINTAN	11,074	0.004	0.021	-0.022	-0.002	0.000	0.002	0.149
ΔR&D	11,074	0.013	0.035	-0.026	0.000	0.000	0.008	0.281
ΔLEV	11,074	-0.001	0.036	-0.155	-0.008	0.000	0.001	0.201
ΔCAPX	11,074	0.006	0.018	-0.042	-0.001	0.002	0.009	0.121
ΔBM	11,074	0.009	0.033	-0.104	-0.002	0.010	0.020	0.187
ΔSALES	11,074	0.050	0.171	-0.439	-0.030	0.035	0.107	0.859
FOREIGN	11,074	0.616	0.486	0	0	1	1	1
NOL	11,074	0.508	0.500	0	0	1	1	1
ROA_{t-1}	11,074	0.080	0.091	-0.217	0.036	0.071	0.117	0.471
ΔTA_t	11,074	0.110	0.206	-0.201	0.006	0.068	0.154	1.499
$LOSS_t$	11,074	0.004	0.061	0	0	0	0	1
LEV_{t-1}	11,074	0.186	0.179	0.000	0.007	0.158	0.296	0.756
BM_{t-1}	11,074	0.445	0.304	-0.084	0.237	0.384	0.590	1.631
LN_MVE_{t-1}	11,074	7.196	1.735	0.871	5.975	7.054	8.341	11.311
IOR_t	11,074	0.704	0.236	0	0.593	0.77	0.882	0.984
CAR	11,074	0.004	0.075	-0.212	-0.035	0.003	0.045	0.218
BEAT_W_TAX	11,074	0.323	0.468	0	0	0	1	1
EARNINGS_SURP_PRC	11,074	0.001	0.006	-0.036	-0.000	0.001	0.002	0.026
LN_TA	11,074	7.024	1.687	1.968	5.791	6.896	8.157	10.968
MOMENTUM	11,074	0.008	0.135	-0.456	-0.068	0.006	0.081	0.528

TABLE 3
Correlation table

This correlation table presents Pearson (bottom) and Spearman (top) correlation coefficients for some variables of interest. *, **, *** signifies statistical significance at the 10%, 5% and 1% level, respectively. All variables are defined in the Appendix.

	ΔETRQ4Q3	*DA*	*R_CFO*	*R_DISX*	*R_PROD*	*GOOD_NEWS*	*EARNINGS_ SURPRISE*	*LATE*	*DAYSLATE*
ΔETRQ4Q3	1	0.003	0.018**	0.005	0.014*	0.046***	0.067***	0.008	0.009
DA	-0.004	1	0.227***	0.072***	0.103***	-0.029***	-0.028***	0.014*	-0.005
R_CFO	-0.027***	0.068***	1	0.198***	0.504***	-0.118***	-0.090***	0.035***	0.010
R_DISX	0.015**	0.026***	0.206***	1	0.746***	-0.047***	-0.009	0.005	-0.001
R_PROD	0.004	0.042***	0.508***	0.770***	1	-0.060***	-0.017**	0.023***	0.003
GOOD_NEWS	0.041***	-0.009	-0.114***	-0.040***	-0.052***	1	0.810***	-0.046***	-0.031***
EARNINGS_SURPRISE	0.057***	-0.000	-0.071***	0.001	-0.010	0.577***	1	-0.040***	-0.025***
LATE	-0.009	0.017**	0.037***	0.003	0.025***	-0.046***	-0.028***	1	0.410***
DAYSLATE	-0.002	0.006	0.006	-0.006	-0.000	-0.033***	-0.017**	0.549***	1

	CAR	*BEAT_W_TAX*	*EARNINGS_SURP_PRC*	*BM*	*LN_TA*	*MOMENTUM*
CAR	1	0.036***	0.239***	0.006	0.029***	-0.044***
BEAT_W_TAX	0.033***	1	0.231***	-0.069***	0.183***	0.010
EARNINGS_SURP_PRC	0.165***	0.1572***	1	0.000	0.014**	0.143***
BM	0.012*	-0.0688***	-0.077***	1	-0.091***	-0.082***
LN_TA	0.022***	0.1785***	0.045***	-0.087***	1	-0.040***
MOMENTUM	-0.041***	0.0083	0.124***	-0.087***	-0.050***	1

TABLE 4

Regressions of real earnings management proxies

This table presents the regression estimates of various real earnings management proxies estimated following Cohen, Dey, and Lys (2008). We report coefficient estimates and (in parentheses) *t*-statistics from a linear probability model based on robust standard errors clustered by firm and year. We include year and industry (Fama-French 12 industries) fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

	R_CFO	*R_CFO*	*R_DISX*	*R_DISX*	*R_PROD*	*R_PROD*
GOOD_NEWS	-0.011***	-0.012***	-0.013**	-0.012**	-0.014***	-0.013***
	(-7.14)	(-7.59)	(-2.40)	(-2.50)	(-3.13)	(-2.86)
EARNINGS_SURPRISE	-0.025***	-0.025***	0.031**	0.031**	0.002	0.002
	(-4.29)	(-4.27)	(2.01)	(2.01)	(0.17)	(0.17)
LATE	0.013***		0.001		0.008	
	(3.11)		(0.10)		(0.80)	
DAYSLATE		0.000		-0.001		-0.000
		(0.77)		(-1.00)		(-0.44)
GOOD_NEWS × *LATE*	-0.005		0.011		0.013	
	(-0.99)		(0.90)		(1.26)	
GOOD_NEWS ×		0.000		-0.000		0.001
DAYSLATE		(0.59)		(-0.04)		(0.68)
ROA_{t-1}	-0.195***	-0.195***	0.623***	0.623***	-0.141***	-0.142***
	(-13.17)	(-13.10)	(14.26)	(14.24)	(-3.58)	(-3.58)
ΔTA_t	-0.005	-0.005	-0.084***	-0.084***	0.028**	0.028**
	(-0.87)	(-0.81)	(-7.82)	(-7.82)	(2.50)	(2.55)
$LOSS_t$	0.031***	0.031***	-0.041	-0.040	-0.018	-0.017
	(3.24)	(3.27)	(-1.03)	(-1.01)	(-0.50)	(-0.48)
LEV_{t-1}	0.036***	0.037***	0.261***	0.261***	0.113***	0.114***
	(5.03)	(5.07)	(10.07)	(10.11)	(4.60)	(4.63)
BM_{t-1}	0.041***	0.041***	0.152***	0.152***	0.157***	0.157***
	(8.98)	(8.92)	(9.49)	(9.49)	(11.55)	(11.54)
LN_MVE_{t-1}	-0.004***	-0.004***	0.002	0.003	-0.001	-0.001
	(-5.46)	(-5.61)	(0.82)	(0.83)	(-0.25)	(-0.31)
IOR_t	-0.006	-0.006	-0.043***	-0.043***	-0.029**	-0.030**
	(-1.23)	(-1.29)	(-2.85)	(-2.84)	(-1.97)	(-2.00)
Observations	21,394	21,394	20,183	20,183	20,183	20,183
R-squared	0.1740	0.1738	0.1537	0.1537	0.1423	0.1420
Fixed effects	Year, Industry	Year, Industry	Year, Industry	Year, Industry	Year, Industry	Year, Industry

TABLE 5
Regression of discretionary accruals

This table presents the regression estimates of discretionary accruals. We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by firm and year. We include year and industry (Fama-French 12 industries) fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

	Prediction	*DA*	*DA*
GOOD_NEWS	+	-0.007	-0.001
		(-0.40)	(-0.09)
EARNINGS_SURPRISE	+	-0.005	-0.004
		(-0.10)	(-0.09)
LATE	+/-	0.007	
		(0.20)	
DAYSLATE	+/-		-0.001
			(-0.25)
GOOD_NEWS× LATE	+	0.076*	
		(1.76)	
GOOD_NEWS × DAYSLATE	+		0.004
			(1.49)
ROA_{t-1}	+/-	-0.167	-0.169
		(-1.53)	(-1.54)
ΔTA_t	+/-	0.100**	0.101***
		(2.53)	(2.59)
$LOSS_t$	+/-	-0.018	-0.018
		(-0.15)	(-0.15)
LEV_{t-1}	+/-	0.010	0.012
		(0.22)	(0.27)
BM_{t-1}	+/-	0.052**	0.051**
		(2.10)	(2.09)
LN_MVE_{t-1}	+/-	-0.004	-0.005
		(-1.15)	(-1.37)
IOR_t	+/-	-0.046	-0.048
		(-1.55)	(-1.61)
Observations		24,480	24,480
R-squared		0.0044	0.0042
Fixed effects		Year, Industry	Year, Industry

TABLE 6
Regression of changes in effective tax rates

This table presents the regression estimates of changes in effective tax rates. We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by firm and year. We include year and industry (Fama-French 12 industries) fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

	Prediction	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*
GOOD_NEWS	+	0.000	0.001
		(0.15)	(0.67)
EARNINGS_SURPRISE	+	0.034***	0.034***
		(7.25)	(7.22)
LATE	+/-	-0.006	
		(-1.33)	
DAYSLATE	+/-		-0.000
			(-0.37)
GOOD_NEWS × LATE	+	0.010**	
		(2.19)	
GOOD_NEWS × DAYSLATE	+		0.000
			(1.27)
ETRQ3	+/-	0.235***	0.234***
		(9.73)	(9.75)
ΔLIQ	+/-	-0.043***	-0.043***
		(-4.16)	(-4.17)
ΔROA	+/-	0.026	0.027
		(0.42)	(0.43)
ΔSIZE	+/-	0.023*	0.023*
		(1.93)	(1.92)
ΔINTAN	+/-	-0.004	-0.004
		(-0.14)	(-0.13)
ΔR&D	+/-	0.005	0.005
		(0.30)	(0.32)
ΔLEV	+/-	0.025*	0.025*
		(1.75)	(1.74)
ΔCAPX	+/-	-0.035	-0.034
		(-1.24)	(-1.22)
ΔBM	+/-	0.194***	0.196***
		(7.59)	(7.61)
ΔSALES	+/-	-0.020***	-0.020***
		(-3.29)	(-3.28)
FOREIGN	+/-	0.001	0.001
		(0.99)	(0.99)
NOL	+/-	0.002	0.002
		(1.28)	(1.29)
Observations		24,480	24,480
R-squared		0.1098	0.1097
Fixed effects		Year, Industry	Year, Industry

TABLE 7

Regressions of market reaction around earnings announcements

This table presents the regression estimates of cumulative size-adjusted abnormal returns around earnings announcements. We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by industry (Fama-French 12 industries) and calendar quarter. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

	Prediction	*CAR*	*CAR*
BEAT_W_TAX	-	0.001	0.001
		(0.79)	(0.45)
EARNINGS_SURP_PRC	+	1.633***	1.631***
		(7.76)	(7.78)
LATE	+/-	0.002	
		(0.75)	
DAYSLATE	+/-		0.000
			(1.40)
BEAT_W_TAX × *LATE*	-	-0.009**	
		(-2.15)	
BEAT_W_TAX × *DAYSLATE*	-		-0.000
			(-1.12)
BM	+/-	0.005***	0.005***
		(2.95)	(2.95)
LN_TA	+/-	0.000	0.000
		(1.40)	(1.40)
MOMENTUM	+/-	-0.025***	-0.025***
		(-6.60)	(-6.57)
Observations		24,480	24,480
R-squared		0.0319	0.0318

TABLE 8

Regressions of earnings announcement timing

This table presents the regression estimates of various real earnings management proxies estimated following Cohen, Dey, and Lys (2008). We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by firm and year. We include year and industry (Fama-French 12 industries) fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

	(1)	(2)	(3)	(4)	(5)	(6)
	LATE	*LATE*	*LATE*	*LATE*	*LATE*	*LATE*
GOOD_NEWS	-0.024***	-0.019***	-0.019***	-0.022***	-0.022***	-0.022***
	(-6.13)	(-5.15)	(-5.13)	(-6.36)	(-6.31)	(-5.21)
EARNINGS_SURPRISE	0.006	-0.002	-0.002	-0.012	-0.011	0.002
	(0.36)	(-0.15)	(-0.13)	(-0.79)	(-0.70)	(0.13)
R_CFO	0.123***					0.117***
	(3.14)					(2.62)
GOOD_NEWS × R_CFO	-0.082**					-0.102*
	(-2.04)					(-1.85)
R_DISX		0.004				0.003
		(0.37)				(0.11)
GOOD_NEWS × R_DISX		0.007				-0.016
		(0.55)				(-0.68)
R_PROD			0.017			-0.008
			(0.97)			(-0.21)
GOOD_NEWS × R_PROD			0.006			0.040
			(0.37)			(1.13)
DA				0.001	0.001	0.002
				(0.26)	(0.27)	(0.36)
GOOD_NEWS × DA				0.003	0.003	0.002
				(1.17)	(1.16)	(0.37)
ΔETRQ4Q3					-0.061	-0.073
					(-1.39)	(-1.45)
GOOD_NEWS × ΔETRQ4Q3					0.105**	0.106*
					(2.20)	(1.73)
ROA_{t-1}	0.009	-0.028	-0.019	0.011	0.011	-0.003
	(0.37)	(-1.36)	(-0.93)	(0.48)	(0.48)	(-0.13)
ΔTA_t	0.027***	0.028***	0.027**	0.024**	0.024**	0.025**
	(2.87)	(2.71)	(2.52)	(2.56)	(2.54)	(2.43)
$LOSS_t$	0.062	0.074	0.074	0.040	0.031	0.059
	(1.35)	(1.47)	(1.48)	(1.08)	(0.90)	(1.22)
LEV_{t-1}	0.027**	0.027**	0.026**	0.034***	0.034***	0.027**
	(2.23)	(2.31)	(2.30)	(2.97)	(2.96)	(2.34)
BM_{t-1}	-0.008	-0.007	-0.009	-0.003	-0.003	-0.009
	(-1.04)	(-0.77)	(-1.04)	(-0.41)	(-0.42)	(-1.09)
LN_MVE_{t-1}	-0.008***	-0.008***	-0.008***	-0.009***	-0.009***	-0.008***
	(-7.85)	(-7.51)	(-7.52)	(-8.12)	(-8.13)	(-7.59)
IOR_t	-0.025***	-0.022***	-0.022***	-0.027***	-0.027***	-0.022***
	(-4.21)	(-3.42)	(-3.38)	(-4.21)	(-4.20)	(-3.39)
Observations	21,394	20,183	20,183	24,480	24,480	20,183
R-squared	0.0286	0.0280	0.0282	0.0294	0.0297	0.0293
Fixed effects	Year, Industry	Year, Industry	Year, Industry	Year, Industry	Year, Industry	Year, Industry

TABLE 9

Regressions of earnings management by pre and post SOX Periods

Panel A presents the regression estimates of discretionary accruals and panel B presents the regression estimates of changes in effective tax rates. We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by firm and year. We include year and industry (Fama-French 12 industries) fixed effects. For variables with clear predictions, ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

Panel A: Regression of discretionary accruals by pre and post SOX periods

		Pre-SOX		Post-SOX	
	Prediction	*DA*	*DA*	*DA*	*DA*
GOOD_NEWS	+	0.005	0.004	-0.026	-0.013
		(0.29)	(0.24)	(-0.74)	(-0.42)
EARNINGS_SURPRISE	+	-0.054	-0.054	0.075	0.077
		(-1.06)	(-1.05)	(0.79)	(0.79)
LATE	+/-	0.002		0.008	
		(0.13)		(0.09)	
DAYSLATE	+/-		0.000		-0.003
			(0.09)		(-0.43)
GOOD_NEWS × LATE	+	-0.001		0.170*	
		(-0.03)		(1.86)	
GOOD_NEWS × DAYSLATE	+		-0.001		0.013**
			(-0.69)		(2.18)
ROA_{t-1}	+/-	-0.167	-0.166	-0.155	-0.158
		(-1.43)	(-1.42)	(-0.70)	(-0.72)
ΔTA_t	+/-	0.125***	0.125***	0.049	0.056
		(2.71)	(2.71)	(0.65)	(0.75)
$LOSS_t$	+/-	0.035	0.037	-0.050	-0.051
		(0.50)	(0.51)	(-0.27)	(-0.28)
LEV_{t-1}	+/-	-0.030	-0.031	0.068	0.073
		(-0.76)	(-0.76)	(0.79)	(0.85)
BM_{t-1}	+/-	0.030	0.031	0.086*	0.085*
		(1.25)	(1.25)	(1.75)	(1.73)
LN_MVE_{t-1}	+/-	-0.005	-0.005	-0.006	-0.007
		(-1.15)	(-1.14)	(-0.90)	(-1.16)
IOR_t	+/-	-0.019	-0.019	-0.081	-0.085
		(-0.71)	(-0.71)	(-1.57)	(-1.63)
Observations		13,406	13,406	11,074	11,074
R-squared		0.0098	0.0099	0.0046	0.0043
Fixed effects		Year, Industry	Year, Industry	Year, Industry	Year, Industry

Panel B: Regression of changes in ETR by pre and post SOX periods

		Pre-SOX		Post-SOX	
	Prediction	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*
GOOD_NEWS	+	-0.004***	-0.003***	0.005**	0.007***
		(-3.65)	(-2.67)	(2.08)	(2.80)
EARNINGS_SURPRISE	+	0.036***	0.036***	0.029***	0.029***
		(8.16)	(8.07)	(3.19)	(3.18)
LATE	+/-	-0.007		-0.005	
		(-1.32)		(-0.63)	
DAYSLATE	+/-		-0.000		0.000
			(-0.44)		(0.19)
GOOD_NEWS × LATE	+	0.005		0.017**	
		(1.05)		(2.42)	
GOOD_NEWS× DAYSLATE	+		0.000		0.001
			(0.42)		(1.30)
ETRQ3	+/-	0.182***	0.183***	0.283***	0.283***
		(6.29)	(6.28)	(8.73)	(8.74)
ΔLIQ	+/-	-0.028***	-0.029***	-0.070***	-0.070***
		(-2.95)	(-2.97)	(-3.32)	(-3.29)
ΔROA	+/-	0.037	0.040	0.012	0.011
		(0.40)	(0.43)	(0.16)	(0.14)
ΔSIZE	+/-	0.006	0.006	0.062***	0.062***
		(0.47)	(0.46)	(3.53)	(3.50)
ΔINTAN	+/-	-0.012	-0.012	-0.027	-0.026
		(-1.26)	(-1.19)	(-0.55)	(-0.55)
ΔR&D	+/-	0.006	0.006	0.011	0.009
		(0.40)	(0.42)	(0.26)	(0.22)
ΔLEV	+/-	0.031**	0.031**	0.014	0.012
		(2.29)	(2.27)	(0.44)	(0.38)
ΔCAPX	+/-	-0.017	-0.017	-0.078	-0.076
		(-0.77)	(-0.76)	(-1.01)	(-0.98)
ΔBM	+/-	0.143***	0.144***	0.264***	0.267***
		(4.31)	(4.31)	(8.18)	(8.52)
ΔSALES	+/-	-0.015*	-0.015*	-0.028***	-0.027***
		(-1.88)	(-1.89)	(-2.96)	(-2.92)
FOREIGN	+/-	-0.003**	-0.002*	0.007***	0.007***
		(-2.04)	(-1.90)	(4.16)	(4.05)
NOL	+/-	0.001	0.001	0.001	0.001
		(0.45)	(0.42)	(0.55)	(0.56)
Observations		13,406	13,406	11,074	11,074
R-squared		0.0779	0.0777	0.1433	0.1432
Fixed effects		Year, Industry	Year, Industry	Year, Industry	Year, Industry

TABLE 10

Regression of changes in ETR by internal control weaknesses

This table presents the regression estimates of changes in effective tax rates. We report OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by firm and year. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% *p*-levels (two-tailed), respectively. All variables are defined in the Appendix.

		No Internal Control Weakness		Internal Control Weakness	
	Prediction	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*	Δ*ETRQ4Q3*
GOOD_NEWS	+	0.004	0.005*	0.021	0.024
		(1.29)	(1.93)	(0.94)	(1.13)
EARNINGS_SURPRISE	+	0.029***	0.029***	0.088	0.089
		(2.70)	(2.72)	(1.17)	(1.26)
LATE	+/-	-0.005		0.003	
		(-0.82)		(0.13)	
DAYSLATE	+/-		0.000		0.004
			(0.48)		(1.03)
GOOD_NEWS × LATE	+	0.018**		-0.013	
		(2.17)		(-0.39)	
GOOD_NEWS× DAYSLATE	+		0.001		-0.005
			(1.34)		(-1.13)
ETRQ3	+/-	0.267***	0.266***	0.308***	0.306***
		(6.50)	(6.50)	(5.12)	(5.00)
ΔLIQ	+/-	-0.085***	-0.086***	0.237*	0.237*
		(-3.05)	(-3.02)	(1.74)	(1.73)
ΔROA	+/-	0.023	0.022	0.002	-0.081
		(0.25)	(0.23)	(0.01)	(-0.21)
ΔSIZE	+/-	0.057**	0.058**	-0.024	-0.062
		(2.36)	(2.35)	(-0.21)	(-0.48)
ΔINTAN	+/-	-0.021	-0.022	0.499	0.503
		(-0.35)	(-0.37)	(1.39)	(1.40)
ΔR&D	+/-	0.013	0.011	0.226**	0.219***
		(0.29)	(0.25)	(2.51)	(2.60)
ΔLEV	+/-	0.022	0.020	0.072	0.109
		(0.63)	(0.57)	(0.33)	(0.51)
ΔCAPX	+/-	-0.051	-0.047	-0.616***	-0.588***
		(-0.56)	(-0.53)	(-3.36)	(-2.76)
ΔBM	+/-	0.282***	0.284***	-0.069	-0.023
		(7.00)	(7.11)	(-0.15)	(-0.05)
ΔSALES	+/-	-0.030***	-0.030***	0.033	0.041
		(-3.20)	(-3.17)	(0.75)	(0.93)
FOREIGN	+/-	0.007***	0.007***	0.008	0.007
		(3.13)	(3.10)	(0.61)	(0.50)
NOL	+/-	0.001	0.001	0.008	0.007
		(0.36)	(0.37)	(0.61)	(0.56)
Observations		9,128	9,128	308	308
R-squared		0.1282	0.1283	0.2732	0.2815
Fixed effects		Year, Industry	Year, Industry	Year, Industry	Year, Industry