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Are earnings announced early of higher quality?

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Abstract

This study examines whether the timing of annual earnings announcements is related to how promptly earnings incorporate value-relevant information (timeliness in recognition), the extent to which earnings are managed (income smoothing) and the extent to which earnings are realized into operating cash flow (accruals quality). Based on Trueman (1990), we hypothesize that early announcers will have higher quality earnings. Our results, however, do not support these hypotheses. We find, instead, that late announcers have higher quality earnings and that earnings of late announcers recognize bad news on a more timelier basis than do earnings of early announcers.

Key words: Earnings announcement; Timeliness in recognition; Timeliness in disclosure; Income smoothing; Accruals quality

JEL classification: M41, G14, C21

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1. Introduction

This article examines whether earnings announced early (EAE) are of higher quality than earnings of other companies in the same industry. The timing of an earnings announcement is a key element of a firm's corporate disclosure strategy (Gennotte and Trueman, 1996; Graham *et al.*, 2005).[1] Firms strategically time their earnings announcements to influence investors' reaction to the released information (Brown *et al.*, 2012). We examine whether the

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[1]The decision of when to announce earnings is made at the highest executive levels. The CEO or CFO decides when to announce their earnings after consultation with the audit committee, the investor relation manager and/or the counsel general (Michaely *et al.*, 2011).

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timing of annual earnings announcements is systematically related to how quickly earnings recognize value-relevant information.

Previous studies have shown that earnings announced earlier than the previous year's announcement date are more informative to users than earnings announced with a delay. Specifically, firms that announce earnings early (late), on average, experience a positive (negative) stock market reaction (Givoly and Palmon, 1982; Chambers and Penman, 1984; Kross and Schroeder, 1984; Atiase *et al*., 1989). This is mostly due to the fact that, all else constant, firms having good earnings news announce their earnings sooner than firms having bad earnings news (Begley and Fischer, 1998; Bagnoli *et al*., 2002).

Another line of research (Foster, 1981; Freeman and Tse, 1992; Kim *et al*., 2008) has also examined the timing of a firm's earnings announcement relative to the announcements of other firms in the same industry. Firms in the same industry operate in a similar economic environment and tend to follow similar accounting and reporting practices. Prior research suggests that markets consider industry performance and the relative timeliness of earnings announcements within an industry for evaluating whether an earnings announcement is late or early. For this reason, our main tests focus on timeliness of earnings announcements within an industry, although as a check for robustness we also measure timeliness relative to the expected announcement date.

While there is ample evidence on how firms strategically time their earnings announcements, there is only limited research on whether earnings announced early (EAE) are also of high quality. Empirical evidence exists that markets place higher values on EAE *after holding reported earnings constant* (Kross and Schroeder, 1984). This is consistent with EAE not only containing good news but investors considering these earnings to be also of higher quality (Pawlewicz, 2011).

A theoretical model by Trueman (1990) provides an explanation for why earnings of early announcers are possibly of higher quality. He argues that firms having bad news have incentives to manage their earnings for mitigating the market's reaction to their announcements. Earnings management, however, is a time-consuming process which in turn delays the announcement. Importantly, as a consequence of earnings management, earnings announced late are discounted by investors because they are perceived to be of lower quality (Trueman, 1990). On the other hand, firms having good news have no reason to delay their announcements because they are not under pressure to manage their earnings. As a result, markets consider earnings announced early to be equivalent to economic earnings, that is, earnings of higher quality.

Trueman's (1990) model provides an explanation for why *after holding the reported earnings constant* stock markets react positively to early announcements. It predicates that (i) early announcers are less likely to manage earnings, that is, they are less likely to smooth income or use accruals for earnings

management and (ii) earnings of early announcers recognize market-relevant information on a more timelier basis because they are of higher quality. These constitute the basis for the hypotheses tested in this paper.

Our empirical results refute Trueman's (1990) theory for why markets penalize late announcers. We find, instead, that late announcers are less likely to smooth income or use accruals for earnings management. We also use reverse regression of earnings on returns to examine the issue of timeliness in recognition (Basu, 1997). Contrary to Trueman's (1990) theory, we find that earnings of late announcers recognize bad news on a more timely basis than do earnings of early announcers. We offer an alternative explanation based on our results, namely that due to heightened litigation risk associated with bad news, auditors adopt a more conservative approach with their clients and take longer to complete the audit. These actions taken by auditors result in delays of earnings announcements and in a timelier recognition of news in earnings. We acknowledge, however, that the topic of strategic timing of earnings announcements is very complex and that our conjecture needs to be examined in more detail by future research.

This study contributes to the existing literature in several important ways. We provide evidence suggesting that earnings announced earlier than by industry peers are less timely in incorporating economic news. In general, we find that firms that are more (less) timely in *disclosure* are less (more) timely in *recognition*. To the best of our knowledge, this study is the first to demonstrate such an association. This finding has implications for regulators. To increase the informational efficiency of markets, the Securities and Exchange Commission (SEC), for example, has issued rules requiring phased in reductions in filing deadlines from 90 days after the fiscal year-end to 60 days for large filers (SEC, 2005).[2,3] However, attempts to increase market efficiency by expediting the release of financial information would not be in the best interests of investors if the information is also not of good quality. Our results suggest that accelerating the release of information alone will not increase its usefulness because its quality may be compromised.

The remainder of this study comprises of four sections. In section 2, we review the relevant literature. In section 3, we discuss the research design, and in section 4, we discuss the empirical results. Finally, in section 5, we present the conclusions of the study.

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[2] Similar actions were taken in certain other countries. On 1 January 2003, the Australian Stock Exchange (ASX) reduced the filing deadline for the Australian Preliminary Final Statement (PFS), equivalent to the 10-K in the US, from 75 days to 60 days for most companies (Brown *et al*., 2009). In Canada, the filing deadline for publicly traded companies was reduced from 140 to 90 days in 2004 (Lambert *et al*., 2013).

[3] However, reducing filing deadlines involves costs. It could lead to an involuntary reduction in the time taken to complete an audit, lowering earnings quality (Doyle and Magilke, 2013; Lambert *et al*., 2013).

2. Literature review and hypotheses

2.1. Timeliness in disclosure and recognition

Timeliness is an important element affecting the usefulness of financial information. According to the FASB's conceptual framework (FASB, 2010), timeliness is 'having information available to decision-makers in time to be capable of influencing their decisions'. Thus, all else constant, earnings information is considered more relevant to investors when it is *disclosed* sooner than later. We refer to this as timeliness in *disclosure*. However, for earnings disclosures to be useful, they must also be timely in reflecting current news affecting the financial performance of the firm. We refer to this as timeliness in *recognition,* which is the extent to which current earnings capture the information set underlying changes reflected in stock prices (Basu, 1997). Shaw (2003) notes that timeliness in disclosure and timeliness in recognition, both are important factors affecting the usefulness of earnings information. In its conceptual framework, the FASB makes a similar assertion that timely disclosed information 'is only useful if it is relevant and faithfully represented' (FASB, 2010).

2.2. Literature review and hypotheses

Previous research on timeliness in *disclosure* has found that firms announcing earnings early (late), on average, experience a positive (negative) stock market reaction (Givoly and Palmon, 1982; Chambers and Penman, 1984; Kross and Schroeder, 1984; Atiase *et al*., 1989). An obvious explanation for this finding is that firms having good unexpected earnings news announce their earnings sooner than firms having bad unexpected news (Begley and Fischer, 1998; Bagnoli *et al*., 2002).

Basu (1997), on the other hand, studies timeliness in the *recognition* of economic news in accounting earnings. He argues that because of certain conventions, accounting income does not incorporate all economic news about performance that is publicly available. Hence, stock prices typically lead accounting earnings. In addition, he finds asymmetry in the recognition of the news in earnings. Specifically, he finds that publicly revealed bad news about a company as reflected in stock prices is recognized in earnings in a more timelier manner than is good news. He attributes this to the accounting principle of conservatism which is to 'anticipate no profits but anticipate all losses'. Basu (1997) does not discuss announcement timing, namely whether earnings reflecting good economic news will be announced sooner than earnings reflecting bad news.

In this study, we attempt to empirically examine how the concepts of timeliness in recognition and timeliness in disclosure are related to each other. It is not obvious, for example, that earnings announced early will also be more timely in recognizing economic events affecting the firm as reflected in its stock price. There is only scant research on this issue in the literature. An exception is

Trueman (1990) whose analytical work on the theory of earnings announcement timing sheds some light on this topic. His paper provides two explanations for why managers having bad earnings news delay announcing them. First, he argues that managers of firms with unfavourable earnings news will attempt to increase reported earnings by 'borrowing' from future earnings or past cookie-jar reserves. However, this effort is time-consuming which results in firms delaying their earnings announcements. Second, he argues that announcement delays can occur because managers of bad news firms wait to observe the earnings of other firms in the same industry, which they then use as a benchmark for determining the appropriate level of earnings management. In contrast, managers of firms possessing good earnings news have no reason to delay their earnings announcements and announce their earnings early.

Trueman (1990) contends that earnings announced early are regarded by markets as equivalent to economic earnings (i.e. higher quality) because these earnings have not been subjected to opportunistic managerial actions. In contrast, late announcements represent lower quality earnings because the earnings have been smoothed or have been subjected to other forms of earnings management. Trueman's (1990) work therefore suggests that earnings that are timely with regard to disclosure are also timely with regard to recognition.

However, Trueman (1990) acknowledges that earnings management does not come without a cost. The SEC does not approve of earnings management, and the use of cookie-jar reserves for smoothing earnings is prohibited (Kirschenheiter and Melumad, 2002; Kedia and Rajgopal, 2011). In his model, the manager also benefits financially as a result of the earnings management, which exposes the manager to criminal and civil penalties stemming from violations of insider trading rules. Trueman (1990) acknowledges that his explanations for the late announcements of bad news do not hold when the risks of SEC enforcement are considered. The model also breaks down if the manager intends to increase his/her shareholdings in the firm or maximize his/her compensation that is tied to earnings (Trueman, 1990, p. 292). Finally, Trueman (1990) suggests but does not explore in-depth an alternative explanation, namely that bad news is announced later than good news because it takes longer to audit earnings reports reflecting bad news.[4] As audit lags constitute the most significant determinant affecting earnings announcement lags, this could explain why bad news is announced late (Givoly and Palmon, 1982).[5] We explore this explanation in more detail in section 4.2.1.

Our main hypothesis, however, is based on Trueman's (1990) analytical model which is as follows:

[4] Trueman (1990) rejects this explanation because of empirical evidence that early announcers experience higher abnormal returns after controlling for earnings. That is, being early in announcing, just by itself, is positively viewed by markets.

[5] Several studies use earnings announcement lags to proxy for the timeliness in completing audits (Williams and Dirsmith, 1988; Bamber *et al.*, 1993).

H1 : Firms announcing earnings later (earlier) than other firms in the same industry incorporate contemporaneous market returns in a less (more) timely manner.

2.2.1. Income smoothing

Trueman (1990) argues that income smoothing activities cause delays in earnings announcements. Specifically, he argues that shifting income from one period to the next for smoothing takes time to accomplish, and as a result, earnings are announced late. His theory predicts that late announcers will exhibit more income smoothing than early announcers. An alternative but similarly consistent explanation provided by Trueman (1990) is that managers of firms whose earnings are weak have incentives to manage earnings upwards but do so after observing the overall industry condition. This also predicts that it is the late announcers that are more likely to smooth income.

Gassen *et al*. (2006) provide direct evidence that earnings of firms engaging in income smoothing show lower timeliness in the recognition; that is, these firms' earnings recognize economic news already reflected in stock prices with a greater delay. Managers generally smooth income by reserving earnings when earnings performance is unexpectedly high and 'borrowing' from those earnings when earnings performance is unexpectedly low. As a consequence, contemporaneous economic news affecting the firm is not appropriately recognized in current earnings. That is, using cookie-jar reserves for smoothing earnings comes at the expense of improper or incomplete recognition of news in earnings.

Finding that late announcers engage in more income smoothing would provide additional support for Hypothesis 1 that their earnings incorporate contemporaneous market returns in a less timelier manner. Therefore, we direct our focus, next, to the following prediction arising from Trueman's (1990) analytical model, namely that

H1A : Firms announcing earnings later (earlier) than other firms in the same industry are more (less) likely to smooth their earnings.

2.2.2. Accruals quality

As discussed, Trueman (1990) suggests that late announcers are more likely to engage in earnings management. He does not, however, elaborate on which form of earnings management will be chosen by the late announcing companies. These companies can manage their earnings through 'real' activities that affect cash flows, for example by altering shipment schedules, delaying purchases or opportunistically boosting end-of-period sales (Fudenberg and Tirole, 1995). Alternatively, they can manage their earnings using accruals which is generally considered to be a less costly action for firms and hence more prevalent than 'real' earnings management. Therefore, the focus in this section

is on accruals quality rather than on other mechanisms used for earnings management.

Based on Trueman (1990), the accruals quality of firms announcing late should be lower because these firms engage in more opportunistic earnings management. Similar to the case of income smoothing, using accruals for earnings management should lower earnings quality and result in a less timelier recognition of news in earnings (Dechow and Dichev, 2002; Jayaraman, 2008). Furthermore, finding that late announcers are associated with lower accruals quality would provide additional support for our main hypothesis, H1, namely that their earnings incorporate contemporaneous market returns in a less timelier manner.

We therefore test the following hypothesis that is implied by Trueman's (1990) analytical model:

H1B : Firms announcing earnings later (earlier) than other firms in the same industry are more likely to have lower (higher) accruals quality.

3. Research design

3.1. Sample selection procedure and sample distribution

Panel A of Table 1 describes the sample selection procedure. We initially include all firms in Compustat during the years 1997 to 2006. After dropping firm-years having extreme values of earnings announcement lags,[6] and firm-years lacking the requisite (i) financial data in Compustat (ii) stock market data in CRSP and (iii) earnings announcement dates in I/B/E/S, our final sample consists of 36 807 firm-year observations.[7]

Panel B of Table 1 presents the sample distribution by length of the announcement lags. Approximately 84 per cent of firms announce their annual earnings 15 days to 59 days after the fiscal year-end. The largest grouping of firms has announcement lags of 30 days to 44 days. Announcement lags, on average, have increased after 2004 following the implementation of Section 404 of the Sarbanes-Oxley Act (SOX).[8] Starting in 2004, the number of firms announcing earnings after 30 days or more monotonically increases as the announcement lags increase. The additional financial reporting and auditing

[6] We follow Sengupta's (2004) method of deleting extreme observations and retaining firms with earnings announcement lags of seven to 90 days.

[7] Sample sizes in some of our other tests are less than 36 807 firm-year observations because data for some variable used in those tests were missing. We have 35 052 and 31 609 firm-year observations in tests of income smoothing and accruals quality, respectively.

[8] Section 404 of the SOX requires each issuer's annual report to include an assessment of the effectiveness of the internal controls of the issuer, which has increased the time taken to complete an audit (Ettredge *et al.*, 2006).

Table 1
Sample selection procedure and sample distribution

Panel A: Sample selection procedure

Year	No. active firms on Compustat	No. firms after deleting observations without CRSP data	No. firms after deleting observations without earnings announcement dates in I/B/E/S	No. firms after deleting extreme announcement lags
1997	9530	7294	4014	3692
1998	9528	7147	4101	3761
1999	9531	6751	3994	3696
2000	9530	6556	3881	3557
2001	9518	6338	3719	3547
2002	9513	5977	3671	3548
2003	9504	5653	3673	3580
2004	9503	5424	3793	3691
2005	9500	5347	3993	3865
2006	9479	5009	3969	3870
Total	95 136	61 496	38 808	36 807

Panel B: Distribution of sample by length of announcement lags

Lag	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
7–14	80	78	74	53	42	41	42	38	25	19	492
15–29	1163	1148	1144	1083	1085	1044	1166	991	823	719	10 366
30–44	1131	1121	1103	1092	1195	1280	1170	1042	1156	1198	11 488
45–59	817	885	866	879	882	807	790	962	1054	1085	9027
60–74	299	318	324	265	211	205	254	453	586	616	3531
75–90	202	211	185	185	132	171	158	205	221	233	1903
Total	3692	3761	3696	3557	3547	3548	3580	3691	3865	3870	36 807

Panel C: Distribution of sample by industry

SIC code	Industry	No. observation	Mean lag
1000–1999	Mining, construction	1826	49.09
2000–2999	Manufacturing – food, textiles, lumber, chemicals	5536	44.99
3000–3999	Manufacturing – rubber, metal, machinery, equipment	9455	40.90
4000–4999	Transportation, communication, utilities	3238	44.71
5000–5999	Wholesale, retail	3243	44.16
6000–6999	Financial sectors	7192	33.08
7000–9999	Services	6317	44.03
Total		36 807	41.55

Announcement lag refers to the number of days between the fiscal year-end and the earnings announcement date.

requirements in SOX appear to have contributed to increased delays in earnings announcements.

Panel C of Table 1 presents the sample distribution by one-digit Standard Industrial Classification (SIC) codes. On average, there is a 16-day difference in the earnings announcements of the industry with the shortest announcement lag (financial sector) and the industry with the longest lag (mining and construction).

3.2. Testing for differences in timeliness in recognition

Following Basu (1997), we test for timeliness in *recognition* by estimating a reverse regression of earnings on stock returns and the interaction of stock returns with variables denoting early earnings announcements and news type.[9] Interactions among *RET*, *BN* and *EARLY* are included to measure the joint effects of early earnings announcements and news type on the earnings–return relationship.

$$\begin{aligned} NIBX_{it} = {} & \alpha_0 + \beta_1 EARLY_{it} + \beta_2 RET_{it} + \beta_3 BN_{it} \\ & + \beta_4 RET * EARLY_{it} + \beta_5 RET * BN_{it} \\ & + \beta_6 EARLY * BN_{it} + \beta_7 RET * EARLY * BN_{it} \\ & + \text{year dummies} + \varepsilon_i t \end{aligned} \tag{1}$$

NIBX	Firm *i*'s income before extraordinary items in year *t*. It is deflated by beginning market value of equity to mitigate heteroscedasticity problems (Basu, 1997)
EARLY	1 if a firm announces annual earnings earlier than the median announcement lag of its four-digit SIC industry peers, and 0 otherwise.[10] *EARLY* is defined in a similar fashion by prior studies (e.g. Park and Ro, 2004; Kim *et al*., 2008)
RET	Firm *i*'s compounded stock returns to the end of the fiscal year-end, *t*[11]
BN	Denotes news type which is 1 if *RET* is negative (i.e. bad news) and 0 otherwise (i.e. good news)

[9] Although Basu's (1997) method has received much criticism (see Ryan, 2006; and Ball *et al*., 2012, for a discussion), it remains the most popular model used to examine timeliness in recognition in academic research.

[10] We use the median lag each year (as opposed to the median lag over the entire sample period) in defining *EARLY*. Because earnings announcement lags have become lengthier in more recent years, as shown in Table 1, using the median of the entire sample period would result in the variable, *EARLY*, being over-represented in the first years of the sample period.

[11] Compounded stock returns are calculated using monthly return data from the CRSP. As a sensitivity test, we use compounded stock returns to end of three months after the fiscal year-end. We obtain qualitatively similar results using this alternative measure.

As discussed, timeliness in recognition is measured by the extent to which earnings capture the information set reflected in firms' stock prices (Basu, 1997; Bushman *et al*., 2004; Ashbaugh-Skaife *et al*., 2006). A higher contemporaneous correlation between earnings and stock returns (i.e. a higher regression coefficient) indicates that reported earnings contain more relevant information that underlie changes in stock prices. Note that *RET* is measured over the fiscal year while earnings are announced sometime after the fiscal year-ends. Basu (1997), among others, finds that the earnings are timelier with regard to recognition of bad news than good news. That is, they find that the interaction of *BN* with *RET* is positive and statistically significant.

Our model extends Basu (1997), first, by examining timeliness in recognition for *both* early and late announcers. The regression coefficient, β_5, measures the difference in the timeliness in recognition of bad news versus good news for late announcers. For early announcers, the difference in timeliness of recognition of bad news versus good news is the sum of regression coefficients, β_5 and β_7.[12]

Next, we compare timeliness in recognition for early announcers of good (bad) news versus late announcers of good (bad) news. The regression coefficient, β_4, measures the difference in timeliness in recognition of early versus late announcers for firms having good news, while for firms having bad news, the difference in timeliness of recognition for early versus late announcers is $(\beta_4 + \beta_7)$.[13]

Positive and statistically significant differences would support our main hypothesis, H1, that early announcers of good news (β_4) or bad news ($\beta_4 + \beta_7$) have timelier earnings with respect to recognition compared with late announcers of good news or bad news, respectively.

3.3. Testing for differences in income smoothing

Following previous studies (Francis *et al*., 2004; Larcker *et al*., 2007), we define income smoothing (*IS*) as the ratio of firm *i*'s standard deviation of income before extraordinary items to the standard deviation of its cash flows from operations. We calculate the standard deviations using 10 years of historical data that include the current year. Smaller values of *IS* indicate more variability in operating cash flows relative to the variability in earnings, suggesting that there has been smoothing of reported earnings.

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[12] The coefficients are summarized as follows: (i) late good news = β_2; (ii) late bad news = $\beta_2 + \beta_5$; (iii) early good news: $\beta_2 + \beta_4$; and (iv) early bad news: $\beta_2 + \beta_4 + \beta_5 + \beta_7$. The difference between late announcers having bad versus good news is (ii)–(i) which is β_5, while the difference between early announcers having bad versus good news is (iv)–(iii) which is $\beta_5 + \beta_7$.

[13] The difference between late announcers having good news (β_2) and early announcers having good news ($\beta_2 + \beta_4$) is β_4, while the difference between late announcers having bad news ($\beta_2 + \beta_5$) and early announcers having bad news ($\beta_2 + \beta_4 + \beta_5 + \beta_7$) is $\beta_4 + \beta_7$.

$$IS_{it} = \alpha_0 + \beta_1 EARLY_{it} + \beta_2 MB_{it} + \beta_3 CHGTA_{it} + \beta_4 LVG_{it} + \beta_5 LITIND_{it} + \beta_6 INOWNER_{it} + \beta_7 BIGN_{it} + \beta_8 SIZE_{it} + \beta_9 STDSALE_{it} + \beta_{10} INTINT_{it} + \text{year dummies} + \varepsilon_{it} \quad (2)$$

IS	Ratio of firm *i*'s standard deviation of income before extraordinary items divided by beginning value of total assets to the standard deviation of cash flows from operations divided by beginning value of total assets
EARLY	1 if a firm announces annual earnings earlier than the median announcement lag of its four-digit SIC industry peers and 0 otherwise
MB	Ratio of market value to book value of equity
CHGTA	Change in total assets divided by the beginning value of total assets
LVG	Ratio of total liabilities to total assets
LITIND	1 if a firm operates in a high-litigation industry and 0 otherwise. High-litigation industries are industries with SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370–7374
INOWNER	Percentage of institutional ownership
BIGN	1 if a firm is audited by a Big N auditing firm and 0 otherwise
SIZE	Natural logarithm of total assets
STDSALE	Standard deviation of the sales revenues of a firm scaled by total assets using 10-year historical data
INTINT	Sum of a firm's reported R&D and advertising expenses as a proportion of its sales revenues

The main variable of interest is, *EARLY*. As previously discussed, smoothed earnings should reflect to a lesser extent, current economic news affecting a firm and reflected in its stock price. A positive and statistically significant coefficient on *EARLY* would indicate that late announcers smooth earnings to a greater extent which in turn would provide additional support for Hypothesis H1 and the argument that timeliness in disclosure also implies timeliness in recognition.

In addition to the test variable, *EARLY*, we estimate *IS* as a function of management's incentives, corporate governance and earnings attributes. Management's incentives are measured using the following variables: growth (*MB* and *CHGTA*), leverage (*LVG*) and litigation risk (*LITIND*). Managers of high growth firms (high *MB* or high *CHGTA*) are under greater pressure to smooth earnings from shareholders who desire stable earnings increases (Reynolds *et al.*, 2004). We include the debt ratio (*LVG*) because of prior research showing that firms with high leverage engage in greater smoothing (Trueman and Titman, 1988; DeFond and Jiambalvo, 1994). We include *LITIND* following Frankel *et al.* (2002), who suggest that managers of firms in industries facing a high-litigation risk have greater incentives to meet analysts' expectations.

Prior research suggests that income smoothing is constrained by Big N auditors and institutional investors (Becker *et al*., 1998; Francis *et al*., 1999; Bhojraj and Sengupta, 2003). Therefore, we include an indicator variable, *BIGN*, which represents auditor type (Big N or Non-Big N) and a variable, *INOWNER*, which represents the percentage of ownership of institutional investors.[14]

Finally, we include several variables that have been found by prior research to be related to income smoothing: firm size, sales variability and intangible asset intensity. Large firms have more stable and predictable operations and therefore have a smoother earnings stream (Moses, 1987; Baginski *et al*., 1999; Dechow and Dichev, 2002). To control for variability in operations, we include the standard deviation of sales (Francis *et al*., 2004). We expect that a high standard deviation in sales will be negatively associated with income smoothing. We include intangibles intensity (*INTINT*) due to Baginski *et al*. (1999) who show that intangibles-intensive firms face lower competition and have more sustainable earnings growth. Managers may have a relatively easier task for smoothing earnings of these firms.[15]

3.4. Testing for differences in accruals quality

Following Francis *et al*. (2005) and Dechow and Dichev (2002), we use the absolute values of the error terms obtained from Eqn. (3) below, to proxy for accruals quality. Higher values of $|v_t|$ which we denote *UNEXACCR* in Eqn. (4) imply a higher estimation error in the mapping of current accruals into operating cash flow realizations, after controlling for firm-specific characteristics.

$$TCA_{it} = \beta_0 + \beta_1 OCF_{it-1} + \beta_2 OCF_{it} + \beta_3 OCF_{it+1} + \beta_4 \Delta REV_{it} + \beta_5 PPE_{it} + v_{it} \quad (3)$$

$$UNEXACCR_{it} = \beta_0 + \beta_1 EARLY_{it} + \beta_2 SIZE_{it} + \beta_3 OCFSTD_{it} + \beta_4 SALESTD_{it} + \beta_5 OPCYCLE_{it} + \beta_6 LOSSDUM_i t + \text{year dummies} + u_{it} \quad (4)$$

TCA	Change in current assets – change in cash – (change in current liabilities – change in short-term debt included in current liabilities)
OCF	Operating cash flow reported in the cash flow statements

[14] We obtain the institutional shareholder ownership data (*INOWNER*) from the CDA/Spectrum (Thomson Financial) database. Missing values of *INOWNER* are set to zero.

[15] Missing values of R&D and advertising expenses are set to zero.

ΔREV	Changes in sales revenues
PPE	Gross values of property, plant and equipment
UNEXACCR	Absolute values of error terms in Eqn. (3)
EARLY	1 if a firm announces annual earnings earlier than the median announcement lag of its four-digit SIC industry peers and 0 otherwise
SIZE	Natural logarithm of total assets
OCFSTD	Standard deviation of quarterly operating cash flows for the last 20 quarters
SALESTD	Standard deviation of quarterly sales for the last 20 quarters
OPCYCLE	Natural logarithm of the operating cycle measured as 360/(sales/average account receivables) + 360/(cost of goods sold/average inventory)
LOSSDUM	1 if the net income is negative, and 0 otherwise

Higher values of *UNEXACCR* are more likely to capture managerial actions that are discretionary and opportunistic because they are not realized into cash flows (Francis *et al*., 2005). As such, firms with higher values are less likely to have timelier earnings with regard to recognition. A negative and statistically significant coefficient on *EARLY* would indicate that late announcers engage in discretionary and opportunistic earnings management, providing support for Hypothesis 1 that earnings of late announcers are less timely in recognizing contemporaneous economic news. With regard to the control variables, following Dechow and Dichev (2002), we predict that accruals quality is lower for smaller firms and for firms with greater cash flow and sales volatility, longer operating cycles and greater incidences of loss.

4. Empirical results

4.1. Descriptive statistics

Table 2 provides descriptive statistics according to early versus late announcers (i.e. timeliness in disclosure).[16] Panel A of Table 2 shows that the mean three-day cumulative abnormal returns (CAR)[17] for early announcers is positive and statistically significant, while it is negative and statistically significant for late announcers. The differences in means and medians of CAR for the two groups are statistically significant ($p < 0.01$). These results showing that earnings announced early reflect good news while those announced late reflect bad news.

Along the same lines, Panel B of Table 2 indicates that firms announcing earnings early tend to have higher income and higher annual stock returns. The

[16] All continuous variables are winsorized at both the 1 per cent and 99 per cent levels to reduce the effects of extreme values.

[17] Abnormal returns are based on a market model estimated using the CRSP value-weighted return over days −220 to −20 relative to the annual earnings announcement date.

Table 2
Comparisons of variables between early and late announcers

Panel A: Three-day (−1, 0, +1) cumulative abnormal returns (CAR) surrounding annual earnings announcement date (*t*-values in parentheses)

CAR	Early announcers	Late announcers	Test of differences
Mean	0.0032 (5.07)***	−0.0019 (−2.93)***	5.60***
Median	0.0017 (4.46)***	−0.0011 (−2.74)***	4.86***
Q1	−0.0292	−0.0353	
Q3	0.0349	0.0327	
Min.	−0.2154	−0.2298	
Max.	0.2325	0.2164	
SD	0.0698	0.0745	

Panel B: Comparisons of variables used in tests of differences in timeliness in recognition

	Early announcers			Late announcers			Test of mean
Variables	Mean	Median	SD	Mean	Median	SD	*t*-statistic
NIBX	0.0287	0.0518	0.1184	0.0036	0.0444	0.1556	17.37***
RET	0.2007	0.1706	0.5126	0.1648	0.1426	0.5556	6.43***
BN	0.3100	0.0000	0.4625	0.3561	0.0000	0.4788	−9.37***

Panel C: Comparisons of variables used in tests of differences in income smoothing

	Early announcers			Late announcers			Test of mean
Variables	Mean	Median	SD	Mean	Median	SD	*t*-statistic
IS	1.0394	0.8630	0.8267	1.1257	0.9196	0.9219	−9.12***
MB	3.5393	2.3747	4.3839	2.8351	1.9579	4.0402	15.51***
CHGTA	0.1437	0.0861	0.3111	0.1402	0.0814	0.3484	0.99
LVG	0.4961	0.5029	0.2442	0.4997	0.4992	0.2555	−1.31
LITIND	0.3329	0.0000	0.4713	0.3259	0.0000	0.4687	1.39
INOWNER	0.4168	0.4418	0.3321	0.3221	0.2468	0.3204	26.92***
BIGN	0.9611	1.0000	0.1934	0.8819	1.0000	0.3227	27.35***
SIZE	6.7605	6.6799	1.9253	5.8829	5.7233	1.8821	42.76***
STDSALE	0.4015	0.2444	0.4655	0.4387	0.2762	0.4941	−7.19***
INTINT	0.0981	0.0146	0.2030	0.1045	0.0099	0.2314	−2.73***

Panel D: Comparisons of variables used in tests of differences in accruals quality

	Early announcers			Late announcers			Test of mean
Variables	Mean	Median	SD	Mean	Median	SD	*t*-statistic
UNEXACCR	0.0708	0.0349	0.1024	0.0744	0.0378	0.1050	−2.96***
SIZE	6.6869	6.6108	1.8644	5.8086	5.6561	1.8224	41.16***
OCFSTD	0.0734	0.0544	0.0677	0.0806	0.0567	0.0779	−8.54***
SALESTD	0.0715	0.0447	0.0879	0.0849	0.0529	0.1037	−12.04***
OPCYCLE	4.5337	4.6458	0.8262	4.5806	4.6976	0.8432	−4.85***
LOSSDUM	0.2313	0.0000	0.4217	0.3305	0.0000	0.4704	−19.15***

In panel A, CAR denotes cumulative abnormal returns over a three-day window surrounding the annual earnings announcement date, where abnormal returns are based on a market model estimated using the CRSP value-weighted return over days −220 to −20 relative to the annual earnings announcement date.

differences in these variables are statistically significant ($p < 0.01$) and are also consistent with prior findings (Givoly and Palmon, 1982; Dye and Sridhar, 1995; Begley and Fischer, 1998).

Panel C of Table 2 presents comparisons of the variables used in the tests of income smoothing. Interestingly, we find that firms that announce earnings early tend to report more smoothed earnings. The mean *IS* of firms announcing early is 1.0394, whereas for firms announcing earnings late, it is 1.1257. The difference is statistically significant ($p < 0.01$). Note that small values of *IS* indicate more income smoothing. Other notable differences are that early announcers have: greater market to book values, higher institutional ownership, more Big N auditors, larger firm size, lower sales volatility and lower intangible asset intensity.

In Panel D of Table 2, we report comparisons of variables used in tests of accruals quality. Consistent with hypothesis, H1B, we find higher accruals quality (i.e. smaller values of *UNEXACCR*) for early announcers. Regarding the other variables, early announcers are: larger, exhibit lower volatility in operating cash flows and sales, have shorter operating cycles and lower frequencies of losses. All of these differences are statistically significant ($p < 0.01$).

Panel A of Table 3 presents the Pearson's correlations among *NIBX*, *RET* and *BN*. All of these correlations are statistically significant ($p < 0.01$). As expected, the correlation between *NIBX* and *RET* is positive, suggesting that earnings, on average, reflect economic news captured in stock prices. *EARLY* is positively correlated with *NIBX*, which is consistent with early announcers having higher net income. Early announcers also have higher stock returns as evidenced by the positive correlation between *RET* and *EARLY*. These correlations are consistent with those found by prior research.

Panel B of Table 3 presents the correlations among the variables used in the tests of income smoothing. Our measure of income smoothing is statistically significantly correlated with all variables used. However, the direction of the correlation is not always consistent with our expectations. For example, *IS* is negatively correlated with *EARLY*, which suggests that earnings of early announcers are smoothed to a greater extent. In addition, the external governance variables are negatively correlated with *IS* which is not consistent with our expectation that external monitoring reduces the extent of income smoothing.

In Panel C of Table 3, we find inconsistent with expectations that *UNEXACCR* is negatively correlated with *EARLY*, suggesting that accruals quality is higher in firms that announce their earnings earlier than their industry peers. As expected, *UNEXACCR* is negatively correlated with firm size (*SIZE*) and positively correlated with firms with greater cash flow (*OCFSTD*) and sales volatility (*SALESTD*), longer operating cycles (*OPCYCLE*) and greater incidences of losses (*LOSSDUM*).

Table 3
Pearson correlation matrix.

Panel A: Correlation among variables used in the tests of timeliness in recognition

	RET	BN	EARLY
NIBX	0.139 (<0.001)	−0.194 (<0.001)	0.090 (<0.001)
RET		−0.689 (<0.001)	0.034 (<0.001)
BN			−0.048 (<0.001)

Panel B: Correlation among variables used in the tests of income smoothing

	EARLY	MB	CHG-TA	LVG	LIT-IND	INOW-NER	BIGN	SIZE	STD-SALE	INT-INT
IS	−0.049 (<0.001)	0.031 (<0.001)	−0.016 (0.004)	−0.073 (<0.001)	0.081 (<0.001)	−0.014 (0.009)	−0.031 (<0.001)	−0.137 (<0.001)	0.068 (<0.001)	0.132 (<0.001)
EARLY		0.083 (<0.001)	0.005 (0.323)	−0.007 (0.189)	0.007 (0.165)	0.146 (<0.001)	0.145 (<0.001)	0.225 (<0.001)	−0.039 (<0.001)	−0.015 (0.006)
MB			0.158 (<0.001)	−0.068 (<0.001)	0.133 (<0.001)	0.041 (<0.001)	0.005 (0.343)	−0.061 (<0.001)	0.033 (<0.001)	0.147 (<0.001)
CHGTA				−0.127 (<0.001)	0.016 (0.004)	0.026 (<0.001)	−0.024 (<0.001)	0.003 (0.643)	0.069 (<0.001)	−0.028 (<0.001)
LVG					−0.293 (<0.001)	0.019 (0.000)	0.074 (<0.001)	0.445 (<0.001)	−0.190 (<0.001)	−0.258 (<0.001)
LITIND						−0.086 (<0.001)	−0.017 (0.002)	−0.259 (<0.001)	0.175 (<0.001)	0.382 (<0.001)
INOWNER							0.087 (<0.001)	0.247 (<0.001)	−0.069 (<0.001)	−0.045 (<0.001)
BIGN								0.207 (<0.001)	−0.079 (<0.001)	0.015 (0.007)
SIZE									−0.285 (<0.001)	−0.330 (<0.001)
STDSALE										−0.011 (0.040)

Panel C: Correlation among variables used in the tests of accruals quality

	EARLY	SIZE	OCFSTD	SALESTD	OPCYCLE	LOSSDUM
UNEXACCR	−0.017 (<0.001)	−0.295 (<0.001)	0.382 (<0.001)	0.118 (<0.001)	0.011 (0.064)	0.250 (<0.001)
EARLY		0.232 (<0.001)	−0.049 (<0.001)	−0.069 (<0.001)	−0.028 (<0.001)	−0.110 (<0.001)
SIZE			−0.435 (<0.001)	−0.204 (<0.001)	−0.042 (<0.001)	−0.297 (<0.001)
OCFSTD				0.230 (<0.001)	−0.028 (<0.001)	0.303 (<0.001)
SALESTD					−0.0642 (<0.001)	0.035 (<0.001)
OPCYCLE						−0.007 (0.218)

Table 4
Ordinary least squares (OLS) regressions testing for differences in timeliness in recognition
$NIBX_{it} = \alpha_0 + \beta_1 EARLY_{it} + \beta_2 RET_{it} + \beta_3 BN_{it} + \beta_4 RET * EARLY_{it} + \beta_5 RET * BN_{it} + \beta_6 EARLY * BN_{it} + \beta_7 RET * EARLY * BN_{it} + \text{year dummies} + \varepsilon_i t$

Variables	Coefficient	*t*-value	*p*-value
Intercept	0.0509	23.98	<0.0001
EARLY	0.0136	5.53	<0.0001
RET	0.0435	15.53	<0.0001
BN	−0.0277	−9.39	<0.0001
*RET*EARLY*	−0.0037	−0.92	0.3590
*RET*BN*	0.2124	37.47	<0.0001
*EARLY*BN*	0.0056	1.31	0.1916
*RET*EARLY*BN*	−0.0354	−4.12	<0.0001
F-value	300.57***		
Adj-*R* square	0.1088		
N	36 807		

***denotes significance at the 1 per cent level (two-tailed).

4.2. Regression results testing for differences in timeliness in recognition

Estimation results are presented in Table 4.[18] The model is statistically significant (*F*-value = 300.57) with an adjusted R^2 of approximately 11 per cent. All coefficients are statistically significant excepting for β_4 and β_6.

As discussed, the coefficient, β_5, captures the difference in timeliness of bad versus good news for late announcing firms, while the sum of coefficients, ($\beta_5 + \beta_7$), captures the difference in timeliness of bad news versus good news for early announcing firms. We find that the coefficient, β_5, is positive and statistically significant ($p < 0.01$), while an F-test shows that ($\beta_5 + \beta_7$) is also positive and significantly different from zero ($p < 0.01$). These results are consistent with Basu (1997) who finds that bad news is reflected in earnings on a timelier basis than is good news.

Our results also show that there is no difference between firms disclosing good news early versus firms disclosing good news late (i.e. β_4 is not statistically significant). That is, earnings recognize good news to same extent regardless of when they are announced. However, with regard to the recognition of bad news in earnings, there is a significant difference. We find that there is a more timely recognition of bad news in earnings of late announcers compared early announcers. That is, we find that ($\beta_4 + \beta_7$) is negative and statistically significant ($p < 0.01$). This finding is inconsistent with our hypothesis, H1, that timeliness is disclosure also implies timeliness in recognition.

[18] In all models estimated, the standard errors reported are robust with respect to firm clustering. The variance inflation factors (VIF) are all well below the threshold levels where multicollinearity is suggested to be a significant issue.

4.2.1. Alternative explanations

As our results refute predictions from Trueman's (1990) model, we suggest an alternative explanation that could possibly explain what we found. We acknowledge, however, that this may not be the only explanation for our results. Trueman (1990) also acknowledges that his theory may not lead to the same predictions under a different set of assumptions. We believe that much more research would be needed before a complete theory develops that would explain this complex issue.

We explore an alternative explanation mentioned, but not pursued in Trueman (1990) that bad news is announced late because auditors take longer to complete audits of bad news firms, that is, these firms have longer audit lags. The longer audit lags for bad news firms are due to the higher litigation risk that these firms pose for their auditors (Bamber *et al*., 1993). The greater the litigation risk, the longer the time taken to complete an audit. As the risk of litigation increases, auditors also become increasingly conservative in their audits (Basu, 1997). Indeed, Basu argues that as a result of high-litigation risk, auditors tend to become more conservative with regard to recognition, than their clients.[19] Our results appear to be supportive of the above explanations. That is, we suggest that late announcements of bad news are timelier in recognition because they reflect greater auditor diligence in response to a heightened litigation risk, which in turn results in higher audit delays and greater auditor conservatism.

4.3. Regression results testing for differences in income smoothing

Estimation results are presented in Table 5. The overall fit is significant (*F*-values = 68.53 and 68.73), and the model explains approximately 6 per cent of the variation in the dependent variable. We find that the coefficient on *EARLY* is negative and statistically significant at $p < 0.01$, indicating that early announcers are more likely to smooth earnings.[20] A change from

[19] The principle of anticipate no gains but anticipate all losses is more rigorously applied when auditors become more conservative.

[20] As tests of sensitivity, we do the following: (i) we also run Tobit regressions rather than ordinary least squares regressions because our dependent variable (*IS*), by definition, is censored at zero. Our inferences are robust to the use of Tobit regressions, (ii) we use a continuous variable for *EARLY*, defined as the number of days elapsed from the fiscal year-end to the earnings announced date after subtracting the median industry level of the announcement lag. We find qualitatively similar results, and (iii) following Jayaraman (2008), we also measure income smoothing as the difference between the variance of earnings and the variance of cash flows, rather than the ratio of the two variables. We find similar results with this alternative measure of income smoothing.

Table 5
Ordinary least squares (OLS) regressions testing for differences in income smoothing

$$IS_{it} = \alpha_0 + \beta_1 EARLY_{it} + \beta_2 MB_{it} + \beta_3 CHGTA_{it} + \beta_4 LVG_{it} + \beta_5 LITIND_{it} + \beta_6 INOWNER_{it} + \beta_7 BIGN_{it} + \beta_8 SIZE_{it} + \beta_9 STDSALE_{it} + \beta_{10} INTINT_{it} + \text{year dummies} + \varepsilon_{it}$$

Variables	Coefficient	*t*-value	*p*-value
Intercept	1.0006	31.49	<0.0001
EARLY	−0.0498	−4.54	<0.0001
MB	0.0018	1.60	0.1093
CHGTA	−0.0375	−2.57	0.0101
LVG	0.0783	3.55	0.0004
LITIND	0.0586	3.14	0.0017
INOWNER	−0.0072	−0.47	0.6383
BIGN	−0.0013	−0.07	0.9424
SIZE	−0.0388	−12.21	<0.0001
STDSALE	0.0571	5.46	<0.0001
INTINT	0.3497	12.47	<0.0001
F-value	68.53***		
Adj-*R* square	0.0556		
N	35 052		

***denotes significance at the 1 per cent level (two-tailed).

EARLY = 0 to *EARLY* = 1 for a typical firm (median *IS* of 0.8890) results in a decrease in income smoothing of about 6 per cent (0.0498 divided by 0.8890), after controlling for other known factors. Once again, we refute Trueman's (1990) prediction that late announcers have greater incentives to smooth income. The results, however, are consistent with our alternative explanation, namely that auditor conservatism and diligence are higher for late announcers leading to earning of higher quality (i.e. lower income smoothing) for late announcers.

Regarding the control variables, we find, as expected, that income smoothing is more pronounced for larger firms (*SIZE*), and firms having higher growth (*CHGTA*) and lower sales volatility (*STDSALE*). However, we also find that some regression coefficients have signs that are inconsistent with our predictions. Specifically, we find that income smoothing is lower in firms: having higher leverage (*LVG*), belonging to litigious industries (*LITIND*), and having high R&D and advertising expenses (*INTINT*).[21]

[21] Leverage is being used less frequently as a constraint in lending agreements (Begley and Freedman, 2004), which may be why leverage does not show up as a significant incentive for income smoothing in our research period. Further, the variables *LITIND* and *INTINT* scope in technology companies where smoothing is often difficult because of the inherent volatile nature of this industry. This could possibly explain why we fail to find the predicted results.

Table 6
Ordinary least squares (OLS) regressions testing for differences in accruals quality
$UNEXACCR_{it} = \beta_0 + \beta_1 EARLY_{it} + \beta_2 SIZE_{it} + \beta_3 OCFSTD_{it} + \beta_4 SALESTD_{it} + \beta_5 OPCYCLE_{it} + \beta_6 LOSSDUM_i t + \text{year dummies} + u_{it}$

Variables	Coefficient	*t*-value	*p*-value
Intercept	0.0596	12.11	<0.0001
EARLY	0.0099	8.79	<0.0001
SIZE	−0.0075	−21.16	<0.0001
OCFSTD	0.3749	43.55	<0.0001
SALESTD	0.0368	6.21	<0.0001
OPCYCLE	0.0011	1.54	0.1232
LOSSDUM	0.0288	22.01	<0.0001
F-value	325.13***		
Adj-*R* square	0.1927		
N	31 609		

***denotes significance at the 1 per cent level (two-tailed).

4.4. Regression results testing for differences in accruals quality

We present results for tests of accruals quality in Table 6. The model is significant (*F*-values = 325.13 and 326.31), explaining approximately 19 per cent of the variation in the dependent variable. The coefficient on *EARLY* is positive and statistically significant ($p < 0.01$). Contrary to predictions from Trueman's (1990) model, this suggests that early announcers tend to have lower quality of accruals.[22] A change in the test variable, from $EARLY = 0$ to $EARLY = 1$, for the typical firm (median *UNEXACCR* of 0.0365) results in a decrease in accruals quality of approximately 27 per cent (0.0099 divided by 0.0365) after controlling for other known determinants.

Similar to the case of income smoothing, our alternative explanation, however, provides support for our results. That is, if heightened litigation risk associated with bad news is the reason for delays in earnings announcements and greater auditor conservatism, we would expect accruals quality to be higher for these late announcers.

The findings regarding other determinants of accruals quality are consistent with findings of previous studies; accruals quality is lower for smaller firms, for firms with higher frequencies of losses and for firms with greater volatilities in operating cash flows and sales.

[22] Interestingly, results obtained from the regression tests are contrary to the univariate results in Table 2. Univariate analyses, however, do not control for other determinants. For this reason, we view our multivariate tests as more valid for drawing conclusions.

4.5. Sensitivity analyses

4.5.1. An alternative definition of timely disclosures

Several prior studies have defined early/late announcements relative to the expected announcement dates (Givoly and Palmon, 1982; Chambers and Penman, 1984; Kross and Schroeder, 1984; Atiase *et al.*, 1989). Following previous research (Verrecchia, 1983; Leventis and Weetman, 2004; Sengupta, 2004), we first obtain the predicted announcement lags using a model.[23] Earnings announcement lags are modelled as a function of the demand for information from investors, litigation costs, audit related lags, type of investor base, proxies for proprietary costs and type of news. *EARLY* is then defined as 1 if a firm's actual announcement lag is shorter than its predicted value using the regression below.

$$\begin{aligned} Announcement\ Lag_{it} = {} & \alpha_0 + \beta_1 VOL_{it} + \beta_2 LCON_{it} + \beta_3 LITIN_{it} \\ & + \beta_4 NUM_{it} + \beta_5 FC_{it} + \beta_6 LOSS_{it} + \beta_7 LVG_{it} \\ & + \beta_8 COM_{it} + \beta_9 BARR_{it} + \beta_{10} BN_{it} \\ & + \beta_{10} SIZE_{it} + \text{year dummies} \\ & + \text{industry dummies} + \varepsilon_{it} \end{aligned} \tag{5}$$

Announcement Lag	Number of days from the fiscal year-end to the earnings announcement date
VOL	Annual trading volume divided by the number of shares outstanding;
LCON	Log of ownership concentration ratio, measured by shares outstanding divided by the number of shareholders
LITIN	1 if a firm operates in a high-litigation industry and 0 otherwise. High-litigation industries are industries with SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370–7374
NUM	Number of reportable business segments
FC	Financial condition measured by Zmijewski's financial condition index
LOSS	1 if a firm reports negative earnings and 0 otherwise
LVG	Total liabilities divided by total assets
COM	Percentage of revenue of the top five companies in each two-digit industry code
BARR	Gross property, plants and equipment expressed as a percentage of total assets
BN	1 if actual earnings minus mean value of analysts' forecasts made just before earnings announcements is negative and 0 otherwise
SIZE	Firm size, measured as the natural log of total assets

[23] We expect that this two-stage-least-squares (2SLS) approach reduces, at least partially, the concern of endogeneity, which is common in studies performing cross-sectional analyses (See Larcker and Rusticus, 2010, for a discussion on endogeneity).

Estimation results regarding tests of all our hypotheses (not tabulated) are qualitatively similar using this alternative definition of *EARLY*.[24]

4.5.2. Tests using continuous variable for EARLY

As a test of robustness, we replace the dummy variable, *EARLY*, with a continuous variable, *ADJLAG*. *ADJLAG* is defined as number of days elapsed since the end of the fiscal year until earnings announcement date after subtracting the two-digit SIC industry's median lag. Our untabulated results are robust to using a continuous variable for *EARLY*.

4.5.3. Quarterly announcements

We also perform our tests using quarterly earnings announcements obtained from Compustat. *EARLY* is coded 1, if a firm announces its quarterly earnings earlier than its peers in the same industry in at least three quarters of the year. Approximately 35 per cent of the sampled firms are classified as *EARLY* announcers. Our results (untabulated) are qualitatively similar to those reported.

4.5.4. Year by year regressions

There have many regulatory changes during our sample period (e.g. SOX and reductions in SEC filing dates). While we control for fixed-year effects in our prior estimations, we also run separate yearly regressions. We find the expected statistically significant results in seven of the ten years in estimations concerning the timeliness in recognition and income smoothing and in nine of the ten years in estimations involving accruals quality (results untabulated). We also perform tests (untabulated) separately for pre- and post-SOX periods.[25] We find qualitatively similar results to those previously documented, in both periods.

5. Conclusion

Our study examines whether there are differences in earnings quality of early and late announcers. Our main research question explores whether earnings announced earlier than by peers in the same industry are timelier in recognizing value-relevant news that is publicly available. That is, we hypothesize whether the timeliness in disclosure is positively related to the timeliness in recognition. As additional evidence in support of this hypothesis, we test whether firms

[24] We note that early announcers using both definitions are highly correlated (the correlation is approximately 60 per cent).

[25] Pre-SOX era is 1997 to 30 July 2002, and post-SOX era is 1 August 2002 to 2006.

announcing earnings late are more likely to smooth income and reflect lower accruals quality.

The results are inconsistent with our hypotheses. We find, instead, that earnings of late announcers recognize bad news in a significantly timelier fashion than earnings of early announcers. Similarly, we find that earnings of late announcers recognize good news in a timelier fashion than earnings of early announcers, although the difference in timeliness is not statistically significant. We offer an alternative possible explanation for these results. We suggest that litigation risk is higher for bad news firms forcing auditors to adopt a more conservative audit approach and also take a longer time to complete the audit. We acknowledge, however, that this is not a complete theory explaining the timing of earnings announcements. For example, our results do not fully explain why stock markets react positively to early earnings announcements after controlling for reported earnings. But whatever the reason is, it is not because earnings announced early have higher quality. Additional future work is needed on increasing our understanding of strategic patterns in announcements and disclosures.

The findings of this study have implications for regulators attempting to ensure that information is delivered in a timely manner to investors and capital markets. To increase the informational efficiency of markets, regulators in several countries (e.g. the SEC in the US and the ASX in Australia) have mandated shorter filing deadlines. However, our results based on US data suggest that there is a trade-off for regulators to consider, namely that mandating timelier disclosures may come at the expense of lower earnings quality. An extension of this work would be to test whether our findings also hold in other countries.

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