

Earnings Revisions in SEC Filings from Prior Preliminary Announcements

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Abstract

This study examines the characteristics of firms with significant earnings revisions between preliminary earnings announcements and SEC filings several weeks later. Earnings revisions occur in about 2.4% of all preliminary announcements, and are widespread across all industries, although they are slightly more pronounced for the business services, telecommunications, trading and utilities industries. Over 75% of the firms in our sample had only one such revision during the 13-year period covered by the study, and fewer than 8% had more than two revisions. The study shows that the likelihood of significant earnings revisions is positively associated with the complexity of operations, losses during the quarter, earnings volatility, and financial leverage, but negatively associated with the persistence of earnings surprises. It also shows that cumulative abnormal returns around SEC filing dates are positively and significantly associated with the additional earnings surprise in the SEC filings, implying that investors speedily react to new information in the SEC filings, although the vast majority of revising firms do not issue a formal announcement prior to SEC filings that filed earnings would be revised from the preliminary announcements. However, we find that investor reactions to a dollar earnings surprise in the preliminary earnings release are not statistically different from those to a dollar earnings surprise in the SEC filing. We also find that financial analysts seem to revise their earnings forecasts after the SEC filings in line with the additional earnings surprise, but that their revised forecasts after the SEC filings are not more accurate than their forecasts after the preliminary earnings announcements.

Keywords: *earnings announcement, SEC filings, earnings revisions, stock market reactions.*

Data Availability: *All data sources are identified in the paper.*

Earnings Revisions in SEC Filings from Prior Preliminary Announcements

I. Introduction

Companies traditionally report preliminary earnings to the market through a press release that is issued 26 days after the fiscal quarter-end for the median company, with 1% of the firms reporting preliminary earnings in less than nine days after quarter-end. Subsequently, firms file a 10-Q or 10-K Form with the Securities and Exchange Commission (SEC), typically on the last day or two of the required filing period (45 days for 10-Q and 90 days for 10-K¹). A small but non-trivial proportion of all firms actually revise their earnings from the preliminary announcement to the subsequent SEC filing due to various reasons. For example, the firm's auditor may require the firm to file a different earnings figure with the SEC than that released previously to investors. Some subsequent information revealed after the preliminary announcement may also induce firms to modify their SEC filed earnings. While not a frequent phenomenon, many of these revisions are quite large – consisting of an average 3.8% of market value of equity for our sample of 2,575 revisions that changed earnings by more than 10% and Earnings Per Share (EPS) by more than \$0.01, with more than 10% of the earnings revisions being greater in absolute value than 5.8% of market value of equity at quarter-end.

The purpose of this study is to examine the characteristics of firms that revise their earnings in their SEC filings and the stock market reactions to these revisions. If investors act rationally, one would expect an initial market reaction to the earnings surprise at the time of the

¹ Beginning with fiscal years ending on or after December 15, 2003, some companies are subject to a phased-in accelerated filing schedule. Our sample ends prior to that.

preliminary earnings announcement, and an additional market reaction at the time of the SEC filing if filed earnings are sufficiently different from preliminary earnings. Significant market reactions to earnings revisions in SEC filings may shed additional light on three strands of literature – (i) studies that examine market reactions to SEC filings, (ii) studies of restatements, and (iii) studies of voluntary disclosure of financial information. Recent studies question prior evidence about the lack of significant market reactions to SEC filings, employing various methodologies to detect significant unsigned market reactions; our study is different because it uses the magnitude as well as the direction of the additional earnings surprise to detect market reactions around the SEC filing date. It also allows us to test whether the market reaction to a dollar of earnings surprise is the same for preliminary earnings and for subsequent SEC filings. Our study highlights a special case of earnings restatements, where earnings are restated just a few days after their preliminary release. Whereas most restatement studies examine market reactions to announced restatements that affect previously filed financial statements, this study examines revisions of preliminary earnings, where most firms do not announce the forthcoming earnings revisions. This study also shows the vulnerability of voluntarily announcing preliminary earnings prior to the SEC filing. These earnings can be revised significantly in the subsequent SEC filings, seemingly with little cost to firms. Whether firms attempt to strategically announce preliminary earnings that would be subsequently revised is an interesting issue that we do not explore in this study.

Our sample indicates that about 62% of all significant earnings revisions are income decreasing, with the remainder income increasing, and a large proportion of the revisions, about 42%, occur in the fourth fiscal quarter, consistent with both audit work at year-end and a longer period before SEC filing in which subsequent events may require earnings revisions. We find

that the likelihood of significant earnings revision in the SEC filing is positively associated with the complexity of operations (measured by the number of segments and size), earnings volatility in prior quarters, whether the firm experiences a loss in the quarter and its financial leverage. We also find that the likelihood of significant earnings revision is inversely related to the persistence of earnings changes. These are variables that are shown in the literature to be associated with lower earnings quality and subsequent earnings restatements. Contrary to our prior expectations, we do not find that significant earnings revisions occur in high litigation risk industries. We do find a higher incidence of earnings revisions in the business services and telecommunications industries, but also in the trading and utilities industries. Most of the firms in our sample (about 75%) appear only once, indicating that most sample firms are probably not attempting to strategically manage earnings information across their preliminary announcements and SEC filings.²

We also find that investors' reactions to preliminary earnings surprises are consistent with intuition and prior results; the association between earnings surprises and abnormal returns around the preliminary announcement date is positive and significantly different from zero. More interestingly, market reactions around the SEC filing date are consistent with a positive and statistically significant association between the additional surprise in earnings and abnormal returns, after controlling for the initial earnings surprise and any news impounded in stock returns between the initial earnings announcement and the SEC filing date. We also find that the magnitude of market reactions to a dollar of earnings surprise is not statistically different between the preliminary announcement and the subsequent SEC filing. Thus, investors seem to

² However, we observe only those cases where an earnings revision **does** take place, as compared to cases where firms "forced" their auditors to go along with the preliminary earnings announcement, at least until the Form 10-K is filed at year-end.

identify and react to the additional earnings surprise in the SEC filing in a similar manner as an earnings surprise included in the preliminary earnings release, indicating that when SEC filings contain new and significant earnings information the market is able to properly impound it, even though a press release is typically not issued to warn market participants that the SEC filing would contain revised earnings. Our results also indicate that market participants seem to ignore the negative news in the act of earnings revision itself, since the reaction to a dollar surprise at the time of the SEC filing is similar to that of a preliminary earnings release.

We find that the significant market reactions to the additional earnings surprise around the filing date occur for firms with both income-decreasing and income-increasing earnings revisions. Also, the magnitude of the market reactions to a dollar of an earnings surprise is statistically the same during the preliminary earnings announcement and the SEC filing for both income-increasing and income-decreasing revisions. We generally find these patterns of market reactions in a subset of firms; (i) firms that have an earnings revision due to a recurring item (such as revenues, cost of goods sold, selling, general, and administrative expenses), but not due to a non-recurring item (such as non-operating gains or losses, special items, and extraordinary items and discontinued operations), and (ii) firms that have only one earnings revision during the sample period, and (iii) firms that did not announce that an earnings revision is forthcoming in the SEC filing (the vast majority of firms).

Finally, the study shows that analysts revise their earnings forecasts when the preliminary earnings surprise is disclosed to the market in a manner consistent with the actual earnings surprise. Also, upon filing a revised earnings figure with the SEC analysts revise their forecasts according to the additional surprise in earnings. However, we find that the forecast error is not

significantly smaller after analysts revise their forecasts based on the new SEC earnings information.

Our findings are particularly relevant to academics, financial analysts and investors. The results of this study are important for prior academic research that investigates market reactions to information around the SEC filing date. We show that when new earnings information is provided in the SEC filings, investors react to it, so the SEC filings are a medium that investors notice and use, contrary to many studies which fail to document a market reaction to SEC filings. Our results also indicate that earnings revisions are related to earnings restatements; both are affected by similar variables and market reactions to both are evident in the data. However, earnings revisions are different in that a formal announcement of the revision is typically not issued to the market. Also, contrary to most of the restatements studies, our results show that investors do not penalize firms with earnings revisions. We also show the characteristics of firms that are more likely to have earnings revisions by the SEC filing date, and the potential reasons for these revisions such a short time after preliminary earnings are announced. Our results suggest that investors and financial analysts should pay attention not only to earnings surprises at the preliminary earnings announcement, but also to actual earnings reported in the SEC filing and the types of circumstances in which they are more likely to be revised.

The remainder of this paper is organized as follows. Section II reviews the related literature and outlines our hypotheses and methodology. Section III describes the sample and presents the empirical results. Section IV summarizes and concludes the paper.

II. Background, Hypotheses and Research Design

2.1 Earnings Revisions after the Preliminary Earnings Announcements

Most firms disclose their preliminary earnings for the quarter or year through a press release, following it with an SEC filing several weeks later. Easton and Zmijewski (1993) report a median lag between the balance sheet date and the preliminary earnings announcement of 28 days and a median SEC filing lag of 45 days for 10-Q Forms. Our sample shows a similar pattern with a median preliminary earnings lag of about 27-28 days for years before 1996 and about 25-26 days in recent years. Some firms issue a press release to discuss earnings **after** their SEC filings (Stice, 1991), and others do not issue any press release at all, relying on the information available in the SEC filings alone. When firms issue their preliminary earnings release prior to the SEC filing, investors implicitly assume that these will also be the SEC filed earnings. However, as this study shows, there exists a non-trivial portion of firms that file a different earnings figure with the SEC than the one previously provided in their preliminary announcement, sometimes with material differences in earnings.

Consider the following two examples, which are highlighted in Appendix A. Aspect Communications Corp. (APST), reported income of \$10.241 million in its preliminary earnings release on 4/18/02, but revised it upwards to \$12.163 million on 5/14/02 in its SEC filing, an increase of 19% from the preliminary earnings. An examination of other news related stories (through Lexis-Nexis) about Aspect Communications Corporation reveals that multiple announcements were released between the preliminary earnings announcement and SEC filing date. However, none of these announcements related to earnings of the previous quarter, and instead informed investors about new marketing relationships that have come to fruition since

the preliminary earnings release date.³ Thus, there appears to be no public information between the earnings announcement and the SEC filing date that would suggest an upward revision in SEC filed earnings is forthcoming. RMH Technologies Inc. (RMHT), issued its preliminary earnings release on 7/30/02 reporting a \$9.244 million loss, followed by an SEC filing (filed on 8/14/02) showing a reported loss of \$20.257 million, reducing the prior earnings figure by 119%. There were no other news reported in Lexis-Nexis between the preliminary earnings announcement and the SEC filing date. As these two examples illustrate, some earnings revision between the preliminary earnings release and the SEC filing dates are upward revisions, i.e., income-increasing earnings, whereas others are downward revisions that are income-decreasing. As we shall show below, most revisions (about 2/3) are downward revisions.

Possible explanations for earnings revisions between the preliminary announcement and the SEC filing (not specific to the previous two examples) are audit work which uncovers issues not known at the preliminary earnings release date, new auditors who are more likely to compel clients to revise earnings issued under the prior auditor, subsequent information that becomes known after the preliminary earnings announcement, or accounting errors discovered before the filing date. For example, several studies document the existence of accounting errors that are discovered by auditors and corrected before public release of year-end statements.⁴ This is also consistent with about 42% of our firm-quarter observations falling into the fourth quarter, where a full audit is required (see panel A of Table 1), and where the window between the preliminary earnings announcement and the SEC filing is typically longer, leading to greater opportunities for material subsequent events that require earnings revisions.

³ Prior preliminary earnings figures should not be impacted by these new marketing relationships since this new information impacts future earnings and not prior earnings.

⁴For example, see Kinney 1979; Johnson et al. 1981; Hylas and Ashton 1982; Ham et al. 1985 and Wright et al. 1989.

2.2 Market Reactions to Preliminary Earnings Announcements and SEC Filing Dates

Prior research shows that the market responds to earnings surprises included in preliminary earnings announcements, and that the market incorporates this information immediately into stock prices (see Lev, 1989 and Kothari, 2001 for summaries of these studies). However, most of the prior research related to the market response to SEC filings provides little evidence of incremental information content in 10-Q/Ks beyond earnings announcements. Foster and Vickery (1978), as well as Wilson (1987), document that 10-Ks have information content beyond earnings announcements. In contrast, subsequent studies suggest that the market fails to react to earnings information contained in SEC filings (Foster et al. 1983; Foster et al. 1986; Cready and Mynatt 1991; Stice 1991; Easton and Zmijewski 1993; and Chung, et al. 2003).

Easton and Zmijewski (1993) examine whether the 10-Q and 10-K filing dates are associated with abnormal returns, using squared market model prediction errors to avoid any predictions about the direction of expected returns around the SEC filing dates. Their results show significantly different from zero abnormal market returns around preliminary earnings announcements but no significantly different from zero market reactions to SEC filings, except in those cases where only the 10-Q dates are known but no preliminary earnings announcement dates are available on the Quarterly Compustat File. These results seem to imply that SEC filings contain no incremental information beyond the preliminary earnings announcements.

Stice (1991) examines whether the information content of an earnings announcement can be affected by the method in which earnings are announced, concentrating on firms that file their 10-Qs or 10-Ks several days **before** the earnings announcement. Stice (1991) finds that SEC filings are not fully reflected in prices until subsequent earnings announcements are made.⁵

⁵ Stice (1991) conducts this study at a time when SEC filings were not as readily available (e.g., on-line and other media) as they are today. Chung et. al (2003) examine the same issue when filings were available on EDGAR, but

Chung et al. (2003) corroborate Stice's (1991) findings and show that some of the firms in their sample behave as if they manage earnings.

Qi et al. (2000) suggest that prior research's inability to detect little, if any, information content around the SEC filing date may be due to the SEC paper filing system in place at the time of prior studies. Their study compares SEC paper filings with SEC electronic filings to test whether the information content of 10-Ks has changed as a result of electronically available SEC filings. In contrast to most of the prior research, Qi et al (2000) provide evidence that 10-K filings through the EDGAR system provide incremental information content that did not exist for the SEC paper filings. However, they study the years 1993-1995, in which the EDGAR system was still voluntary (becoming mandatory in May 1996). In addition, their study is limited to firms with available AIMR analyst rankings.

In a recent study covering the period 1996-2001, Griffin (2003) finds SEC filings to have significantly different from zero abnormal market returns, where the abnormal returns are the absolute value of excess returns around the filing date compared to the excess returns in a prior period. He finds greater market reactions to 10-Ks than 10-Qs, to smaller firms, to firms with lower proportions of institutional holders, to firms that report on days with many filings by other firms, and to firms with delayed filings. In multivariate results, Griffin (2003) finds evidence of stronger market reactions to filings made in recent periods and to delayed SEC filings.

Balsam et al. (2002) investigate whether investors in firms that are suspected of earnings management are able to rapidly incorporate the information about accruals available in 10-Q filings, and whether institutional investors seem to respond even before the SEC filing dates. They find evidence consistent with no investors' reactions to the managed accruals around the

use only a handful of quarters from the beginning of the EDGAR database. Their findings seem to suggest that Stice's results hold true even with the availability of the SEC EDGAR database.

preliminary earnings announcement (with event windows up to 9 days later), with market reactions to discretionary accruals by firms with at least 40% institutional investors during the window spanning 10 days after the preliminary earnings announcement through two days before the SEC filing date, and with market reactions to discretionary accruals in the window from a day prior to the SEC filing date through 15 days afterwards for firms with fewer institutional investors. Their interpretation is that institutional investors seem to find the information necessary to reverse accruals faster than other investors and prior to the SEC filing dates.

Asthana et al (2004) show that small trades increase in the five-day period around the 10-K filing after EDGAR as compared to the pre-EDGAR period, but not large trades, implying that small investors are better able to use the information in SEC filings in the post-EDGAR period. They also show that small investors seem to incorporate better the information content of the 10-Ks (as measured by returns around the filing) in the post-EDGAR period than before, and provide evidence consistent with an erosion of the information advantage that larger traders have as compared to small traders in the post-EDGAR period.

The above studies indicate that the literature is inconclusive about whether SEC filings provide information to investors beyond that available in preliminary earnings releases. Earlier studies tend to document no information content in SEC filings, whereas more recent studies tend to show that SEC filings may have information content in certain settings where further information can be useful. Most prior studies explored unsigned market reactions around the SEC filing dates, because the expected direction of the additional information is unknown. When the expected direction of the information is known, Stice (1991) finds no market reactions and Balsam et al (2002) find market reactions only for firms with low institutional ownership and only for long windows after the filings. Thus, we still do not know whether SEC filings are a

medium ignored by investors regardless of the new information content in the reports, or whether past studies fail to document incremental information content because the (unsigned) average information content was insignificant.

In our study, we examine market reactions to SEC filings for a subset that contains **new earnings** information beyond that disclosed in the preliminary earnings announcements. Specifically, we focus on those SEC filings where the preliminary earnings are revised upwards or downwards, providing us with additional earnings surprises on the SEC filing dates. These additional earnings surprises allow us to test the signs and magnitudes of new earnings surprises beyond those available in preliminary earnings. These tests provide direct evidence on whether the market ignores the SEC filings as an information medium, in which case no significant market reactions to the new surprises would be evident, or whether the market immediately incorporates in prices the new earnings information contained in SEC filings.

2.3 Characteristics of Firms with Earnings Revisions between Preliminary Earnings Announcements and SEC Filings

Consistent with many prior studies, such as Chen et al. (2002) on voluntary disclosure of balance sheet information in preliminary earnings announcements, and DeFond and Hung (2003) on analyst cash flow forecasts, we study the characteristics of firms that revise earnings between the preliminary announcement and SEC filing dates. Absent a theoretical model to guide the selection of potential variables which can be associated with the likelihood of earnings revisions in SEC filings, we use variables referenced in the literature on earnings restatements, as well as intuition about the specific causes of earnings revisions.

DeFond and Hung (2003) use earnings volatility and accruals magnitude as measures of incentives to disseminate cash flow forecasts. Employing similar rationale, we conjecture that earnings revisions are more likely for firms with greater earnings volatility, with higher proportions of accruals, and with lower correlations between earnings and operating cash flows, because such firms are more likely to have a lower earnings quality, which may require future revisions. Chen et al (2002) claim that firms with losses, and firms with greater earnings surprises are more likely to provide balance sheet information in their preliminary earnings to strengthen their weaker information environment. We use these variables, as well as the persistence of earnings surprises, to argue that firms with a weaker earnings quality may also be more likely to have earnings revisions in their SEC filings, since preliminary earnings may contain errors and misstatements that are subsequently corrected in SEC filings.

The restatements literature (e.g., Richardson et al., 2002 for annual restatements and Livnat and Tan, 2004, for quarterly restatements) asserts that financial leverage is positively associated with the likelihood of restatements due to management's desire to inflate earnings initially as a way to avoid debt restrictions. It also asserts that growth firms are more likely to have earnings restatements because of their desire to show continued earnings growth and ability to beat analyst expectations. Firms with high financial leverage may also be subject to additional scrutiny by auditors and creditors, leading to greater chances for earnings revisions. Thus, we expect financial leverage to be positively associated with the likelihood of earnings revisions, and the earnings to price ratio (an indicator of growth) to be negatively associated with the likelihood of earnings revisions.

Consistent with subsequent corrections during audit work (or review) between the preliminary earnings announcement and the SEC filing (resulting in earnings revisions in the

SEC filing), we conjecture that the firm's complexity, measured by the number of its operating segments, size, number of analysts, as well as auditor changes, are all positively associated with the likelihood of an earnings revision. However, it may be argued that larger firms with greater analyst following are managed more carefully and are less likely to have earnings revisions.⁶ We also expect that less profitable firms (lower return on assets) are more likely to have earnings revisions because managers in such firms have greater incentives to manage preliminary earnings, and because the lower profitability may also indicate operational problems, and potentially weaker accounting controls.

2.4 Financial Analysts' Forecast Revisions After Earnings Revisions

We also examine financial analysts' responses (e.g., forecast revisions) to the earnings revisions in SEC filings. Prior research documents that financial analysts name SEC filings (e.g., 10-Q/Ks) as one of the most important sources of information for a firm (Lees, 1981, and Knutson, 1992). Financial analysts may also represent the group of endowed and sophisticated investors who seem to be able to utilize properly important information beyond that contained in preliminary earnings announcements. If financial analysts use earnings information provided by firms to update their forecasts for subsequent quarters, we would expect a significant and positive association between financial analysts' forecast revisions and the earnings surprise immediately after the preliminary earnings announcement. Similarly, we expect to see analysts revising their forecasts again when earnings are further revised in SEC filings, causing a positive association between analyst forecast revisions after the SEC filing and the additional surprise in earnings due to the revised earnings in SEC filings. If the additional earnings surprises in SEC

⁶ The degree of analyst following may also be positively associated with the likelihood of an earnings revision due to the desire to meet or beat analyst forecasts in the preliminary announcement.

filings are used by analysts to revise their earnings forecasts, we expect the forecast errors to decline after the SEC filings from the forecasts that utilize only the preliminary earnings surprise.

2.5 Research Design

Figure 1 portrays the timeline of the events in the study, highlighting the various periods over which abnormal returns are cumulated. It shows the short windows around the preliminary earnings announcement and SEC filing date. It also shows the long window between the preliminary earnings announcements and SEC filings. In most of our tests we examine differences between two samples; a sample of firms with significant earnings revisions (Revisers), and a sample of control firms from the same Fama and French (1997) industry closest in size (market value of equity) in the same quarter.

(Insert Figure 1 about here)

2.5.1 Characteristics of firms with Earnings Revisions

To assess the specific characteristics of firms that have earnings revisions between preliminary earnings announcements and SEC filings, we perform univariate tests of mean differences between Revisers and control firms from the same industry closest in size to the revising firm in that quarter that did not have such revisions. We also use the following Logistic Regression model for the likelihood that a firm is a Reviser, attempting to balance concerns about multicollinearity in the variables and the desire to use as many observations as possible:

$$\begin{aligned} \text{REVISER}_{it} = & \beta_0 + \beta_1 \text{EARNVOL}_{it} + \beta_2 \text{PERSE}_{it} + \beta_3 \text{DEBT}_{it} + \beta_4 \text{LOG(MKT)}_{it} \\ & + \beta_5 \text{SEGNUM}_{it} + \beta_6 \text{LOSS}_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where

REVISER is a dummy variable equal to one if a firm-quarter has a material earnings revision and zero if not. A material earnings revision is one where the absolute value of the difference in earnings between preliminary earnings and SEC filings scaled by preliminary earnings is at least 10%, and the absolute value of the effect on EPS is at least \$0.01. The variables we consider to potentially discriminate Revisers and controls are:

1. **Earnings volatility (EARNVOL)** is absolute value of the ratio of the standard deviation of EPS/Price over the most recent 12 months to the average EPS/Price over the same period. It is winsorized to a maximum of 5.
2. **E/P** is current quarterly earnings before extraordinary items and discontinued operations divided by market value at the end of the quarter.
3. **The proportion of accruals (ACCPROP)** is absolute value of total accruals divided by sales, averaged over the previous four quarters. Total accruals are income before extraordinary items and discontinued operations minus net operating cash flow. It is winsorized to a maximum of 5.
4. **The correlation of quarterly earnings and OCF (COREOCF)** is estimated over the eight previous quarters.
5. **Persistence of Earnings Changes (PERSE)** is estimated as the first autocorrelation between scaled earnings surprises in the prior eight quarters. The earnings surprise is earnings in the quarter minus earnings of the same quarter in the preceding year, scaled by market value at the beginning of the quarter.
6. **Debt/Assets (DEBT)** is estimated as short plus long-term debt divided by total assets at the end of the quarter.

7. **Auditor change (AUC)** is a dichotomous variable obtaining one if the firm's auditor was changed from the prior year (where mergers of audit firms such as Coopers and Lybrand and Price Waterhouse are not counted as an auditor change).
8. **The (log) market value of equity (LOG(MKT))** is the log of the market value as of quarter-end.
9. **The Number of segments (SEGNUM)** is from the Compustat Segment file and is a surrogate for operating complexity.
10. **ROA** is the ratio of earnings to total assets at quarter-end.
11. **The number of analysts on IBES (IBESN)** is a measure of coverage and informational environment.
12. **Loss** is a dummy variable obtaining one if earnings for the quarter are negative.
13. **The First (Preliminary) Surprise (FSURP)** is the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, the earnings surprise is actual earnings minus earnings of the same quarter in the prior year, scaled by market value of equity at quarter-end.
14. **Big Auditor (BIG)** is an indicator variable equaling one if audited by one of the then big-8 audit firms and zero otherwise.

2.5.2 Market Reactions on the Preliminary Earnings Announcement and SEC Filing Dates

As portrayed in Figure 1, this study focuses on three return windows; the preliminary earnings announcement date, the SEC filing date, and the window between the preliminary earnings announcement and the SEC filing dates. Cumulative Abnormal Return, CAR_{prelim}

(CAR_{file}) for the preliminary announcement (SEC filing) is for window (-1,+1), where day zero is the preliminary earnings announcement (SEC filing) date. CAR_{af} is the cumulative abnormal return for the window that begins two days after the preliminary earnings announcement date through two days prior to the SEC filing date. The daily abnormal return is calculated as the raw daily return from CRSP minus the daily return on the portfolio of firms with the same size (the market value of equity as of June) and book-to-market (B/M) ratio (as of December). The daily returns (and cut-off points) on the size and B/M portfolios are obtained from Professor Kenneth French's data library, based on classification of the population into six (two size and three B/M) portfolios.⁷ The daily abnormal returns are summed over the return window.

2.5.2.1 Market Reactions on the Preliminary Earnings Announcement Date

We conduct an analysis of stock returns to provide initial evidence on the effect of earnings surprises in preliminary earnings announcements. Consistent with prior research (e.g., Lev, 1989 and Kothari, 2001), we expect a positive and significant relation between stock market returns and earnings announcements. We investigate the relation between FSURP (first or preliminary surprise) and CAR_{prelim} using the following regression:

$$CAR_{prelim\ it} = \beta_0 + \beta_1 FSURP_{it} + \beta_2 REVISER_{it} + \beta_3 REVISER_{it} * FSURP_{it} + \varepsilon_{it} \quad (2)$$

We expect a positive coefficient on β_1 , which represents the overall earnings response coefficient (ERC) for the preliminary earnings surprise. Since it is not known on the preliminary earnings announcement date that earnings of Revisers would subsequently be revised, we expect that the earnings response coefficient of Revisers and controls would be statistically the same, and hence expect β_3 to be insignificantly different from zero.

⁷ http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

2.5.2.2 Stock market reaction to SEC filed earnings:

We then examine the stock market reaction to the SEC filings. We measure the additional earnings surprise (ASURP) on the SEC filing date as SEC filed earnings minus the preliminary earnings, scaled by market value at the end of the quarter. In a similar manner to CAR_{prelim} , we define CAR_{file} as the three-day (-1 to +1) cumulative abnormal returns centered on the SEC filing date (date 0). To control for additional news that market participants obtain between the preliminary earnings announcement and the SEC filing date, we include in the regression the cumulative abnormal return between the preliminary earnings release and the SEC filing date. The assumption is that all news during this event period are captured by changes in stock prices. Specifically, CAR_{af} is the cumulative abnormal return from two days after the preliminary earnings announcement through two days before the SEC filing date. Thus, we investigate the relation between ASURP (additional surprise, defined below), FSURP, CAR_{af} and CAR_{file} using the following regression model:

$$CAR_{\text{file } it} = \beta_0 + \beta_1 REVISER_{it} + \beta_2 FSURP_{it} + \beta_3 REVISER_{it} * FSURP_{it} + \beta_4 ASURP_{it} + \beta_5 CAR_{\text{af } it} + \beta_6 REVISER_{it} * CAR_{\text{af } it} + \varepsilon_{it} \quad (3)$$

where ASURP is earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. By definition, it is zero for control firms.

The coefficients β_2 and β_3 capture the market reaction at the time of the SEC filing to the already known initial earnings surprise in preliminary earnings. We expect β_2 and β_3 to be insignificantly different from zero if the stock market has already fully impounded this information into prices during the preliminary earnings announcement window. The coefficient on β_4 represents the market reaction to the additional earnings surprise contained in the SEC

filing beyond earnings reported in the preliminary announcement. It is expected to be positive and statistically different from zero if the SEC filings are noticed by investors who react to the additional earnings surprise. We have no expectations about the signs or magnitudes of other coefficients.

We also examine the combined market reactions to the two surprises in earnings and compare the market reactions to the two surprises to see whether investors consider a dollar earnings surprise the same, whether it is part of the preliminary earnings announcement or the following SEC filing. This is accomplished by investigating the associations of both earnings surprises with the sum of stock returns around both the preliminary earnings announcement and SEC filing dates. Thus, we define CAR_{both} as the sum of CAR_{prelim} and CAR_{file} . We then estimate the following regression:

$$CAR_{\text{both } it} = \beta_0 + \beta_1 REVISER_{it} + \beta_2 FSURP_{it} + \beta_3 REVISER_{it} * FSURP_{it} + \beta_4 ASURP_{it} + \beta_5 CAR_{\text{af } it} + \beta_6 REVISER_{it} * CAR_{\text{af } it} + \varepsilon_{it} \quad (4)$$

It is expected that β_2 , β_3 and β_4 will be positive and significantly different from zero. If the market does not distinguish between earnings surprises in the preliminary announcement and the subsequent SEC filing, we expect that $\beta_2 + \beta_3 = \beta_4$.

We also investigate whether the market reactions differ for (1) sample-only firms, (2) sample-only firms with upward earnings revisions, and (3) sample-only firms with downward earnings revisions. These additional tests provide further insights as to whether income-decreasing or income-increasing earnings revisions have differing market effects.

2.5.3 Financial Analysts' Reaction to Earnings Revisions

To determine whether financial analysts revise earnings forecasts based on preliminary earnings announcements and then update them again once a firm reports an additional earnings surprise in SEC filings, we focus on the following variables: FSURP (first surprise), ASURP (additional surprise), and REVISER, as previously defined. REVPRE (revision after preliminary announcement) is the mean IBES forecast for quarter t+1 using all forecasts (from the detailed IBES database) made between the preliminary earnings announcement for quarter t and the SEC filing date for quarter t, minus the mean earnings forecast for quarter t+1 using all forecasts made in the 90-day period prior to the preliminary earnings announcement, scaled by price per share at the end of quarter t. Thus, REVPRE measures the revision in quarter t+1 mean forecast induced by the preliminary earnings announcement of quarter t. REVFILE (revision after filing) is the mean analyst forecast for quarter t+1 using all forecasts made in the 20-day period following the SEC filing date minus the mean IBES forecast for quarter t+1 using all forecasts (from the detailed IBES database) made between the preliminary earnings announcement for quarter t and the SEC filing date for quarter t, scaled by price per share at the end of quarter t. We estimate the following regressions for Revisers:

$$\text{REVPRE}_{it} = \beta_0 + \beta_1 \text{FSURP}_{it} + \varepsilon_{it} \quad (5)$$

The coefficient on FSURP represents the association between the preliminary earnings surprise and the analyst forecast revisions resulting from the news in the preliminary earnings announcement, and is expected to be positive and significantly different from zero.

$$\text{REVFILE}_{it} = \beta_0 + \beta_1 \text{FSURP}_{it} + \beta_2 \text{ASURP}_{it} + \varepsilon_{it} \quad (6)$$

The coefficient on ASURP represents the association between the additional earnings surprise in the SEC filing and the analyst forecast revisions resulting from the news in the SEC filing, and is expected to be positive and statistically different from zero. The coefficient β_1 captures the association between analyst forecast revisions at the time of the SEC filing and the already known initial earnings surprise in preliminary earnings. We expect β_1 to be insignificantly different from zero if analysts fully incorporate this information into their estimates following the preliminary earnings announcement.

Finally, we estimate the analyst forecast error as the absolute value of IBES actual earnings for quarter $t+1$ minus the mean IBES forecast during the period between preliminary earnings announcement and SEC filing (during the 20 days after SEC filing), scaled by price per share at quarter end, FE_{prelim} (FE_{file}). We expect the two forecast errors to have statistically the same mean if analysts are unable to improve their forecasts using the filed SEC earnings.

III. Data and Results

3.1 The Original Compustat Quarterly Data

Data entry into the Compustat databases has been performed in a fairly structured manner over the years. When a firm releases its preliminary earnings announcement, Compustat takes as many line items as possible from the preliminary announcement and enters them into the quarterly database within 2-3 days. The preliminary data in the database are denoted by an update code of 2, until the firm files its Form 10-Q (10-K) with the SEC or releases it to the public, at which point Compustat updates all available information and uses an update code of 3. Unlike the Compustat Annual database, which is maintained as originally reported by the firm

(except for restated items), the Compustat Quarterly database is further updated when a firm restates its previously reported quarterly results. For example, if a firm engages in mergers, acquisitions, or divestitures at a particular quarter and restates previously reported quarterly data to reflect these events, Compustat inserts the restated data into the database instead of the previously reported numbers. Similarly, when the annual audit is performed and the firm is required to restate its previously reported quarterly results by its auditor as part of the disclosure contained in 10-K, Compustat updates the quarterly database to reflect these restated data.

Charter Oak Investment Systems, Inc. (Charter Oak) has collected the weekly original CD-Rom that Compustat sent to its PC clients, which always contained updated data as of that week. From these weekly updates, Charter Oak has constructed a database that contains for each firm in the Compustat Quarterly database three numbers for each Compustat line item in each quarter. The first number is the preliminary earnings announcement that Compustat inserted into the database when it bore the update code of 2. The second number is the “As First Reported” (AFR) figure when Compustat first changed the update code to 3 for that firm-quarter. The third number is the number that exists in the current version of Compustat, which is what most investors use. The Charter Oak database allows us to determine whether an earnings revision has occurred in any quarterly earnings by comparing the preliminary earnings and the first-reported 10-Q/K earnings in the Charter Oak database.

3.2 Sample Selection

The initial population for the study consists of 468,194 observations (firm-quarters) in the Compustat database between 1991 (the first year of available SEC filing dates) and 2003, which were traded on the NYSE, AMEX or NASDAQ. We exclude firms with missing CUSIP, market

value or total assets below \$1 million at the end of the quarter, price per share less than \$1 at the end of the quarter, or sales or total assets below \$1 million at the end of the prior quarter. These exclusions yield 297,956 firm-quarters. We further eliminate firms that are incorporated outside the USA, that have a missing preliminary earnings report date, or that have a missing value for preliminary earnings before extraordinary items and discontinued operations (Compustat Quarterly item No. 8) or the SEC filed earnings (the as-first-reported earnings on Charter Oak database), or for which we have no SEC filing date, and obtain 195,673 observations. Out of these observations, we have 4,785 firm-quarters with differences between preliminary earnings and first-reported earnings in excess of \$100,000. This is not a trivial proportion; about 2.4% of the relevant population files a different earnings figure than the one disclosed in the preliminary earnings announcement just a few days/weeks earlier.

To examine the characteristics of firms that materially revise their earnings upon the SEC filing after publicly disclosing a different earnings figure (as defined above with a change in earnings that exceeds 10% and an EPS change of at least \$0.01), we compare these firms (Revisers) to a control group of firms from the same Fama and French (1997) industry (based on 48 industries) and having a market capitalization closest to a Reviser. If we cannot find a matching firm from the same industry, we eliminate the Reviser from our sample.

In addition, the following requirements must be met for Revisers and control firms alike:

1. The absolute value of earnings to market value of equity (E/P) and to total assets (ROA) at quarter end is below one. This is intended to eliminate extreme cases.
2. The absolute value of the scaled earnings surprise at the preliminary earnings announcement is available and is below one. The earnings surprise is IBES actual EPS minus the mean IBES forecast during the last month in the quarter, scaled by

price per share at quarter end. If IBES data are unavailable, the earnings surprise is actual earnings minus earnings of the same quarter in the prior year, scaled by market value of equity at quarter-end.

3. The preliminary earnings announcement is available on Compustat and is prior to the SEC filing date (eliminating observations subject to the Stice, 1991, effect).

Our sample selection criteria yield a final sample of 2,575 observations (firm-quarters) for Revisers matched by 2,258 control firms.

3.3 Sample Composition and Descriptive Statistics

Panel A of Table 1 provides statistics about the distribution of Revisers and control firms throughout the sample period, and across the four fiscal quarters for Revisers. There is an indication of an increasing trend in the number of Revisers across years, likely due to the more extensive coverage of Compustat firms than a real increase in the proportion of Revisers to total Compustat firms.⁸ A noticeable trend is that there are about twice as many Revisers in the fourth fiscal quarter as in other quarters. This may be attributed to revisions required by the auditor as part of the year-end audit work. It may also be attributed to the longer period between the balance sheet date and the SEC filing for the fourth quarter, when material subsequent events are more likely to have occurred requiring a revision in earnings.

(Insert Table 1 about here)

Panel B of Table 1 shows that about 62% (1,601 out of 2,575) of the earnings revisions from the preliminary earnings announcements to the SEC filings are downward revisions, resulting in lower filed earnings. This is consistent with potentially strategic reporting by

⁸ An outlier in the number of Revisers is 2002. It may be related to the demise of Arthur Andersen and the auditor switches that it necessitated. This is also consistent with many revisions that occur throughout that year, instead of the larger concentration in the fourth quarter.

management that is intended to inflate earnings initially, but also consistent with subsequent events that are more likely to cause downward revisions due to the conservative nature of accounting. Panel B also indicates that about 38% of all Revisers (978 of 2,575) had a negative initial earnings surprise, as compared to about 35% (786 of 2,258) for the control firms. This is consistent with a slightly stronger likelihood of strategic reporting by managers of Revisers than control firms, which are from the same industry, of similar size, and are likely to face similar economic conditions.

Panel C of Table 1 shows the distribution of Revisers across the 48 industries, and compares them to Compustat firms with similar data characteristics. As can be seen, business services, telecommunications, trading and utilities have greater sample representation than the Compustat industries, where the first two industries are mentioned in prior studies as having a greater litigation risk. In contrast, insurance, retail, pharmaceutical products, steel, consumer goods and medical equipment industries are represented less often in the Revisers sample. Thus, one cannot strongly conclude from Table 2 that industry membership can explain satisfactorily earnings revisions. However, it seems that more stable industries are slightly under-represented in the Revisers sample, whereas more volatile industries tend to be slightly over-represented.

Panel D of Table 1 shows the distribution of material earnings revisions across firms. The majority of firms, 75%, have only one revision during the 13 year (52 quarters) period. Another 17% have two earnings revisions during the sample period, and fewer than 8% (136 sample firms) have more than two earnings revisions during the sample period. An analysis of firms with more than three earnings revisions during the sample period indicates some consistent differences in reported earnings between the preliminary earnings announcement and the SEC filings, such as the treatment of minority interest and the allocation of equity income in

unconsolidated subsidiaries, as well as reporting operating income instead of net income. In sensitivity analysis, we report the results when sample firms with more than one material earnings revision are omitted from the sample.

Table 2 contains descriptive statistics about Revisers and control firms. It shows that Revisers have higher mean and median earnings volatility, proportion of accruals, debt, size, number of segments, number of analyst forecasts (mean only), frequency of auditor changes (mean only), and losses (mean only) than control firms. The table also shows that Revisers have lower mean and median E/P ratios, correlation between earnings and operating cash flows, persistence of earnings surprises, ROA, frequency of Big auditors (mean only), and the first scaled earnings surprise (mean only) on the date of the preliminary earnings release. The mean and median CAR around the preliminary earnings release date is lower for Revisers than control firms, consistent with the lower earnings surprise on that date. In contrast, although the mean CAR around the SEC filing date is less negative for control firms than for Revisers, the median CAR is the same. The median CAR for the window between the preliminary earnings announcement and the SEC filing date is negative for both groups, but both the mean and median are more negative for Revisers, consistent with more negative news during that period for Revisers.

(Insert Table 2 about here)

3.4 Determinants of Earnings Revisions

To employ univariate tests that Revisers have different characteristics than control firms, Table 3 provides t-statistics and significance levels about the various variables mentioned above as potential explanations for earnings revisions. As can be seen from the table, earnings

volatility, financial leverage, frequency of auditor changes, size, number of segments, and frequency of losses are significantly larger for Revisers than control firms. In contrast, the earnings to price ratio, correlation between earnings and operating cash flows, persistence of earnings surprises, and profitability (ROA) are all significantly larger for control firms than Revisers. We do not find statistically significant differences below the 5% level for the proportion of accruals, the number of analysts following a firm, the magnitude of the earnings surprise on the preliminary announcement date, and whether the firm is audited by a Big audit firm.

(Insert Table 3 about here)

Table 4 provides the results of Logistic Regression analysis, where the dependent variable is one for Revisers and zero for control firms.⁹ As can be seen at the bottom of the table, the regression model has high explanatory power with significant likelihood ratios, and 63% of all observations predicted correctly. All variables in the model (except size with significance of 9.7%) have statistically significant explanatory power in the expected direction. In particular, we find that the more complex the firm (indicated by the number of segments and possibly size), the greater the likelihood of a subsequent earnings revision. Similarly, the likelihood of a revision is higher for firms with losses or high financial leverage, possibly because such firms are more likely to have operational and accounting control problems, and greater incentives to report strategically on the preliminary earnings announcement date. Firms with greater earnings volatility are also more likely to have subsequent earnings revisions, possibly because subsequent material events after the preliminary earnings announcements are more likely. Firms

⁹ The sensitivity analysis section describes the results of the Logistic Regression model when all non-Revisers are used as controls.

with a higher persistence of earnings surprises are less likely to have subsequent revisions, probably because of their greater earnings stability.

(Insert Table 4 about here)

3.5 Market Reactions

Table 5 presents results of regression equations where the dependent variable is the CAR over a specified period and independent variables which include various earnings surprises. Panel A provides information about market reactions to the preliminary earnings announcement. Consistent with prior studies, there is a positive and statistically significant association between the scaled earnings surprise (FSURP) and the 3-day CAR centered on the preliminary announcement date (0.215, $p < 0.0001$). The market reaction to a dollar of scaled earnings surprise is not statistically different between Revisers and control firms, as is indicated by the coefficient on the interactive term of the dummy variable and the first surprise (REVISER*FSURP, -0.016, $p = 0.745$). Thus, the market reactions to the initial earnings surprise seem to be similar for the two groups, as is expected for firms in the same industry and similar sizes, and the still unknown information about subsequent earnings revisions on the preliminary announcement date.¹⁰

(Insert Table 5 about here)

Panel B of table 5 presents the results of regressing the 3-day CAR around the SEC filing date on the initial earnings surprise (FSURP) for both groups and the additional earnings surprise (ASURP), which, by construction, is zero for control firms. We control for the information flows to the market between the preliminary earnings release and the SEC filing date by adding CAR_{af} , the cumulative abnormal return between the two dates, as an independent variable in the

¹⁰ The purpose of Panel A is to establish that our matching of Revisers and controls is adequate, and that the two groups do not have statistically different market reactions until after the preliminary earnings announcement date.

regression. We find that the additional surprise upon the revised earnings on the SEC filing date, ASURP, has a positive and significantly different from zero association with the 3-day CAR around the filing date (0.109, $p < 0.0001$). Thus, investors react to this new earnings information on the SEC filing date, indicating that the lack of market reactions in prior studies to SEC filings may be due to the lack of significant new information, not due to market participants who ignore SEC filings. As expected, we find that there are no statistically significant market reactions to the already-known (on the previous preliminary earnings announcement date) initial earnings surprise. Note also that the information flows to the market between the preliminary earnings release date and the SEC filing date are differentially associated with returns around the SEC filing date for Revisers and control firms; negative associations for control firms and less negative for Revisers.¹¹

Panel C of Table 5 shows the combined market reactions to both sources of earnings surprises, the preliminary and the SEC filing, where the dependent variable is the sum of the 3-day CAR around both the preliminary earnings announcement and the SEC filing date. Consistent with the results in Panels A and B of the table, the market has positive and statistically significant reactions to both earnings surprises. There are no differences in the market reactions to the first earnings surprise between Revisers and control firms. These results are after controlling for (differential) information flows to the market between the two dates.

Table 6 is similar to Table 5, except that it provides results only for Revisers, so there is no need to control and test for differences from control firms. The results are consistent with our findings in Table 5. There are positive and statistically significant market reactions to preliminary earnings surprises around the preliminary earnings announcement date. There are

¹¹ In untabulated results, we ran the regression reported in Panel B without CAR_{af} and without the preliminary earnings surprise (FSURP). In all of these regressions, the coefficient on the additional earnings surprise ASURP is positive and significantly different from zero around the SEC filing date.

also positive and statistically significant market reactions to the additional earnings surprises in SEC filings around the SEC filing date, even after controlling for the preliminary earnings surprise and any new information between the two dates. Finally, both the preliminary and additional earnings surprises are positively and significantly associated with the sum of market reactions around the preliminary earnings announcement and the SEC filing dates, but as Panel C indicates, the magnitude of the market reaction to a dollar of earnings surprise is **not** statistically different between the preliminary earnings announcement and the SEC filing. The latter is an interesting observation, as it may be expected that market reactions to the additional earnings surprise on the SEC filing date would be weaker, since the earnings revision may indicate potential weaknesses in accounting and control systems or strategic behavior by management.

(Insert Table 6 about here)

Tables 7 and 8 present analyses similar to those in Table 6 for Revisers only, but according to the direction of the earnings revision, upward revisions in Table 7 and downward revisions in Table 8. The results in Tables 7 and 8 are consistent with those reported in Table 6; there are statistically significant positive market reactions to earnings surprises on both the preliminary earnings announcement and the SEC filing dates, and the two reactions are not statistically distinguishable from each other.

(Insert Tables 7 and 8 about here)

3.6 Analyst Forecast Revisions

Table 9 provides evidence about whether analyst forecast revisions and absolute forecast errors are associated with the preliminary earnings surprise after the preliminary earnings announcement date and the additional earnings surprise after the SEC filing. If analysts use the

additional earnings surprises in revising their forecasts for future earnings, we should see a positive and significant association between the magnitude of the forecast revision and the additional earnings surprise, and a lower forecast error in forecasts made after the SEC filings. We first compute the mean of all forecasts made for quarter t+1 during the 90-day period preceding the preliminary earnings announcement for quarter t. We then compute the mean of all forecasts made for quarter t+1 between the preliminary earnings announcement date and the SEC filing date. Finally, we compute the mean of the forecasts made for quarter t+1 in the 20-day period after the SEC filing date. The first revision, REVPRE, is the difference in the first two means (from before the preliminary earnings announcement to the period after the preliminary earnings announcement through the SEC filing), scaled by price per share at the end of quarter t. The second revision, REVFILE, is the difference in the means of the last two periods (from after the preliminary earnings announcement but before the SEC filing, to the 20-day period after the SEC filing), again scaled by market price per share at the end of quarter t.¹² We present the results of regressing these forecast revision variables on the various earnings surprises.

(Insert Table 9 about here)

As can be seen in the table, there is a positive and statistically significant association between the preliminary earnings surprise and the revision of analyst forecasts following the preliminary earnings release (0.194, $p < 0.0001$). In contrast, there is a significant but negative association between the revision after the SEC filing and the second earnings surprise (-0.290, $p < 0.0001$), and more curiously a positive and statistically significant association between the revision after the SEC filings and the preliminary earnings surprise (0.091, $p < 0.0001$). The latter

¹² We follow a similar process with forecasts of annual earnings, and use the revision in the annual forecasts if the quarterly forecast revisions were unavailable.

result may be due to some analysts who do not revise their forecasts fast enough after the preliminary earnings announcement and do so only after the SEC filing.

Panel B of Table 9 provides information about the association of the scaled absolute value of the forecast errors with the earnings surprises after the preliminary earnings announcement and after the SEC filing. As the table shows, the forecasts made after the preliminary earnings announcement seem to be efficient with respect to the preliminary earnings surprise, in that the forecast error ERRPRE is insignificantly associated with the first earnings surprise (0.028, $p=0.7793$). However, the forecast errors for forecasts made after the SEC filings are inefficient as ERRFILE is significantly and positively associated with the preliminary earnings surprise (0.0258, $p=0.046$) and significantly and negatively associated with the additional earnings surprise in the SEC filing (-0.360, $p<0.0001$). Thus, analyst forecasts made after the SEC filings are not efficient and do not fully incorporate both earnings surprises.

3.6 Sensitivity Analyses

To test the robustness of the main results, we performed the following sensitivity analyses:

1. The Logistic Regression is run with all non-revisers, instead of the matched control sample. The regression is highly significant, with all variables retaining the same sign and significance levels, except for the size variable, which is now insignificantly different from zero.
2. We delete all Revisers with more than one revision. This is likely to eliminate cases where Compustat does not find sufficient data in the preliminary earnings release and needs to report a different income figure when the SEC filings become available. The

main results are virtually the same; there is a positive and statistically significant market reaction to the additional earnings surprise around the SEC filing day, with no market reaction to the preliminary earnings surprise, after controlling for information between the preliminary earnings release and the SEC filing. There is a significant and positive market reaction to both earnings surprises when we sum the reactions around the preliminary earnings release and the SEC filing dates, and these two reactions are not statistically different from each other. We also deleted all cases where the preliminary earnings matches any other updated (after SEC filing) earnings figure, where Compustat may have more information in the SEC filing to classify the preliminary earnings number more accurately. The main results are the same as those when all multiple revisions are eliminated.

3. To examine if market reactions are different depending on the sign of the preliminary earnings surprise and the subsequent additional surprise at the time of the SEC filing, we classify firms into four groups with the two extreme groups being those where the preliminary earnings surprise is positive (negative) and the subsequent SEC filing also has a positive (negative) earnings surprise. Results for these four-subgroups are reported in Table 10. The largest group is the group with positive preliminary earnings surprises and negative SEC additional surprises (735 firms), for which the market reactions to the additional SEC earnings surprises are positive and statistically significant, and for which the market reactions to the preliminary and the SEC additional earnings surprises are not statistically different from each other. This is also the group where strategic reporting is the most likely, although the subsequent negative earnings revision can also be attributed to the conservative bias in accounting.

(Insert Table 10 about here)

Market reactions for the three other groups are consistent, for the most part, with the results for the entire sample. The market reactions to the SEC additional surprise are positive and statistically different from zero, except for the small sub-group with a negative preliminary surprise and a positive SEC additional surprise, where the return window is limited to the SEC filing date. Also, the market reactions to the preliminary earnings surprises are generally not different from those to the SEC surprises, except for the group where both earnings surprises are negative. Unlike the results for the entire sample, the preliminary earnings surprises are not significantly associated with the sum of the CAR around the preliminary earnings and the SEC filing dates, CAR_{both} .

4. All Revisers' earnings announcements between the preliminary earnings announcement and the subsequent SEC filing dates were read to determine if the firm issued a press release that announced the upcoming earnings revision in the SEC filing. Only 102 Revisers with sufficient return information issued such revision announcements, with 68 (66.7%) of them having a negative additional SEC surprise (as compared to 62.2% for all non-announcing Revisers). 42 revision announcements occurred within the SEC filing window, the three-day window centered on the SEC filing date.¹³ Table 11 reports the results for these two sub-groups. The results for the non-announcers are very similar to those reported for the main sample and are not discussed here again. Even for those firms that announced an upcoming earnings revision in the SEC filing we observe a positive and significant market reaction to the additional SEC earnings surprise, but the market

¹³ Among the reasons for the earnings revisions are legal proceedings and settlements, loan loss provisions, responses to new SEC guidance, as well as admitted accounting errors and auditor-forced revenue recognition changes.

reactions to the additional earnings surprise are statistically different from those to the preliminary earnings surprise.

(Insert Table 11 about here)

5. We examine the sensitivity of the results to the various reporting lags between Revisers and control firms, with no significant role for any reporting lag. Specifically, we find the Revisers have a mean (median) lag of 34 (22) days between the quarter-end and the preliminary earnings announcement, as compared to 31 (21) for control firms. Similarly, the lag from the preliminary earnings announcement to the SEC filing has a mean (median) of 30 (23) for Revisers and 25 (21) for control firms. However, in spite of the greater lags for Revisers than control firms, these lags are not statistically significant in any of the return regressions we use in the study.
6. Table 12 reports summary statistics about the components of earnings that are revised between the preliminary earnings release and the SEC filing. The table summarizes revisions only for those items that had been disclosed in the preliminary earnings release, and subsequently revised; if Compustat could not find an earnings component in the preliminary earnings release, a component revision is not recorded for that firm, although the earnings component may in fact have been revised for that firm. The table indicates that sales, taxes, extraordinary items and cost of sales are subject to the most revisions. As can be expected, the largest revisions occur for sales, cost of sales and special items.

(Insert Table 12 about here)

We classify revisions to sales, cost of sales, SG&A, and depreciation as recurring items if there are no revisions to non-recurring items for these firms. We classify revisions to non-operating gains and losses, special items, and extraordinary items and discontinued

operations as non-recurring items if there are no revisions to recurring items for these firms.¹⁴ Table 13 shows the market reactions to earnings revisions classified into recurring and non-recurring items. The results for recurring items are very similar to the main results reported above. For firms with revisions to non-recurring items, we find that the additional SEC earnings surprise is associated with a positive and significant market reaction on the filing date, but that the initial earnings surprise is not statistically significant when we sum the market reactions to both surprises. Furthermore, the market reactions to the two earnings surprises are statistically different from each other at the 7.3% significance level.

(Insert Table 13 about here)

IV. Summary and Conclusions

This study explores characteristics of and market reactions to firms which file a 10-Q or 10-K with different earnings from those communicated in their preliminary earnings announcements. Our sample reveals that close to two thirds of all earnings revisions are income decreasing and that a larger proportion of the revisions occur in the fourth fiscal quarter, consistent with audit work at year-end and a longer period before the filing date. We find that the likelihood of earnings revision in the SEC filing is positively associated with proxies for complexity of operations, loss in the quarter, size, high earnings volatility, and financial leverage, but negatively associated with the persistence of earnings surprises. We find that earnings revisions are not concentrated in just a few industries and are not limited to industries with high litigation risk.

¹⁴ We do not classify taxes as recurring or non-recurring, because it may include both components.

We document market reactions to the initial earnings surprise at the time of the preliminary earnings announcement, and additional market reactions at the time of the SEC filing, which are statistically significant and comparable to those in the preliminary earnings surprise. These results contribute to prior academic research that generally failed to document market reactions around SEC filings, showing that when new earnings information is provided in the SEC filings, investors react to it. Interestingly, the significant market reactions to the additional earnings surprise around the filing date are not statistically smaller than those to the preliminary earnings release, although the earnings revisions can be perceived as a negative signal about weak accounting systems. Finally, the study indicates analysts revise their earnings forecasts both when the initial earnings surprise is disclosed to the market and when the additional earnings surprise is communicated in the SEC filings, but that those after the SEC filings are not more accurate than those after the preliminary earnings announcement and do not efficiently incorporate both sources of earnings surprises.

Our results suggest that investors and financial analysts should pay attention not only to earnings surprises at the preliminary earnings announcement, but also to the actual earnings figures in the SEC filing and the types of circumstances in which they are more likely to be revised.

Appendix A

Examples of Upward and Downward Earnings Revisions

Upward Revision:

Firm: Aspect Communications Corporation (Ticker: ASPT)

Period: First quarter ended March 31, 2002

Preliminary Earnings Announcement Date: April 18, 2002

Earnings Announcement: First quarter revenues were \$106.2 million, a decrease of \$8.284 million for the quarter ended March 31, 2002. Net income for the first quarter was \$10.241 million compared to a loss of \$46.156 million in the first quarter of the prior year.

SEC Filing Date: May 14, 2002

10-Q Reported Earnings: Consistent with the preliminary earnings announcement, first quarter revenues were \$106.2 million. However, net income for the first quarter reported in the 10-Q was \$12.163 million compared to the \$10.241 million reported in the preliminary earnings announcement just 26 days earlier. This change in earnings translates to an additional earnings surprise of \$1.922 million, or a 19% increase in earnings from that reported in the preliminary earnings announcement on April 18, 2002.

Downward Revision:

Firm: RMH Teleservices, Inc. (Ticker: RMHT)

Period: Second quarter ended June 30, 2002

Preliminary Earnings Announcement Date: July 30, 2002

Earnings Announcement: Second quarter revenues were \$58.651 million, an increase of 26 percent over revenues of \$46.592 million for the quarter ended June 30, 2001. Net income for the second quarter was a \$9.244 million loss, or \$0.69 per diluted share compared to net income of \$4.768 million, or \$0.46 per diluted share in the second quarter of the prior year.

SEC Filing Date: August 14, 2002

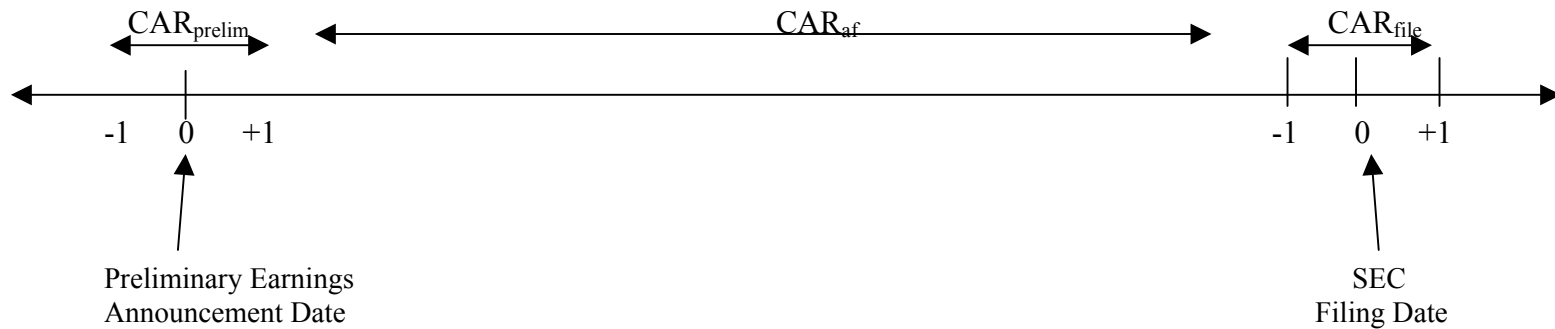
10-Q Reported Earnings: Consistent with the preliminary earnings announcement, second quarter revenues were \$58.651 million. However, net income for the second quarter reported in the 10-Q was a \$20.257 million loss compared to the \$9.244 million loss reported in the preliminary earnings announcement just 15 day earlier. This translates to an additional earnings surprise (loss) of \$11.013 million, or 119% decrease in earnings from that reported in the preliminary earnings announcement on July 30, 2002.

References

- Asthana, S., S. Balsam and S. Sankaraguruswamy, 2004, Differential Response of Small versus Large Investors to 10-K Filings on EDGAR. *The Accounting Review*, 79:3, pp. 571-589.
- Balsam, S., E. Bartov. And C. Marquardt. 2002. Accruals management, investor sophistication, and equity valuation: Evidence form 10-Q filings. *Journal of Accounting Research* (40): 987-1012.
- Chen, S., M. L. DeFond and C. W. Park, 2002. Voluntary disclosure of balance sheet information in quarterly earnings announcements, *Journal of Accounting and Economics* (33): 229-251.
- Chung, Kwang-Hyun, R. Jacob, and Ya B. Tang. 2003 Earnings management by firms announcing earnings after SEC filing. *International Advances in Economic Research* (9) 152-62.
- Cready, W. and P. Mynatt. 1991. The information content of annual reports: A price and trading response analysis. *The Accounting Review* (66): 291-312.
- DeFond, M. L., and M. Hung (2003). An empirical analysis of analysts' cash flow forecasts. *Journal of Accounting and Economics*, 35, pp. 73-100.
- Easton, P. D. and M. E. Zmijewski. 1993. SEC Form 10K/10Q Reports and Annual Reports to Shareholders: Reporting Lags and Squared Market Model Prediction Errors. *Journal of Accounting Research* (31:1, Spring): 113-129.
- Fama, Eugene F, French, Denneth R. 1997. Industry costs of equity. *Journal of Financial Economics*. Feb 1997. Vol.43:2, pp. 153-194.
- Foster, T. and D. Vickery. 1978. The incremental information content of the 10-K. *The Accounting Review* (53): 921-934.
- Foster, T., D. Jenkins, and D. Vickery. 1983. Additional evidence on the incremental information content of the 10-K. *Journal of Business Finance and Accounting* (10): 57-66.
- Foster, T., D. Jenkins, and D. Vickery. 1986. The incremental information content of the annual report. *Accounting Business and Research* (24): 91-98.
- Griffin, P. 2003. Got Information? Investor response to form 10-K and form 10-Q EDGAR filings. *Review of Accounting Studies* (8): 433-460.
- Ham, J. D. Losell, and W. Smieleliuskas. 1985. An empirical study of error characteristics in accounting populations. *The Accounting Review* (3): 387-406.
- Hylas, R. E. and R. H. Ashton. 1982. Audit detection of financial statement errors. *The Accounting Review*. (4) 751-765.

- Johnson, J. R., R. A. Leitch, and J. Neter. 1981. Characteristics of errors in accounts receivable and inventory audits. *The Accounting Review* (2) 270-293.
- Kinney, W. R., Jr. 1979. The predictive power of limited information in preliminary analytical review: An empirical study. *Journal of Accounting Research* (Supplement): 148-165.
- Knutson, P. 1992. *Financial reporting in the 1990's and beyond*. Charlotte, VA: Association for Investment Management and Research.
- Kothari, S. P. 2001. Capital markets research in accounting. *Journal of Accounting and Economics* (31): 105-231.
- Lees, F. 1981. *Public disclosure of Corporate earnings forecasts*. New York: The Conference Board
- Lev, B. 1989. On the Usefulness of Earnings and Earnings Research: Lessons and Directions from Two Decades of Empirical Research. *Journal of Accounting Research* (Supplement), pp. 153-201.
- Livnat, J. and C. E. L. Tan, 2004. Restatements of Quarterly Earnings: Evidence on Earnings Quality and Market Reactions to the Originally Reported Earnings. Working paper, NYU.
- Qi, D., W. Wu, and I. Haw. 2000. The incremental information content of SEC 10-K reports filed under the EDGAR system. *Journal of Accounting, Auditing, and Finance* (15): 24-46.
- Richardson, S., I. Tuna and M. Wu. 2002. Predicting earnings management: The case of earnings restatements. *Working paper*, University of Pennsylvania and Hong Kong University of Science and Technology.
- Stice, Earl. 1991. The market reaction to 10-k and 10-q filings and to subsequent *The Wall Street Journal* earnings announcements. *The Accounting Review* (66): 42-55.
- Wilson, Peter. 1987. The incremental information content of the accrual and funds components of earnings after controlling for earnings. *The Accounting Review* (62): 293-322.
- Wright, A., and R. H. Ashton. 1989. Identifying audit adjustments with attention-directing procedures. *The Accounting Review* 64: 710-728.

Figure 1
Timeline: Preliminary Earnings Announcements and SEC Filings



CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French.

CAR_{af} = the cumulative abnormal return between preliminary earnings announcements and SEC filings. It controls for information released to the stock market between the two time periods.

CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K.

Table 1
Sample Composition

Panel A: Firms by Year and for sample firms only by Fiscal Quarter

<i>Year</i>	<i>Control Firms</i>	<i>Sample Firms</i>	<i>Total Firms</i>	<i>Qtr1</i>	<i>Qtr2</i>	<i>Qtr3</i>	<i>Qtr4</i>
1991	66	78	144	16	8	11	43
1992	71	88	159	19	13	12	44
1993	78	92	170	27	11	8	46
1994	69	79	148	17	10	13	39
1995	103	118	221	12	12	24	70
1996	113	137	250	24	20	12	81
1997	151	186	337	32	24	39	91
1998	244	260	504	46	33	55	126
1999	222	240	462	59	35	38	108
2000	236	250	486	49	32	41	128
2001	241	257	498	66	42	31	118
2002	580	695	1275	115	230	161	189
2003	84	95	179	70	7	14	4
All	2258	2575	4833	552	477	459	1087

Panel B: Upward and Downward Earnings Revisions and Initial Earnings Surprise

<i>Year</i>	<i>Sample Firms</i>		<i>Control Firms</i>		<i>Sample Firms</i>	
	<i>Upward Revisions</i>	<i>Downward Revisions</i>	<i>Positive FSURP</i>	<i>Negative FSURP</i>	<i>Positive FSURP</i>	<i>Negative FSURP</i>
1991	25	53	32	34	48	30
1992	27	61	46	25	60	28
1993	27	65	44	34	61	31
1994	29	50	45	24	51	28
1995	62	56	60	43	60	58
1996	64	73	72	41	88	49
1997	84	102	106	45	116	70
1998	96	164	152	92	151	109
1999	89	151	146	76	148	92
2000	67	183	154	82	163	87
2001	79	178	152	89	157	100
2002	276	419	414	166	437	258
2003	49	46	49	35	57	38
All	974	1601	1472	786	1597	978

Panel C: Sample and Compustat Observations by Industries

	Sample		Compustat		Difference
	Firms	%	Firms	%	%
Agriculture	6	0.23	438	0.22	0.01
Aircraft	2	0.08	685	0.35	-0.27
Alcoholic beverages	4	0.16	586	0.30	-0.14
Apparel	18	0.70	2271	1.16	-0.46
Autos	35	1.36	3511	1.80	-0.44
Banking	305	11.84	22087	11.30	0.54
Business services	337	13.09	22671	11.59	1.50
Business supplies	17	0.66	2630	1.34	-0.68
Chemicals	30	1.17	3536	1.81	-0.64
Computers	125	4.85	8943	4.57	0.28
Construction material	35	1.36	3202	1.64	-0.28
Constructions	30	1.17	2176	1.11	0.06
Consumer goods	22	0.85	3055	1.56	-0.71
Defense	2	0.08	225	0.12	-0.04
Electrical equipment	16	0.62	2542	1.30	-0.68
Electronic equipment	151	5.86	10896	5.57	0.29
Entertainment	44	1.71	2418	1.24	0.47
Fabricated products	13	0.50	933	0.48	0.02
Food products	35	1.36	2866	1.47	-0.11
Healthcare	48	1.86	3544	1.81	0.05
Insurance	61	2.37	7231	3.70	-1.33
Machinery	72	2.80	6446	3.30	-0.50
Measuring and control	48	1.86	4372	2.24	-0.38
Medical Equipment	58	2.25	5788	2.96	-0.71
Miscellaneous	18	0.70	1195	0.61	0.09
Nonmetallic mining	4	0.16	442	0.23	-0.07
Personal services	28	1.09	1924	0.98	0.11
Petroleum and natural	66	2.56	5350	2.74	-0.18
Pharmaceutical produc	69	2.68	6816	3.49	-0.81
Precious metals	1	0.04	310	0.16	-0.12
Printing and publishi	10	0.39	1838	0.94	-0.55
Real estate	26	1.01	1002	0.51	0.50
Recreational products	28	1.09	1756	0.90	0.19
Restaurants, hotel, m	53	2.06	2875	1.47	0.59
Retail	87	3.38	8730	4.46	-1.08
Rubber and Plastic pr	23	0.89	1957	1.00	-0.11
Shipbuilding railroad	4	0.16	372	0.19	-0.03
Shipping containers	2	0.08	553	0.28	-0.20
Steel	22	0.85	3076	1.57	-0.72
Telecommunication	101	3.92	4638	2.37	1.55
Textiles	5	0.19	951	0.49	-0.30
Tobacco	2	0.08	161	0.08	0.00
Trading	204	7.92	9092	4.65	3.27
Transportation	65	2.52	4616	2.36	0.16
Utilities	137	5.32	7334	3.75	1.57
Wholesale	106	4.12	7221	3.69	0.43

Panel D: Distribution of Revisions per Sample Firms

Revisions	Firms	%	Cum N
1	1427	75.38	1427
2	330	17.43	1757
3	90	4.75	1847
4	23	1.22	1870
5	16	0.85	1886
6	4	0.21	1890
7	2	0.11	1892
8	1	0.05	1893

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between preliminary announcements and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. Control firms are from the same Fama and French (1997) industry (48 industries) that are closest in size to the revising firm in the same quarter, but without an earnings revision.
3. Compustat firms are those observations that fit the initial sample selection criteria during the sample period. The sample selection criteria require market value at quarter end of at least \$1 million, price per share at quarter end in excess of \$1, sales and total assets at the beginning of the quarter in excess of \$1million, availability of a preliminary earnings announcement date on Compustat that is prior to the SEC filing date, availability of preliminary earnings and As First Reported earnings on Charter Oak, and availability of the number of shares used to calculate EPS.

Table 2
Descriptive Statistics on Variables for Sample and Control Firms

Panel A: Descriptive Statistics for Sample Firms

	N	Mean	Std Dev	10th Pctl	25th Pctl	Median	75th Pctl	90th Pctl
EARNVOL	2301	1.962	1.618	0.342	0.616	1.415	2.968	5.000
E/P	2570	-0.019	0.108	-0.080	-0.015	0.005	0.016	0.028
ACCPROP	2089	0.301	0.597	0.048	0.081	0.149	0.278	0.531
COREOCF	2003	0.168	0.431	-0.422	-0.140	0.181	0.513	0.715
PERSE	2161	0.128	0.378	-0.370	-0.126	0.129	0.395	0.636
Debt	2382	0.267	0.231	0.001	0.068	0.236	0.404	0.571
AUC	2229	0.120	0.325	0	0	0	0	1
Market Val	2575	2494	13560	20	57	230	899	3412
SEGNUM	2224	2.325	1.682	1	1	1.5	3	5
ROA	2570	-0.012	0.072	-0.0560	-0.0097	0.0021	0.0103	0.0240
IBESN	1733	5.909	5.501	1	2	4	8	14
Loss	2575	0.398	0.490	0	0	0	1	1
Big	2575	0.786	0.410	0	1	1	1	1
FSURP	2575	-0.001	0.182	-0.027	-0.003	0.000	0.004	0.025
ASURP	2575	-0.004	0.211	-0.037	-0.011	-0.003	0.004	0.019
CAR _{prelim}	2025	-0.003	0.109	-0.101	-0.040	-0.002	0.037	0.100
CAR _{file}	2014	-0.003	0.078	-0.069	-0.031	-0.003	0.023	0.066
CAR _{af}	1878	-0.008	0.160	-0.156	-0.071	-0.005	0.058	0.138

Panel B: Descriptive Statistics for Control Firms

	N	Mean	Std Dev	10th Pctl	25th Pctl	Median	75th Pctl	90th Pctl
EARNVOL	2050	1.718	1.641	0.221	0.411	1.026	2.608	5.000
E/P	2257	-0.002	0.069	-0.041	0.000	0.012	0.020	0.032
ACCPROP	1894	0.267	0.540	0.045	0.075	0.132	0.251	0.476
COREOCF	1824	0.203	0.430	-0.394	-0.129	0.234	0.540	0.764
PERSE	1971	0.180	0.368	-0.285	-0.086	0.162	0.466	0.681
Debt	2091	0.227	0.227	0.000	0.027	0.185	0.358	0.510
AUC	1949	0.100	0.300	0	0	0	0	1
Market Val	2258	1679	7499	19	52	203	821	3000
SEGNUM	1936	2.012	1.529	1	1	1	3	4
ROA	2257	0.001	0.052	-0.036	0.000	0.006	0.018	0.033
IBESN	1522	5.596	5.215	1	2	4	7	13
Loss	2258	0.248	0.432	0	0	0	0	1
Big	2258	0.795	0.404	0	1	1	1	1
FSURP	2258	0.003	0.069	-0.016	-0.002	0.000	0.003	0.016
CAR _{prelim}	1904	0.006	0.097	-0.088	-0.035	0.002	0.041	0.104
CAR _{file}	1903	0.000	0.071	-0.063	-0.027	-0.003	0.025	0.060
CAR _{af}	1727	0.001	0.143	-0.141	-0.059	-0.003	0.056	0.139

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between preliminary announcements dates and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. Control firms are from the same Fama and French (1997) industry (48 industries) that are closest in size to the revising firm in the same quarter, but without an earnings revision.
3. EARNVOL= Earnings volatility is estimated as the absolute value of the ratio of the standard deviation of EPS/Price over the most recent 12 months to the average EPS/Price over the same period.

4. E/P= Current quarterly earnings before extraordinary items and discontinued operations divided by market value at the end of the quarter.
5. ACCPROP =Proportion of accruals. It is the absolute value of total accruals divided by sales, averaged over the previous four quarters. Total accruals are income before extraordinary items and discontinued operations minus net operating cash flow (OCF).
6. COREOCF= Correlation of quarterly earnings and OCF, estimated over the eight previous quarters.
7. PERSE =Persistence of earnings surprises. Estimated as the first autocorrelation between earnings surprises in the previous 8 quarters. Earnings surprises are earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the beginning of the quarter.
8. DEBT =Debt/Assets. Estimated as short plus long-term debt divided by total assets at the end of the quarter.
9. AUC=Auditor change. A dichotomous variable obtaining one if the firm's auditor was changed from the prior year
10. Market Val=Market value of equity in millions of dollars as of quarter-end.
11. SEGNUM= Number of segments. Taken from the Compustat Segment file and is a surrogate for operating complexity.
12. ROA=Ratio of earnings to total assets at quarter-end.
13. IBESN=Number of analysts on IBES. A measure of coverage and informational environment.
14. Loss= Dummy variable obtaining one if earnings for the quarter are negative.
15. Big= An indicator variable equals to one if the firm is audited by a Big auditor.
16. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t.
17. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. By definition, it is zero for control firms.
18. CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French.
19. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K.
20. CAR_{ar} = the cumulative abnormal return between preliminary announcements and SEC filings. It controls for information released to the market between the two time periods.

Table 3
Tests of Mean Differences between Sample and Control Firms

	t-statistic	Significance
Earnings Volatility	-4.92	<.0001
Earnings/Price	6.65	<.0001
Proportion of Accruals	-1.86	0.0627
Correlation between earnings and OCF	2.52	0.0118
Persistence of Earnings Changes	4.43	<.0001
Debt/Assets	-5.81	<.0001
Auditor Change	-2.04	0.0414
Market Value	-2.63	0.0086
Number of Segments	-6.28	<.0001
ROA	7.14	<.0001
Number of Analysts	-1.66	0.096
Loss	-11.33	<.0001
Big Auditor	0.77	0.4433
First Surprise	1.03	0.3053

Notes:

1. Precise descriptions of sample and control firms as well as variable definitions are in notes to Table 2.
2. The t-statistics test that the mean of the control is greater than the mean of the sample firms based on unequal variances.
3. Bold entries are significant below 5%.

Table 4
Logistic Regression to Predict Earnings Revisions

Variable	Expected	Estimate	χ^2	Significance	Average change in odds (%)
Intercept	?	-0.906	45.3	<.0001	
Debt/Assets	+	0.475	9.3	0.0023	12
Log(Market Value)	+	0.032	2.8	0.0966	7
Number of Segments	+	0.142	33.5	<.0001	26
Earnings Volatility	+	0.078	11.6	0.0006	14
Persistence of Earnings	-	-0.285	8.5	0.0035	-10
Loss	+	0.753	89.9	<.0001	43
Sample N			1,703		
Control N			1,562		
Likelihood Ratio			183.9		
p-value			<0.0001		
Percent Concordant			63.1		

Notes:

1. Precise descriptions of sample and control firms as well as variable definitions are in notes to Table 2.
2. The table provides the results of Logistic Regression where the dependent variable equals one if a sample firm (material earnings revision) and zero if control.
3. Bold entries are significant below 5%.
4. The percentage change in odds equals $100[\text{Exp}(\text{estimate} \times \text{standard deviation of variable}) - 1]$. It measures by how much the odds of a firm having an earnings revision increase due to an increase of one standard deviation in the variable (see DeFond and Hung, 2003, p. 90).

Table 5
Regressions of Preliminary Earnings Announcement and SEC Filing Date Returns on Earnings Surprises for all Firms

Panel A: Regressions of Stock Market Reactions to Preliminary Earnings Surprises

Variable	Intercept	REVISER	FSURP	REVISER*FSURP	F-Value	Adj. R ²	Obs.
Coefficient	0.005	-0.007	0.215	-0.016	<0.0001	0.019	3912
p-value	0.029	0.024	<0.0001	0.745			

Dependent variable = CAR_{prelim} .

Panel B: Regressions of Stock Market Reactions to Additional Earnings Surprises in SEC Filings

Variable	Intercept	REVISER	FSURP	REVISER*FSURP	ASURP	CAR_{af}	REVISER* CAR_{af}	F-Value	Adj. R ²	Obs.
Coefficient	0.001	-0.002	-0.005	-0.006	0.109	-0.052	0.033	<0.0001	0.013	3583
p-value	0.675	0.354	0.860	<0.866	<0.0001	<0.0001	0.039			

Dependent variable = CAR_{file} .

Panel C: Regressions of Combined Preliminary Earnings Announcement and SEC Filing Returns to Earnings Surprises

Variable	Intercept	REVISER	FSURP	REVISER*FSURP	ASURP	CAR_{af}	REVISER* CAR_{af}	F-Value	Adj. R ²	Obs.
Coefficient	0.005	-0.005	0.203	-0.027	0.237	-0.054	0.107	<0.0001	0.026	3582
p-value	0.090	0.182	<0.0001	0.6665	<0.0001	0.009	<0.0001			

Dependent variable = CAR_{both} .

Notes:

1. Sample observations (Reviser=1) are for firm-quarters during 1991-2003 with material earnings revisions between preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01. Control (Reviser=0) firms are from the same Fama and French (1997) industry (48 industries) that are closest in size to the revising firm in the same quarter, but without an earnings revision.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. By definition, it is zero for control firms.
3. CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. CAR_{af} = the cumulative abnormal return between preliminary earnings announcements and SEC filings. It controls for information released to the market between the two time periods. $CAR_{both} = CAR_{prelim} + CAR_{file}$.

Table 6
Regressions of Preliminary Earnings Announcement and SEC Filing Date Returns on Earnings Surprises for Sample Firms Only

Panel A: Regressions of Stock Market Reactions to Preliminary Earnings Surprises

Variable	Intercept	FSURP	F-Value	Adj. R²	Obs.
Coefficient	-0.000	0.179	<0.0001	0.013	1,845
p-value	0.876	<0.0001			

Dependent variable = CAR_{prelim} .

Panel B: Regressions of Stock Market Reactions to Additional Earnings Surprises in SEC Filings

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R²	Obs.
Coefficient	-0.002	-0.011	0.115	-0.018	<0.0001	0.012	1,845
p-value	0.401	0.686	<0.0001	0.118			

Dependent variable = CAR_{file} .

Panel C: Regressions of Combined Preliminary Earnings Announcement and SEC Filing Returns to Earnings Surprises

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R²	Obs.	F-Test for FSURP=ASURP
Coefficient	-0.001	0.173	0.256	0.052	<0.0001	0.031	1,845	1.91
p-value	0.871	0.0002	<0.0001	0.009				0.168

Dependent variable = CAR_{both} .

Notes:

1. Sample observations (Reviser=1) are for firm-quarters during 1991-2003 with material earnings revisions between preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. By definition, it is zero for control firms.
3. CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. CAR_{af} = the cumulative abnormal return between preliminary earnings announcements and SEC filings. It controls for information released to the market between the two time periods. $CAR_{both} = CAR_{prelim} + CAR_{file}$.

Table 7
Regressions of Preliminary Earnings Announcement and SEC Filing Date Returns on Earnings Surprises for Sample Firms Only with Upward Earnings Revisions

Panel A: Regressions of Stock Market Reactions to Preliminary Earnings Surprises

Variable	Intercept	FSURP	F-Value	Adj. R ²	Obs.
Coefficient	0.003	0.153	0.008	0.009	693
p-value	0.461	0.008			

Dependent variable = CAR_{prelim} .

Panel B: Regressions of Stock Market Reactions to Additional Earnings Surprises in SEC Filings

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R ²	Obs.
Coefficient	0.001	0.016	0.104	-0.034	0.035	0.008	693
p-value	0.704	0.713	0.013	0.109			

Dependent variable = CAR_{file} .

Panel C: Regressions of both Preliminary Earnings Announcement and SEC Filing Date Returns to Earnings Announcement and SEC Filing Earnings

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R ²	Obs.	F-Test for FSURP=ASURP
Coefficient	-0.002	0.208	0.290	0.060	< 0.0001	0.028	693	.76
p-value	0.749	0.007	< 0.0001	0.101				0.382

Dependent variable = CAR_{both} .

Notes:

1. Sample observations (Reviser=1) are for firm-quarters during 1991-2003 with material earnings revisions between preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. Upward earnings revisions occur when ASURP>0.
3. CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. CAR_{af} = the cumulative abnormal return between preliminary earnings announcements and SEC filings. It controls for information released to the market between the two time periods. $CAR_{both} = CAR_{prelim} + CAR_{file}$.

Table 8
Regressions of Preliminary Earnings Announcement and SEC Filing Date Returns on Earnings Surprises for Sample Firms Only with Downward Earnings Revisions

Panel A: Regressions of Stock Market Reactions to Preliminary Earnings Surprises

Variable	Intercept	FSURP	F-Value	Adj. R ²	Obs.
Coefficient	-0.002	0.197	<0.0001	0.014	1,152
p-value	0.435	<0.0001			

Dependent variable = CAR_{prelim} .

Panel B: Regressions of Stock Market Reactions to Additional Earnings Surprises in SEC Filings

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R ²	Obs.
Coefficient	-0.003	-0.030	0.111	-0.012	0.0035	0.009	1,152
p-value	0.228	0.364	0.0004	0.404			

Dependent variable = CAR_{file} .

Panel C: Regressions of both Preliminary Earnings Announcement and SEC Filing Date Returns to Earnings Announcement and SEC Filing Earnings

Variable	Intercept	FSURP	ASURP	CAR_{af}	F-Value	Adj. R ²	Obs.	F-Test for FSURP=ASURP
Coefficient	-0.001	0.155	0.240	0.050	<0.0001	0.026	1,152	1.07
p-value	0.850	0.008	<0.0001	0.041				0.301

Dependent variable = CAR_{both} .

Notes:

1. Sample observations (Reviser=1) are for firm-quarters during 1991-2003 with material earnings revisions between preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end. Downward earnings revisions occur when ASURP<0.
3. CAR_{prelim} = the cumulative abnormal return from day -1 through day +1, where day zero is the preliminary earnings announcement date. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. CAR_{af} = the cumulative abnormal return between preliminary earnings announcements and SEC filings. It controls for information released to the market between the two time periods. $CAR_{both} = CAR_{prelim} + CAR_{file}$.

Table 9
Financial Analysts' Revisions and Forecast Errors after Preliminary Earnings Announcements and SEC Filings

Panel A: Forecast Revisions For Sample Firms Only

Dependent Variable	N	Intercept	p-value	FSURP	p-value	ASURP	p-value	R²	F-value
REVPRE	547	-0.002	<0.0001	0.194	<0.0001			0.165	<0.0001
REVFILE	547	-0.002	0.018	0.091	<0.0001	-0.290	<0.0001	0.124	<0.0001

Panel B: Forecast Errors For Sample Firms Only

Dependent Variable	N	Intercept	p-value	FSURP	p-value	ASURP	p-value	R²	F-value
ERRPRE	537	0.012	<0.0001	0.028	0.7793			0.001	.7793
ERRFILE	537	0.011	<0.0001	0.258	0.046	-0.360	<0.0001	0.096	<0.0001

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end.
3. REVPRE = the mean IBES forecast for quarter t+1 between the preliminary earnings announcement for quarter t and the filing date for quarter t, minus the mean earnings forecast for quarter t+1 in the 90-day period prior to the preliminary earnings announcement, scaled by price per share at quarter t's end. REVFILE = the mean analyst forecast for quarter t+1 in the 20-day period following the filing date minus that formed between the announcement and filing dates as explained for REVANN.
4. ERRPRE (ERRFILE) is the absolute value of the scaled forecast error using the mean forecast between the preliminary earnings announcement and the SEC filing (the mean forecast in the 20-day period after the SEC filing). The forecast error is IBES actual minus IBES mean forecast, scaled by price at quarter end.
5. ERRPRE-ERRFILE has a mean of -0.0004 and a median of zero. A t-test (Wilcoxon test) of that difference shows significance level of 0.609 (0.330).

Table 10
Regressions of CAR on Preliminary Earnings Surprises and SEC Filing Surprises Date Returns for Various Sub-Samples

Group	Dependent Variable	Intercept	Preliminary Earnings Surprise FSURP	SEC Filing Additional Surprise ASURP	CAR _{af}	N	R ²	F-Test for FSURP=ASURP
FSURP<0,ASURP<0	CAR _{file}	-0.008	-0.008	0.147	-0.004	422	0.014	
		0.243	0.199	0.015	0.841		0.108	
	CAR _{both}	-0.029	-0.070	0.359	0.062	422	0.036	5.67
		0.000	0.519	0.001	0.113		0.011	0.018
FSURP>=0,ASURP<0	CAR _{file}	-0.002	-0.027	0.086	-0.020	735	0.011	
		0.421	0.566	0.017	0.250		0.051	
	CAR _{both}	0.013	0.092	0.162	0.028	735	0.012	0.6
		0.007	0.246	0.009	0.359		0.034	0.439
FSURP<0,ASURP>=0	CAR _{file}	0.000	0.028	0.040	-0.003	275	0.001	
		0.992	0.731	0.546	0.894		0.942	
	CAR _{both}	-0.018	0.272	0.353	0.073	275	0.035	0.5
		0.024	0.090	0.007	0.153		0.021	0.480
FSURP>=0,ASURP>=0	CAR _{file}	0.003	-0.057	0.176	-0.053	426	0.026	
		0.489	0.386	0.005	0.079		0.012	
	CAR _{both}	0.011	0.095	0.298	0.049	426	0.026	1.59
		0.169	0.383	0.004	0.317		0.011	0.208

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between the preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end.
3. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{af} = the cumulative abnormal

return between preliminary earnings and SEC filings. It controls for information released to the market between the two time periods. $CAR_{\text{both}} = CAR_{\text{prelim}} + CAR_{\text{file}}$.

4. Table entries report coefficients in the top row and significance levels in the bottom row. Bold entries represent significance levels below 5%.

Table 11
Regressions of CAR on Preliminary Earnings Surprises and SEC Filing Surprises Date Returns for Various Sub-Samples

Group	Variable	Intercept	Preliminary Earnings Surprise FSURP	SEC Filing Additional Surprise ASURP	CAR_{af}	N	R₂	F-Test for FSURP=ASURP
No Revision Announcements								
	CAR _{file}	-0.001	-0.009	0.093	-0.030	1756	0.012	
		0.488	0.724	0.000	0.014		0.000	
	CAR _{both}	0.001	0.173	0.184	0.022	1756	0.020	0.04
		0.798	0.000	0.000	0.307		0.000	0.848
Revision Announcements								
	CAR _{file}	-0.003	-0.098	0.317	0.025	102	0.121	
		0.754	0.542	0.005	0.491		0.005	
	CAR _{both}	-0.011	0.102	1.018	0.135	102	0.299	5.13
		0.485	0.752	0.000	0.069		0.000	0.026

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between the preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. The table reports results for a group of firms that issued a press release announcing the forthcoming earnings revision in the SEC filing (Revision Announcements), and all others (No Revision Announcements).
3. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end.
4. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{af} = the cumulative abnormal return between preliminary earnings and SEC filings. It controls for information released to the market between the two time periods. CAR_{both} = CAR_{prelim} + CAR_{file}.
5. Table entries report coefficients in the top row and significance levels in the bottom row. Bold entries represent significance levels below 5%.

Table 12
Revisions to Components of Earnings

Component of Earnings	N	Mean	Median	p25%	p75%
Sales	1029	0.1093	0.0239	0.0063	0.0800
Cost of Sales	990	0.0801	0.0134	0.0049	0.0498
Selling, General & Administrative	539	0.0250	0.0071	0.0026	0.0196
Depreciation	197	0.0093	0.0033	0.0009	0.0098
Tax	1095	0.0164	0.0036	0.0015	0.0103
Non-Operating Gains and Losses	378	0.0115	0.0037	0.0009	0.0107
Special Items	597	0.0535	0.0110	0.0032	0.0391
Extraordinary Items and Discontinued Operations	1032	0.0328	0.0076	0.0029	0.0214

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between the preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. The table reports statistics about the components of earnings that are revised between the preliminary earnings announcement and the subsequent SEC filing. Table entries are the absolute value of the revision, scaled by market value of equity at quarter end.

Table 13
Regressions of CAR on Preliminary Earnings Surprises and SEC Filing Surprises Date Returns for Various Sub-Samples

Group	Variable	Intercept	Preliminary Earnings Surprise FSURP	SEC Filing Additional Surprise ASURP	CAR_{af}	N	R₂	F-Test for FSURP=ASURP
Revising Recurring Items	CAR _{file}	-0.001	-0.022	0.171	-0.001	1159	0.027	
		0.750	0.580	0.000	0.922		0.000	
	CAR _{both}	-0.002	0.263	0.355	0.077	1159	0.055	1.18
		0.585	0.000	0.000	0.003		0.000	0.277
Revising Non-Recurring Items	CAR _{file}	0.003	0.029	0.129	-0.041	825	0.023	
		0.304	0.514	0.000	0.035		0.000	
	CAR _{both}	0.003	0.111	0.280	0.071	825	0.037	3.23
		0.573	0.159	0.000	0.010		0.000	0.073

Notes:

1. Sample observations are for firm-quarters during 1991-2003 with material earnings revisions between the preliminary earnings and subsequent SEC filings. A material revision is one where the absolute value of the change in earnings scaled by preliminary earnings is at least 10% and the change in EPS is at least \$0.01.
2. The table reports results for a group of firms that had a revision in an earnings component in the SEC filing. Revisions to sales, cost of sales, selling, general, and administrative expenses, and depreciation are classified as revisions of recurring items. Revisions to non-operating gains and losses, special items and extraordinary items and discontinued operations are classified as non-recurring.
3. FSURP=The First (Preliminary) Surprise. Calculated as the IBES actual EPS minus the mean IBES forecast of EPS as of the last month in the quarter, scaled by price per share at quarter end. If IBES data are unavailable, as earnings at quarter t minus earnings at quarter t-4, scaled by market value of equity at the end of quarter t. ASURP = Additional surprise. Calculated as earnings in the SEC filing minus earnings reported in the preliminary earnings release, scaled by market value at quarter-end.
4. CAR_{file} = the cumulative abnormal return from day -1 through day +1, where day zero is the SEC filing date of 10-Q/10-K. The abnormal return is the raw return minus the average return on a same size-B/M portfolio (six portfolios), as provided by professor French. CAR_{af} = the cumulative abnormal return between preliminary earnings and SEC filings. It controls for information released to the market between the two time periods. CAR_{both}= CAR_{prelim} + CAR_{file}.
5. Table entries report coefficients in the top row and significance levels in the bottom row. Bold entries represent significance levels below 5%.