

Are Early Announcements of Earnings Truly Timely?
An Analysis of Earnings Timeliness and Income Smoothing

ABSTRACT

This study examines whether annual earnings announcement timing is related to how quickly earnings incorporate value-relevant information (earnings timeliness) and the extent to which earnings are smoothed (income smoothing). Interestingly, we found that among firms in the same industry, those who announced earnings early were actually later in incorporating concurrent market information. In addition, the earnings that were announced early were more smoothed. These results suggest that managers who delay recognition of bad news to achieve income smoothing tend to announce annual earnings earlier than their industry peers. Therefore, managers who manipulate earnings may mislead the market by facilitating disclosure of their earnings.

Keywords: earnings announcement date, earnings timeliness, earnings smoothing

Data Availability: Data are publicly available from sources identified in the paper.

I. INTRODUCTION

The purpose of this paper is to address the research question of whether earnings announced early (EAE) are timelier than others in the same industry in capturing value-relevant information. Some regard earnings announced earlier than others in the same industry as timely, while others define timeliness as the extent to which current earnings capture the information set underlying contemporaneous changes in stock prices. These two concepts in timeliness differ in that the former refers to timeliness in disclosure, while the latter refers to timeliness in recognition. Disclosure is the process of releasing the information that is already prepared, while recognition is the process of including items in numbers in the financial statements (FASB 1984). Disclosure and recognition are two major avenues through which companies communicate their financial information with information users (Shaw 2003).

Timeliness of earnings is an important element in determining the usefulness of information. FASB states that “timeliness alone does not determine relevance of information, but lack of timeliness can rob information of relevance it might have had” (FASB 1980). According to the Statement of Financial Accounting Concepts No. 2, the characteristic of timeliness is related to relevance of information, one of the two primarily decision-specific qualities. Timeliness is of great importance because financial information users (e.g., investors, analysts, creditors, and others) need information that is relevant and useful to make economic decisions, and the disclosure of information should be timely as possible, in order not to lose the capacity to influence decision making (FASB 1980).

Investigating timeliness of earnings is also a relevant issue in that regulators have made an effort to improve the timeliness of financial information by accelerating annual filings. To increase the informational efficiency of markets, the Securities and Exchange Commission (SEC), for example, has issued rules requiring phased reductions in filing deadlines from 90 days after the fiscal year-end to 60 days for large filers.¹ However, this effort to increase market efficiency by accelerating annual filings would be unsuccessful if timeliness in disclosure is not followed by timeliness in recognition. That is, if EAE do not contain relevant information in a timely way, accelerating filings dates alone would not enhance market efficiency.

Atiase et al. (1989) shows that as reporting delays increase, the less likely information will be useful to decision makers. In other words, the value of information declines with information delay. It is well documented that timeliness of earnings announcement is related to market prices. Firms that announce earnings early are, on average, viewed positively by the market, whereas firms that announce earnings late are generally viewed negatively by the market (Chambers and Penman 1984; Kross and Schroeder 1984). However, it is not clear whether markets place high values on EAE because the arrival of the information is more timely and thus, more relevant to their decision makings, or because EAE are more likely to contain good news rather than bad news.

¹ See Revisions to Accelerated Filer Definition and Accelerated Deadlines for Filing Periodic Reports Other Release No. 34-5298 available at <http://www.sec.gov/rules/final/33-8644.pdf>. There was a similar effort in Australia. On January 1, 2003, the Australian Stock Exchange (ASX) reduced the deadline for the Australian Preliminary Final Statement (PFS), equivalent to 10-K in the U.S., from 75 days to 60 days for most companies (Brown et al. 2009).

In this study, we examine whether there are any quality differences between earnings announced early versus late. Our first research question is whether earnings announced more timely are the ones incorporating market relevant information quickly. In specific, this study examines whether earnings announced earlier than their peers in the same industry (timeliness in disclosure) contain more value-relevant information in a timely manner (timeliness in recognition). A multivariate regression incorporating type of news is used to help determine if reporting early is actually timely in measurement as well. That is, a reverse regression of earnings is estimated on returns and interactions of returns with variables to examine the issue of timeliness. Interestingly, our empirical results show that EAEs are relatively later in recognizing economic news in their earnings than earnings announced late, especially for bad news.² This suggests that timeliness in disclosure is not the same as timeliness in recognition.

One possible explanation for the finding is the well-known strategy of companies to smooth their earnings pattern intertemporarily. Managers have incentives to delay recognition of relevant but unfavorable information to achieve a smoothed earnings pattern, since timely recognition of loss results in earnings that are more volatile than cash flows (Jayaraman 2008). Managers may recognize good news and bad news in a way so that earnings are smoothed over for a period, given the empirical evidence that markets prefer smoothed earnings. Bernard and Schipper (1994) shows that managers try to please analysts and investors by providing highly predictable earnings, potentially yielding earnings that are manipulated by managers. Furthermore, Shaw (2003) provides some evidence that high quality of firms' disclosure practices do not always suggest high

² For our tests, bad (good) news refers to incidents that adversely (favorably) affect market returns, and that are eventually incorporated in earnings.

quality in their recognition practices. Managers who delay recognition of bad news for income smoothing may mislead the market by facilitating disclosure.

Consequently, our second research question is to test whether firms announcing earnings early engage in more income smoothing. Our results indicate that early announcers of annual earnings tend to be income smoothers. Considering both earnings timeliness and income smoothing tests, we argue that firms with early earnings announcements are late to incorporate concurrent market information, in order to achieve a smooth earnings pattern. This suggests that firms with good disclosure practices - early announcement of annual earnings in this study - are not always ones with good recognition practices.

This study contributes to the accounting literature in several important aspects. First, we provide evidence suggesting that firms that announce earnings earlier than their peers are late in incorporating economic news. To our knowledge, our study is the first to demonstrate such an association. By documenting this association, it extends the line of literature showing that two definitions of earnings timeliness in disclosure and recognition are two distinct concepts, which should be carefully considered in defining timeliness of information. Next, by showing a negative association between timeliness in disclosure and timeliness in recognition, our study casts doubts on regulators' efforts to increase the relevance of financial information by shortening the time of earnings release. Our result indicates that EAE are the earnings that are smoothed by managers and contain less timely information, suggesting that early releases of earnings alone do not increase information relevance. Our findings should also be useful to investors who use earnings information to evaluate firms' performance, as it is suggested that EAE do not necessarily

contain high quality earnings. It seems that the high market values of EAE documented by prior studies are attributable to the possibility that such earnings are more likely to be good news rather than the possibility that earnings released early are timelier in incorporating relevant market information.

The remainder of this study comprises four sections. Section 2 reviews relevant literature. Section 3 discusses the research design, and Section 4 reports and discusses empirical results. The last section concludes the study.

II. LITERATURE REVIEW

A. Earnings Timeliness

Earnings are considered the most important single number in financial accounting (Nichols and Wahlen 2004). Earnings can be used in many ways, including lending, contracting, corporate governance, management compensation, regulation, and mergers and acquisitions, but, most importantly, play a pivotal role in the stock market (Brown et al. 2009). Previous studies examining timeliness have generally focused on the timeliness of disclosures and its effect on stock prices. Givoly and Palmon (1982) argue that timeliness is important to measure the usefulness of an annual report. They document that market reactions to early earnings announcements are more influential than those to late earnings announcements. Similarly, Chambers and Penman (1984) study timeliness of interim reports and document results that earlier reports produce positive price reactions, while later released reports result in negative reactions. Those studies suggest that a longer reporting lag adversely affects the usefulness of its information and increases uncertainty.

Prior studies also find that timeliness in disclosure also affects stock evaluation of other firms in the same industry. For example, Zeghal (1984) examines how the timeliness of a firm's earnings announcement affects share prices of other firms in the same industry. He compares the informational content of interim and annual reports, and finds that shorter delays have better informational content compared to longer delays. Atiase et al. (1989) also argue that a later release of earnings would provide investors with the chance to discover similar information contained in the earnings reports from other intra-industry announcements. Therefore, earnings lose their usefulness when they are not reported in a timely manner. Similarly, Han and Wild (1997) examine the potential relationship between earnings timeliness and share price reaction of competing firms. They document that later releases yield insignificant information transfers since much of the information is expressed in competitors' prior disclosures. The timing by which earnings are released significantly influences the sign and importance of information transfers.

Previous researchers have studied timeliness of earnings reports and their effect on firm stock prices, and have documented that early releases are associated with significant information content of its own firm and other firms in the same industry. However, very few researchers, if any, have studied whether EAE are timelier than late announced earnings in incorporating value-relevant information. This paper tests whether or not firms with timeliness in disclosure are also ones with timeliness in recognition. Timeliness in disclosure is measured by whether a firm announces its annual earnings earlier than its industry peers. However, timeliness in recognition is measured as the extent to which current earnings capture the information set underlying contemporaneous

changes in stock prices (thus, market returns), following prior studies (Ashbaugh-Skaife et al. 2006; Basu 1997; Bushman et al. 2004). A high correlation between earnings and market returns indicates that earnings are capturing more relevant events affecting stock prices and considered more timely (Basu 1997). This definition of timeliness is also consistent with Butler et al. (2007), who contend that the issue of timeliness is not simply a matter of counting the number of days elapsed between the fiscal quarter-end date and the earnings release date.

Based on the preceding discussion, we devise a research question of whether EAE are those incorporating value-relevant information quickly. This is a research question that requires an empirical test. Since the direction is unclear *ex ante*, we test the following non-directional hypothesis (stated in the null form):

H1: The timeliness in disclosure is unrelated to the timeliness in recognition.

B. Income Smoothing

Managers are concerned about the high volatility of their earnings. Graham et al. (2005) find that 97% of CFOs in their survey prefer smoothed earnings because they believe that lower earnings volatility is associated with lower cost of capital and greater precision in analysts' earnings forecasts. Prior studies have suggested a number of benefits of smoothed earnings. For example, DeFond and Park (1997) show that a decrease in the variability of earnings improves earnings persistence and therefore, stock prices. Francis et al. (2004) find that firms with greater income smoothing have a lower cost of capital, even after accounting for cash flow volatility. Furthermore, income smoothing is rewarded by cash compensation. Das et al. (2009) find that CEOs' cash

compensation increases in income smoothing when cash flow volatility is high, where the benefits of reporting smooth earnings are relatively high.

Further, managers try to avoid high earnings volatility because it is costly to shareholders. Barnes (2001) finds a negative relation between market to book value of assets and volatility of earnings, suggesting lower value of firms reporting high volatile earnings. Allayannis and Weston (2005) further find that earnings volatility dominates cash flow volatility in determining firm value. In specific, they provide evidence that one standard deviation increase in earnings volatility is associated with approximately a 9% decrease in firm value. In addition, Truman and Titman (1988) note that earnings volatility adversely affects cost of debts because investors perceive a high probability of bankruptcy. Similarly, Minton and Schrand (1999) find that firms with greater earnings volatility have higher costs of equity, as well as debt capital. Institutional investors generally avoid firms showing large variability of earnings, and investors generally are not attracted to firms with fluctuating earnings (Michelson et al. 2000).

Managers achieve income smoothing by under-reporting true earnings when earnings performance is higher than expected and over-reporting true earnings when earnings performance is lower than expected. Some researchers (Arya et al. 2003; Sankar and Subramanyam 2001; Subramanyam 1996) view it as improving the information content via managers' private information communication. For example, Arya et al. (2003) argue that by smoothing earnings, managers are able to communicate the permanent portion only after eliminating the transient portion of earnings, thereby enabling markets to estimate the firm's stock price more efficiently. However, income smoothing is generally viewed as an act of earnings management, garbling the

information content of earnings (Bhattacharya et al. 2003; Dechow and Skinner 2000; Jayaraman 2008; Lang et al. 2003; Leuz et al. 2003; Levitt 1998). The study of income smoothing in general has been more successful in providing evidence than the study of other forms of earnings management (Bao and Bao 2004). DeFond and Park (1997) find that managers consider both current-year earnings and the next-year earnings when they determine the level of discretionary accruals at the current year, and smooth earnings using discretionary accruals in ways to meet earning targets.

As the second test, we examine whether EAE are more smoothed, relative to earnings announced late. This test is motivated by a link between timeliness in recognition and income smoothing. Shaw (2003) suggests that firms may manipulate recognizing value relevant information to achieve a smoothed earnings pattern. Jayaraman (2008) also contends that one reason why firms delay bad news recognition is to achieve earnings smoothness. Given the findings of these studies, we believe that a test of whether EAE are more smoothed sheds additional insight into firms' disclosure behavior. Shaw (2003), using disclosure quality scores from the Financial Analysts' Federation (FAF), finds that firms choose high disclose quality to disguise their behavior of earnings management. This suggests a possible link between timeliness in disclosure and income smoothing. Therefore, whether firms with EAE pursue more income smoothing is our second hypothesis stated in a null form:

H2: The timeliness in disclosure is unrelated to income smoothing.

III. RESEARCH DESIGN

A. Sample Selection Procedure

Table 2 summarizes the sample selection procedure. Both of our samples include any active firms in COMPUSTAT during 1997-2006. After having excluded observations that (a) lacked financial data in COMPUSTAT, (b) lacked market data in CRSP, (c) lacked earnings announcement dates in IBES, or (d) were extremes in earnings announcement delay,³ our sample contains 36,807 and 35,052 firm-years for the tests of earnings timeliness and income smoothing, respectively.

(Insert TABLE 2 Here)

B. Model for the Test of Earnings Timeliness

Following Basu (1997), a reverse regression of earnings is estimated on returns and interaction of returns with variables capturing early earnings reporting and news type to test earnings timeliness. The timeliness in recognition is defined by the extent to which earnings capture the information set underlying changes in stock price. A higher contemporaneous correlation between earnings and stock returns (thus, greater magnitude of coefficients in the regression) indicates that the earnings capture more of the relevant events that are reflected in stock prices (Basu 1997). We consider earnings that reflect contemporaneously more of the variance in returns more timely in recognition.

$$NIBX_{it} = \alpha_0 + \beta_1 EARLY_{it} + \beta_2 RET_{it} + \beta_3 BN_{it} + \beta_4 RET*EARLY_{it} + \beta_5 RET*BN_{it} + \beta_6 EARLY*BN_{it} + \beta_7 RET*EARLY*BN_{it} + year\ dummies + industry\ dummies + \varepsilon_{it} \quad (1)$$

<i>NIBX</i>	Firm <i>i</i> 's income before extraordinary items in year <i>t</i> , deflated by beginning market value of equity;
<i>EARLY</i>	1 if a firm announces annual earnings earlier than its 2-digit SIC industry peers, and 0 otherwise;
<i>RET</i>	Firm <i>i</i> 's buy-and-hold annual stock returns in year <i>t</i> ; and
<i>BN</i>	1 if <i>RET</i> is negative, and 0 otherwise.

³ We follow Sengupta (2004) to delete obvious extreme observations, and retain firms that have an earnings announcement delay of 7-90 days.

The dependent variable, income before extraordinary items (*NIBX*), is deflated by the beginning market value of equity to mitigate heteroskedasticity (Basu 1997). We calculate buy-and-hold annual stock returns (*RET*) to end at the fiscal year-end. This is to ensure that earnings capture all news that the capital markets learn from other sources prior to earnings announcement dates (Basu 1997). However, as a sensitivity test, we use buy-and hold annual stock returns cumulated to end three months after the fiscal year ends, and obtain qualitatively similar results from the alternative measure of *RET*.

A dummy variable (*EARLY*) takes the value of 1 for a firm announcing annual earnings earlier than the median delay of industry to which the firm belongs, and 0 otherwise. A dummy variable (*BN*) is used to indicate news types, which equals 1 if *RET* is negative, and 0 otherwise. Then, interactions among *RET*, *BN*, and *EARLY* are included to grasp the combined effect of early earnings reporting and the news type on the earnings-return relation.

C. Model for Tests of Income Smoothing

Following prior studies (Francis et al. 2004; Larcker et al. 2007), we define income smoothing (*IS*) as ratios of a firm *i*'s standard deviation of income before extraordinary items (scaled by its beginning total assets), to its standard deviation of cash flows from operations (scaled by its beginning total assets). We calculate standard deviations over the past 10 years, including the current year. Small ratios indicate more variability in operating cash flows relative to the variability in earnings, suggesting that a firm is more likely to smooth reported earnings using accruals.

$$IS_{it} = \sigma (NIBX)_{it} / \sigma (CFO)_{it},$$

where *NIBX* is income before extraordinary items scaled by beginning total assets, and *CFO* is cash flows from operations divided by beginning total assets.

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

<i>IS</i>	Ratios of a firm <i>i</i> 's standard deviation of income before extraordinary items divided by its beginning total assets, to its standard deviation of cash flows from operations divided by its beginning total assets;
<i>EARLY</i>	1 if a firm announces annual earnings earlier than its 2-digit SIC industry peers, and 0 otherwise;
<i>MB</i>	Ratio of market value to book value of equity;
<i>CHGTA</i>	Change in total assets divided by beginning total assets;
<i>LVG</i>	Ratio of total liabilities to total assets;
<i>LITIND</i>	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.
<i>INOWNER</i>	Percentage of institutional ownership;
<i>BIGN</i>	1 if a firm is audited by a Big N auditing firm, and 0 otherwise;
<i>SIZE</i>	Natural logarithm of total assets;
<i>STDSALE</i>	Standard deviation of a firm's rolling ten-year sales revenues scaled by total assets; and
<i>INTINT</i>	Sum of a firm's reported R&D and advertising expense as a proportion of its sales revenues.

In addition to the test variable, *EARLY*, we estimate *IS* as a function of managers' incentives, corporate governance control, and earnings attributes. First, we measure managers' incentives using the following variables: growth (*MB* and *CHGTA*), leverage (*LVG*), and litigation risk (*LITIND*). We expect that income smoothing behavior, one of earnings management, is caused by less transparent practices and the pressure to signal growth and stability to shareholders (Nagy and Neal 2001). This study includes two growth measures as control variables: potential and experienced growth. Market value divided by book value (*MB*) indicates growth potentials. Changes in total assets (*CHGTA*) capture *experienced* growth. Firms with high growth (high *MB* or high *CHGTA*) are more likely to please investors by smoothing earnings (Reynolds et al. 2004). Firms with

higher debt use discretionary accruals to avoid negative consequences of debt covenants (DeFond and Jiambalvo 1994). Firms are expected to smooth earnings in order to obtain more favorable terms of contracts from their creditors (Trueman and Titman 1988). We include debt ratio, *LVG*, to control for leverage effects on income smoothing behavior. Following Frankel et al. (2002), who suggest that firms in industries with a high litigation risk have a higher incentive to meet market expectation by using more discretionary accruals, we include an indicator variable (*LITIND*) to identify firms in such industries.

As constraints of managers' opportunistic behavior, we include outside corporate control variables: institutional investors (*INOWNER*) and auditors (*BIGN*). We expect that the presence of greater institutional ownership or Big N auditors reduces firms' pursuance of opportunistic behavior such as income smoothing.⁴ Prior studies (e.g., Becker et al. 1998; Francis et al. 1999) suggest that Big N auditors are more likely to restrict managers' opportunistic behaviors. We include an indicator variable, *BIGN*, which represents an auditor type (Big N or Non-Big N), and institutional ownership (*INOWNER*) to account for the role of institutional investors.⁵

Finally, we include the following variables to control for the appearance of income smoothing due to operational reasons rather than managers' opportunistic reasons: firm size, sales variability, and intangible asset intensity. It is expected that large firms have more stable and predictable operations and, therefore, announce a more persistent earnings stream (Baginski et al. 1999; Dechow and Dichev 2002; Moses 1987). To control for operational fluctuation, we include sales variability, σ (sales), which is the

⁴ It is also possible that institutional investors are attracted to firms having smooth earnings, which suggests a positive effect. Therefore, what we observe is a result coming after netting positive and negative effects of institutional investors on income smoothing.

⁵ We obtain the institutional shareholder ownership data from the CDA/Spectrum (Thomson Financial) database. Missing values of *INOWNER* are set to zero.

standard deviation of the firm's rolling ten-year sales revenues scaled by total assets (Francis et al. 2004). We expect that high values of σ (sales) negatively affect income smoothing. We also include intangibles intensity because Baginski et al. (1999) show that intangibles intensity is positively related to earnings persistence since it proxies for higher barriers-to-entry, decreased competition, and thus, sustainable earnings growth. It is likely that this provides managers with more flexibility and/or ability to smooth earnings. *INTINT* is the sum of the firm's reported R&D and advertising expense as a proportion of its sales revenues; missing values of R&D and advertising expense are set to zero.

IV. EMPIRICAL RESULTS

In this section, we first show separate descriptive statistics of variables used for analyses by timing of annual earnings announcements. We then examine correlations among variables. Finally, we investigate whether there is any difference in earnings timeliness and income smoothing between early and late announcers in multivariate settings.

A. Descriptive Statistics

Table 3 provides descriptive statistics separately by disclosure timeliness (early versus late announcers).⁶ Panel A of Table 3 indicates that firms announcing earnings early tend to have larger income, higher annual return, and less bad news, all of which are statistically significant and consistent with results from prior studies (Begley and Fischer 1998; Dye and Sridhar 1995; Givoly and Palmon 1982). Panel B of Table 3 presents

⁶ All continuous variables were winsorized at both 1% and 99% levels to reduce the effects of extreme values.

comparisons of variables used for the test of income smoothing. Firms announcing earnings early tend to report more smoothed earnings. That is, *IS* of earnings announced early is 1.0443, while that of earnings announced late is 1.1324. The difference between the two amounts is statistically significant at the 1% level. Note that small values of *IS* indicate more income smoothing. Other differences between two groups include higher market values over book values of equity, higher institutional ownership, higher rate of Big N auditors, larger size, less volatility in sales, and less intensity in intangible assets for early announcers.

(Insert TABLE 3 Here)

Panel A of Table 4 presents Pearson correlation results among *NIBX*, *RET*, and *BN*. All correlations are statistically significant at the 1% level. Not surprisingly, the correlation between *NIBX* and *RET* is positive, suggesting that earnings, on average, contain contemporary economic news. *EARLY* is positively correlated to *NIBX*, which confirms the notion that early released earnings likely contain good news. The correlation between *RET* and *EARLY* is also positive. As stock returns increase during the fiscal year, firms are more likely to announce annual earnings soon. Note that *RET* is measured during the fiscal year, and earnings are announced some time after the fiscal year ends.

Panel B of Table 4 presents correlations among variables used for the test of income smoothing. Income smoothing (*IS*) is negatively correlated with *EARLY*, which is consistent with the notion that EAE are more smoothed.⁷ Furthermore, income smoothing is correlated with all other variables used for the tests, but the direction is not entirely consistent with our expectation. For example, two external governance variables are

⁷ We also find that *IS* is negatively correlated with discretionary accruals, measured by the modified Jones model (0.09 significant at 0.0001), suggesting that a firm achieves income smoothing by using discretionary accruals.

negatively correlated with *IS*, although our initial predication was that the presence of external governance would reduce the level of income smoothing.

(Insert TABLE 4 Here)

B. Regression Results for the Test of Earnings Timeliness

Table 5 presents the result for the test of earnings timeliness. All coefficients are shown to be significant with the exceptions of β_4 and β_6 . The model is statistically significant (F-value=299.37), and the adjusted R^2 is about 11%. The t-statistics of the regression are estimated using the consistent variance-covariance matrix suggested by White (1980). Variance inflation factors (VIF) scores reveal that all values are under 3, suggesting that multicollinearity is not a problem.

Timeliness is measured by the magnitude of coefficients following Basu (1997).⁸ First, we examine whether there is any timing difference in incorporating good and bad news separately by early and late announcers. β_2 measures the timeliness of late announcers when endowed with good news, while $\beta_2 + \beta_5$ captures the timeliness of late announcers when endowed with bad news. The timeliness difference of late announcers between good and bad news is measured by the coefficient of β_5 , which is positive and statistically significant at 1%. This result confirms Basu's (1997) finding that firms recognize bad news on a timelier basis than good news. In addition, $\beta_2 + \beta_4$ measures the timeliness of early announcers when endowed with good news, while $\beta_2 + \beta_4 + \beta_5 + \beta_7$ captures the timeliness of early announcers when bad news arrives. Therefore, $\beta_5 + \beta_7$ captures the timeliness difference of early announcers between good news and bad news. An F-test shows that $\beta_5 + \beta_7$ is positive and significantly different from zero at the 1%

⁸ The coefficients are summarized as follows: 1) late/good news = β_2 ; 2) late/bad news = $\beta_2 + \beta_5$; 3) early/good news: $\beta_2 + \beta_4$; and 4) early/bad news: $\beta_2 + \beta_4 + \beta_5 + \beta_7$.

level. Again, this is consistent with Basu (1997) in that firms tend to recognize bad news sooner than good news.

Now, we turn to the comparison of difference in timeliness between early and late announcers. We find that the late announcers (β_2) have a larger coefficient than early announcers ($\beta_2 + \beta_4$) in the good news years, although the difference (β_4) is not statistically significant. On the other hand, the difference between early ($\beta_2 + \beta_4 + \beta_5 + \beta_7$) and late ($\beta_2 + \beta_5$) in bad news years is $\beta_4 + \beta_7$, which is negative and statistically significant at the 1% level, suggesting that late announcers' earnings are timelier than early announcers' earnings. Considering both univariate and multivariate analyses, our conclusion is that earnings of late announcers are timelier in recognition than are those of early announcers, and this is more pronounced in bad news years.

(Insert TABLE 5 Here)

C. Regression Results for the Test of Income Smoothing

Results for the test of income smoothing are presented in Table 6. The overall models are significant (F-value=62.85 and 62.88), and explain about 5% of the variation in the dependent variable. Analyses of VIF indicate that the highest value of VIF is well below 10.00, the level of concern (Belsley et al. 1980).

We present results for two variations of the equation (2): 1) using a dummy variable (*EARLY*) to identify early announcers relative to their industry peers, and 2) using a continuous variable of disclosure timeliness, measured by the number of days of earnings announced dates elapsed from the fiscal year end after subtracting the median industry level of delay (*DELAY*). Thus, two variables of interest are industry-adjusted

measures of timeliness in disclosure. Note that p-values are two-tailed values computed using White's (1980) heteroskedasticity-corrected standard errors.

The results for the two timeliness measures are similar. The coefficient of *EARLY* is negative and statistically significant at the 1% level, while the coefficient of *DELAY* is positive and statistically significant at the 1% level. Recall that we measure income smoothing as the ratios of standard deviations of earnings over standard deviations of operating cash flows, where larger values of *IS* indicate a high degree of income smoothing.⁹ Therefore, both variables of interest, *EARLY* and *DELAY*, produce consistent results that early announcers are more likely than late announcers to smooth earnings. Regarding economic significance of *EARLY*, a switch from *EARLY*=0 to *EARLY*=1 for the typical firm (median *IS* of 0.8890) results in about 5% (0.0462 divided by 0.8890) decreases in income smoothing, after controlling for other known determinants. We believe that this result at least partially explains why earnings of early announcers are late in incorporating value-relevant news, which is the result documented in the test of earnings timeliness. Firms with EAE tend to delay recognition of bad news in order to gain a smoothed earning pattern. It seems that firms that opportunistically smooth earnings choose earnings announcement timing relatively early, which may make markets mistakenly interpret those earnings as higher quality.

Regarding control variables, we find that income smoothing is more pronounced for firms with experienced growth, large size, and small volatility of sales, as expected.

⁹ As pointed out by Jayaraman (2008), there is a possibility that large values of the ratio may be due to big baths, which do not necessarily lessen the degree of income smoothing. Jayaraman (2008) measures income smoothing as the difference between the variance of earnings and the variance of cash flows, rather than ratios of the two variables as our proxy. We find similar results with this alternative measure of income smoothing.

However, there are some coefficients that are inconsistent with the theoretical prediction. *IS* is positively correlated with *MB*, *LVG*, *LITIND*, and *INTINT*, suggesting that firms with high market values relative to book values, high leverage, operating in litigious industries, and high R&D and advertising expenses are less likely to smooth earnings. One possible explanation with respect to *LVG* is that leverage is being used less frequently as a constraint in lending agreements (Begley and Freedman 2004), which suggests that leverage may not be as large an incentive for income smoothing during our research period.

(Insert TABLE 6 Here)

V. CONCLUSION

This study explores the research question of whether firms that announce earnings earlier than their peers in the same industry are timelier in recognizing value relevant news in earnings announced after the fiscal year ends. This is an issue as to whether timeliness in disclosure is related to timeliness in recognition. As a related issue, we test if managers announcing earnings early pursue more income smoothing. Altogether, our study examines whether there are any differences in earnings timing and income smoothing between early announcers and late announcers.

A reverse regression of earnings on contemporaneous returns incorporating news type is used to help determine timeliness in recognition. The magnitude of the earnings-return coefficient measures the timeliness of how quickly earnings capture the information underlying changes in stock prices. During bad news years, we find that there is a significant difference of timeliness in recognition between early and late

announcers. This result is also found in good news years, though it is not statistically significant. This finding is surprising in that earnings announced early contain less timely information. One possibility is that firms announcing earnings early tend to smooth their earnings, causing their earnings to contain less timely information, that is, they opportunistically delay the recognition of bad news. Consistent with this prediction, we find that earnings of early announcers are more likely than those of late announcers to be smoothed. Taken together, managers who delay recognition of bad news for income smoothing mislead the market by facilitating disclosure of their earnings.

Regulators want to ensure that timely information is delivered to investors and capital markets. To pursue this goal, the SEC introduced shorter filing deadlines for large companies. Our results suggest that early disclosure of earnings is not accompanied by early recognition of relevant information, casting doubts on the validity of the SEC's effort to enhance information timeliness. A natural extension of this study is to investigate whether there are any differences between early and late announcers in other attributes of earnings quality, such as accrual quality, conservatism, value relevance, persistence, and predictability.

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TABLE 1
Variable Definitions

Variables for the test of earnings timeliness

<i>NIBX</i>	Income before extraordinary items deflated by beginning market value of equity;
<i>EARLY</i>	1 if a firm announces annual earnings earlier than its 2-digit SIC industry peers, and 0 otherwise;
<i>RET</i>	Buy-and-hold annual stock returns; and
<i>BN</i>	1 if <i>RET</i> is negative, and 0 otherwise.

Variables for the test of income smoothing

<i>IS</i>	Ratio of a firm's standard deviation of income before extraordinary items divided by its beginning total assets, to its standard deviation of cash flows from operations divided by its beginning total assets;
<i>MB</i>	Ratio of market value to book value of equity;
<i>CHGTA</i>	Change in total assets divided by beginning total assets;
<i>LVG</i>	Ratio of total liabilities to total assets;
<i>LITIND</i>	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.
<i>INOWNER</i>	Percentage of institutional ownership;
<i>BIGN</i>	1 if a firm is audited by a Big N auditing firm, and 0 otherwise;
<i>SIZE</i>	Natural logarithm of total assets;
<i>STDSALE</i>	Standard deviation of a firm's rolling ten-year sales revenues scaled by its total assets; and
<i>INTINT</i>	Sum of a firm's reported R&D and advertising expense as a proportion of its sales revenues.

TABLE 2
Sample Selection Procedure

Panel A: Sample Selection Procedure for the Test of Earnings Timeliness

Year	# Active Firms on Compustat	# Firms with Compustat CRSP Data	# Firms with Earnings Announcement Dates (EAD) in IBES	# Firms with EAD Having 7-90 days after FYE
1997	9,530	7,294	4,014	3,692
1998	9,528	7,147	4,101	3,761
1999	9,531	6,751	3,994	3,696
2000	9,530	6,556	3,881	3,557
2001	9,518	6,338	3,719	3,547
2002	9,513	5,977	3,671	3,548
2003	9,504	5,653	3,673	3,580
2004	9,503	5,424	3,793	3,691
2005	9,500	5,347	3,993	3,865
2006	9,479	5,009	3,969	3,870
Total	95,136	61,496	38,808	36,807

Panel B: Sample Selection Procedure for the Test of Income Smoothing

Year	# Active Firms on Compustat	# Firms with Compustat Data	# Firms with Earnings Announcement Dates (EAD) in IBES	# Firms with EAD Having 7-90 days after FYE
1997	9,530	7,577	3,788	3,470
1998	9,528	7,647	3,903	3,559
1999	9,531	7,359	3,762	3,451
2000	9,530	7,272	3,722	3,355
2001	9,518	7,054	3,505	3,310
2002	9,513	6,759	3,473	3,342
2003	9,504	6,471	3,485	3,368
2004	9,503	6,337	3,764	3,615
2005	9,500	6,164	3,912	3,747
2006	9,479	5,336	4,025	3,835
Total	95,136	67,976	37,339	35,052

TABLE 3
Comparisons of Variables Used for Regressions
Between Early Announcers and Late Announcers

Panel A: Comparisons of Variables Used for the Test of Earnings Timeliness

Variables	Early Announcers (17,951 firm years)			Late Announcers (18,856 firm years)			Difference
	Mean	Median	Std	Mean	Median	Std	T-statistic
<i>NIBX</i>	0.0285	0.0517	0.1189	0.0036	0.0443	0.1557	17.20***
<i>RET</i>	0.1993	0.1693	0.5133	0.1657	0.1437	0.5555	6.03***
<i>BN</i>	0.3095	0.0000	0.4623	0.3571	0.0000	0.4791	-9.68***

Panel B: Comparisons of Variables Used for the Test of Income Smoothing

Variables	Early Announcers (17,047 firm years)			Late Announcers (18,005 firm years)			Difference
	Mean	Median	Std	Mean	Median	Std	T-statistic
<i>IS</i>	1.0443	0.8679	0.7999	1.1324	0.9488	0.8448	-7.26***
<i>MB</i>	3.4234	2.3045	4.3791	2.6837	1.9372	4.2276	11.93***
<i>CHGTA</i>	0.1313	0.0799	0.2995	0.1361	0.0772	0.3433	-1.02
<i>LVG</i>	0.4990	0.5071	0.2503	0.4946	0.4931	0.2604	1.20
<i>LITIND</i>	0.3328	0.0000	0.4713	0.3197	0.0000	0.4664	1.94*
<i>INOWNER</i>	0.4142	0.4425	0.3320	0.3129	0.2236	0.3202	19.96***
<i>BIGN</i>	0.9542	1.0000	0.2091	0.8686	1.0000	0.3378	21.81***
<i>SIZE</i>	7.0193	6.9193	1.9082	5.9892	5.8136	1.9136	37.39***
<i>STDSALE</i>	0.4016	0.2449	0.4548	0.4272	0.2699	0.4731	-3.83***
<i>INTINT</i>	0.0973	0.0168	0.1953	0.1053	0.0080	0.2380	-3.40***

- T-values are based on two-tailed tests.
- ***, **, and * denotes 1%, 5%, and 10% significance, respectively.
- See Table 1 for variable definitions.

TABLE 4
Pearson Correlation Matrix

Panel A: Correlation Among Variables Used for the Test of Earnings Timeliness

	RET	BN	EARLY
NIBX	0.1398 ($<.0001$)	-0.1945 ($<.0001$)	0.0893 ($<.0001$)
RET		-0.6891 ($<.0001$)	0.0314 ($<.0001$)
BN			-0.0504 ($<.0001$)

Panel B: Correlation Among Variables Used for the Test of Earnings Smoothing

	EARLY	MB	CHGTA	LVG	LITIND	INOW- NER	BIGN	SIZE	STD- SALE	INTINT
IS	-0.0522 ($<.0001$)	0.0265 (0.0002)	-0.0261 (0.0003)	-0.0791 ($<.0001$)	0.0922 ($<.0001$)	-0.0195 (0.0067)	-0.0334 ($<.0001$)	-0.1497 ($<.0001$)	0.0533 ($<.0001$)	0.0672 ($<.0001$)
EARLY		0.0856 ($<.0001$)	-0.0074 (0.3069)	0.0086 (0.2303)	0.0139 (0.0525)	0.1423 ($<.0001$)	0.1552 ($<.0001$)	0.2601 ($<.0001$)	-0.0275 (0.0001)	-0.0654 ($<.0001$)
MB			0.1716 ($<.0001$)	-0.1016 ($<.0001$)	0.1355 ($<.0001$)	0.0224 (0.0018)	0.0102 (0.1585)	-0.0858 ($<.0001$)	0.0411 ($<.0001$)	0.0861 ($<.0001$)
CHGTA				-0.1403 ($<.0001$)	0.0307 ($<.0001$)	0.0104 (0.1476)	-0.0157 (0.0298)	-0.0045 (0.5362)	0.0552 ($<.0001$)	0.0277 (0.0001)
LVG					-0.3036 ($<.0001$)	0.0275 (0.0001)	0.0761 ($<.0001$)	0.4634 ($<.0001$)	-0.1941 ($<.0001$)	-0.1319 ($<.0001$)
LITIND						-0.0791 ($<.0001$)	-0.0254 (0.0004)	-0.2633 ($<.0001$)	0.1791 ($<.0001$)	0.2258 ($<.0001$)
INOWNER							0.1101 ($<.0001$)	0.2074 ($<.0001$)	-0.0487 ($<.0001$)	-0.0208 (0.0038)
BIGN								0.2369 ($<.0001$)	-0.0924 ($<.0001$)	0.0065 (0.3700)
SIZE									-0.2756 ($<.0001$)	-0.2008 ($<.0001$)
STDSALE										-0.0682 ($<.0001$)

- See Table 1 for variable definitions.

Table 5
Results of OLS Regressions for the Test of Earnings Timeliness

$$\text{NIBX}_{it} = \alpha_0 + \beta_1 \text{EARLY}_{it} + \beta_2 \text{RET}_{it} + \beta_3 \text{BN}_{it} + \beta_4 \text{RET} * \text{EARLY}_{it} + \beta_5 \text{RET} * \text{BN}_{it} + \beta_6 \text{EARLY} * \text{BN}_{it} + \beta_7 \text{RET} * \text{EARLY} * \text{BN}_{it} + \text{year dummies} + \text{industry dummies} + \varepsilon_{it}$$

Variable	Coefficient	T-value	P-value
<i>INTERCEPT</i>	0.0517	26.71	<.0001
β_1 : <i>EARLY</i>	0.0172	6.99	<.0001
β_2 : <i>RET</i>	-0.0401	-14.25	<.0001
β_3 : <i>BN</i>	-0.0256	-8.65	<.0001
β_4 : <i>RET*EARLY</i>	-0.0019	-0.46	0.6433
β_5 : <i>RET*BN</i>	0.2056	36.04	<.0001
β_6 : <i>EARLY*BN</i>	0.0035	0.82	0.4098
β_7 : <i>RET*EARLY*BN</i>	-0.0208	-2.42	0.0155
F-value	299.37***		
Adj-R square	0.1082		
N	36,807		

*** denotes significance at the 1 % level.

See Table 1 for variable definitions.

Table 6
Results of OLS Regressions for the Test of Earnings Timeliness

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

Variable	Using a Dummy Variable to Measure Announcement Timing			Using a Continuous Variable to Measure Announcement Timing		
	Coefficient	T-value	P-value	Coefficient	T-value	P-value
<i>INTERCEPT</i>	1.0871	38.07	<.0001	1.0515	35.43	<.0001
β_1 . <i>EARLY</i>	-0.0462	-4.59	<.0001			
β_2 . <i>DELAY</i>				0.0016	4.70	<.0001
β_3 . <i>MB</i>	0.0024	1.95	0.0515	0.0024	2.01	0.0447
β_4 . <i>CHGTA</i>	-0.0443	-2.44	0.0148	-0.0442	-2.44	0.0148
β_5 . <i>LVG</i>	0.0594	2.41	0.0159	0.0535	2.15	0.0314
β_6 . <i>LITIND</i>	0.0711	4.22	<.0001	0.0703	4.18	<.0001
β_7 . <i>INOWNER</i>	0.0129	0.87	0.3826	0.0156	1.05	0.2926
β_8 . <i>BIGN</i>	-0.0025	-0.13	0.8933	0.0023	0.12	0.9044
β_9 . <i>SIZE</i>	-0.0410	-13.57	<.0001	-0.0400	-12.98	<.0001
β_{10} . <i>STDSALE</i>	0.0509	4.20	<.0001	0.0510	4.21	<.0001
β_{11} . <i>INTINT</i>	0.0223	4.79	<.0001	0.0217	4.68	<.0001
F-value	62.85***			62.88***		
Adj-R square	0.0503			0.0503		
N	35,052			35,052		

*** denotes significance at the 1 % level.

DELAY is the number of days elapsed since fiscal-year-ends until earnings announcement dates after subtracting industry median delay. See Table 1 for other variable definitions.