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THE MAGNITUDE AND TIMING
OF ANALYST FORECAST RESPONSE TO
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THE MAGNITUDE AND TIMING OF ANALYST FORECAST RESPONSE TO QUARTERLY EARNINGS ANNOUNCEMENTS

By

Lise Newman Graham

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ABSTRACT

THE MAGNITUDE AND TIMING
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Investors frequently use earnings per share as a proxy for estimated cash flows or as the starting point in the cash flow estimation process. Consequently, accurate and timely forecasts of corporate earnings are critical to security valuation and investment success. This study examines the magnitude and timing of revisions in analysts' forecasts of annual earnings around the time of quarterly earnings announcements.

The sample includes earnings forecasts for 49 large firms with December fiscal year-ends for the years 1983 through 1986. The forecasts of annual primary earnings per share before extraordinary items come from the Institutional Brokers Estimate System (I/B/E/S) detail tapes of Lynch, Jones and Ryan, which contains forecasts made by individual analysts. Consensus forecasts for each firm are constructed for weekly, bi-weekly, and monthly intervals in the earnings anticipation period (the eight weeks preceding the earnings announcement), the announcement period (the week of and week

following the announcement), and the post-announcement period (the seven weeks following the announcement period). A "market" average is also constructed using all firms in the sample. Tests of revisions from one interval to the next are then conducted using the both the unadjusted firm consensus forecasts and those forecasts adjusted for market-wide revisions occurring at the same time.

The results provide little evidence that forecasters revise their forecasts in ways which anticipate annual earnings in the two months preceding quarterly earnings announcements. There is evidence that analysts underreact to the information in a quarterly earnings announcement and continue to revise their forecasts for as much as two months after the announcement. These findings are sensitive to the length of the period used to aggregate analyst forecasts, however.

One implication for other studies of analyst forecasts and forecast revisions is that the choice of forecast aggregation period in forming a consensus forecast of earnings per share may affect the results. Also, studies of changes in analyst forecasts which do not adjust for changes in macroeconomic factors may be drawing spurious conclusions.

This work is dedicated to Don, my husband, and to my children, Donald and Karen. Their love, support, understanding and patience throughout this process is greatly appreciated.

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Finally, I would like to acknowledge my family. My husband, children, parents, brothers, and sisters provided listening ears, helping hands and loving hearts as I endeavored to complete this dissertation, for which I will always be grateful.

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CHAPTER 1

INTRODUCTION

Financial theory holds that the value of an asset is simply the present value of its expected future cash flows discounted at a rate appropriate to the risk of the asset. Investors frequently use earnings per share as a proxy for estimated cash flows or as the starting point in the cash flow estimation process. Thus, information (such as quarterly earnings announcements) which affects the investment community's evaluation of a security receives a great deal of attention from investors and security analysts.

Previous studies of the relationship between earnings per share and the market's valuation of a security have found that announcements of unexpected changes in earnings are positively correlated with stock price changes (e.g. Brown [1978] and Rendleman, Jones and Latane [1982]). A similar link has been established between revisions in security analysts' forecasts of those earnings and security returns (e.g. Givoly and Lakonishok [1979] and Benesh and Peterson [1986]). Thus, it appears that forecasts of corporate earnings are an important component of investment analysis and that accurate and timely forecasts of earnings

may be critical to security valuation and investment success.

Consider the forecasts of annual earnings for 1986 made by 31 security analysts covering Airborne Freight and reporting to the Institutional Brokers Estimate System (I/B/E/S) shown in Figure 1.

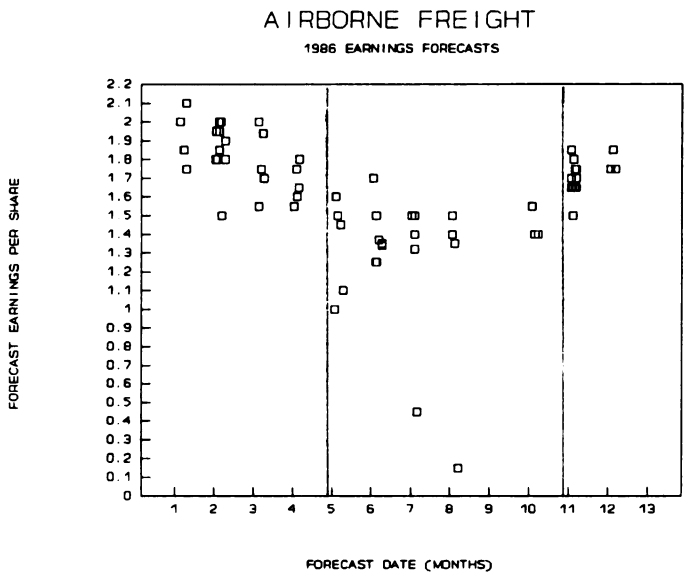


Figure 1: AIRBORNE FREIGHT - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986. The two vertical lines indicate the April and October quarterly earnings announcement dates.

Several questions arise upon inspection of the graph:

a) In what manner do analysts anticipate earnings information prior to earnings announcements?

b) Do analyst forecasts react unbiasedly and without delay to information such as earnings announcements?

c) If analyst forecasts do not immediately impound the information in earnings announcements, in what manner do market participants adapt their forecasts to new information?

d) Does share price lead and/or lag earnings forecast changes?

To the extent that individual investors rely on forecasts made by individual analysts, an understanding of the process by which earnings forecasts are formed may add to investors' ability to use those forecasts. Direct tests of individual analyst forecast accuracy have found that there is no significant difference in the overall accuracy of the various analysts (O'Brien [1990] and Butler and Lang [1991]). However, the intra-year behavior of analysts' forecasts of annual earnings is the subject of some debate.

Using consensus forecasts, Kerrigan [1984] and Arnott [1985] find that large upward or downward forecasts early in the year tend to be followed by further revisions in the same direction. Abdel-Khalik and Espejo [1978] and Brown and Rozeff [1979] model this behavior as an adaptive expectations process in which forecasts are revised to incorporate the "permanent" component of the most recent forecast error. Givoly [1985] finds that the coefficients of adaptation vary over time and across companies, but that different forecasters of the same company exhibit similar adaptive behavior. Each of these studies is consistent with analyst underreaction to new information.

In a study of analyst earnings forecasts and forecast revisions reported to I/B/E/S during April and December from 1976 to 1984, DeBondt and Thaler [1990] find that analysts are generally too optimistic in the beginning of the year and that forecast revisions between April and December tend to reverse this bias. Based on these results, DeBondt and Thaler conclude that analysts typically overreact to new information. Brown, Foster, and Noreen [1985] and O'Brien [1992] also find empirical evidence that analysts are too optimistic in their earnings forecasts. This is perhaps especially true of "sell-side" analysts working for brokerage houses.

In addition, investors may be concerned not only with the accuracy of the forecaster, but also with the timing of the forecast revision. If investors rely on these forecasts in making investment decisions, less timely revisions may have an adverse impact on their decisions.

Given the demonstrated link between financial analysts' forecasts and security returns, a deeper understanding of the way in which forecasts are made becomes important. This study adds to our knowledge of the forecasting process by examining the timing and magnitude of revisions of analyst forecasts of annual earnings per share around the time of quarterly earnings announcements. Forecast revisions are examined separately for positive versus negative surprises, as well as large and small surprises. To the extent that analysts' forecasts act as proxies for market expectations,

we gain additional insight into the way in which the market processes unexpected information.

The next chapter reviews related literature and develops hypotheses. The third chapter contains the results of an initial investigation of the data used in this study. The fourth chapter discusses sample selection and study methodology. Results of the empirical tests are discussed in the fifth chapter. Conclusions and extensions of the study are in chapter six.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews relevant prior research and identifies research issues regarding the behavior of analysts' revisions of earnings forecasts subsequent to the receipt of new information.

2.1 Relationship Between Earnings and Security Returns

Financial theory holds that the value of an asset is simply the present value of its expected future cash flows discounted at a rate appropriate to the risk of the asset. Investors have often used earnings per share as a proxy for estimated cash flows and even now, with explicit estimation of cash flows receiving more attention, earnings per share is frequently the starting point for that calculation. Also, a survey of investment managers regarding their securities analysis and portfolio management techniques by Carter and Van Auken [1990] found that fundamental analysis was considered to be an important valuation technique and, within that group of techniques, price/earnings analysis was highest ranked. Accordingly, earnings announcements receive a great deal of attention from investors and security analysts. In fact, as Givoly and Lakonishok [1984] note,

"earnings per share emerges from various studies as the single most important accounting variable in the eyes of investors and the one that possesses the greatest information content of any array of accounting variables."

A relationship between earnings and security returns has previously been documented in the literature. For example, in an investigation of the earnings characteristics of the 50 best and 50 worst-performing NYSE stocks in 1970-1971, Niederhoffer and Regan [1972] found that the most important characteristic separating the two groups was profitability. Of the 50 stocks experiencing the greatest percentage gains in price, 45 reported earnings per share greater than those of a year earlier and 20 of those 50 reported earnings gains of at least 25 percent. In contrast, 46 of the 50 worst performers reported earnings decreases and 44 of those decreases were in excess of 25 percent. In a similar study, Benesh and Peterson [1986] also noted a strong relationship between unexpected earnings changes and security returns.

Brown [1978] considered announcements of changes in annual earnings per share (excluding extraordinary items) of at least 20 percent for the years 1963 to 1971. His results indicated that the market does not react instantaneously but rather takes about 45 market days to fully impound the new information. More importantly, even with transactions costs, significant excess returns could have been earned

simply by purchasing the stocks at the time the announcement appeared in The Wall Street Journal.

Similarly, Rendleman, Jones and Latane [1982], using a sample from the years 1971 - 1981, found a strong relationship between unexpected quarterly earnings and excess returns on common stock in the period following the announcement. In their study, approximately 50 percent of the adjustment to the new information occurred in the 90 days following the announcement and the greater the earnings surprise, the greater the cumulative excess returns.

2.2 Relationship Between Analyst Earnings Forecasts and Stock Returns

A similar relationship between analysts' forecasts of earnings and security returns has also been found. In their study of the 50 best and 50 worst performing stocks of 1970-71, Niederhoffer and Regan [1972] observed that the stocks with the highest returns had earnings increases substantially greater than those forecast by analysts (as reported in the March 31, 1970 edition of the Standard and Poor's Earnings Forecaster). For the worst performing stocks, analyst forecasts were generally too optimistic and the actual earnings were greatly below the projections.

Givoly and Lakonishok [1979] studied the information content of revisions in financial analysts' forecasts by measuring abnormal returns in the months surrounding the revision month. Using revisions produced by the most active

forecaster (the one with the greatest number of revisions) reporting in the Standard and Poor's Earnings Forecaster during the period 1967 to 1974, they found positive abnormal returns in the months surrounding an upward revision and negative abnormal returns in the period around a downward revision. These abnormal returns persisted for two months following the revision month and were sufficient to cover transaction costs. These results provide support for the hypothesis that these forecast revisions contain information and that the market is inefficient with respect to these revisions.

Benesh and Peterson [1986] provide further support for this hypothesis in their study of the relationship between analyst forecasts and stock price fluctuations. Using consensus forecasts reported by the Institutional Brokers Estimate System (I/B/E/S) during 1980 and 1981, they found that when an earnings forecast was revised by 5 percent or more, the security tended to experience significant excess returns for the remainder of the year. Based on this result, they suggested that "investors may improve their performance by immediately purchasing stocks that have experienced an upward revision in the consensus forecast and selling stocks for which the consensus forecast has been revised downward."

Hawkins, Chamberlin, and Daniel [1984] constructed portfolios consisting of the 20 stocks with the largest one-month increases in the I/B/E/S consensus estimates of

earnings for each of the quarters from March 1975 through December 1980. These portfolios outperformed portfolios comprised of all stocks covered by I/B/E/S, the S&P 500, and various combinations of 20 stocks chosen at random from the I/B/E/S universe. Furthermore, these abnormal returns remained even after adjusting for risk and transaction costs.

Dowen and Bauman [1989] found that this relationship between forecast revision and excess returns continued to exist even after the publication in 1984 and 1985 of articles reporting this phenomenon. Using the I/B/E/S consensus forecasts for the year 1977 through 1986, portfolios were constructed based on the value of a revision ratio calculated as follows:

$$\text{Revision Ratio} = E_4/E_3$$

where E_4 and E_3 represented the April and March consensus estimates of EPS for the current year. A revision ratio greater than 1.00 indicated an upward revision and a downward revision resulted in a ratio less than 1.00. They observed a significant positive relationship between the direction of the April forecast revisions and the returns on the stock for the remainder of the year over the ten-year period, including 1986. In addition, this relationship could not be explained by either the small firm effect or analyst neglect (few analysts following selected stocks).

Harris and Gultekin [1987], in a study of financial analysts' consensus forecasts of corporate earnings growth

(as reported by I/B/E/S for the time period 1982-1985), noted a strong positive relationship between the analysts' growth forecasts and the value of the company's stock. In particular, companies with high growth forecasts had higher price earnings ratios and market to book ratios than companies with low growth forecasts.

2.3 Properties of Consensus Forecasts

Previous research on the properties of consensus forecasts of earnings has documented that the accuracy of these forecasts is greater than if one simply extrapolates past earnings trends. As Brown and Rozeff [1978] note, the earnings forecasts of security analysts should be superior to time series forecasts since financial analysts presumably employ a larger information set than simply a time series of past earnings. Also, the very fact that profit-maximizing firms continue to employ analysts rather than relying solely on less costly mechanistic time series models implies that the analysts' forecasts must provide information of value.

O'Brien [1988] examined the relative merits of three composite analyst forecasts and time series models as proxies for expected earnings. Consistent with prior research, she also found that the analysts' forecasts were superior to time series models. Within the analyst forecast group, her results indicate that the most recent forecast is more accurate than either the mean or median forecast. If the consensus forecast is restricted to only those forecasts

made since the last earnings announcement, aggregating the forecasts to remove individual idiosyncratic error improves forecast accuracy.

In a study using I/B/E/S consensus forecasts from 1977 to 1982, Kerrigan [1984] found that large upward or downward forecast revisions early in the year tended to be followed by further revisions in the same direction. Arnott [1985] achieved essentially the same result in a study of the 1976-1982 period. More recently, Dowen and Bauman [1989] in their study covering 1977-1986 found that analysts were continuing to make revisions in the early part of the year that were in general too small.

In contrast, DeBondt and Thaler [1990], using I/B/E/S consensus forecasts for the years 1976 to 1984, found that analysts' forecasts were generally too optimistic, that early-year revisions were too large (i.e. analysts "overreacted") and that forecasts of year-ahead earnings per share were even more extreme than current year EPS forecasts. In particular, they noted that actual changes in EPS averaged only 65 percent of the forecasted one-year changes, while the actual two-year change was only 46 percent of the forecasted change.

2.4 Properties of Individual Analyst Forecasts

On the issue of whether some analysts are more accurate than others, O'Brien [1990] finds no evidence of systematic differences in forecast accuracy among individuals. (A

fixed effects model was used to control for average year and industry effects.) Butler and Lang [1991], using a different methodology, achieve essentially the same result. However, Butler and Lang also find that some analysts are consistently optimistic or pessimistic relative to the consensus forecast. Harris and Gultekin [1987] find evidence of analyst over-optimism in earnings forecasts for individual firms. A consistently optimistic estimate at a time when the consensus is consistently overestimating earnings can lead to inferior performance by that analyst relative to the group as a whole.

Other research on the properties of individual analysts' earnings forecasts focused on the way in which analysts adjusted their forecasts to compensate for past errors. Abdel-Khalik and Espejo [1978] specified an adaptive expectations model which assumed that quarterly earnings announcements convey signals about the level of realizable earnings for the year. They tested the model using Value Line forecasts and actual earnings for 97 firms in 1976 and found a high degree of correlation between the announcement of interim earnings and the accuracy of the annual earnings forecasts. This provided empirical confirmation of the intuitively appealing theory that analysts use the information provided by those interim earnings reports.

Brown and Rozeff [1979] also used revisions to Value Line earnings forecasts to examine the time series

properties of analyst forecasts. Using an ARIMA model, they found support for the hypothesis that analysts' forecast revisions follow an adaptive expectations model, in which expectations are revised to incorporate the "permanent" component of the most recent forecast error. However, the reaction coefficients, which summarize the forecast revisions by specifying the direction and size of response to the recent forecast error, imply a nonuniform reaction to forecast error by quarter. In addition, the explanatory power of their adaptive model is generally less than 50 percent, suggesting that information outside the time-series of earnings is also used in forecast revisions. This is also consistent with the idea that analysts use a richer information set than simply information about past errors.

Givoly [1985] found further supporting evidence for the adaptive expectations model in a time series analysis of earnings forecasts reported in the S&P Earnings Forecaster. He noted that the coefficients of adaptation varied over time and across companies, but that different forecasters of the same company (for the 18 companies in his sample) exhibited similar adaptive behavior.

Brown, Foster and Noreen [1985] also examined the relationship between security analyst multi-year forecast revisions and security price changes in the first year following the revision (i.e. fiscal year 1). For both consensus forecasts reported in the I/B/E/S data base and individual analyst forecasts reported in the Security Market

Line data base, there was a significant link between the security returns in fiscal year 1 and the forecast revisions for fiscal year 2 and later. They interpret this result as being "consistent with (i) the capital market having a multi-year earnings horizon and (ii) the forecast for fiscal year 1 not fully capturing the signal embodied in revisions to the earnings sequence over that multi-year horizon."

Additionally, Brown, Foster and Noreen noted that "the sign and magnitude of security returns in the twelve month period preceding a revision in consensus security analyst forecasts are positively associated with the sign of the single year and multi-year forecast revisions." One potential explanation proposed by Brown, et al. is that consensus forecasts contain non-timely forecasts, thereby causing the consensus forecasts to appear to lag behind the security returns. O'Brien [1988] provides partial support for this alternative with her finding that the most current forecast is more accurate than either the mean or median forecast.

Alternative explanations include (i) that security analysts process information less efficiently than does the market as a whole, (ii) that they use price changes as the signal to revise the earnings forecast, and/or (iii) that the analysts wait until they have had a chance to trade on the information before releasing the forecast. These explanations are all unappealing when applied to individual forecasts, particularly in light of the fact that individual

investors rely on the forecasts of individual analysts (often relayed through contact with a stock broker). If analysts wait until they have traded for their own accounts, that is at the least unethical, given that their clients pay for these earnings forecasts. Also, to assume that brokerage houses would continue to pay for analysts to simply recode the information contained in security prices is not consistent with economic theory.

2.5 Research Issues

Given that it appears excess returns can be earned for some time subsequent to the announcement of unexpected information, and that investors rely on analysts' earnings forecasts when making investment decisions, the accuracy and timeliness of analyst forecasts is critical. The relevant forecast for many individual investors is the forecast made by an individual analyst at a brokerage house, while professional investors use services such as I/B/E/S, Zack's, and/or Value Line which aggregate individual forecasts in forming a consensus estimate. Therefore, knowledge of the behavior of individual forecasts may be beneficial.

The evidence to date is that analyst forecasts do not differ in their degree of accuracy (O'Brien [1988] and Butler and Lang [1991]) based on a comparison of the forecasts to the realized earnings. Additionally, Givoly [1985] claims the coefficients of adaptation in an adaptive expectations model exhibit insignificant differences between

individual forecasters of the same company. However, as previously noted, individual investors are concerned with the timing as well as the accuracy of the earnings forecast. This second dimension of forecast revisions has not yet been tested. Therefore, the null hypothesis is that subsequent to the receipt of new information, analysts' revisions will not exhibit significant differences in either timing or magnitude (controlling for the firm and year effects noted by both O'Brien [1988] and Givoly [1985]). Also, consistent with rational expectations, the forecasts should be unbiased, efficient, and consistent.

One alternative to the null hypothesis is that the magnitude and/or timing of the revision will be systematically different for "good news" vs "bad news" events. This alternative was suggested by Harris and Gultekin's [1987] finding that there was significantly more revision activity for those firms for which earnings were initially overestimated than for those for which the earnings were underestimated. They speculate that this is the result of analysts' reluctance to revise their published forecasts downward and so the forecasts are revised gradually in a series of small steps.

If analysts overreact, as found by DeBondt and Thaler [1990], then security analysts should initially revise earnings forecasts upward subsequent to good news, followed by revisions downward to the true earnings level. For bad news, large downward revisions would be followed by smaller

upward revisions. It is also possible that early revisers may overreact and analysts which revise more slowly may be closer to the true earnings. Because analysts become more accurate as the year progresses (Butler and Lang [1989]), this requires that the revision period be carefully defined.

If the underreaction noted by Kerrigan [1984], Arnott [1985], and Dowen and Bauman [1989] is the norm for analyst revisions of earnings per share forecasts, then revisions subsequent to good news should be followed by further upward revisions. Similarly, downward revisions subsequent to bad news should be followed by further downward revisions.

Another factor may be that persistent analyst optimism or pessimism, as found by Butler and Lang [1991], has a systematic influence on the magnitude and/or timing of the revision. Persistently pessimistic (optimistic) analysts should overreact (underreact) to bad news and underreact (overreact) to good news. If, on average, there is as much good news as bad, no differences in the overall accuracy of the forecasters would be noted. If, however, there are systematic differences in the revisions of the two groups, this could be important during times of persistent good news or bad news.

Even if analysts exhibit significant differences in the timing of the forecast revisions, in an efficient market this should have no significant influence on the return earned by individuals relying on those forecasts. However, if the overreaction hypothesis is correct, investors who

rely on "early revisers" should earn lower returns than those who rely on "late revisers". For good news, they will buy too soon, at too high a price, and for bad news they will sell too soon at too low a price.

If the uncertain information hypothesis formulated by Brown, Harlow and Tinic [1988] is correct, however, investors who rely on "early revisers" should earn higher returns for good news events and lower returns for bad news events than those individuals who rely on "late revisers". For good news, positive excess returns are followed by more positive excess returns, so purchasing early allows one to capture more of the excess return. For bad news, negative excess returns are followed by positive excess returns, so selling early results in selling at too low a price (just as under the overreaction hypothesis).

An additional question to be investigated is the degree to which the distinction between earnings announcements and other types of information influences the forecast revision process. The timing and/or magnitude of the revision may be less for certain types of information than for others. Similarly, there may be categories of information which have more influence on the forecast of next year's earnings than on the forecast of long term growth for a particular company or vice versa.

Quarterly earnings announcements or management's earnings forecasts are expected to have a direct effect on the analysts' earnings forecasts. Subsequent to the release

of this information, we should observe analyst forecast revisions (at least, to the extent that the announcement contains new information).

In general, firms are reluctant to announce dividend increases unless reasonably certain the higher dividend can be maintained and are equally reluctant to decrease dividends unless conditions force them to do so. Therefore, announcements of dividend changes may contain information about management's view of the firm's earnings potential. If so, such announcements may be followed by revisions in analysts' earnings forecasts.

Announcements of increased investment in plant and equipment or of an acquisition or merger may affect the estimated cash flows for a firm or its long-term growth prospects; however, the impact on current year earnings will probably be minimal. Therefore, such announcements would not be expected to lead to revisions of current forecasts of earnings.

CHAPTER 3

PILOT STUDY ON THE NATURE OF ANALYST FORECASTS

This pilot study was done in order to examine the individual analyst forecasts of earnings per share available on the I/B/E/S detail tape published by Lynch, Jones and Ryan. This is the database I/B/E/S uses in constructing its published consensus forecast. In addition to identifying potential problems with the data, the sample selection method and the study methodology were altered and/or refined as a result of this study.

For the first 50 firms listed on the CRSP daily tapes, those dates with one day excess returns of 5 percent or greater (in absolute value) during the time period January 1983 through December 1986 constituted the initial sample of "events". Excess return is defined to be the difference between the return on the security and the return on the market for a given day. These returns are unadjusted for the risk of the security in this pilot study. This sample selection method is based on the methodology used by Brown, Harlow, and Tinic [1988] and is an attempt to avoid specifying in advance what information the market should consider in valuing securities or what analysts use in forecasting earnings. It has an additional benefit in that

it obviates the need to subjectively classify information as "good news" or "bad news"; the sign of the excess return proxies for the market consensus regarding the nature of the information.

Of the firms so identified with excess returns in 1986, thirteen were then matched with forecasts available on the I/B/E/S data tapes. One of these firms, Adams Express, was a closed-end investment company followed by only one analyst, and so was not investigated any further. To develop a better understanding of the pattern of forecasts and revisions, the individual forecasts were plotted in order of forecast date. These plots can be seen in Figures 2 through 13 and a listing of the individual forecasts of 1986 earnings per share for the thirteen firms can be found in Appendix A.

For some months, the tapes contain several instances of an analyst having more than one earnings forecast reported with the same forecast date. Upon further investigation, some of these cases were the result of the company splitting its stock. (See, for example, Figures 3, 4 and 5.) In order for the previous earnings forecasts to be consistent with future forecasts and with actual earnings, the existing forecast was adjusted for the split. In other cases, however, the tape seems to contain duplicate forecasts.

For these twelve firms I then attempted to verify the nature of the underlying event for those days with an excess return of 5 percent or greater, using the Wall Street

Journal Index (WSJI). The results of this search are shown in Tables 1 through 12. Of the twenty-eight identifiable events, eleven were announcements of quarterly earnings per share. However, for a number of the days on which the stock experienced an excess return, no event was recorded in the Wall Street Journal Index. One possible explanation for this is that these returns were unadjusted for risk. However, the magnitude of the excess return on some of these days for which no announcement was identified is such that an adjustment for risk is unlikely to be the entire explanation. An alternative explanation is suggested by the fact that the stock of several of these firms was trading at a very low price, meaning that small price changes in actual dollars could result in proportionally large returns.

The results of this pilot study caused two major changes in the sample selection process. (For a detailed description of the process, see the following chapter.) Rather than drawing the sample from all firms on the CRSP tape, the sample was drawn from large firms which are widely-followed by security analysts and which represent a diverse set of industries. A second alteration to the sample selection process was the decision to specify quarterly earnings announcements which resulted in a return in excess of the market return for that period as the event of interest, rather than using the excess return criterion to define potential event dates and then identifying the

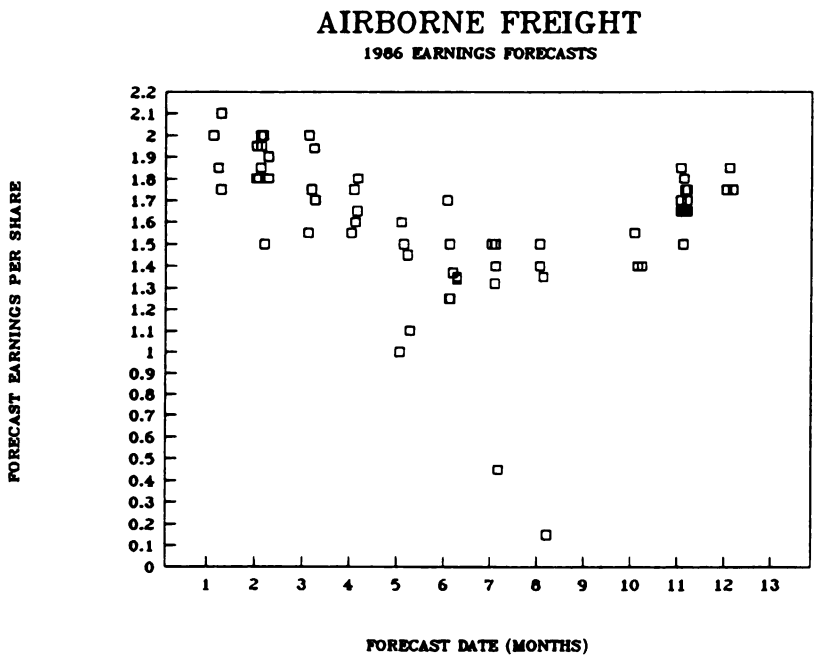


Figure 2: AIRBORNE FREIGHT - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 1
Airborne Freight
1986 Dates With Excess Return > 5% in Absolute Value

4/24/86	(-)	Earnings & dividend announcement (4/29)
5/05/86	(+)	
6/05/86	(-)	
7/08/86	(-)	
8/11/86	(+)	
8/15/86	(+)	
9/17/86	(+)	
10/06/86	(-)	
10/27/86	(+)	
10/28/86	(+)	Earnings announcement
11/14/86	(+)	TNT proposes to offer $29 per share for Airborne

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

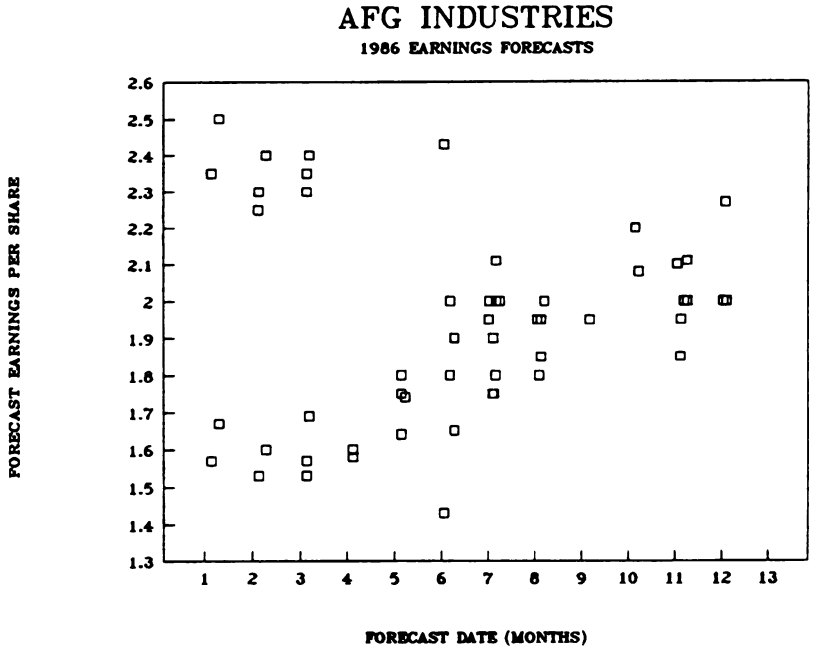


Figure 3: AFG INDUSTRIES - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 2
AFG Industries
1986 Dates With Excess Return > 5% in Absolute Value

4/03/86	(+)	
4/04/86	(+)	Earnings expected to increase by 30-40%; expected to establish a cash dividend
4/16/86	(+)	Earnings & dividend announcement (4/15)
6/11/86	(+)	Redeemed convertible debentures (6/9)
6/13/86	(+)	Earnings expected to increase (6/16)
7/09/86	(+)	Earnings announcement (7/10)
9/08/86	(-)	
10/24/86	(+)	Dividend announcement (10/28)
11/19/86	(-)	AFG may seek to acquire Lear Siegler (11/20)

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

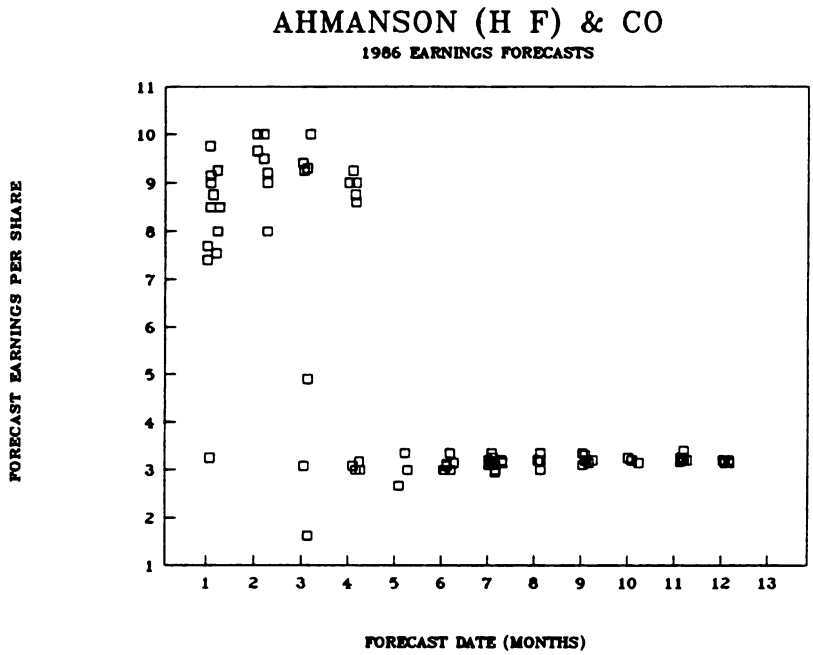


Figure 4: AHMANSON (H F) & CO - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 3
Ahmanson (H F) & Co
1986 Dates With Excess Return > 5% in Absolute Value

1/07/86	(+)	Ahmanson replaces Storer Communications as one of 127 stocks on which the ASE trades put and call options (1/8)
1/24/86	(+)	1985 earnings quadruple those of 1984
7/15/86	(+)	Earnings announcement (7/17)
7/29/86	(-)	
9/05/86	(-)	
9/30/86	(+)	
12/02/86	(+)	
12/03/86	(+)	Named new president & CEO, plus a new chief operating officer (12/5)

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

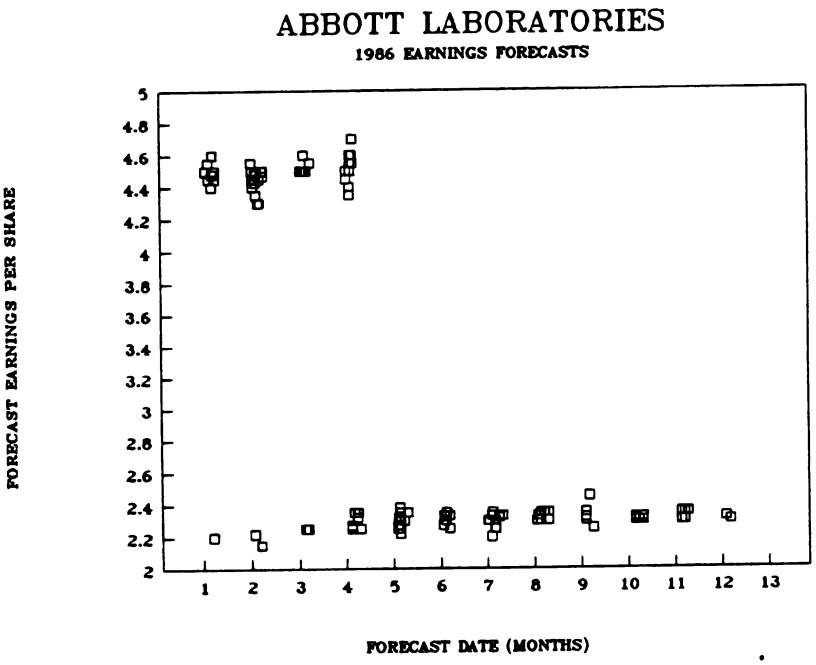


Figure 5: ABBOTT LABORATORIES - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 4
Abbott Laboratories
1986 Dates With Excess Return > 5% in Absolute Value

11/10/86 (+)

'A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

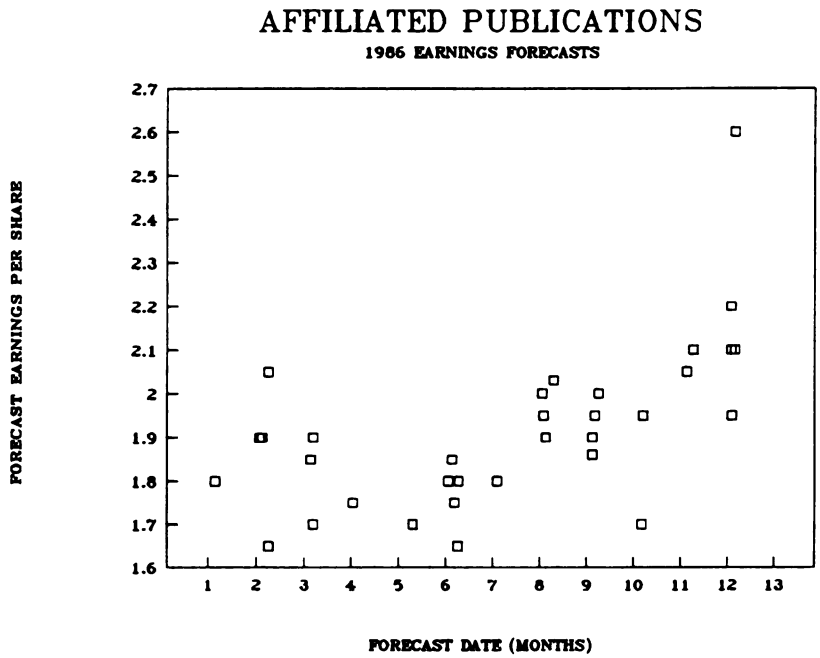


Figure 6: AFFILIATED PUBLICATIONS - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 5
Affiliated Publications
1986 Dates With Excess Return > 5% in Absolute Value

2/28/86	(+)	Newspaper stocks again start to draw notice (2/25)
11/24/86	(+)	McCaw Communications affiliate puts cable television unit up for sale

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

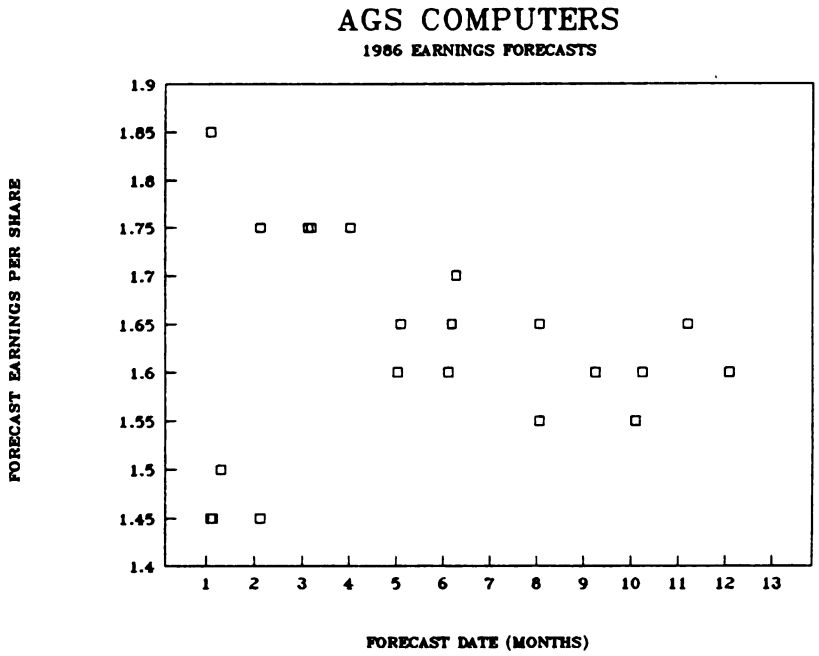


Figure 7: AGS COMPUTERS - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 6
AGS Computers
1986 Dates With Excess Return > 5% in Absolute Value

2/18/86	(+)	
4/25/86	(+)	Earnings announcement (4/28)
5/02/86	(-)	
6/19/86	(+)	
6/26/86	(+)	
8/14/86	(+)	
10/23/86	(+)	Earnings announcement (10/22)
11/05/86	(+)	
12/03/86	(+)	Predicts record earnings for 4th quarter (12/4)

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

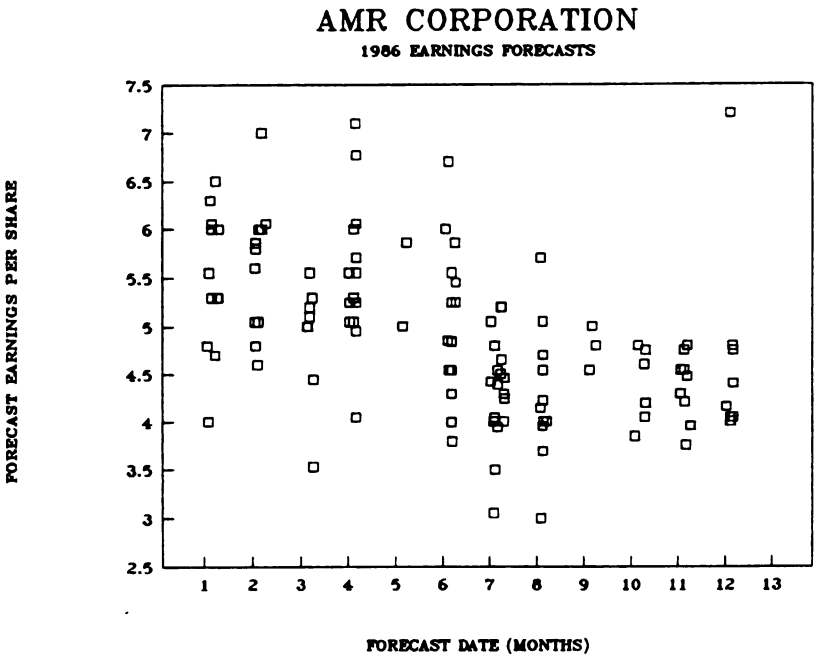


Figure 8: AMR CORPORATION - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 7
AMR Corporation
1986 Dates With Excess Return > 5% in Absolute Value

1/16/86	(+)	Agrees to sell Sky Chef unit (1/15)
1/24/86	(+)	4th quarter earnings up 3.5%
3/20/86	(+)	
6/23/86	(+)	

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

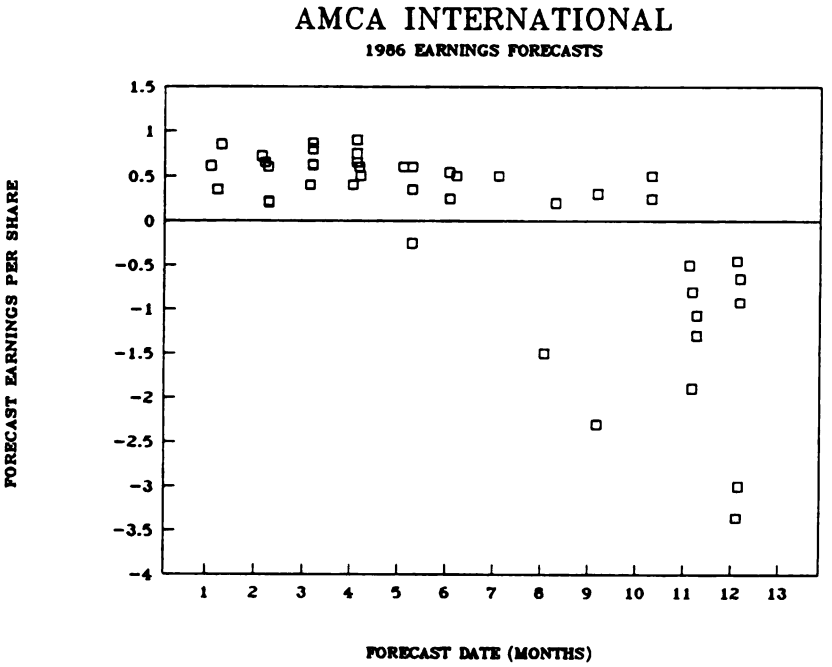


Figure 9: AMCA INTERNATIONAL - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 8
AMCA International
1986 Dates With Excess Return > 5% in Absolute Value

1/29/86	(+)	
1/30/86	(+)	
3/05/86	(+)	
3/06/86	(+)	
3/21/86	(+)	
3/24/86	(-)	
4/22/86	(-)	Algoma may sell 34% stake in AMCA (4/17)
		Earnings announcement (net loss) (4/23)
10/23/86	(-)	Earnings announcement (net loss) (10/21)
10/24/86	(-)	
10/28/86	(-)	
10/29/86	(-)	

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

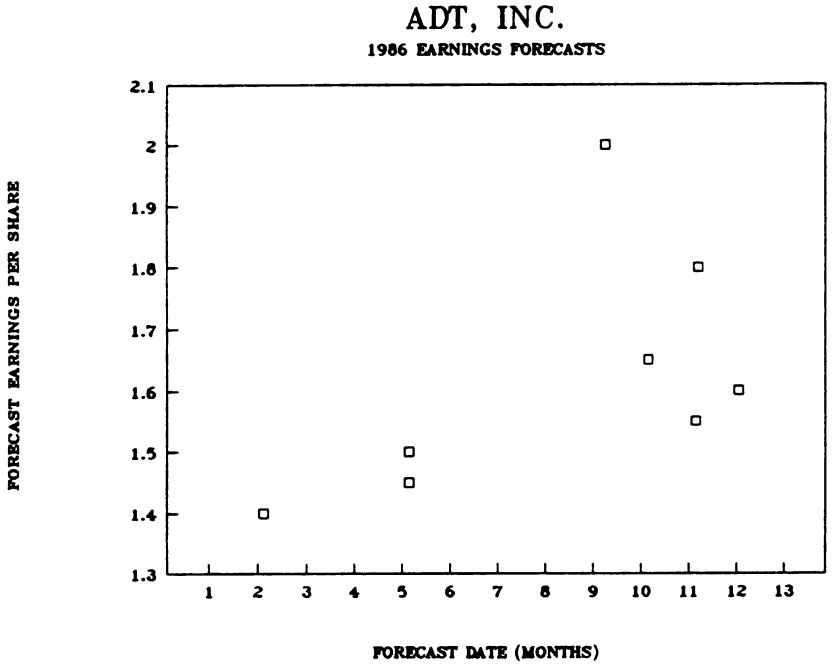


Figure 10: ADT, INC - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 9
ADT, Inc.
1986 Dates With Excess Return > 5% in Absolute Value

1/23/86	(+)	
4/14/86	(+)	Odyssey Partners increases stake in ADT from 5% to 6.9% (4/15)
12/17/86	(+)	

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

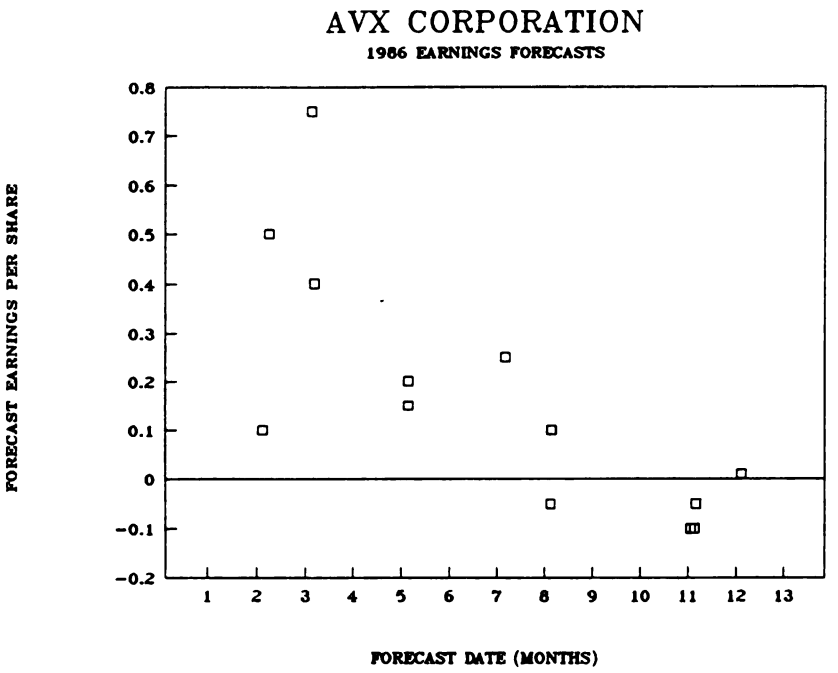


Figure 11: AVX CORPORATION - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 10
AVX Corporation
1986 Dates With Excess Return > 5% in Absolute Value

1/15/86	(+)	
2/12/86	(+)	
2/20/86	(+)	
3/24/86	(-)	
4/02/86	(+)	
4/16/86	(-)	
5/09/86	(+)	
6/17/86	(-)	
7/01/86	(+)	
7/31/86	(+)	
8/04/86	(-)	
8/08/86	(+)	
10/01/86	(-)	
10/29/86	(+)	
12/16/86	(-)	Propose to acquire CTS Corp; expect 4th quarter net income to be higher than 3rd quarter's .03/share
12/23/86	(-)	

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

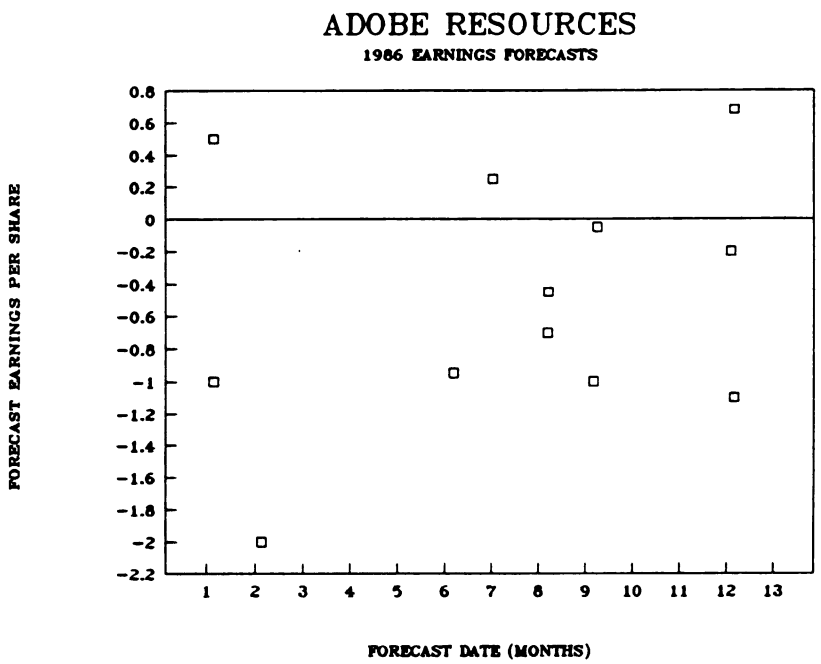


Figure 12: ADOBE RESOURCES - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 11
Adobe Resources
1986 Dates With Excess Return > 5% in Absolute Value

1/28/86	(-)	Repurchased 1 million shares of stock
3/12/86	(+)	
3/14/86	(-)	
3/21/86	(+)	
3/24/86	(-)	Net loss for prior year
5/08/86	(+)	Named a director
5/09/86	(+)	
7/08/86	(-)	
7/29/86	(-)	
7/30/86	(-)	
8/05/86	(+)	
9/04/86	(+)	
9/10/86	(+)	
10/24/86	(-)	
10/28/86	(-)	
10/29/86	(+)	
11/10/86	(+)	
11/12/86	(-)	
11/14/86	(+)	
11/17/86	(-)	
12/03/86	(-)	
12/16/86	(+)	
12/23/86	(-)	

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

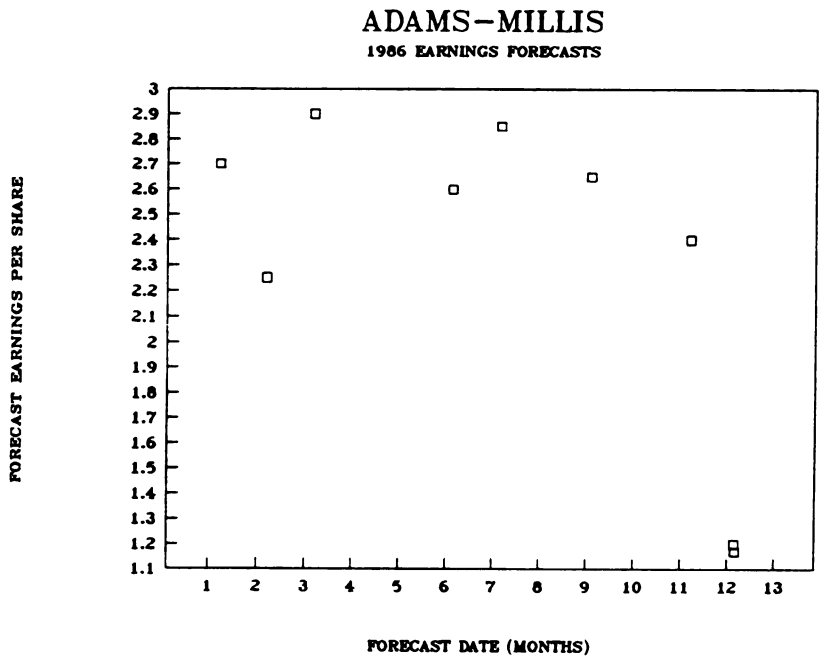


Figure 13: ADAMS-MILLIS - 1986 EARNINGS FORECASTS
This figure shows the time series of analyst forecasts of annual earnings per share made in January through December 1986.

Table 12
Adams-Millis
1986 Dates With Excess Return > 5% in Absolute Value

2/14/86	(+)
2/18/86	(+)
3/21/86	(+)
4/07/86	(-)
12/19/86	(+)

A + or - following the date indicates a positive or negative excess return. Those dates with excess returns which could be matched with a news article are so noted.

event. This change was motivated by the large number of days with excess returns for which no underlying event could be identified and by the fact that the largest class of identifiable events was earnings announcements.

The individual forecasts of annual earnings per share available for Airborne Freight both before and after its announcement of quarterly earnings on October 23, 1986 were then examined in order to further understand the data available. Thirty-one different analysts provided forecasts to I/B/E/S throughout the year. The results of various methods of constructing a consensus forecast are illustrated in Figure 14.

The choice of analysts to include in calculating the mean forecast prior to the event had very little effect on the consensus; there was less than a one cent difference among the three groups. The mean forecast for the 25 analysts providing a forecast prior to the event date was $1.472. Of those 25 analysts, only 21 had an I/B/E/S report subsequent to the event; the mean forecast for those 21 analysts was $1.473. The mean pre-event forecast was $1.467 for the eleven analysts that actually revised their forecast subsequent to the earnings announcement.

The choice of analysts to include in post-event mean forecast calculations affected the results to a much greater degree than for the pre-event forecasts. The mean post-event forecast for the eleven analysts who revised their estimates of earnings per share was $1.709. In addition,

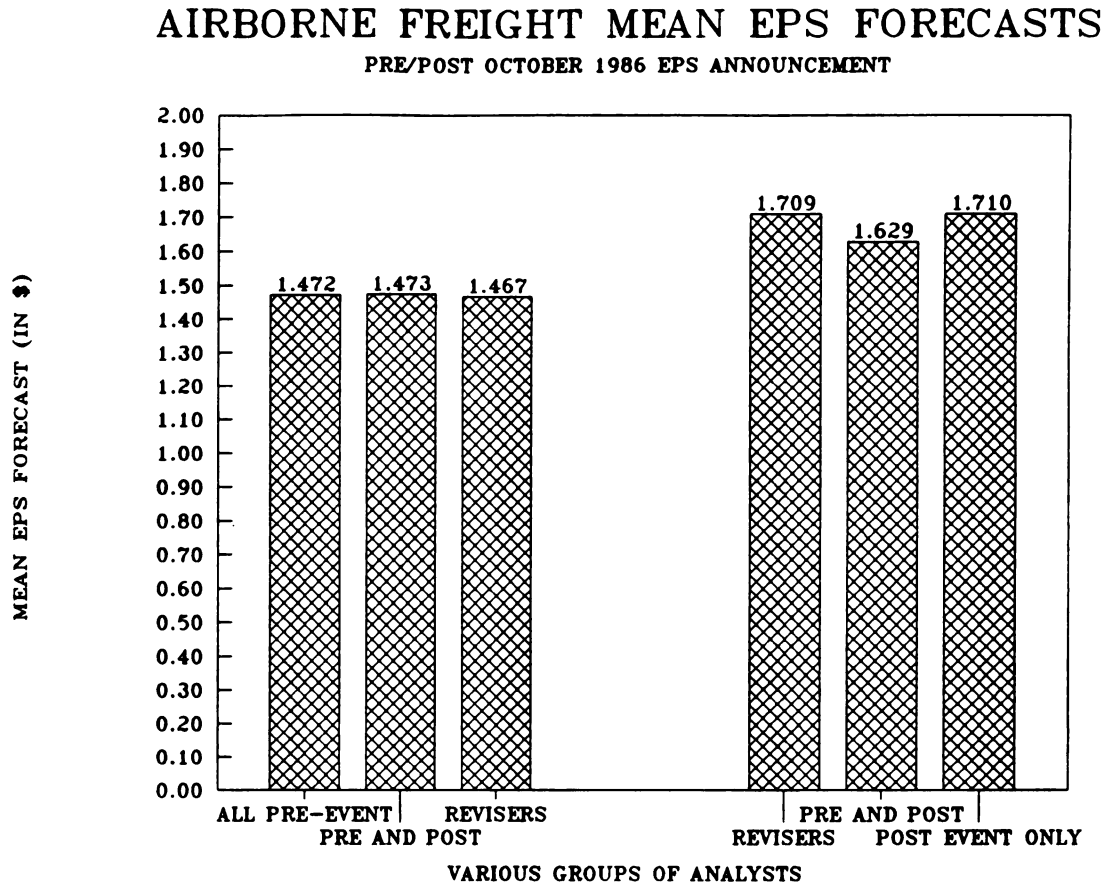


Figure 14: AIRBORNE FREIGHT MEAN EPS FORECASTS - PRE/POST OCTOBER 1986 EPS ANNOUNCEMENT. This figure illustrates the results of different methods of constructing the consensus forecast for Airborne Freight. The all pre-event group includes any analyst with a forecast dated prior to the announcement. The pre and post group includes those analysts with a forecast included on the I/B/E/S tape both before and after the announcement, even though the most recent self-reported date may have been prior to the announcement. The post event group is those analysts with a forecast date subsequent to the earnings announcement, including those reporting for the first time, while the revisers group includes only those analysts who actually revised their forecasts.

four analysts reported for the first time after the earnings announcement; the mean forecast for those four analysts was $1.712. For the fifteen analysts with a forecast date subsequent to the event, the mean forecast was $1.710. If the consensus is calculated using the 17 analysts with a report date both before and after the event (even though the most recent forecast date for six of the analysts was actually before the event), the mean forecast was $1.629. Including the four "first-timers" with these 17 resulted in a consensus forecast of $1.645. Thus, the manner in which the consensus was constructed resulted in a difference of over eight cents per share between the highest and lowest mean forecasts of annual earnings per share. Since reports of earnings that are even one or two cents per share more or less than expected can result in large price changes, the choice of consensus is not trivial.

Of the eleven analysts who revised their forecasts, four were above and seven were below the prior mean, as seen in Table 13. Ten of the eleven analysts revised their forecasts upward, consistent with the positive excess return for the stock. Of the four who were above the prior mean, two were above and two were below the mean subsequent to the announcement. For the seven who were below the prior mean, four were above the new mean and three were below. The average revision for the eleven analysts was $0.242; the four analysts which were above the prior mean had an average revision of $0.1125 and the seven analysts below the prior

mean revised their forecasts an average of $0.3157 per share.

Regarding the timing of the forecasts subsequent to the announcement, no forecasts were made in the first week following the event. Four, five, and four analysts revised their forecasts or reported for the first time in weeks 2, 3 and 4 respectively. One analyst required over 5 weeks to revise his/her forecast, one reported for the first time more than 5 weeks after the event and two who revised shortly after the announcement revised their forecasts upward once again a month later. While this provides no evidence that individual analysts differ systematically in the length of time needed to revise their forecasts, it does suggest that there are delays in analyst reaction to unexpected information.

Table 13
Airborne Freight
Analyst Forecast Revision Statistics

	For Those Analysts Who Revised Their Forecast	
	If Above Prior Mean	If Below Prior Mean
# Above New Mean	2	4
# Below New Mean	2	3
Mean Revision	$.1125	$.3157

	Number of Weeks Until Revision or Initial Forecast					
	1	2	3	4	5	>5
# of Analysts	0	4	5	4	0	2

CHAPTER 4

HYPOTHESES AND METHODOLOGY

The purpose of this chapter is to describe the sample selection process, identify testable hypotheses, and develop empirical models to be used in testing the hypotheses.

Earnings announcements are associated with both price changes and earnings forecast revisions. In Section 4.1, large return surprises at the time of quarterly earnings announcements are identified by comparing the magnitude of market model abnormal return to the standard deviation of abnormal return estimated over the 50 trading days preceding the announcement. Section 4.2 identifies good/bad news and surprise/nonsurprise samples based on the magnitude and direction of abnormal return. In Section 4.3, the magnitude and timing of analyst forecast revisions are examined over the periods preceding and subsequent to the announcements.

4.1 Sample Selection

A group of 49 large firms with fiscal years ending in December, selected from the top 65 firms in the December 1986 Fortune index as in Butler and Lang [1991], is examined in this study. These firms are widely followed by investors and analysts and represent a broadly diversified cross-

section of U.S. industries. A list of these 49 firms can be found in Appendix B.

The firms so identified were then matched with the forecasts of annual primary earnings per share before extraordinary items available on the Institutional Brokers Estimate System (I/B/E/S) detail data tapes supplied by Lynch, Jones and Ryan. This data base contains forecasts made by individual analysts. Each analyst is assigned a number and can therefore be identified in different time periods or with forecasts of earnings for different companies. Each individual forecast has a forecast date associated with it, which is the date the analyst actually made the revision. These dates are self-reported by the analysts. To the extent that competition with other analysts causes them to backdate their forecasts, this information may not be fully reliable.

Tests of the timing, direction and magnitude of earnings forecast revisions in this paper require a measure of consensus earnings forecasts in each period. O'Brien [1988] examines individual security analysts' forecasts as earnings expectations and concludes that consensus earnings forecasts should be constructed from timely analyst forecasts. She finds that the forecast accuracy of forecasts just three months old is inferior to the most recent forecast. Accordingly, Lynch, Jones and Ryan now provides a "flash" consensus estimate, in addition to its traditional consensus, based only on forecasts made in the

most recent six week period. Similarly, Zack's Investment Service recently began reporting a consensus forecast constructed of forecasts reported in the most recent month. Unfortunately, neither of these consensus forecasts is currently available for empirical research. Following Butler and Lang [1991], a proxy for this flash estimate is constructed on a weekly basis using the individual analyst forecasts available on the I/B/E/S detail tape.

Because the study focuses on intra-year earnings forecast revision behavior, only those analysts who supplied at least 3 forecasts to I/B/E/S each year were included in the sample. The need for an accurate, current consensus required that duplicate forecasts be deleted from the sample. If a firm was undergoing a stock split, stock dividend or merger, the earnings forecasts for that year were omitted from the sample. The fact that several analysts forecast earnings for each company in the sample represents an improvement over the forecasts used by Abdel-Khalik and Espejo [1978] and Brown and Rozeff [1979] in that several forecasts are available for each company, rather than a single Value Line estimate.

The quarterly earnings announcement dates were then identified using COMPUSTAT. For the years 1983-1986, there were 784 announcements made by the 49 firms in the sample. Because the study focuses on intra-year revision behavior, only the first three quarterly announcements for any given year are included in the sample; the fourth quarter

announcement does not occur until after the end of the fiscal year, at which point earnings for the prior year are known. This reduces the number of potential events to 588 for the 49 firms in the sample. Furthermore, some of the 49 firms split their stock in one or more of the four years in this study. Because I/B/E/S does not indicate whether the forecast is of pre- or post-split earnings per share, those firm years were excluded from the study, reducing the number of events to 481.

4.2 Identifying Surprise/Nonsurprise and Good/Bad News Samples

Consider the stock return periods depicted in Figure 15.

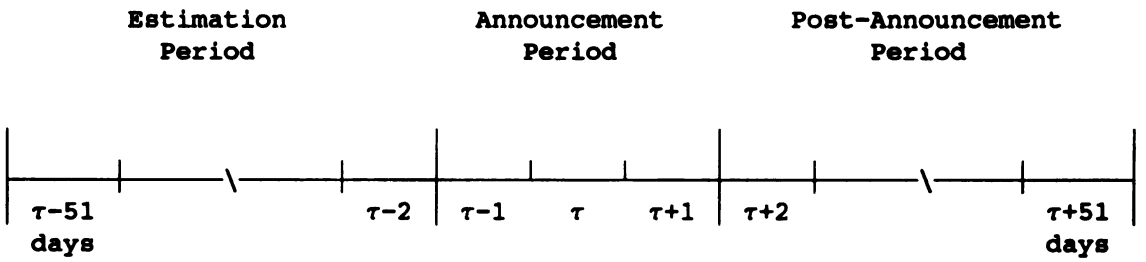


Figure 15: STOCK RETURN PERIODS

A three-day event window centered on the earnings announcement date was chosen as the period over which to measure return surprise. First, a market model regression

$$E[R_{jt}] = \alpha_j + \beta_j R_{mt} + e_{jt} \qquad (4.1)$$

was estimated over the 50 trading days prior to each event window. There are typically 65 trading days between quarterly earnings announcements. The 50 day estimation period was chosen as a compromise between the properties of timeliness and precision. Estimating the market model over a greater number of days increases the precision of the estimate. However, the farther back in time one goes, the more likely it is that an earlier earnings event will "contaminate" the returns in the estimation period. The 50-day estimation period is unlikely to include a great deal of information from the previous quarterly earnings announcement.

Using daily returns in a market-model regression is suspect for any stock with price-adjustment delays which influence daily returns. One source of delay arises from the fact that not all securities trade at market close (see Scholes and Williams [1977]), although Simonds, Butler and Atchison [1993] find that this nonsynchronous security trading has a relatively minor impact on market model betas estimated with daily returns, especially for actively-traded stocks which are more likely to trade near market close.

More problematic are price-adjustment delays in transaction prices themselves arising from supply-demand forces and dealer activities (see Cohen, Maier, Schwartz and Whitcomb [1986]). While a more robust test might employ the market model estimation techniques of Scholes and Williams [1977], Dimson [1979] and Fowler and Rorke [1983], it is likely that these influences on daily returns are minimal for the 49 actively traded firms in this sample.

Let s_{ej} represent the standard deviation of firm j's residuals from the above regression. If instantaneous returns R_{jt} follow the stochastic differential equation $R_{jt} = \mu_j dt + \sigma_j dZ$, then residual returns from the market model are white noise with instantaneous daily standard deviation s_{ej}. Since variance in this return generating process is a function of time, the standard deviation of residual return over the three-day event window is $\sqrt{t}\ s_{ej} = \sqrt{3}\ s_{ej}$.

In order to discriminate between large and small return surprises across the sample firms, risk-adjusted excess return over the three-day event window is measured relative to the residual standard deviation as follows:

$$\text{Normalized 3-day excess return} = \text{3-day excess return scaled by its standard deviation}$$

$$= \sum_{\tau = -1}^{+1} (R_{j\tau} - E[R_{j\tau}]) \,/\, \sqrt{3}\ s_{ej}. \qquad (4.2)$$

Firms with normalized 3-day excess returns greater than one in absolute value constituted the initial sample. This process resulted in classifying the original 481 earnings announcements into two groups of approximately equal size. One group, the "nonsurprise" sample, is comprised of 253 earnings announcements which were not associated with a 3-day excess return greater than the standard deviation. The second group, the "surprises", is comprised of 228 earnings announcements which were associated with a normalized 3-day excess return greater than 1 (see Table 14).

This second group was then dichotomized on good/bad news (i.e. positive/negative return). This dichotomization is motivated by Brown and Harlow's [1988] finding that the way in which the market reacts to extreme stock price movements depends upon the direction of the initial change. Of the 228 "surprise" announcements, 128 were positive surprises and 100 were negative surprises (see Table 14). As noted in Chapter 3, a potential benefit of this sample selection method is that it may obviate the need to subjectively classify the earnings announcements as "good news" or "bad news"; the sign of the excess return proxies for the market consensus regarding the direction of the surprise.

TABLE 14
Earnings Announcements

	1983	1984	1985	1986	TOTAL
Total Number of Earnings Announcements	114	114	124	129	481
Total w/ Normalized Excess Return ≥ 1	58	44	63	63	228
Number of Positive Surprises	35	26	41	26	128
Number of Negative Surprises	23	18	22	37	100

4.3 Testable Hypotheses

The theory of rational expectations has implications for both security prices and security analysts' earnings forecasts. If security analysts' forecasts conform to rational expectations, then forecasts should react unbiasedly and without delay to information contained in earnings announcements. Forecasts subsequent to an earnings announcement should fully incorporate information contained in the announcement. Analyst forecasts should also anticipate announcements as information arrives during the periods preceding the announcements.

Suppose an earnings announcement is made at event time t. In order to investigate the level of analyst forecast revisions preceding, at the time of, and subsequent to an earnings announcement, define the change in analysts' consensus forecast over event period t+w (i.e. over the interval (t+w-1,t+w]) as

$$\hat{X}_{jt+w} = (\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}) \; / \; \hat{P}_j$$

$$= \alpha_j + \beta_j \hat{X}_{Mt+w} + e_{jt+w} \qquad (4.3)$$

where

$\hat{X}_{jt+w}$ = the mean consensus forecast revision for firm j (j=1,...,J) over period t+w (i.e. from time t+w-1 through t+w) scaled by beginning-of-year price P_j

$$= \frac{\left[\left[(1/K_{jt+w}) \sum_{k=1}^{K_{jt+w}} \hat{Y}_{kjt+w-1}\right] - \left[(1/K_{jt+w-1}) \sum_{k=1}^{K_{jt+w-1}} \hat{Y}_{jt+w-1}\right]\right]}{P_j}$$

$\hat{Y}_{kjt+w}$ = analyst k's forecast of EPS for firm j during period t+w ($k = 1,\ldots,K_{t+w}$),

α_j = the intercept term,

β_j = percentage change in firm j's EPS forecast for a given percentage change in the total EPS forecast for all firms in the sample (where each EPS forecast is scaled by its beginning-of-year share price),

$\hat{X}_{Mt+w}$ = average change in earnings/price ratios across the J sample firms during the period

$$= 1/J \sum_{j=1}^{J} (\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}) / P_j ,$$

e_{jt+w} = the firm-specific component of firm j's consensus forecast revision over the interval (t+w-1, t+w].

Earnings forecasts are scaled by beginning-of-year stock price in order to avoid confounding share price changes with information contained in the earnings events. Adjusting the earnings forecast changes for average forecast changes across all other firms during period t+w controls for economy-wide forecast changes during the period. As in the market model regression 4.1 applied to price changes, the specification in 4.3 separates firm-specific revisions from market-wide revisions.

The choice of the sampling interval 'w' is important because of the scarcity of analyst forecasts around earnings announcements. Too short an interval may capture too few forecast revisions to yield reliable results. Too long an interval will provide a less timely revision measure. Empirical tests in the remainder of this section will use weekly, bi-weekly, and monthly measurement intervals. This will provide some perspective on how robust the empirical results are to the sampling interval.

The forecast sensitivity coefficient β_j could be estimated for each firm over the anticipation period. However the anticipation period has at most 12 weeks since the previous quarterly earnings announcement date, so the standard errors would be large and statistical precision low. For convenience, all β_j are instead assumed equal to one and all α_j are assumed equal to zero. Under these assumptions, firm-specific revisions in 4.3 are given by:

$$e_{jt+w} = \hat{X}_{jt+w} - \hat{X}_{Mt+w} \qquad (4.4)$$

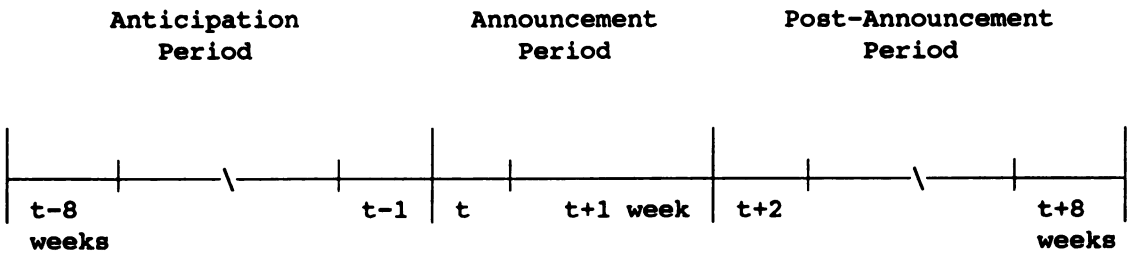
With this alternative specification, each test is a joint test of the null hypothesis and the assumption that α_j equals zero and β_j equals one for each sample firm. While there will be some firm-specific mis-estimation under this assumption, it does allow a simple adjustment for market-wide changes in the level of analyst forecasts.

Tests of hypotheses in the next three sections focus on the behavior of the residuals e_{jt+w} in the above model. Each test is based on the expected value of this residual:

$$E[e_{jt+w}] = E[\hat{X}_{jt+w} - \alpha_j - \beta_j \hat{X}_{Mt+w}]$$

$$= \left[E[\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}] - E[\bar{Y}_{jt+w} - \bar{Y}_{jt+w-1}] \right] / P_j = 0. \qquad (4.5)$$

where $w \leq 0$, $w=1$ and $w \geq 2$ for the anticipation, announcement, and post-announcement periods, respectively, as shown in Figure 16.



t = the announcement day

FIGURE 16: EARNINGS FORECAST PERIODS

4.3.1 Forecast Revisions in the Post-Announcement Period

Rational expectations requires that analysts react quickly and without bias to the information contained in earnings announcements. While analysts may not report forecasts until some time after announcement dates, forecasts in the period (e.g., week) immediately following the announcement should fully reflect the information contained in the event. Subsequent forecast revisions should not systematically alter revisions reported immediately after an earnings announcement.

As a test of rational expectations, the following null hypothesis proposes that forecast revisions during the post-announcement period are unrelated to forecast revisions immediately after an announcement:

$H1_0$: $\bar{e}_{jt+w} = 0$ for $w \geq 2$.

Under rational expectations, the first forecast reported after an earnings announcement should fully and unbiasedly reflect the information in the announcement. Subsequent forecasts should then be unrelated to the change in the forecast during the announcement period. In testing $H1_0$, firms will enter the sample only after the first analyst to report subsequent to an announcement establishes the new level of earnings expectations. For each firm, if the first analyst to report a forecast subsequent to an announcement does not do so until week t+w (w > 1), then the firm is included only in t+w+1 and later tests. This ensures that consensus forecasts are only included in the empirical tests after the post-announcement level of earnings forecasts is established.

Several authors have noted that security prices continue to react to earnings information well after earnings announcement dates. For example, Brown [1979] (see also Latane, Rendleman and Jones [1982]) finds that prices take up to 45 days to incorporate earnings information. If this is true for security prices, then analyst forecasts may also exhibit delayed reaction to earnings information.

The literature suggests several alternatives to null hypothesis $H1_0$. Brown, Harlow and Tinic's [1988] uncertain information hypothesis, for example, predicts that the magnitude of share price response is greater for negative

than for positive events. Brown, Harlow and Tinic find empirical results which are consistent with this hypothesis.

A second alternative to $H1_0$ is DeBondt and Thaler's over-reaction hypothesis. DeBondt and Thaler suggest and then empirically find that both prices (DeBondt and Thaler [1988]) and analyst earnings forecasts (DeBondt and Thaler [1990]) "overreact" to recent information. In contrast, several authors (e.g. Kerrigan [1984], Arnott [1985] and Dowen and Bauman [1989]) find empirical results suggesting that analysts underreact to earnings announcements. Still other authors, including Givoly [1985] and Klein [1990], fail to find either stock price over- or underreaction to earnings announcements.

Under the null hypothesis of rational forecasts, and assuming equation (4.3) is correctly specified for all sample firms, $H1_0$ should apply to every subsample of earnings forecasts. T-tests of each hypothesis are run on the full set of earnings announcements, on the surprise and nonsurprise groups, and on the good news (positive return) and bad news (negative return) subsets of the surprise group.

With respect to DeBondt and Thaler's [1990] overreaction hypothesis, for the good news sample $e_{jt+w} > 0$ implies an underreaction to the earnings announcement and $e_{jt+w} < 0$ implies an overreaction. For bad news, $e_{jt+w} > 0$ and $e_{jt+w} < 0$ imply an overreaction and underreaction, respectively. Similarly, a t-test comparison of means based

on e_{jt+w} for the good and bad news samples provides a test of Brown, Harlow and Tinic's [1988] uncertain information hypothesis.

4.3.2 Forecast Revisions in the Earnings Anticipation Period

Earnings forecasts reported before an announcement date may at least partially anticipate the event, especially if there are many analysts following a particular company. As a test of this premise, the following null hypothesis proposes that forecast revisions during the anticipation period are unrelated to forecast revisions at the time of an announcement:

$$H2_0: \quad \bar{e}_{jt+w} = 0 \text{ for } w < 1.$$

Hypothesis $H2_0$ provides a test of the extent to which analyst forecasts anticipate (i.e. converge toward) announcement-period earnings forecasts. Comparing e_{jt+w} between good/bad and surprise/nonsurprise samples will provide a test of whether analysts anticipate earnings differentially in these various samples.

4.3.3 Forecast Revisions in the Earnings Announcement Period

The last hypothesis proposes that forecast revisions during the announcement period are unrelated to information contained in the earnings announcement:

$H3_0$: $\bar{e}_{jt+w} = 0$ for $w = 1$.

In the unlikely event that analysts are able to completely anticipate the information in earnings announcements, e_{jt+1} will be zero according to $H3_0$. In most cases, it is expected that earnings announcements bring with them new information. This is especially true of the good and bad news samples with normalized excess return greater than one (the surprise samples). For these samples, analyst forecasts should react to the sign of price (and presumably earnings) surprise. Computing e_{jt+w} for the surprise/nonsurprise and good/bad samples will allow a comparison of the magnitude of firm-specific forecast changes between these samples.

4.3.4 Relationship Between Forecast Revisions and Return Surprises

The correlation of firm-specific forecast revisions with the size of return surprise is another interesting measure. The resulting "forecast revision coefficient" can be considered a variation of the "earnings response coefficient" of, for example, Collins and Kothari [1987]. If there is no relationship between analyst revisions and market prices, then $Corr(e_{jt+w}, R_{jt}) = 0$ for $w = -1,0,1,2$.

Alternatively, if the announcements contain information, then $Corr(e_{jt+1}, R_{jt})$ will be greater than zero. If the analysts are able to anticipate this information, then the correlation coefficient at time t-1 would be greater than zero. And if the analysts exhibit a delayed reaction to the announcement, then the correlation at time t+2 will be greater than zero.

CHAPTER 5

EMPIRICAL RESULTS

Empirical results are presented in this chapter for each of the three hypotheses regarding analysts' revisions of forecasts of annual earnings per share developed in the previous chapter. Those hypotheses are as follows:

$H1_0$: No post-announcement revisions: $\bar{e}_{jt+w} = 0$ for $w \geq 2$.

Under rational expectations, the first forecast reported after an earnings announcement should fully and unbiasedly reflect the information in the announcement. This hypothesis proposes that forecast revisions immediately after an announcement are unrelated to forecast revisions during the subsequent post-announcement period.

$H2_0$: No pre-announcement anticipation: $\bar{e}_{jt+w} = 0$ for $w < 1$.

Earnings forecasts reported before an announcement date may at least partially anticipate the event, especially if there are many analysts following a particular company. Hypothesis $H2_0$ provides a test of the extent

to which analyst forecasts anticipate (i.e. converge toward) announcement-period earnings forecasts.

$H3_0$: Announcement period reaction: $\bar{e}_{jt+w} = 0$ for $w = 1$.

In the unlikely event that analysts are able to completely anticipate the information in earnings announcements, $\bar{e}_{jt+1}$ will be zero according to $H3_0$. In most cases, it is expected that earnings announcements bring with them new information. This is especially true of the good and bad news samples with normalized excess returns greater than one (the surprise samples). For these samples, analyst forecasts should react to the sign of price (and presumably earnings) surprise.

Tests of each of the hypotheses focus on the behavior of the residuals e_{jt+w} in the following model:

$$\hat{X}_{jt+w} = (\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}) / \hat{P}_j$$

$$= \alpha_j + \beta_j \hat{X}_{Mt+w} + e_{jt+w} \qquad (4.3)$$

where

$\hat{X}_{jt+w}$ = the mean consensus forecast revision for firm j (j=1,...,J) over period t+w (i.e. from time t+w-1 through t+w) scaled by beginning-of-year price P_j

$$= \frac{\left[\left[(1/K_{jt+w}) \sum_{k=1}^{K_{jt+w}} \hat{Y}_{kjt+w-1}\right] - \left[(1/K_{jt+w-1}) \sum_{k=1}^{K_{jt+w-1}} \hat{Y}_{jt+w-1}\right]\right]}{P_j}$$

$\hat{Y}_{kjt+w}$ = analyst k's forecast of EPS for firm j during period t+w ($k = 1,\ldots,K_{t+w}$),

α_j = the intercept term,

β_j = percentage change in firm j's EPS forecast for a given percentage change in the total EPS forecast for all firms in the sample (where each EPS forecast is scaled by its beginning-of-year share price),

$\hat{X}_{Mt+w}$ = average change in earnings/price ratios across the J sample firms during the period

$$= 1/J \sum_{j=1}^{J} (\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}) / P_j ,$$

e_{jt+w} = the firm-specific component of firm j's consensus forecast revision over the interval (t+w-1, t+w].

Each test is based on the expected value of this residual:

$$E[e_{jt+w}] = E[\hat{X}_{jt+w} - \alpha_j - \beta_j \hat{X}_{Mt+w}]$$

$$= \left[E[\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}] - E[\bar{Y}_{jt+w} - \bar{Y}_{jt+w-1}] \right] / P_j = 0. \quad (4.5)$$

where $w \leq 0$, $w=1$ and $w \geq 2$ for the anticipation, announcement, and post-announcement periods, respectively.

For each hypothesis, tests are run on the entire sample, the good/bad news samples, and the joint good/bad news and surprise/no surprise samples. Tests are run for weekly, bi-weekly, and monthly sampling intervals. Empirical results are presented for pre-announcement earnings anticipations ($w<0$), announcement period reactions ($w=1$) and post-announcement revisions ($w>1$) in Tables 15 through 23. (Full results may be found in Appendix C.)

5.1 Weekly Forecast Changes

For the entire sample, the results in Tables 15 and 16 suggest that analysts do not anticipate the information contained in earnings announcements, nor do they react to that information quickly (i.e. within the first week following the announcment.) Only those forecasts reported in the third week following an earnings announcement are significantly different than those reported in the previous week at a 5% level of confidence. This is the case for both

the unadjusted forecast revisions (Table 15) and the revisions adjusted for sample-wide changes (Table 16). The significant coefficient in week t+3 is not consistent with the null hypothesis that the mean change is zero in the post-announcement period.

Because earnings announcements may be either more or less than expected, analysts may revise their forecasts either upward or downward. Thus, the changes for all firms within the sample might cancel one another out, leading to the appearance of no change in the consensus forecasts. The sample was therefore dichotomized on the basis of positive and negative abnormal excess return as a proxy for whether the information was good or bad news. If the announcement contained negative information from the market's perspective, we might reasonably expect that analysts also found the information to be negative and would accordingly revise their forecasts downward.

The sample is dichotomized on the basis of the direction (positive or negative) of normalized excess stock return in the second and third panels of Tables 15 and 16. For announcements associated with positive returns, a statistically significant revision appears in both weeks t+2 and t+3 in Table 15. Interestingly, the revision is negative in week two and positive in week 3. After adjusting for forecast revisions occurring across all sample firms, only the third week following the announcement is significant. This delayed upward revision is consistent

with underreaction to the information in the earnings announcement for positive surprises, although the revisions of opposite sign in weeks 2 and 3 are puzzling. For the announcements associated with negative returns, none of the weeks in the anticipation, announcement, or post-announcement periods are significant.

Large forecast revisions would be expected to be most prevalent around announcements associated with large price reactions. Dichotomizing on the basis of whether the return surprise was small or large revealed that large positive surprises were associated with statistically significant changes in week 4 after adjusting for market-wide changes (Table 16). Negative return surprise samples and small return surprise samples exhibited no statistically significant forecast revisions. The negative coefficient in week four suggests that analysts revise their forecasts downward despite the positive reaction of share price to the announcement. While one might suspect that this is evidence of an overreaction to the earnings announcement followed by a subsequent backward revision, there is no evidence of large upward revisions preceding this as one would expect with overreaction. The sum of the coefficients for positive surprise over the four-week post-announcement period is in fact close to zero in both Tables 15 and 16.

These results are troubling in that the weeks with significant results and the signs of the revisions are not consistent across the subsamples. Also, it implies that

analysts and investors are somehow processing the information differently, in that information which the market appears to feel justifies larger than usual stock price changes does not seem to lead to a corresponding large change in the annual earnings forecast. A possible explanation for this is that the market is reacting to a single piece of information, while the analysts incorporate a broader information set into their forecast revisions.

Under the assumption that the information in the quarterly earnings announcement is a component of the broader information set analysts use, an additional test was done with the data dichotomized by whether the earnings forecast was an overestimate or underestimate of the actual earnings per share at year-end. For earnings overestimates, some evidence of statistically significant reactions appears in Tables 15 and 16. However, as in the positive return sample, the direction of the forecast revisions changes from week to week.

For underestimates, the revisions are positive in each post-announcement week using either unadjusted or adjusted forecast revisions, with several of the revisions being statistically significant. Dichotomizing the sample based on the ex-post direction of analyst forecast error does induce an ex-post selection bias. Nevertheless, these results suggest that for earnings forecasts which ultimately turn out to be too low (i.e. underestimates), analysts are

Table 15
Weekly Changes in Annual Earnings Forecasts/Price Ratios
Without Adjustment for Market-Wide Changes

Sample	Number of observations	Weekly interval t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4
All Observations	481	-0.00011	-0.00148	0.00004	-0.00032	-0.00032	-0.00189	-0.00099	0.00241*	-0.00039
(Number of Observations)		478	480	481	481	373	392	392	465	477
Positive returns	260	0.00063	-0.00181	0.00040	-0.00036	-0.00050	-0.00093	-0.00178*	0.00299*	-0.00039
Big surprises	128	0.00014	-0.00025	0.00064	0.00089	-0.00077	-0.00021	-0.00112	0.00154	-0.00251*
Small surprises	132	0.00111	-0.00332	0.00142	-0.00157	-0.00022	-0.00163	-0.00243	0.00441*	0.00168
Negative returns	221	-0.00098	-0.00110	-0.00038	-0.00028	-0.00012	-0.00296	-0.00012	0.00175	-0.00038
Big surprises	100	0.00048	-0.00110	0.00204	-0.00355*	0.00265	-0.00283	0.00112	0.00112	0.00095
Small surprises	121	-0.00218	-0.00110	-0.00237	0.00243	-0.00252	-0.00307	-0.00118	0.00226	-0.00146
Overestimates	286	0.00021	-0.00221	-0.00073	0.00223	-0.00203	-0.00428*	-0.00186	0.00378*	-0.00077
Underestimates	195	-0.00057	-0.00042	0.00119	-0.00406*	0.00234	0.00157	0.00027	0.00046	0.00018

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given week. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios were then calculated for each weekly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each weekly interval.

Table 16
Weekly Changes in Annual Earnings Forecasts/Price Ratios
After Adjustment for Market-Wide Changes

Sample	Number of observations	Weekly interval t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4
All observations	481	-0.00004	-0.00093	0.00046	0.00056	-0.00026	-0.00081	-0.00072	0.00222*	-0.00056
(number of observations)		478	480	481	481	373	392	392	465	477
Positive returns	260	0.00078	-0.00111	0.00079	0.00048	-0.00032	0.00020	-0.00143	0.00255*	-0.00063
Big surprises	128	0.00031	-0.00034	0.00008	0.00176	-0.00076	0.00087	-0.00053	0.00135	-0.00274*
Small surprises	132	0.00124	-0.00187	0.00147	-0.00076	0.00014	-0.00045	-0.00231	0.00373	0.00142
Negative returns	221	-0.00101	-0.00072	0.00008	0.00065	-0.00019	-0.00193	0.00007	0.00184	-0.00048
Big surprises	100	0.00041	-0.00054	0.00206	-0.00196	0.00230	-0.00224	0.00163	0.00134	0.00085
Small surprises	121	-0.00217	-0.00086	-0.00156	0.00281	-0.00233	-0.00166	-0.00126	0.00225	-0.00157
Overestimates	286	0.00013	-0.00147	-0.00032	0.00295*	-0.00214	-0.00293	-0.00154	0.00357*	-0.00117
Underestimates	195	-0.00029	-0.00014	0.00162	-0.00295*	0.00267*	0.00227*	0.00049	0.00028	0.00032

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given week. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each weekly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each weekly interval.

likely to revise their forecasts progressively upward in the weeks following a quarterly earnings announcement.

In the week of the announcement, results for the sample of firms with overestimated and with underestimated earnings are as one would expect. Analysts tend to revise their estimates downward for overestimated firms and upward for underestimated firms, with p-values in the range of .01 to .10. However, forecast revisions immediately preceding the announcement are puzzling. Revisions during week t-1 are in the opposite direction than in week t and are in most cases significant at 5%. These pre-announcement forecast changes are nearly completely reversed in the week of the announcement.[1]

5.2 Bi-Weekly and Monthly Forecast Changes

With a weekly sampling interval as in Tables 15 and 16, the entire sample and some of the subsamples reveal forecast revisions which vary unpredictably in sign. To test the sensitivity of these conclusions to the choice of forecast aggregation period, the individual forecasts were also aggregated into bi-weekly and monthly consensus forecasts. With bi-weekly aggregation (Tables 17 and 18), we again

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[1]The baffling directional changes in forecast revisions across subsequent weeks may be due to the timing of firms' earnings announcements. Since nearly all sample firms report quarterly earnings in a four-week period beginning approximately one month after the fiscal end-of-quarter, each sample was further dichotomized based on the week of the announcement within this four-week period. Since no consistent pattern emerged from this dichotomization, results are not reported here.

conclude that there is no significant earnings anticipation in the forecast revisions prior to the announcement period for the sample as a whole or the positive/negative return subsamples. For the announcement period itself, it initially appears there is significant revision activity. However, when we adjust for revisions occurring across all other firms at that time, this revision activity appears to be due to macroeconomic and hence sample-wide information rather than to firm-specific information, as the results are no longer significant for any of these samples. So, although we would reject $H1_0$ using weekly aggregations, we cannot reject any of the first three hypotheses if a bi-weekly aggregation is used.

For the samples based on over/underestimates of actual earnings, we now observe downward revisions of overestimates as well as upward revisions of underestimates in the announcement period. Again, this is consistent with analysts focusing on the long-term information component of the current announcement, rather than reacting to the short-term results.

With monthly aggregations (Tables 19 and 20), the null hypothesis regarding the anticipation period cannot be rejected for the small negative surprises, nor for the announcement and post-announcement periods for the large positive surprises. However, t=2 for the monthly aggregation includes forecasts made from 5 to 8 weeks following the earnings announcement. Therefore, if some

Table 17
Bi-Weekly Changes in Annual Earnings Forecasts/Price Ratios Without Adjustment for Market-Wide Changes

Sample	Number of observations	Bi-Weekly interval t-2	t-1	t	t+1	t+2	t+3	t+4
All observations	481	-0.00090	-0.00082	0.00007	-0.00222*	0.00172	-0.00100	-0.00118
(number of observations)		478	481	373	465	465	480	481
Positive returns	260	-0.00056	-0.00114	0.00013	-0.00186*	0.00254*	-0.00047	-0.00243
Big surprises	128	-0.00088	0.00040	-0.00031	-0.00056	0.00050	0.00004	-0.00098
Small surprises	132	-0.00026	-0.00263	0.00059	-0.00313*	0.00455*	-0.00095	-0.00383
Negative returns	221	-0.00130	-0.00046	-.00000	-0.00264*	0.00078	-0.00161	0.00029
Big surprises	100	-0.00089	0.00055	0.00107	-0.00368*	0.00091	-0.00028	0.00042
Small surprises	121	-0.00163	-0.00129	-0.00093	-0.00179	0.00067	-0.00272	0.00018
Overestimates	323	-0.00117	-0.00022	-0.00083	-0.00428*	0.00201	-0.00090	-0.00260
Underestimates	158	-0.00036	-0.00207	0.00194	0.00191*	0.00116	-0.00119	0.00173*

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios were then calculated for each bi-weekly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each interval.

Table 18
Bi-Weekly Changes in Annual Earnings Forecasts/Price Ratios
After Adjustment for Market-Wide Changes

Sample	Number of observations	Bi-Weekly interval t-2	t-1	t	t+1	t+2	t+3	t+4
All observations	481	-0.00060	0.00035	0.00049	-0.00074	0.00157	-0.00061	0.00100
(number of observations)		478	481	373	465	465	480	481
Positive returns	260	-0.00016	0.00006	0.00063	-0.00033	0.00211	0.00004	0.00092
Big surprises	128	-0.00073	0.00159	0.00007	0.00098	0.00043	0.00029	0.00429
Small surprises	132	0.00040	-0.00142	0.00122	-0.00162	0.00377	-0.00021	-0.00236
Negative returns	221	-0.00113	0.00069	0.00033	-0.00122	0.00094	-0.00137	0.00110
Big surprises	100	-0.00039	0.00165	0.00142	-0.00219	0.00135	-0.00014	0.00102
Small surprises	121	-0.00173	-0.00011	-0.00062	-0.00045	0.00061	-0.00238	0.00117
Overestimates	323	-0.00082	0.00092	-0.00053	-0.00263*	0.00168	-0.00044	-0.00056
Underestimates	158	-0.00017	-0.00081	0.00261*	0.00303*	0.00135	-0.00096	0.00419*

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each bi-weekly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each interval.

Table 19
Monthly Changes in Annual Earnings Forecasts/Price Ratios
Without Adjustment for Market-Wide Changes

Sample	Number of observations	Monthly interval t-1	t	t+1	t+2
All observations	480	-0.00142*	-0.00418	-0.00183*	-0.00073
(number of observations)		478	373	480	480
Positive returns	259	-0.00155*	-0.00020	-0.00092	-0.00033
Big surprises	127	-0.00041	-0.00002	0.00022	-0.00013
Small surprises	132	-0.00265*	-0.00038	-0.00202*	-0.00052
Negative returns	221	-0.00127	-0.00066	-0.00290*	-0.00119
Big surprises	100	0.00001	0.00073	-0.00415*	0.00081
Small surprises	121	-0.00232*	-0.00187	-0.00187	-0.00284*
Overestimates	332	-0.00166*	-0.00110	-0.00370*	-0.00102
Underestimates	148	-0.00088	0.00112	0.00237*	-0.00008

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios were then calculated for each monthly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each interval.

Table 20
Monthly Changes in Annual Earnings Forecasts/Price Ratios
Without Adjustment for Market-Wide Changes

Sample	Number of observations	Monthly interval t-1	t	t+1	t+2
All observations	480	-0.00024	0.00049	0.00016	0.00105
(number of observations)		478	373	480	480
Positive returns	259	-0.00025	0.00078	0.00096	0.00241*
Big surprises	127	0.00065	0.00089	0.00230*	0.00459*
Small surprises	132	-0.00113	0.00068	-0.00032	0.00030
Negative returns	221	-0.00022	0.00016	-0.00078	-0.00055
Big surprises	100	0.00130	0.00164	-0.00177	0.00136
Small surprises	121	-0.00147*	-0.00112	0.00004	-0.00212*
Overestimates	332	-0.00046	-0.00021	-0.00163*	-0.00097
Underestimates	148	0.00025	0.00208*	0.00417*	0.00123

* Different from zero at a 5% confidence level based on a t-test.

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each monthly interval for the sample as a whole and for each of the indicated subsamples. Under each of the null hypotheses, the revisions in the consensus E/P ratios would be zero for each interval.

delayed reaction to the announcement were occurring, aggregating the forecasts into a monthly consensus forecast may obscure those changes.

5.3 The Relationship Between Analyst Forecast Revisions and Return Surprises

Another way to investigate analyst forecasts of annual earnings around the time of quarterly earnings announcements is by comparing them to revisions in share prices at the time of the announcement. If there is no relation between analyst revisions and market prices, then $Corr(\bar{e}_{jt+w}, R_{jt}) = 0$ for $w = -1,0,1,2$. If investors' and analysts' responses to the information in earnings announcements are indeed statistically independent, then this correlation coefficient will be zero. To examine the relationship between abnormal stock returns at the time of the announcement and changes in analysts' forecasts, correlations between the two were calculated for the sample as a whole and for each of the large and small surprise subsamples[2]. These results are summarized in tables 21 through 23.

For the sample as a whole, there were no significant correlations in the week preceeding the announcement, the

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[2]Correlations between both the forecast revisions and the forecast revisions adjusted for "market-wide" changes and both the excess return and normalized excess return were computed. Because the results were essentially the same regardless of the combination of revision measure and excess return measure, only the correlation between the market-adjusted forecast revisions and the normalized excess return is reported here.

announcement week, or the two weeks following the announcement. When the data is aggregated into bi-weekly forecast revisions, there again appears to be no significant correlation between the excess returns and the forecast revisions. It is only when the data is aggregated on a monthly basis that any correlation is observed; the correlation is particulary strong in the month following the announcement.

When the sample is dichotomized into its large and small surprise components, for the small surprise group of announcements there are no significant correlations between analyst revisions and stock return at the time of the announcement. However, for the large surprise group of announcements, there is a strong positive correlation between the excess return on the stock and the forecast revisions in the announcement period. So, the larger the surprise to the market as measured by the abnormal excess return on the stock, the larger the changes in analyst forecasts for that firm.[3] Since these forecast changes are computed relative to changes reported in periods at or before the week of the announcement, this evidence is consistent with rational expectations.

It is only when the data is aggregated on a monthly basis that any correlation is observed for the post-

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[3]These tests were also performed on the positive and negative return subsets of the large and small surprise samples. The results are qualitatively the same as for the large/small surprise samples as a whole and so are not reported here.

announcement period. Recall that forecast revisions in month t+2 are computed relative to a forecast computed in the first month after an announcement. The positive sign on month t+2 in Table 23 indicates that analysts continue to adjust their earnings forecasts in the direction of excess return for 2 months after the announcement. This is evidence of systematic analyst underreaction to the information in quarterly earnings announcements.

Table 21
Correlation Between Weekly Market-Adjusted Earnings Forecasts/Price Ratio Revisions and Residual Return Surprises

	Weekly interval								
Sample	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4
All observations	0.06883	-0.04304	0.02013	0.06880	-0.01762	0.06266	-0.02208	-0.00726	-0.02746
(p-value)	(0.1341)	(0.3482)	(0.6607)	(0.1331)	(0.7356)	(0.2158)	(0.6629)	(0.8762)	(0.5510)
(number of observations)	475	477	478	478	370	392	392	463	474
Small surprises	0.04058	-0.00424	0.01962	-0.02094	-0.02020	-0.02009	0.03239	-0.01833	0.04271
(p-value)	(0.5230)	(0.9467)	(0.7571)	(0.7413)	(0.7827)	(0.7755)	(0.6456)	(0.7762)	(0.5023)
	250	251	251	251	189	204	204	243	249
Large surprises	0.03242	-0.04432	0.01102	0.09592	0.01790	0.15110*	0.01322	0.00799	-0.04919
(p-value)	(0.6286)	(0.5074)	(0.8689)	(0.1497)	(0.8109)	(0.0385)	(0.8571)	(0.9062)	(0.4629)
	225	226	227	227	181	188	188	220	225

* Significant at 5%

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each interval for the sample as a whole and for each of the indicated subsamples. Tests of correlation were conducted using Spearman's rank correlation coefficient.

Table 22
Correlation Between Bi-Weekly Market-Adjusted
Earnings Forecasts/Price Ratio Revisions
and Residual Return Surprises

	Bi-weekly interval				
Sample	t-2	t-1	t	t+1	t+2
All observations	0.01722	0.03986	-0.02135	0.06001	0.03564
(p-value)	(0.7081)	(0.3845)	(0.6823)	(0.1974)	(0.4442)
	475	478	370	463	463
Small surprises	0.09444	0.02924	-0.02088	-0.04195	0.01824
(p-value)	(0.1365)	(0.6448)	(0.7755)	(0.5151)	(0.7772)
	250	251	189	243	243
Large surprises	-0.06147	0.04010	-0.00908	0.12758	0.06419
(p-value)	(0.3588)	(0.5478)	(0.9035)	(0.0589)	(0.3433)
	225	227	181	220	220

* Significant at 5%

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each interval for the sample as a whole and for each of the indicated subsamples. Tests of correlation were conducted using Spearman's rank correlation coefficient.

Table 23
Correlation Between Monthly Market-Adjusted Earnings Forecasts/Price Ratio Revisions and Residual Return Surprises

	Monthly interval			
Sample	t-1	t	t+1	t+2
All observations	0.01922	-0.00744	0.12397*	0.10177*
(p-value)	(0.6761)	(0.8865)	(0.0067)	(0.0262)
	475	370	477	477
Small surprises	0.05432	-0.00235	-0.05783	0.10742
(p-value)	(0.3924)	(0.9744)	(0.3616)	(0.0894)
	250	189	251	251
Large surprises	-0.01589	-0.00374	0.22350*	0.10191
(p-value)	(0.8126)	(0.9602)	(0.0007)	(0.1266)
	225	181	226	226

* Significant at 5%

Consensus earnings forecast/price ratios were constructed for each firm using only the forecasts of annual earnings per share made in the given interval. Forecasts were scaled by the beginning of year share price. Changes in the consensus earnings forecast/price ratios for each firm less the change in the consensus E/P ratios for the other n-1 firms in the sample were then calculated for each interval for the sample as a whole and for each of the indicated subsamples. Tests of correlation were conducted using Spearman's rank correlation coefficient.

CHAPTER 6

CONCLUSIONS AND EXTENSIONS

In this chapter, conclusions from the results of the test of hypotheses are discussed, along with several possible extensions of this study.

6.1 Conclusions

In tests of the correlation between excess stock return and analyst revisions of forecasts of earnings per share, we find significant correlation for the large return sample in the announcement period. This result is consistent with our expectations regarding analyst revision activity around the time of earnings announcements. If the announcement is a surprise to the market as a whole, it seems reasonable that the analysts would be surprised as well and would revise their forecasts. If the analysts had information regarding the firm's quarterly earnings and used that to revise estimates of annual earnings prior to the announcement, one would expect they would communicate that to their clients and that price adjustments would take place prior to the announcement as well. Hence, there is not a statistically significant correlation between stock returns and forecast

revisions for the small surprise firms, but there is for the large surprise firms.

However, when the hypotheses are tested with the model

$$\hat{X}_{jt+w} = (\hat{Y}_{jt+w} - \hat{Y}_{jt+w-1}) \; / \; \hat{P}_j$$

$$= \alpha_j + \beta_j \hat{X}_{Mt+w} + e_{jt+w} \qquad (4.3)$$

we cannot draw any consistent conclusions regarding the three hypotheses. The results change when the forecast aggregation period is changed from weekly to bi-weekly to monthly. Also, revisions which appear to be significant when the raw or absolute changes are examined are often no longer significant when the revisions are adjusted for market-wide changes in that time period.

Because so many of the results are not robust to the choice of aggregation period, the conclusions to be drawn from this regarding analyst forecast revisions are limited. This does, however, have implications for other studies of analyst forecasts; it demonstrates that the choice of the forecast aggregation period in forming a consensus can dramatically affect the results obtained. Similarly, studies of analyst forecasts which do not adjust for changes in macroeconomic (and hence sample-wide) factors may be drawing spurious conclusions.

6.2 Extensions

6.2.1 Sample and Methodology Changes

The sample used in this study was earnings announcements made by 49 large firms in the first three quarters of the years 1983 through 1986. An immediate extension which suggests itself is to repeat the study using more recent forecasts made for a larger sample of firms.

A second issue is the way in which the "market-wide" forecast revisions were calculated. Currently, market-wide revisions are defined as revisions of forecasts for all firms excluding firm j in week t+w. Thus, the market-wide revisions are calculated within-sample. Given the relatively small number of firms in the sample, this may not be a good estimate of the changes due to macroeconomic forces. Therefore, in conjunction with selecting a sample of more recent forecasts, an out-of-sample proxy for market-wide forecast revisions might yield results from which more definitive conclusions could be drawn.

6.2.2 CAR Persistence and Analyst Revision Activity

In an efficient market, security prices will instantaneously and unbiasedly reflect new information. Similarly, if analysts respond to new information in an efficient manner, forecasts of earnings per share will fully incorporate new information unbiasedly and without delay. This should be true regardless of the size of the firm or

the number of analysts forecasting earnings per share. Therefore, there should exist no systematic relationship between the length of time over which investors earn excess returns, the length of the earnings forecast revision period, firm size and/or analyst following.

Various authors have found that the security price response to earnings announcements is not immediate. For example, Brown [1978] concluded that the market takes about 45 trading days to fully impound information regarding changes in annual earnings per share. Rendleman, Jones and Latane found that only about 50% of the adjustment to unexpected quarterly earnings announcements occurred in the 90 days following the announcement.

A potential explanation for the above is that, as analysts revise forecasts of annual earnings per share, information continues to trickle into the market. If so, we may note a correlation between the length of time needed for analyst revision activity to return to normal levels and the persistence of abnormal returns, such that the longer the forecast revision period, the longer the persistence of these excess returns.

Company size, earnings predictability and analyst following are additional facets of the information environment of a firm which may affect market and analyst response to new information. Thus, there may be a relationship between the number of analysts following a particular firm, that firm's market capitalization and/or

earnings predictability, the forecast revision period, and/or the abnormal return persistence period.

6.2.3 Analyst Optimism or Pessimism

Butler and Lang [1991] defined relative optimism as being above the consensus forecast on average for the year each year in their four year time period. Thus, an analyst may have been significantly above the consensus for only one month and been below the consensus for the remainder of the year and still have classified as an optimist in their study. An extension of this study which builds on their work would examine the intra-year individual forecasts relative to the consensus to determine if analyst optimism or pessimism persists over a series of revisions. In addition, the effect of that relative optimism or pessimism on the revision process could be further examined.

Persistently pessimistic (optimistic) analysts may overreact (underreact) to bad news and underreact (overreact) to good news. If, on average, there is as much good news as bad, no differences in the overall accuracy of the forecasters would be noted. If, however, there are systematic differences in the revisions of the two groups, this could be important during times of persistent good news or bad news.

If analysts overreact, as found by DeBondt and Thaler [1990], then security analysts should initially revise earnings forecasts upward subsequent to good news, followed

by revisions downward to the true earnings level. However, persistently pessimistic analysts should overreact to good news to a lesser degree. For bad news, large downward revisions would be followed by smaller upward revisions. In this case, the optimists would have smaller downward revisions than would the pessimists.

If the underreaction noted by Kerrigan [1984], Arnott [1985], and Dowen and Bauman [1989] is the norm for analyst revisions of earnings per share forecasts, then revisions subsequent to good news should be followed by further upward revisions. Similarly, downward revisions subsequent to bad news should be followed by further downward revisions. However, the number and magnitude of the revisions could be different between optimists and pessimists.

LIST OF REFERENCES

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APPENDICES

APPENDIX A

INDIVIDUAL ANALYST FORECASTS OF 1986 EARNINGS PER SHARE FOR THIRTEEN COMPANIES (PILOT STUDY)

APPENDIX A

Table 24
I/B/E/S Analyst Forecasts for Abbott Laboratories (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	308	4.45	11686	21386	12
2824	308	4.45	11686	41786	12
2824	308	2.20	70886	71086	12
2824	308	2.20	70886	81486	12
2824	308	2.20	70886	111386	12
2824	308	2.20	70886	111386	12
2824	363	4.50	22786	32086	12
2824	363	4.60	41086	41786	12
2824	363	2.35	51286	71786	12
2824	363	2.35	51286	81486	12
2824	392	4.48	21186	21386	12
2824	392	4.50	31286	41786	12
2824	392	2.31	51486	71086	12
2824	392	2.31	51486	81486	12
2824	392	2.32	90986	111386	12
2824	392	2.32	90986	111386	12
2824	397	4.50	22586	22786	12
2824	397	2.35	51486	71086	12
2824	397	2.35	51486	81486	12
2824	397	2.35	51486	112086	12
2824	397	2.35	51486	121186	12
2824	535	4.70	41686	41786	12
2824	535	2.35	41686	71786	12
2824	535	2.35	41686	81486	12
2824	535	2.35	41686	111986	12
2824	535	2.35	41686	121886	12
2824	543	4.50	12886	21386	12
2824	543	4.50	12886	32086	12
2824	543	4.50	12886	41786	12
2824	543	2.33	70986	71786	12
2824	543	2.32	72486	81486	12
2824	543	2.32	72486	112086	12
2824	543	2.32	72486	121186	12
2824	550	2.27	60486	61986	12
2824	550	2.27	60486	61986	12
2824	550	2.35	82186	102386	12
2824	550	2.32	120886	121186	12
2824	597	2.35	52986	71086	12
2824	597	2.35	52986	73186	12
2824	597	2.35	52986	103086	12
2824	597	2.35	52986	121886	12
2824	891	4.50	10986	21386	12
2824	891	4.55	41686	41786	12

APPENDIX A

Table 24 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	891	2.35	51286	71086	12
2824	891	2.35	51286	81486	12
2824	891	2.35	51286	111386	12
2824	891	2.35	51286	111386	12
2824	975	2.30	52286	71086	12
2824	975	2.30	52286	81486	12
2824	975	2.30	52286	111386	12
2824	975	2.30	52286	111386	12
2824	1023	2.30	80586	80786	12
2824	1422	2.25	51486	71086	12
2824	1422	2.30	81386	81486	12
2824	1422	2.30	81386	112086	12
2824	1422	2.30	81386	112086	12
2824	1738	2.25	61886	71786	12
2824	1738	2.30	81286	81486	12
2824	1738	2.45	91786	112086	12
2824	1738	2.30	81286	121886	12
2824	1775	4.35	40986	41086	12
2824	1775	2.25	71586	71786	12
2824	1775	2.25	71586	71786	12
2824	1775	2.25	71586	111386	12
2824	1775	2.25	71586	121186	12
2824	1826	2.35	51286	112086	12
2824	1826	2.35	51286	121886	12
2824	1974	4.45	21286	21386	12
2824	1974	4.45	21286	32086	12
2824	1974	4.55	32786	41086	12
2824	1974	2.35	51286	71786	12
2824	1974	2.35	51286	80786	12
2824	1974	2.30	111386	111386	12
2824	1974	2.30	111386	111886	12
2824	2026	2.30	70286	71786	12
2824	2026	2.30	70286	81486	12
2824	2026	2.30	70286	111386	12
2824	2026	2.30	70286	121886	12
2824	2066	2.25	42986	71786	12
2824	2079	4.50	31986	31986	12
2824	2079	4.50	31986	31986	12
2824	2079	2.25	31986	61286	12
2824	2079	2.25	31986	73186	12
2824	2133	2.27	51486	71086	12
2824	2133	2.27	51486	81486	12
2824	2133	2.27	51486	111386	12
2824	2133	2.27	51486	121886	12

APPENDIX A

Table 24 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	2156	4.45	12886	22086	12
2824	2156	4.45	12886	41786	12
2824	2156	2.30	71586	71786	12
2824	2156	2.30	71586	81486	12
2824	2156	2.30	71586	112086	12
2824	2156	2.30	71586	121886	12
2824	2162	4.45	40386	41086	12
2824	2162	2.33	60586	71786	12
2824	2162	2.33	60586	80786	12
2824	2162	2.30	102286	112086	12
2824	2162	2.30	102286	121186	12
2824	2227	4.40	40986	41785	12
2824	2227	2.25	50886	71086	12
2824	2227	2.35	81286	81486	12
2824	2227	2.35	81286	81486	12
2824	2227	2.35	81286	121186	12
2824	2240	2.35	71086	71786	12
2824	2240	2.35	71086	80786	12
2824	2240	2.35	71086	110586	12
2824	2240	2.35	71086	121886	12
2824	2280	2.25	71686	71786	12
2824	2280	2.25	71686	81486	12
2824	2280	2.30	111986	112086	12
2824	2280	2.30	111986	121286	12
2824	2283	2.25	42986	81486	12
2824	2283	2.35	90986	112086	12
2824	2283	2.35	90986	121886	12
2824	2379	4.40	12086	13086	12
2824	2379	4.40	12086	32086	12
2824	2379	4.40	12086	32086	12
2824	2379	2.20	12086	62686	12
2824	2379	2.20	12086	62686	12
2824	2379	2.30	82886	103086	12
2824	2379	2.30	82886	103086	12
2824	2435	4.50	20586	20586	12
2824	2435	4.50	20586	31386	12
2824	2435	4.60	41586	41786	12
2824	2435	2.35	61186	71086	12
2824	2435	2.33	80786	80786	12
2824	2435	2.32	101586	111386	12
2824	2435	2.32	101586	121886	12
2824	2442	4.50	10986	21386	12
2824	2442	4.50	10986	31386	12
2824	2442	4.50	10986	41786	12

APPENDIX A

Table 24 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	2442	2.30	71686	71786	12
2824	2442	2.30	71686	81486	12
2824	2442	2.30	71686	112086	12
2824	2442	2.30	71686	121886	12
2824	2465	4.50	41086	41786	12
2824	2465	2.25	41086	71786	12
2824	2465	2.25	41086	71786	12
2824	2465	2.30	90986	100286	12
2824	2465	2.30	90986	100286	12
2824	2534	4.55	20486	22086	12
2824	2534	4.60	31386	31386	12
2824	2534	4.60	31386	41786	12
2824	2534	2.35	42286	71786	12
2824	2534	2.35	42286	80786	12
2824	2534	2.35	111986	112086	12
2824	2534	2.35	111986	121886	12
2824	2574	2.30	80586	80786	12
2824	2574	2.30	80586	110686	12
2824	2574	2.30	80586	110686	12
2824	2577	4.48	21386	21386	12
2824	2577	4.47	22786	32086	12
2824	2577	4.47	22786	41086	12
2824	2577	2.27	50886	71786	12
2824	2577	2.27	50886	80786	12
2824	2577	2.27	50886	111386	12
2824	2577	2.27	50886	121886	12
2824	2618	4.45	21986	22086	12
2824	2618	4.45	21986	32086	12
2824	2618	4.45	21986	41786	12
2824	2618	2.32	51386	71786	12
2824	2618	2.32	51386	81486	12
2824	2618	2.32	51386	112086	12
2824	2618	2.30	121786	121886	12
2824	2679	4.43	21286	22086	12
2824	2679	4.43	21286	32086	12
2824	2679	4.43	21286	41086	12
2824	2679	2.22	51386	71786	12
2824	2739	2.30	61086	71786	12
2824	2739	2.30	61086	72486	12
2824	2739	2.30	61086	100986	12
2824	2739	2.30	61086	121886	12
2824	2809	4.50	21486	21486	12
2824	2809	4.50	21486	21486	12
2824	2809	2.32	50986	50986	12

APPENDIX A

Table 24 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	2809	2.32	50986	80886	12
2824	2809	2.32	50986	80886	12
2824	2809	2.32	50986	80886	12
2824	2822	4.50	30686	32086	12
2824	2822	4.50	30686	41786	12
2824	2822	2.32	42286	71786	12
2824	2822	2.35	82886	100986	12
2824	2822	2.35	82886	100986	12
2824	2881	2.33	72386	112086	12
2824	2881	2.33	72386	121886	12
2824	2997	4.48	12286	22086	12
2824	2997	4.48	12286	32086	12
2824	2997	4.48	12286	41786	12
2824	2997	2.33	61886	71786	12
2824	2997	2.33	61886	81486	12
2824	2997	2.33	61886	112086	12
2824	2997	2.33	61886	121886	12
2824	3012	4.50	22586	32086	12
2824	3012	4.50	22586	41086	12
2824	3012	2.35	42486	71786	12
2824	3012	2.35	42486	80786	12
2824	3012	2.35	42486	111386	12
2824	3012	2.35	42486	121886	12
2824	3057	4.60	12386	21386	12
2824	3057	4.60	12386	31386	12
2824	3057	4.60	12386	41086	12
2824	3057	2.38	51286	70286	12
2824	3057	2.38	51286	70286	12
2824	3057	2.35	81986	111386	12
2824	3057	2.35	81986	121886	12
2824	3085	4.35	21386	22086	12
2824	3085	4.50	31386	31386	12
2824	3085	4.50	31386	41786	12
2824	3085	2.25	31386	71086	12
2824	3085	2.25	31386	71086	12
2824	3085	2.25	31386	111386	12
2824	3085	2.25	31386	120486	12
2824	3200	4.55	11486	20686	12
2824	3200	4.55	11486	32086	12
2824	3200	4.55	11486	41786	12
2824	3200	2.35	51286	71786	12
2824	3200	2.33	73186	81486	12
2824	3200	2.33	73186	112086	12
2824	3200	2.33	73186	121886	12

Table 24 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2824	3337	2.32	51386	71786	12
2824	3337	2.30	81386	81486	12
2824	3337	2.35	111386	111386	12
2824	3337	2.35	111386	121886	12
2824	4157	4.50	40286	41786	12
2824	4157	2.30	70186	71786	12
2824	4157	2.30	70186	81486	12
2824	4409	2.25	92586	40386	12
2824	4409	2.25	92586	40386	12
2824	4489	4.30	22086	32086	12
2824	4489	2.15	22086	60586	12
2824	4489	2.15	22086	60586	12
2824	4489	2.15	22086	60586	12
2824	4489	2.15	22086	60586	12
2824	4644	4.40	20686	20686	12
2824	4644	4.50	22686	32086	12
2824	4644	4.50	22686	41786	12
2824	4644	2.32	42286	71786	12
2824	4644	2.33	72386	81486	12
2824	4760	4.55	41086	41086	12
2824	4760	2.27	41086	71786	12
2824	4760	2.27	41086	71786	12
2824	4760	2.32	103086	111386	12
2824	4760	2.32	103086	111386	12
2824	5038	4.50	41086	41786	12
2824	5082	4.30	21786	22086	12
2824	5083	4.45	20686	20686	12
2824	5083	4.45	20686	20686	12
2824	5083	4.45	20686	20686	12
2824	5083	2.22	20686	71786	12
2824	5304	2.32	51386	61286	12
2824	5304	2.35	81386	81486	12
2824	5367	2.30	101586	112086	12
2824	5367	2.35	112686	121886	12
2824	5368	2.22	20686	71786	12
2824	5368	2.30	103086	112086	12
2824	5368	2.30	103086	121186	12
2824	5421	2.30	70186	112086	12
2824	5421	2.30	70186	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 25
I/B/E/S Analyst Forecasts for Adams Express (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
6212	2864	0.70	32686	71786	12
6212	2864	0.70	32686	81486	12
6212	2864	0.67	91986	112086	12
6212	2864	0.67	91986	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

Table 26
I/B/E/S Analyst Forecasts for Adams-Millis (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
6284	2311	2.70	12386	12386	12
6284	2311	2.90	31986	32086	12
6284	2311	2.90	31986	32786	12
6284	2311	2.85	71686	71786	12
6284	2311	2.85	71686	71786	12
6284	2311	2.40	111986	112086	12
6284	2311	1.17	121686	121886	12
6284	4587	2.25	21986	22086	12
6284	4587	2.25	21986	32086	12
6284	4587	2.25	21986	41786	12
6284	4587	2.60	61286	71786	12
6284	5369	2.60	61286	81486	12
6284	5369	2.65	90986	112086	12
6284	5369	1.20	121586	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 27
I/B/E/S Analyst Forecasts for Adobe Resources (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
7240	1308	0.68	121686	121886	12
7240	1508	-1.00	11486	11586	12
7240	1508	-1.00	11486	31386	12
7240	1508	-1.00	11486	41086	12
7240	1508	0.50	11486	71786	12
7240	1508	0.50	11486	71786	12
7240	1508	-0.70	81986	111386	12
7240	1508	-0.70	81986	121186	12
7240	2505	-2.00	21386	21386	12
7240	2505	-2.00	21386	31386	12
7240	2505	-2.00	21386	41786	12
7240	3083	0.25	70286	71786	12
7240	3083	0.25	70286	81486	12
7240	3083	-0.05	92486	112086	12
7240	3083	-0.20	121086	121886	12
7240	3471	-0.45	82186	112086	12
7240	3471	-0.45	82186	121886	12
7240	4167	-0.95	61886	71786	12
7240	4167	-0.95	61886	81486	12
7240	5425	-1.00	91786	112086	12
7240	5425	-1.10	121686	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 28
I/B/E/S Analyst Forecasts for ADT, Inc (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1007	748	1.80	111986	112086	12
1007	748	1.80	111986	121886	12
1007	1958	1.65	101586	111386	12
1007	1958	1.65	101586	121886	12
1007	2224	1.45	51486	71786	12
1007	2224	1.45	51486	80786	12
1007	2224	1.55	111586	112086	12
1007	2224	1.55	111586	121886	12
1007	3018	1.40	21286	71786	12
1007	3018	1.40	21286	81486	12
1007	3018	1.40	21286	112086	12
1007	3018	1.60	120486	121886	12
1007	4423	2.00	92586	40386	12
1007	4423	2.00	92586	40386	12
1007	5192	1.50	51386	71786	12
1007	5382	1.50	51386	81486	12
1007	5382	1.50	51386	112086	12
1007	5382	1.50	51386	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 29
I/B/E/S Analyst Forecasts for Affiliated Publications (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8261	595	1.85	61286	71086	12
8261	595	1.85	61286	81486	12
8261	595	1.90	91186	112086	12
8261	595	1.90	91186	121186	12
8261	699	1.90	20686	21386	12
8261	699	1.85	31386	32086	12
8261	699	1.85	31386	41786	12
8261	699	1.80	70986	71786	12
8261	699	1.90	81286	81486	12
8261	699	2.05	111386	112086	12
8261	699	1.95	121086	121186	12
8261	2288	2.05	22586	32086	12
8261	2288	2.05	22586	32086	12
8261	2288	1.70	52986	62686	12
8261	2288	1.70	52986	72486	12
8261	2288	1.86	91186	101686	12
8261	2288	2.10	112686	121886	12
8261	2441	1.90	21286	21386	12
8261	2441	1.90	21286	31186	12
8261	2441	1.90	21286	41086	12
8261	2441	1.90	21286	71786	12
8261	2441	1.90	21286	81486	12
8261	2441	1.90	21286	111386	12
8261	2441	1.90	21286	121886	12
8261	2460	1.80	11486	20686	12
8261	2460	1.90	31986	32086	12
8261	2460	1.90	31986	41786	12
8261	2460	1.90	31986	71786	12
8261	2460	2.00	80586	81486	12
8261	2460	2.00	80586	112086	12
8261	2460	2.00	80586	121886	12
8261	2508	1.80	60486	61986	12
8261	2508	1.80	60486	61986	12
8261	2508	1.95	102086	102386	12
8261	2508	2.20	120886	121186	12
8261	3217	1.65	22586	32086	12
8261	3217	1.65	22586	41786	12
8261	3217	1.65	62486	71786	12
8261	3217	1.95	80786	80786	12
8261	3217	2.03	82886	110686	12
8261	3217	2.10	120886	121886	12
8261	3531	1.75	40386	40986	12
8261	3531	1.80	62686	71786	12

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Table 29 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8261	3531	1.80	62686	81486	12
8261	3531	2.00	92586	111386	12
8261	3531	2.60	121686	121886	12
8261	4193	1.70	31886	32086	12
8261	4193	1.70	31886	41786	12
8261	4193	1.75	61886	71786	12
8261	4193	1.75	61886	81486	12
8261	4193	1.95	91786	112086	12
8261	4193	2.10	121686	121886	12
8261	5428	1.70	101786	111386	12
8261	5428	1.70	101786	111386	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 30
I/B/E/S Analyst Forecasts for AFG (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1054	1361	1.90	71086	71086	12
1054	1361	1.90	71086	81486	12
1054	1361	1.90	71086	112086	12
1054	1361	1.90	71086	121186	12
1054	6451	1.75	51486	71086	12
1054	6451	1.95	81386	81486	12
1054	6451	1.85	111186	111386	12
1054	6451	1.85	111186	111386	12
1054	7481	2.35	11486	21386	12
1054	7481	2.35	11486	32086	12
1054	7481	1.57	11486	41786	12
1054	7481	2.00	71686	71686	12
1054	7481	2.11	71686	81486	12
1054	7481	2.11	71686	112086	12
1054	7481	2.11	71686	121886	12
1054	8661	1.43	60486	61986	12
1054	8661	2.43	60486	61986	12
1054	8661	2.27	120886	121186	12
1054	12111	2.50	13086	22086	12
1054	12111	2.50	13086	32086	12
1054	12111	1.67	13086	41786	12
1054	12111	2.00	61886	71786	12
1054	12111	2.00	61886	81486	12
1054	12111	2.00	61886	112086	12
1054	12111	2.00	61886	121886	12
1054	13611	2.40	22786	22786	12
1054	13611	1.60	22786	22786	12
1054	13611	2.00	70286	70286	12
1054	13611	2.00	70286	70286	12
1054	13611	1.95	91786	102386	12
1054	14251	2.00	120486	120486	12
1054	16351	2.35	31386	31386	12
1054	16351	1.57	31386	41786	12
1054	16351	1.80	51486	71086	12
1054	16351	1.80	51486	71086	12
1054	16351	1.80	51486	111386	12
1054	16351	1.80	51486	120486	12
1054	18851	2.30	21386	21386	12
1054	18851	2.30	21386	21386	12
1054	18851	1.53	21386	21386	12
1054	19401	1.58	41086	41086	12
1054	19401	1.64	51386	71786	12
1054	19401	1.85	81386	81486	12

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Table 30 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1054	19401	1.95	111386	111386	12
1054	19401	2.00	112686	121886	12
1054	22821	1.75	71186	71186	12
1054	22821	1.80	80886	80886	12
1054	22821	1.80	80886	80886	12
1054	22821	1.80	80886	80886	12
1054	23781	2.40	31986	32086	12
1054	23781	1.69	31986	41786	12
1054	23781	1.74	52186	62686	12
1054	23781	2.00	72486	72486	12
1054	24941	1.65	62686	62686	12
1054	24941	1.65	62686	62686	12
1054	24941	2.00	82086	112086	12
1054	24941	2.00	82086	121886	12
1054	25751	2.00	121186	121186	12
1054	26101	2.25	21286	21386	12
1054	26101	2.25	21286	32086	12
1054	26101	1.60	41086	41086	12
1054	26101	1.80	71586	71786	12
1054	26101	1.80	71586	80786	12
1054	26101	1.95	111386	111386	12
1054	26101	1.95	111386	111886	12
1054	26341	1.90	62686	71786	12
1054	26341	1.95	80586	81486	12
1054	26341	2.10	110586	112086	12
1054	26341	2.10	110586	121886	12
1054	31521	1.80	61786	61986	12
1054	31521	1.80	61786	61986	12
1054	33451	1.53	31386	31386	12
1054	33451	2.30	31386	31386	12
1054	33451	1.75	70986	71086	12
1054	33451	1.75	70986	71086	12
1054	33451	2.20	101586	101686	12
1054	33451	2.20	101586	112686	12
1054	33661	2.00	61886	71786	12
1054	33661	2.00	61886	80786	12
1054	33661	2.08	102286	110586	12
1054	33661	2.08	102286	121886	12
1054	33901	1.95	70186	71786	12
1054	33901	1.95	70186	81486	12
1054	33901	1.95	70186	112086	12

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Table 30 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1054	33901	2.11	112686	121886	12
1054	54291	2.00	111986	112086	12
1054	54291	2.00	111986	112086	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 31
I/B/E/S Analyst Forecasts for AGS Computers (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1240	149	1.45	21286	21386	12
1240	149	1.75	31886	32086	12
1240	149	1.75	31886	41786	12
1240	643	1.45	10986	21386	12
1240	643	1.85	10986	32086	12
1240	643	1.75	40186	41786	12
1240	643	1.65	50886	71786	12
1240	643	1.65	50886	81486	12
1240	643	1.65	50886	112086	12
1240	643	1.65	50886	121186	12
1240	748	1.75	31886	70286	12
1240	748	1.75	31886	81486	12
1240	748	1.75	31886	112086	12
1240	748	1.60	120886	121886	12
1240	1276	1.60	102386	112086	12
1240	1276	1.60	102386	121886	12
1240	1403	1.75	31986	32086	12
1240	1403	1.75	31986	41786	12
1240	1403	1.75	31986	52986	12
1240	1403	1.75	31986	80786	12
1240	1403	1.65	111986	112086	12
1240	1403	1.65	111986	120886	12
1240	1493	1.55	100986	112086	12
1240	1493	1.55	100986	121886	12
1240	1985	1.75	31286	41786	12
1240	1985	1.60	50186	71086	12
1240	1985	1.55	80586	80786	12
1240	1985	1.55	80586	112086	12
1240	1985	1.55	80586	121886	12
1240	2280	1.45	11386	21386	12
1240	2280	1.75	21286	31386	12
1240	2280	1.75	21286	41786	12
1240	2280	1.60	61086	71786	12
1240	2280	1.60	61086	72486	12
1240	2280	1.60	61086	100986	12
1240	2280	1.60	61086	121886	12
1240	2911	1.70	62686	71786	12
1240	2911	1.70	62686	81486	12
1240	3318	1.50	13086	22086	12
1240	3318	1.65	80586	81486	12
1240	5306	1.65	61786	61986	12
1240	5306	1.65	61786	61986	12

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Table 31 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1240	5306	1.65	61786	102386	12
1240	5306	1.65	61786	121186	12
1240	5387	1.60	92386	112086	12
1240	5387	1.60	92386	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 32
I/B/E/S Analyst Forecasts for Ahmanson (H F) & Co (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8677	287	9.30	31286	41786	12
8677	287	3.00	60586	71086	12
8677	287	3.00	60586	81486	12
8677	287	3.20	90986	111386	12
8677	287	3.20	90986	111386	12
8677	377	8.00	12486	13086	12
8677	377	3.08	40986	41086	12
8677	377	9.25	40986	41086	12
8677	377	3.08	40986	81486	12
8677	377	3.08	40986	111986	12
8677	377	3.08	40986	111986	12
8677	581	10.00	20686	21386	12
8677	581	10.00	20686	32086	12
8677	581	10.00	20686	41786	12
8677	581	3.35	70986	71786	12
8677	581	3.35	70986	81486	12
8677	581	3.35	70986	112086	12
8677	581	3.35	70986	121186	12
8677	981	9.00	10986	21386	12
8677	981	9.00	10986	41786	12
8677	981	3.10	70886	71086	12
8677	981	3.10	70886	81486	12
8677	981	3.20	100986	111386	12
8677	981	3.20	100986	111386	12
8677	1100	3.15	120886	121186	12
8677	1123	9.65	20686	21386	12
8677	1123	9.65	20686	32086	12
8677	1123	3.17	42386	71786	12
8677	1123	3.20	81386	81486	12
8677	1123	3.25	100186	111386	12
8677	1123	3.25	100186	121886	12
8677	1537	3.00	71686	71786	12
8677	1537	3.00	71686	71786	12
8677	1537	3.35	90486	111386	12
8677	1537	3.35	90486	111386	12
8677	1564	7.55	12086	22086	12
8677	1564	9.00	40186	40386	12
8677	1564	2.95	71586	71786	12
8677	1564	2.95	71586	80786	12
8677	1564	3.20	92586	110586	12
8677	1564	3.20	92586	121886	12
8677	1689	9.40	30386	32086	12
8677	1689	9.40	30386	41786	12

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Table 32 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8677	1689	3.15	62586	71786	12
8677	1689	3.15	62586	81486	12
8677	1689	3.30	90986	111386	12
8677	1689	3.30	90986	121886	12
8677	2039	3.00	60486	61986	12
8677	2039	3.00	60486	61986	12
8677	2039	3.00	60486	102386	12
8677	2063	7.40	10286	11686	12
8677	2063	7.40	10286	31386	12
8677	2063	8.75	41586	41786	12
8677	2063	3.00	52786	71786	12
8677	2063	3.00	52786	71786	12
8677	2063	3.10	90486	111386	12
8677	2063	3.10	90486	111386	12
8677	2074	3.10	70286	71786	12
8677	2074	3.10	70286	81486	12
8677	2074	3.10	70286	112086	12
8677	2074	3.20	120486	121886	12
8677	2102	3.08	61186	71786	12
8677	2102	3.08	61186	80786	12
8677	2145	3.17	111386	111386	12
8677	2145	3.17	111386	121886	12
8677	2168	9.20	22786	31386	12
8677	2168	9.00	41686	41786	12
8677	2168	3.25	71086	71786	12
8677	2168	3.25	71086	80786	12
8677	2168	3.20	91186	112086	12
8677	2168	3.20	91186	121886	12
8677	2209	9.50	21986	22086	12
8677	2209	9.50	21986	32086	12
8677	2209	9.50	21986	41786	12
8677	2209	3.10	71686	71786	12
8677	2209	3.15	73186	81486	12
8677	2209	3.15	73186	112086	12
8677	2209	3.15	73186	121886	12
8677	2238	4.90	31386	41086	12
8677	2238	1.63	31386	71086	12
8677	2238	3.00	81386	81486	12
8677	2238	3.20	111986	112086	12
8677	2238	3.20	111986	112086	12
8677	2659	3.35	61886	81486	12
8677	2659	3.35	61886	91886	12
8677	2659	3.20	112686	112686	12
8677	2763	2.67	50886	71086	12
8677	2763	2.67	50886	81486	12

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Table 32 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8677	2763	2.67	50886	81486	12
8677	2886	10.00	31886	32086	12
8677	2886	10.00	31886	40286	12
8677	2886	3.17	70286	71786	12
8677	2886	3.20	73086	81486	12
8677	2886	3.20	73086	112086	12
8677	2886	3.20	73086	121886	12
8677	3088	9.75	10786	22086	12
8677	3088	9.75	10786	32086	12
8677	3088	9.75	10786	41786	12
8677	3088	3.25	10786	71786	12
8677	3088	3.25	10786	81486	12
8677	3088	3.25	111686	112086	12
8677	3088	3.25	111686	121886	12
8677	3157	8.50	10986	41786	12
8677	3157	3.00	61986	71086	12
8677	3157	3.35	81386	81486	12
8677	3157	3.35	81386	111386	12
8677	3157	3.35	81386	111386	12
8677	3362	7.70	10286	21386	12
8677	3362	8.00	22786	32086	12
8677	3362	8.00	22786	40986	12
8677	3362	3.00	42586	71786	12
8677	3362	3.00	42586	81486	12
8677	3362	3.15	91786	111386	12
8677	3362	3.15	91786	121886	12
8677	3414	3.15	71086	71086	12
8677	3414	3.15	71086	81486	12
8677	3414	3.40	111986	111986	12
8677	3414	3.40	111986	121886	12
8677	3478	8.50	10986	21386	12
8677	3493	3.20	121686	121686	12
8677	3549	8.75	11486	22086	12
8677	3549	9.00	22786	32086	12
8677	4188	9.15	10986	20586	12
8677	4188	9.15	10986	31386	12
8677	4188	9.15	10986	41786	12
8677	4188	3.12	61186	71086	12
8677	4188	3.20	80786	80786	12
8677	4188	3.25	111386	111386	12
8677	4188	3.15	121786	121886	12
8677	4415	8.50	12786	22086	12
8677	4415	3.08	30586	40386	12
8677	4415	3.08	30586	40386	12

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Table 32 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
8677	4415	3.08	30586	40386	12
8677	4415	9.25	30586	40386	12
8677	4415	3.08	30586	40386	12
8677	4645	9.25	12386	20686	12
8677	4645	9.25	12386	31386	12
8677	4645	9.00	41686	41786	12
8677	4645	3.00	41686	71786	12
8677	4645	3.00	41686	81486	12
8677	4645	3.20	92586	112086	12
8677	4645	3.20	92586	120486	12
8677	4836	10.00	21986	22086	12
8677	4836	10.00	21986	32086	12
8677	4836	10.00	21986	41786	12
8677	4913	8.60	41686	41786	12
8677	5116	3.20	70286	71786	12
8677	5116	3.20	70286	81486	12
8677	5279	3.35	52286	71786	12
8677	5279	3.35	52286	81486	12
8677	5279	3.25	111986	112086	12
8677	5279	3.25	111986	121886	12
8677	5312	3.10	70286	71786	12
8677	5312	3.10	70286	81486	12
8677	5312	3.15	102386	112086	12
8677	5312	3.15	102386	121886	12
8677	5313	3.35	61886	71786	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 33
I/B/E/S Analyst Forecasts for Airborne Freight (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
9266	784	1.90	22786	32086	12
9266	784	1.90	22786	41786	12
9266	784	1.34	62686	71786	12
9266	784	1.40	80586	81486	12
9266	784	1.85	110686	112086	12
9266	784	1.85	110686	121186	12
9266	1010	2.00	11386	21386	12
9266	1010	2.00	11386	41786	12
9266	1010	1.50	51486	71086	12
9266	1010	1.50	51486	81486	12
9266	1010	1.50	51486	111386	12
9266	1010	1.50	51486	111386	12
9266	1067	0.15	82186	102386	12
9266	1152	1.85	12386	31386	12
9266	1152	1.85	12386	41086	12
9266	1152	1.70	60586	70286	12
9266	1152	1.70	60586	70286	12
9266	1152	1.65	110686	111386	12
9266	1152	1.85	121186	121886	12
9266	1180	1.55	40386	41786	12
9266	1423	1.70	110686	112086	12
9266	1423	1.70	110686	121886	12
9266	1488	1.55	40386	71086	12
9266	1488	1.55	40386	81486	12
9266	1488	1.75	111686	112086	12
9266	1488	1.75	111686	121886	12
9266	1516	1.94	32486	41086	12
9266	1516	1.37	61886	71786	12
9266	1516	1.37	61886	73186	12
9266	1516	1.70	111986	112086	12
9266	1516	1.70	111986	121886	12
9266	1557	1.75	31986	31986	12
9266	1557	1.75	31986	41786	12
9266	1557	1.00	50686	71786	12
9266	1557	1.00	50686	80786	12
9266	1557	1.40	102386	111386	12
9266	1557	1.40	102386	121186	12
9266	1627	1.75	111986	121786	12
9266	1952	1.32	70986	71786	12
9266	1952	1.32	70986	80786	12
9266	1952	1.65	111086	111386	12
9266	1952	1.75	120486	121886	12
9266	2182	1.75	120486	120486	12

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Table 33 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
9266	2305	1.95	21386	21386	12
9266	2305	1.95	21386	32086	12
9266	2305	1.80	41686	41786	12
9266	2305	1.45	52186	62686	12
9266	2305	1.45	52186	72486	12
9266	2305	1.80	111386	111189	12
9266	2305	1.80	111386	111386	12
9266	2385	1.85	12386	21386	12
9266	2446	1.65	111986	112086	12
9266	2446	1.65	111986	121886	12
9266	2539	2.00	21786	22086	12
9266	2539	2.00	21786	41086	12
9266	2539	2.00	21786	71786	12
9266	2539	2.00	21786	71786	12
9266	2539	2.00	21786	111386	12
9266	2539	2.00	21786	111386	12
9266	2594	1.85	21286	22086	12
9266	2594	1.85	21286	30686	12
9266	2594	1.85	21286	41786	12
9266	2594	1.60	50886	71786	12
9266	2594	1.60	50886	81486	12
9266	2594	1.65	111586	111586	12
9266	2594	1.65	111586	121886	12
9266	2814	2.00	31386	31386	12
9266	2814	2.00	31386	41086	12
9266	2814	1.25	61086	71786	12
9266	2814	1.25	61086	81486	12
9266	2814	1.40	101486	111386	12
9266	2814	1.75	121786	121886	12
9266	2967	1.80	20586	21386	12
9266	2967	1.80	20586	31386	12
9266	2967	1.60	41086	41786	12
9266	2967	0.45	71686	71786	12
9266	2967	0.45	71686	81486	12
9266	2967	1.75	111686	112086	12
9266	2967	1.75	111686	121886	12
9266	3266	2.10	12986	12986	12
9266	3266	2.10	12986	31386	12
9266	3266	1.65	41586	41786	12
9266	3266	1.10	52786	71786	12
9266	3266	1.10	52786	71786	12
9266	3266	1.10	52786	111386	12
9266	3266	1.10	52786	111386	12
9266	3303	1.55	31286	41786	12

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Table 33 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
9266	3303	1.40	71086	71086	12
9266	3303	1.40	71086	81486	12
9266	3303	1.50	111186	111386	12
9266	3303	1.50	111186	111386	12
9266	3386	1.50	71086	71086	12
9266	3386	1.35	81286	81486	12
9266	3386	1.35	81286	81486	12
9266	3386	1.35	81286	121186	12
9266	3607	1.75	12986	22086	12
9266	3607	1.75	12986	31386	12
9266	3607	1.75	12986	41786	12
9266	4496	1.95	20486	22086	12
9266	4496	1.95	20486	32086	12
9266	4496	1.95	20486	41786	12
9266	4496	1.50	61186	71086	12
9266	4496	1.50	80586	80786	12
9266	4496	1.75	111986	111986	12
9266	4497	1.80	20686	20686	12
9266	4497	1.80	20686	32086	12
9266	4497	1.70	32686	41786	12
9266	4497	1.35	62686	71786	12
9266	4754	1.50	21986	22086	12
9266	4754	1.50	21986	32086	12
9266	4754	1.75	40886	41786	12
9266	4754	1.50	70986	71786	12
9266	4856	1.80	20386	20686	12
9266	4856	1.80	20386	22786	12
9266	4856	1.70	32786	32786	12
9266	4856	1.50	70286	70286	12
9266	4856	1.50	70286	70286	12
9266	4856	1.50	70286	102386	12
9266	5053	2.00	21286	22086	12
9266	5053	1.80	22786	32086	12
9266	5053	1.80	22786	41786	12
9266	5053	1.25	61286	71786	12

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Table 33 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
9266	5053	1.25	61286	81486	12
9266	5372	1.50	70986	81486	12
9266	5373	1.35	62686	81486	12
9266	5430	1.55	100886	112086	12
9266	5430	1.55	100886	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 34
I/B/E/S Analyst Forecasts for AMCA International (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1640	1247	0.40	31386	32086	12
1640	1247	0.40	31386	41786	12
1640	1247	0.40	31386	71786	12
1640	1247	0.40	31386	81486	12
1640	1247	-1.90	111786	111786	12
1640	1247	-1.90	111786	121886	12
1640	1254	0.75	41086	41086	12
1640	1254	0.50	61986	71786	12
1640	1254	0.50	61986	81486	12
1640	1254	0.50	61986	111386	12
1640	1254	0.50	61986	121186	12
1640	1354	0.80	31986	31986	12
1640	1354	0.80	31986	40886	12
1640	1354	0.50	70986	71086	12
1640	1354	0.50	70986	81486	12
1640	1354	-0.50	111086	111086	12
1640	1354	-0.50	111086	121186	12
1640	1526	0.60	50886	71086	12
1640	1526	0.60	50886	81486	12
1640	1526	0.30	91786	91886	12
1640	1526	-0.45	121186	121886	12
1640	1849	0.25	60586	71786	12
1640	1849	0.25	60586	73186	12
1640	1849	0.50	103086	103086	12
1640	1932	-3.36	121186	121186	12
1640	2321	0.60	52786	71786	12
1640	2321	0.60	52786	80786	12
1640	2748	0.72	21386	21386	12
1640	2748	0.21	22786	22786	12
1640	2748	0.22	22786	41786	12
1640	2748	-0.65	121786	121886	12
1640	2898	0.35	12286	12386	12
1640	2898	0.35	12286	12386	12
1640	2898	0.35	12286	12386	12
1640	2898	0.50	41886	61286	12
1640	2898	0.50	41886	80786	12
1640	2898	0.50	41886	102486	12
1640	2898	-3.00	121586	121886	12
1640	2984	0.60	41686	41786	12
1640	2984	0.35	52786	71786	12
1640	2984	0.35	52786	71786	12
1640	2984	-1.07	112686	121886	12

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Table 34 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1640	3393	0.85	13086	21386	12
1640	3393	0.85	13086	32086	12
1640	3393	0.85	13086	41786	12
1640	3393	0.54	60486	71786	12
1640	3393	0.54	60486	73186	12
1640	3393	-0.80	111786	112086	12
1640	3393	-0.80	111786	121886	12
1640	3409	0.40	40386	41786	12
1640	3409	0.40	40386	71786	12
1640	3409	-1.50	80686	81486	12
1640	3409	-2.30	91786	112086	12
1640	3409	-2.30	91786	121886	12
1640	3550	0.65	21986	22086	12
1640	3550	0.65	21986	22086	12
1640	3550	0.65	21986	41786	12
1640	3550	0.25	103086	103086	12
1640	3550	-0.92	121786	121886	12
1640	4592	0.60	22686	32086	12
1640	4592	0.60	22686	41786	12
1640	4592	-0.25	52786	71786	12
1640	4860	0.61	10986	21386	12
1640	4860	0.87	31986	31986	12
1640	4860	0.62	31986	32086	12
1640	4860	0.63	31986	41086	12
1640	5084	0.65	41086	41086	12
1640	5084	0.90	41086	71786	12
1640	5084	0.90	41086	71786	12
1640	5376	-0.25	52786	81486	12
1640	5434	0.20	82886	112086	12
1640	5434	-1.30	112686	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 35
I/B/E/S Analyst Forecasts for AMR Corporation (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1765	191	6.30	11386	21386	12
1765	191	5.25	40386	40386	12
1765	191	5.25	40386	40386	12
1765	191	5.25	40386	40386	12
1765	191	5.25	40386	40386	12
1765	191	5.25	40386	40386	12
1765	191	5.25	41686	41786	12
1765	191	5.00	51486	71086	12
1765	191	4.70	81386	81486	12
1765	191	5.20	72486	81486	12
1765	191	4.70	81386	111386	12
1765	191	4.70	81386	111386	12
1765	191	4.80	92586	112086	12
1765	191	4.75	121786	121886	12
1765	541	7.20	121186	111386	12
1765	3771	6.50	12486	13086	12
1765	3771	6.50	12486	41086	12
1765	3771	6.50	12486	41086	12
1765	7201	6.00	11686	21386	12
1765	7201	5.00	31386	41786	12
1765	7201	5.00	31386	71086	12
1765	7201	5.00	31386	81486	12
1765	7201	5.00	31386	111386	12
1765	7201	5.00	31386	111386	12
1765	7841	5.60	20586	21386	12
1765	7841	5.10	31986	32086	12
1765	7841	5.10	31986	41786	12
1765	7841	3.05	70986	71786	12
1765	7841	4.46	73186	81486	12
1765	7841	4.75	103086	112086	12
1765	7841	4.75	103086	121186	12
1765	10091	4.00	81486	112086	12
1765	10091	4.00	81486	121186	12
1765	10671	5.25	61786	61986	12
1765	10671	5.25	61786	61986	12
1765	10671	4.00	82186	102386	12
1765	11521	5.30	41086	41086	12
1765	11521	5.30	41086	70286	12
1765	11521	5.30	41086	70286	12
1765	11521	4.54	110686	111386	12
1765	11521	4.04	121186	121886	12
1765	11801	5.30	12786	21386	12
1765	11801	5.30	12786	32086	12

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Table 35 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1765	11801	5.30	12786	41786	12
1765	13691	5.05	41086	41786	12
1765	13691	4.42	70286	70286	12
1765	13691	4.42	70286	80786	12
1765	13961	4.47	111986	111986	12
1765	13961	4.47	111986	121886	12
1765	15161	5.30	32486	41086	12
1765	15161	4.84	61886	71786	12
1765	15161	4.00	72986	73186	12
1765	15161	5.00	91786	112086	12
1765	16621	7.10	41586	41786	12
1765	16621	6.70	61186	71086	12
1765	16621	5.70	80786	80786	12
1765	16621	5.70	80786	111386	12
1765	16621	4.40	121786	121886	12
1765	17051	5.05	20586	22086	12
1765	17051	5.05	20586	32086	12
1765	17051	4.95	41686	41786	12
1765	17051	4.54	61286	71786	12
1765	17051	4.80	111986	112086	12
1765	17051	4.80	111986	121886	12
1765	17481	3.53	32786	41086	12
1765	17481	3.53	32786	71786	12
1765	17481	3.53	32786	80786	12
1765	17481	4.54	111386	111386	12
1765	17481	4.54	111386	121886	12
1765	19811	5.55	40186	40386	12
1765	19811	5.55	40186	71786	12
1765	19811	4.24	73186	80786	12
1765	19811	4.60	102886	110586	12
1765	19811	4.60	102886	121886	12
1765	20191	5.30	12986	22086	12
1765	20191	6.06	22786	32086	12
1765	20191	6.06	22786	41786	12
1765	20191	5.05	70286	71786	12
1765	20191	4.29	73086	81486	12
1765	20191	4.80	92486	112086	12
1765	20191	4.80	92486	121886	12
1765	20201	7.00	21886	22086	12
1765	22571	6.77	41686	41786	12
1765	22571	5.86	62486	71786	12
1765	22571	5.86	62486	81486	12
1765	22571	5.86	62486	112086	12
1765	22571	5.86	62486	121886	12

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Table 35 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1765	24461	4.54	91186	112086	12
1765	25391	5.55	11086	22086	12
1765	25391	5.55	11086	41086	12
1765	25391	4.39	71686	71786	12
1765	25391	4.39	71686	71786	12
1765	25391	4.19	103086	111386	12
1765	25391	4.19	103086	111386	12
1765	25691	5.05	21286	21386	12
1765	25691	5.05	21286	31386	12
1765	25691	5.05	21286	41786	12
1765	25691	4.85	61086	71786	12
1765	25691	4.85	61086	72486	12
1765	25691	4.85	61086	100986	12
1765	25691	4.85	61086	121886	12
1765	26091	4.22	81386	81486	12
1765	26091	4.22	81386	112086	12
1765	26091	4.22	81386	112086	12
1765	26251	6.06	11586	22086	12
1765	26251	5.55	31986	32086	12
1765	26251	5.55	31986	41786	12
1765	26251	4.04	71086	71786	12
1765	26251	4.04	71086	81486	12
1765	26251	4.04	71086	112086	12
1765	26251	4.04	71086	121886	12
1765	26461	5.30	11586	22086	12
1765	26461	5.30	11586	31386	12
1765	26461	5.05	40286	41786	12
1765	26461	4.29	61886	71786	12
1765	26461	4.29	61886	80786	12
1765	26461	4.29	61886	112086	12
1765	26461	4.29	61886	121886	12
1765	26501	5.55	41686	41786	12
1765	26501	4.54	61886	71786	12
1765	26501	4.54	61886	81486	12
1765	26501	4.04	102986	112086	12
1765	26501	4.04	102986	121886	12
1765	28091	4.00	10986	10986	12
1765	28091	5.00	31486	31486	12
1765	28091	3.50	71186	71186	12
1765	28091	3.00	80886	80886	12
1765	28091	4.20	111486	111486	12
1765	28091	4.00	121286	121286	12
1765	29671	4.54	71686	71786	12
1765	29671	4.54	71686	81486	12

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Table 35 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1765	29671	4.80	101486	112086	12
1765	29671	4.80	101486	121886	12
1765	30421	5.86	52186	71786	12
1765	30421	4.14	80786	80786	12
1765	30421	4.29	110586	112086	12
1765	30421	4.29	110586	121186	12
1765	30801	6.06	41686	41786	12
1765	30801	5.55	61886	71786	12
1765	30801	4.54	81386	81486	12
1765	30801	4.54	81386	112086	12
1765	30971	6.00	41086	41086	12
1765	30971	5.00	51386	71786	12
1765	30981	4.50	72386	81486	12
1765	30981	4.75	111386	111386	12
1765	30981	4.75	111386	121886	12
1765	31381	4.70	12386	22086	12
1765	31381	4.44	32786	41786	12
1765	31381	3.94	71686	71786	12
1765	31381	3.94	71686	81486	12
1765	31381	4.60	102886	112086	12
1765	31381	4.04	121786	121886	12
1765	33031	4.60	21086	21386	12
1765	33031	4.04	41686	41786	12
1765	33031	3.79	61986	71086	12
1765	33031	3.69	81386	81486	12
1765	33031	3.84	100886	111386	12
1765	33031	3.84	100886	111386	12
1765	33731	5.25	62686	71786	12
1765	33731	4.65	72486	81486	12
1765	33731	3.95	112686	121886	12
1765	33861	4.80	71086	71086	12
1765	33861	5.05	81286	81486	12
1765	33861	5.05	81286	81486	12
1765	33861	4.80	121686	121686	12
1765	34551	6.00	13086	22086	12
1765	34551	5.20	31986	32086	12
1765	34551	5.20	31986	41786	12
1765	34551	3.99	61886	71786	12
1765	34551	3.95	81286	81486	12
1765	34551	3.75	111786	111786	12
1765	34551	4.00	121186	121886	12
1765	41611	4.80	10686	22086	12
1765	41611	4.80	10686	32086	12
1765	41611	4.80	10686	41786	12

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Table 35 (cont'd)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
1765	41611	4.00	70986	71786	12
1765	41611	4.00	70986	81486	12
1765	44971	5.80	20686	20686	12
1765	44971	5.86	20686	32086	12
1765	44971	5.86	20686	41786	12
1765	44971	5.45	62686	71786	12
1765	49521	4.80	20686	22086	12
1765	49521	4.80	20686	41086	12
1765	51171	6.00	60486	60586	12
1765	51171	6.00	60486	60586	12
1765	51171	6.00	60486	60586	12
1765	51171	6.00	60486	60586	12
1765	51181	6.00	21386	21386	12
1765	51181	6.00	21386	32086	12
1765	51181	5.71	41686	41786	12
1765	52641	6.00	21886	22086	12
1765	53731	5.20	72386	81486	12
1765	54511	4.00	70986	112086	12
1765	54511	4.15	120386	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

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Table 36
I/B/E/S Analyst Forecasts for AVX (1986)

CUSIP	Analyst	Forecast	Forecast Date	I/B/E/S Date	Fiscal Year-End
2440	255	0.50	22586	22786	12
2440	255	0.50	22586	71086	12
2440	255	0.10	81486	112086	12
2440	255	0.01	121186	121186	12
2440	2023	0.40	31986	32086	12
2440	2023	0.40	31986	41786	12
2440	2023	0.20	51486	71086	12
2440	2694	0.75	31386	31386	12
2440	2694	0.75	31386	41786	12
2440	2694	0.25	71686	71786	12
2440	2694	0.25	71686	81486	12
2440	2694	-0.05	111686	112086	12
2440	2694	-0.05	111686	121886	12
2440	2983	-0.10	110586	111386	12
2440	2983	-0.10	110586	121886	12
2440	4167	0.10	21286	22086	12
2440	4167	0.10	21286	32086	12
2440	4167	0.10	21286	41786	12
2440	4167	0.15	51386	71786	12
2440	4167	-0.05	81286	81486	12
2440	5425	-0.10	111386	112086	12
2440	5425	-0.10	111386	121886	12

Forecasts are sorted by analyst number. The forecast date is self-reported by the analyst as the date on which the forecast was made. The I/B/E/S date is the date on which the forecast was entered in the database.

APPENDIX B

LIST OF COMPANIES AND FIRM-YEARS INCLUDED IN THE SAMPLE

Appendix B

List of Companies & Firm-Years Included in Sample

COMPANY NAME	CUSIP	1983	1984	1985	1986
Allied Signal Inc	19512			X	X
Amoco Corp (Std Oil-IND)	31905			X	X
Anheuser-Busch Cos Inc	35229	X	X	X	X
Atlantic Richfield Co	48825	X	X	X	X
Baxter Labs	71892	X	X	X	X
Boeing Co	97023	X	X	X	X
Caterpillar Inc	149123	X	X	X	X
Chevron Corp (Std Oil-CA)	166751		X	X	X
Chrysler Corp	171196	X	X	X	X
Coca-Cola Co	191216	X	X	X	X
Dow Chemical	260543	X	X	X	X
Du Pont (E.I.) De Nemours	263534	X	X	X	X
Eastman Kodak Co	277461	X	X	X	X
Exxon Corp (Std Oil-NJ)	302290	X	X	X	X
Ford Motor Corp	345370	X	X	X	X
General Dynamics Corp	369550	X	X	X	X
General Electric Co	369604	X	X	X	X
General Motors Corp	370442	X	X	X	X
Georgia-Pacific Corp	373298	X	X	X	X
Goodyear Tire and Rubber	382550	X	X	X	X
Grace (W.R.) & Co	383883	X	X	X	X
Honeywell	438506	X	X	X	X
Intl Business Machines Co	459200	X	X	X	X
Intl Paper Co	460146	X	X	X	X
Johnson & Johnson	478160	X	X	X	X
Lockheed Corp	539821	X	X	X	X
McDonnell Douglas Corp	580169	X	X	X	X
Minnesota Mining & Mfg Co	604059	X	X	X	X
Mobil Corp	607059	X	X	X	X
Monsanto Co	611662	X	X	X	X
Motorola Inc	620076	X	X	X	X
Northrop Corp	666807	X	X	X	X
Occidental Petroleum Corp	674599	X	X	X	X
Pepsico Inc	713448	X	X	X	X
Philip Morris Cos Inc	718154			X	X
Phillips Petroleum Corp	718507	X	X	X	X
RJR Nabisco Inc	74960L				X
Raytheon	755111	X	X	X	X
Sohio (Std Oil-Ohio)	853734	X	X	X	X
Sun Co Inc	866762	X	X	X	X
TRW Inc	872649	X	X	X	X
Tenneco Inc	880370	X	X	X	X
Texaco Inc	881694	X	X	X	X
USX Corp (US Steel)	902905				X
Unisys Corp (Burroughs)	909214				X
United Technologies Corp	913017	X	X	X	X
Unocal Corp	915289	X	X	X	X
Westinghouse Electric Cor	960402	X	X	X	X
Weyerhaeuser Co	962166	X	X	X	X

APPENDIX C

STATISTICAL RESULTS

APPENDIX C

This appendix contains the statistical results of the tests of consensus forecast revisions, both unadjusted and adjusted for sample-wide changes. The following notation is used throughout the appendix:

A = The firm consensus forecast for the given interval
M = The market average forecast for the given interval

C = The change in the firm consensus forecast from one interval to the next
E = The change in the firm consensus forecast from one interval to the next, less the change in the market average forecast over that same interval

For weekly aggregations:

Variables		Weekly Interval
C2	E2	(t-7) - (t-8)
:	:	
C8	E8	(t-1) - (t-2)
C	E	(t) - (t-1)
C9	E9	(t+1) - (t-1)
C10	E10	(t+2) - (t+1)
:	:	
C16	E16	(t+8) - (t+7)

For bi-weekly aggregations:

Variables		Bi-Weekly Interval	
C2	E2	(t-3) - (t-4)	
C3	E3	(t-2) - (t-3)	
C4	E4	(t-1) - (t-2)	
C	E	(t) - (t-1)	[t= a weekly interval]
C5	E5	(t+1) - (t-1)	
C6	E6	(t+2) - (t+1)	
C7	E7	(t+3) - (t+2)	
C8	E8	(t+4) - (t+3)	

For monthly aggregations:

Variables		Monthly Interval	
C2	E2	(t-1) - (t-2)	
C	E	(t) - (t-1)	[t= a weekly interval]
C3	E3	(t+1) - (t-1)	
C4	E4	(t+2) - (t+1)	

APPENDIX C

Table 37
Weekly Mean Earnings/Price Ratios for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
A1	481	0.08451	0.06951	-0.07759	0.569777	26.66457	0.0001
A2	481	0.08576	0.06781	-0.09701	0.42969	27.73978	0.0001
A3	481	0.08937	0.07306	-0.09631	0.58546	26.82851	0.0001
A4	481	0.08833	0.07425	-0.08964	0.66968	26.09183	0.0001
A5	481	0.08747	0.07545	-0.09811	0.70588	25.42380	0.0001
A6	481	0.08958	0.07109	-0.03226	0.65158	27.63532	0.0001
A7	481	0.09330	0.07279	-0.02593	0.49472	28.11163	0.0001
A8	481	0.09513	0.07489	-0.10127	0.65158	27.85808	0.0001
A	481	0.08308	0.06813	-0.08598	0.55747	26.74595	0.0001
A9	481	0.08704	0.06580	-0.09969	0.45701	29.00931	0.0001
A10	481	0.09589	0.06856	-0.12658	0.51077	30.67357	0.0001
A11	481	0.10064	0.07608	-0.11249	0.70890	29.01003	0.0001
A12	481	0.09296	0.07368	-0.10516	0.67511	27.66890	0.0001
A13	481	0.08637	0.07634	-0.09130	0.66968	24.81244	0.0001
A14	481	0.08083	0.07007	-0.10648	0.43439	25.29777	0.0001
A15	481	0.08392	0.07391	-0.15211	0.51900	24.90341	0.0001
A16	481	0.07573	0.07117	-0.09631	0.66968	23.33473	0.0001

Table 38
Weekly Market Average Earnings/Price Ratios for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
M1	481	0.11164	0.01844	0.07420	0.13732	132.81465	0.0001
M2	481	0.11105	0.01814	0.07420	0.13437	134.28001	0.0001
M3	481	0.11104	0.01829	0.07420	0.13144	133.13860	0.0001
M4	481	0.11126	0.01847	0.07420	0.13144	132.12270	0.0001
M5	481	0.11120	0.01850	0.07318	0.13144	131.84261	0.0001
M6	481	0.11065	0.01857	0.07245	0.13242	130.67673	0.0001
M7	481	0.11023	0.01903	0.07204	0.13242	127.06059	0.0001
M8	481	0.10935	0.01899	0.07204	0.13242	126.32032	0.0001
M	481	0.10903	0.01906	0.07204	0.13242	125.47141	0.0001
M9	481	0.10819	0.01937	0.07131	0.13133	122.48268	0.0001
M10	481	0.10797	0.01986	0.07131	0.13428	119.22750	0.0001
M11	481	0.10814	0.02019	0.07131	0.13428	117.44760	0.0001
M12	481	0.10831	0.02014	0.06718	0.13428	117.92558	0.0001
M13	481	0.10820	0.02001	0.06718	0.13428	118.57121	0.0001
M14	481	0.10756	0.01992	0.06718	0.13144	118.40064	0.0001
M15	481	0.10691	0.01980	0.06718	0.13144	118.39543	0.0001
M16	481	0.10578	0.	0.	0.13144	102.95990	0.0001

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Table 39
Weekly Revisions in Earnings/Price Ratios for the Entire Sample Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
C2	371	0.00025	0.01362	-0.12097	0.10937	0.35629	0.7218
C3	450	-0.00099	0.01815	-0.21972	0.15107	-1.15423	0.2490
C4	469	0.00119	0.01634	-0.08952	0.15068	1.57603	0.1157
C5	478	-0.00011	0.01618	-0.09231	0.14661	-0.14717	0.8831
C6	480	-0.00148	0.02272	-0.31674	0.11831	-1.42856	0.1538
C7	481	0.00004	0.02177	-0.30769	0.14178	0.04479	0.9643
C8	481	-0.00032	0.02166	-0.15190	0.30769	-0.32650	0.7442
C	373	-0.00038	0.01911	-0.19909	0.11946	-0.32208	0.7476
C9	392	-0.00189	0.02133	-0.22299	0.10028	-1.75533	0.0800
C10	392	-0.00099	0.02066	-0.18028	0.29575	-0.95089	0.3422
C11	465	0.00241	0.01955	-0.09296	0.25188	2.66333	0.0080
C12	477	-0.00035	0.01631	-0.11014	0.18228	-0.51570	0.6063
C13	480	-0.00013	0.01395	-0.10534	0.13099	-0.20676	0.8363
C14	481	-0.00094	0.01286	-0.12097	0.06526	-1.60512	0.1091
C15	481	-0.00099	0.01870	-0.27873	0.08597	-1.16493	0.2446
C16	481	0.00009	0.01850	-0.21972	0.15107	0.11150	0.9113

Table 40
Weekly Revisions in Earnings/Price Ratios for the Entire Sample Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
E2	371	0.00080	0.01350	-0.11778	0.105415	1.13389	0.2576
E3	450	-0.00098	0.017936	-0.21345	0.149248	-1.15629	0.2482
E4	469	0.00098	0.01616	-0.08970	0.147132	1.30640	0.1921
E5	478	-0.00004	0.01604	-0.08944	0.142939	-0.05720	0.9544
E6	480	-0.00093	0.02222	-0.30483	0.114226	-0.91830	0.3589
E7	481	0.00046	0.02154	-0.30013	0.140456	0.47171	0.6373
E8	481	0.00056	0.02134	-0.14828	0.298446	0.57284	0.5670
E	373	-0.00026	0.018486	-0.19349	0.118607	-0.26807	0.7888
E9	392	-0.00081	0.02084	-0.21545	0.089485	-0.76894	0.4424
E10	392	-0.00072	0.02001	-0.16504	0.285987	-0.70783	0.4795
E11	465	0.00222	0.01938	-0.09009	0.247855	2.47226	0.0138
E12	477	-0.00056	0.01610	-0.11085	0.178614	-0.76159	0.4467
E13	480	-0.00002	0.01379	-0.10014	0.126762	-0.03048	0.9757
E14	481	-0.00031	0.01272	-0.11778	0.062011	-0.52714	0.5983
E15	481	-0.00034	0.01846	-0.27314	0.089161	-0.40612	0.6848
E16	481	0.00122	0.02114	-0.21345	0.149248	1.26821	0.2053

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Table 41
Weekly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
C2	196	-0.00031	0.00837	-0.03125	0.03664	-0.51669	0.6060
C3	243	0.00014	0.01556	-0.05779	0.15107	0.14338	0.8861
C4	254	0.00034	0.01344	-0.08952	0.07615	0.40805	0.6836
C5	258	0.00063	0.01625	-0.06212	0.12670	0.62573	0.5320
C6	260	-0.00180	0.02714	-0.31674	0.11831	-1.07229	0.2846
C7	260	0.00040	0.01647	-0.09776	0.14062	0.39358	0.6942
C8	260	-0.00036	0.01968	-0.15190	0.15255	-0.29453	0.7686
C	196	-0.00050	0.01428	-0.06774	0.06897	-0.48630	0.6273
C9	206	-0.00093	0.01443	-0.08013	0.05417	-0.92184	0.3577
C10	206	-0.00180	0.01110	-0.07762	0.02957	-2.30385	0.0222
C11	250	0.00299	0.01802	-0.02617	0.20043	2.62001	0.0093
C12	257	-0.00039	0.01700	-0.11014	0.18228	-0.37119	0.7108
C13	259	-0.00002	0.01003	-0.05080	0.05484	-0.02856	0.9772
C14	260	0.00012	0.01098	-0.04464	0.06526	0.17937	0.8578
C15	260	-0.00231	0.02118	-0.27873	0.07143	-1.75726	0.0801
C16	260	-0.00008	0.01197	-0.07857	0.06103	-0.10257	0.9184
Bad News							
C2	175	0.00088	0.01776	-0.12097	0.10937	0.65560	0.5129
C3	207	-0.00232	0.02075	-0.21972	0.04932	-1.60503	0.1100
C4	215	0.00219	0.01919	-0.07023	0.15068	1.67096	0.0962
C5	220	-0.00098	0.01608	-0.09231	0.14661	-0.90283	0.3676
C6	220	-0.00110	0.01604	-0.10413	0.07421	-1.01597	0.3108
C7	221	-0.00038	0.02674	-0.30769	0.14178	-0.20907	0.8346
C8	221	-0.00028	0.02382	-0.06039	0.30769	-0.17399	0.8620
C	177	-0.00012	0.02337	-0.19909	0.11946	-0.06972	0.9445
C9	186	-0.00296	0.02699	-0.22299	0.10028	-1.49499	0.1366
C10	186	-0.00012	0.02764	-0.18028	0.29575	-0.05825	0.9536
C11	215	0.00175	0.02121	-0.09296	0.25189	1.20953	0.2278
C12	220	-0.00038	0.01550	-0.10437	0.14178	-0.35895	0.7200
C13	221	-0.00027	0.01748	-0.10534	0.13099	-0.22542	0.8219
C14	221	-0.00219	0.01469	-0.12097	0.03429	-2.21756	0.0276
C15	221	0.00055	0.01518	-0.07782	0.08597	0.54191	0.5884
C16	221	0.00029	0.02404	-0.21972	0.15107	0.18196	0.8558

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Table 42
Weekly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
E2	196	0.00019	0.00862	-0.03151	0.03443	0.30588	0.7600
E3	243	0.00012	0.01538	-0.05752	0.14924	0.12319	0.9021
E4	254	0.00007	0.01332	-0.08970	0.07268	0.08576	0.9317
E5	258	0.00078	0.01621	-0.05843	0.12376	0.77458	0.4393
E6	260	-0.00111	0.02644	-0.30484	0.11422	-0.67958	0.4974
E7	260	0.00079	0.01640	-0.09402	0.13671	0.77333	0.4400
E8	260	0.00048	0.01954	-0.14828	0.14817	0.39574	0.6926
E	196	-0.00032	0.01350	-0.06626	0.05455	-0.33236	0.7400
E9	206	0.00020	0.01414	-0.07816	0.05427	0.20445	0.8382
E10	206	-0.00143	0.01111	-0.07840	0.03043	-1.84643	0.0663
E11	250	0.00255	0.01784	-0.02122	0.19331	2.25762	0.0248
E12	257	-0.00063	0.01680	-0.11085	0.17861	-0.60343	0.5468
E13	259	0.00022	0.01025	-0.04870	0.05311	0.34612	0.7295
E14	260	0.00076	0.01085	-0.04388	0.06201	1.12573	0.2613
E15	260	-0.00140	0.02083	-0.27314	0.06945	-1.07723	0.2824
E16	260	0.00193	0.01875	-0.07564	0.11743	1.65823	0.0985
Bad News							
E2	175	0.00147	0.01742	-0.11778	0.10541	1.11932	0.2645
E3	207	-0.00227	0.02049	-0.21345	0.05400	-1.59155	0.1130
E4	215	0.00204	0.01895	-0.06638	0.14714	1.57953	0.1157
E5	220	-0.00101	0.01584	-0.08944	0.14293	-0.94390	0.3463
E6	220	-0.00072	0.01592	-0.10073	0.07299	-0.66655	0.5058
E7	221	0.00008	0.02636	-0.30013	0.14045	0.04659	0.9629
E8	221	0.00065	0.02333	-0.06117	0.29844	0.41359	0.6796
E	177	-0.00019	0.02280	-0.19349	0.11860	-0.10835	0.9138
E9	186	-0.00193	0.02634	-0.21545	0.08948	-0.99865	0.3193
E10	186	0.00007	0.02662	-0.16504	0.28598	0.03822	0.9696
E11	215	0.00184	0.02107	-0.09009	0.24785	1.28345	0.2007
E12	220	-0.00048	0.01527	-0.10283	0.13853	-0.46453	0.6427
E13	221	-0.00030	0.01705	-0.10014	0.12676	-0.26153	0.7939
E14	221	-0.00156	0.01454	-0.11778	0.03443	-1.59171	0.1129
E15	221	0.00089	0.01515	-0.07384	0.08916	0.87691	0.3815
E16	221	0.00039	0.02366	-0.21345	0.14924	0.24618	0.8058

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Table 43
Weekly Revisions in Earnings/Price Ratios for the Good News & Large/Small Surprise Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
C2	106	-0.00046	0.01005	-0.03125	0.03664	-0.46806	0.6407
C3	126	-0.00089	0.01765	-0.05779	0.15107	-0.56325	0.5743
C4	129	0.00089	0.01198	-0.02223	0.06221	0.84612	0.3991
C5	131	0.00111	0.01608	-0.06012	0.12670	0.78992	0.4310
C6	132	-0.00332	0.03402	-0.31674	0.09786	-1.12042	0.2646
C7	132	0.00142	0.01700	-0.04857	0.14062	0.95662	0.3405
C8	132	-0.00157	0.02448	-0.15190	0.15255	-0.73626	0.4629
C	96	-0.00022	0.01596	-0.06774	0.06897	-0.13245	0.8949
C9	104	-0.00163	0.01539	-0.08013	0.05417	-1.08252	0.2816
C10	104	-0.00243	0.01261	-0.07762	0.02966	-1.96812	0.0517
C11	126	0.00440	0.02293	-0.01717	0.20043	2.15649	0.0330
C12	130	0.00168	0.01909	-0.05779	0.18228	1.00261	0.3179
C13	132	-0.00128	0.01070	-0.05080	0.03308	-1.37577	0.1712
C14	132	-0.00043	0.01098	-0.04464	0.04545	-0.45308	0.6512
C15	132	-0.00267	0.02706	-0.27873	0.07143	-1.13524	0.2583
C16	132	-0.00096	0.01331	-0.07857	0.06071	-0.83275	0.4065
Good News/Large Surprise							
C2	90	-0.00013	0.00586	-0.01720	0.01509	-0.21813	0.8278
C3	117	0.00125	0.01291	-0.05645	0.08597	1.04804	0.2968
C4	125	-0.00022	0.01482	-0.08952	0.07615	-0.16744	0.8673
C5	127	0.00014	0.01647	-0.06212	0.09450	0.09677	0.9231
C6	128	-0.00025	0.01744	-0.10215	0.11831	-0.15928	0.8737
C7	128	-0.00064	0.01589	-0.09776	0.07097	-0.45830	0.6475
C8	128	0.00089	0.01300	-0.04838	0.07512	0.77208	0.4415
C	100	-0.00077	0.01253	-0.04258	0.05373	-0.61037	0.5430
C9	102	-0.00021	0.01342	-0.05780	0.04508	-0.15501	0.8771
C10	102	-0.00112	0.00932	-0.05634	0.01488	-1.20926	0.2294
C11	124	0.00154	0.01091	-0.02617	0.09606	1.57662	0.1175
C12	127	-0.00252	0.01432	-0.11014	0.01938	-1.98004	0.0499
C13	127	0.00129	0.00916	-0.02782	0.05484	1.59374	0.1135
C14	128	0.00069	0.01099	-0.04384	0.06526	0.71478	0.4761
C15	128	-0.00193	0.01261	-0.07793	0.05229	-1.73245	0.0856
C16	128	0.00084	0.01038	-0.05779	0.06103	0.91594	0.3614

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Table 44
Weekly Revisions in Earnings/Price Ratios for the Bad News & Large/Small Surprise Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Bad News/Small Surprise							
C2	93	0.00222	0.00968	-0.01568	0.04743	2.21311	0.0294
C3	111	-0.00240	0.01287	-0.06122	0.03027	-1.96149	0.0523
C4	117	0.00227	0.01611	-0.04422	0.15068	1.52202	0.1307
C5	121	-0.00218	0.01271	-0.09231	0.03362	-1.88260	0.0622
C6	121	-0.00110	0.01338	-0.05959	0.07421	-0.90374	0.3679
C7	121	-0.00237	0.02942	-0.30769	0.02667	-0.88652	0.3771
C8	121	0.00243	0.02964	-0.02675	0.30769	0.90115	0.3693
C	95	-0.00252	0.02497	-0.19909	0.05000	-0.98278	0.3282
C9	100	-0.00307	0.02458	-0.19457	0.06798	-1.24872	0.2147
C10	100	-0.00118	0.01152	-0.04676	0.07089	-1.02318	0.3087
C11	119	0.00226	0.02434	-0.04582	0.25189	1.01312	0.3131
C12	121	-0.00146	0.01246	-0.10437	0.02370	-1.28625	0.2008
C13	121	-0.00130	0.01102	-0.08145	0.02996	-1.29662	0.1973
C14	121	-0.00129	0.01280	-0.08869	0.03056	-1.10516	0.2713
C15	121	-0.00036	0.01055	-0.04563	0.04550	-0.37490	0.7084
C16	121	0.00079	0.01596	-0.05068	0.15107	0.54625	0.5859
Bad News/Large Surprise							
C2	82	-0.00064	0.02381	-0.12097	0.10937	-0.24374	0.8080
C3	96	-0.00222	0.02724	-0.21972	0.04932	-0.79902	0.4263
C4	98	0.00209	0.02241	-0.07023	0.13371	0.92418	0.3577
C5	99	0.00048	0.01940	-0.03982	0.14661	0.24815	0.8045
C6	99	-0.00110	0.01887	-0.10413	0.07389	-0.57926	0.5637
C7	100	0.00204	0.02299	-0.05913	0.14178	0.88629	0.3776
C8	100	-0.00355	0.01325	-0.06039	0.04762	-2.68240	0.0086
C	82	0.00265	0.02117	-0.05042	0.11946	1.13481	0.2598
C9	86	-0.00283	0.02970	-0.22299	0.10028	-0.88376	0.3793
C10	86	0.00112	0.03881	-0.18028	0.29575	0.26647	0.7905
C11	96	0.00112	0.01663	-0.09296	0.08826	0.65742	0.5125
C12	99	0.00095	0.01853	-0.04681	0.14178	0.50863	0.6122
C13	100	0.00099	0.02300	-0.10534	0.13099	0.42848	0.6692
C14	100	-0.00329	0.01670	-0.12097	0.03429	-1.96845	0.0518
C15	100	0.00166	0.01937	-0.07782	0.08597	0.85618	0.3940
C16	100	-0.00031	0.03122	-0.21972	0.15068	-0.09897	0.9214

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Table 45
Weekly Revisions in Earnings/Price Ratios for the Good News & Large/Small Surprise Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
E2	106	0.00006	0.01012	-0.03151	0.03443	0.06141	0.9511
E3	126	-0.00096	0.01746	-0.05752	0.14924	-0.61605	0.5390
E4	129	0.00045	0.01174	-0.01910	0.06099	0.43335	0.6655
E5	131	0.00124	0.01589	-0.05730	0.12376	0.89455	0.3727
E6	132	-0.00187	0.03304	-0.30484	0.09747	-0.64980	0.5170
E7	132	0.00147	0.01681	-0.04733	0.13671	1.00725	0.3157
E8	132	-0.00076	0.02438	-0.14828	0.14817	-0.35733	0.7214
E	96	0.00014	0.01475	-0.06626	0.05455	0.09405	0.9253
E9	104	-0.00045	0.01542	-0.07816	0.05427	-0.29780	0.7663
E10	104	-0.00231	0.01273	-0.07840	0.03043	-1.85115	0.0670
E11	126	0.00373	0.02256	-0.01622	0.19331	1.85441	0.0660
E12	130	0.00142	0.01872	-0.05478	0.17861	0.86653	0.3878
E13	132	-0.00068	0.01087	-0.04870	0.03518	-0.71884	0.4735
E14	132	0.00017	0.01096	-0.04388	0.04642	0.17500	0.8613
E15	132	-0.00173	0.02656	-0.27314	0.06944	-0.74890	0.4553
E16	132	-0.00074	0.01326	-0.07564	0.06099	-0.64437	0.5205
Good News/Large Surprise							
E2	90	0.00034	0.00646	-0.01638	0.01719	0.49790	0.6198
E3	117	0.00128	0.01272	-0.04860	0.08916	1.09223	0.2770
E4	125	-0.00032	0.01481	-0.08970	0.07268	-0.23911	0.8114
E5	127	0.00031	0.01657	-0.05843	0.09149	0.20840	0.8353
E6	128	-0.00034	0.01727	-0.09746	0.11422	-0.22029	0.8260
E7	128	0.00008	0.01601	-0.09402	0.06968	0.05531	0.9560
E8	128	0.00176	0.01273	-0.04923	0.07108	1.56042	0.1211
E	100	-0.00076	0.01223	-0.04480	0.03932	-0.62473	0.5336
E9	102	0.00087	0.01276	-0.05431	0.03679	0.68576	0.4944
E10	102	-0.00053	0.00913	-0.05139	0.01710	-0.58512	0.5598
E11	124	0.00135	0.01112	-0.02122	0.09419	1.34836	0.1800
E12	127	-0.00274	0.01435	-0.11085	0.02389	-2.14771	0.0337
E13	127	0.00116	0.00950	-0.02699	0.05311	1.37145	0.1727
E14	128	0.00137	0.01075	-0.03933	0.06201	1.43876	0.1527
E15	128	-0.00104	0.01254	-0.07416	0.05067	-0.94003	0.3490
E16	128	0.00468	0.02282	-0.05752	0.11743	2.32225	0.0218

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Table 46
Weekly Revisions in Earnings/Price Ratios for the Bad News & Large/Small Surprise Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Bad News/Small Surprise							
E2	93	0.00294	0.00929	-0.01865	0.04749	3.04815	0.0030
E3	111	-0.00209	0.01324	-0.06140	0.03188	-1.66272	0.0992
E4	117	0.00163	0.01613	-0.04638	0.14714	1.09615	0.2753
E5	121	-0.00217	0.01251	-0.08944	0.03014	-1.90718	0.0589
E6	121	-0.00086	0.01339	-0.05589	0.07205	-0.70914	0.4796
E7	121	-0.00156	0.02890	-0.30013	0.02547	-0.59196	0.5550
E8	121	0.00281	0.02890	-0.02239	0.29844	1.06852	0.2874
E	95	-0.00233	0.02440	-0.19349	0.03559	-0.93209	0.3537
E9	100	-0.00166	0.02424	-0.19003	0.06774	-0.68454	0.4952
E10	100	-0.00126	0.01187	-0.04579	0.07017	-1.06426	0.2898
E11	119	0.00225	0.02417	-0.04632	0.24785	1.01532	0.3120
E12	121	-0.00157	0.01238	-0.10283	0.02383	-1.39048	0.1670
E13	121	-0.00115	0.01108	-0.07916	0.02945	-1.14395	0.2549
E14	121	-0.00088	0.01286	-0.08520	0.02759	-0.75590	0.4512
E15	121	0.00035	0.01062	-0.04740	0.04869	0.36307	0.7172
E16	121	0.00076	0.01588	-0.04691	0.14924	0.52649	0.5995
Bad News/Large Surprise							
E2	82	-0.00018	0.02342	-0.11778	0.10541	-0.07105	0.9435
E3	96	-0.00247	0.02660	-0.21345	0.05400	-0.91052	0.3649
E4	98	0.00253	0.02193	-0.06638	0.12969	1.14105	0.2567
E5	99	0.00041	0.01910	-0.04098	0.14293	0.21488	0.8303
E6	99	-0.00054	0.01863	-0.10073	0.07299	-0.28583	0.7756
E7	100	0.00206	0.02291	-0.05943	0.14045	0.90095	0.3698
E8	100	-0.00196	0.01361	-0.06117	0.04672	-1.44160	0.1526
E	82	0.00230	0.02066	-0.04681	0.11860	1.00895	0.3160
E9	86	-0.00224	0.02874	-0.21545	0.08948	-0.72366	0.4713
E10	86	0.00163	0.03706	-0.16504	0.28598	0.40804	0.6843
E11	96	0.00134	0.01656	-0.09009	0.08705	0.79422	0.4290
E12	99	0.00085	0.01817	-0.04729	0.13853	0.46566	0.6425
E13	100	0.00073	0.02225	-0.10014	0.12676	0.32888	0.7429
E14	100	-0.00237	0.01638	-0.11778	0.03443	-1.44794	0.1508
E15	100	0.00155	0.01930	-0.07384	0.08916	0.80348	0.4236
E16	100	-0.00005	0.03062	-0.21345	0.14714	-0.01765	0.9860

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Table 47
Bi-Weekly Mean Earnings/Price Ratios for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
A1	481	0.10370	0.06338	-0.08869	0.56977	35.88405	0.0001
A2	481	0.10372	0.06865	-0.09323	0.58232	33.13522	0.0001
A3	481	0.10620	0.06702	-0.08789	0.61448	34.75103	0.0001
A4	481	0.10524	0.06707	-0.10127	0.53823	34.41115	0.0001
A	481	0.08308	0.06813	-0.08598	0.55747	26.74595	0.0001
A5	481	0.10354	0.06478	-0.12658	0.49911	35.05565	0.0001
A6	481	0.10679	0.07266	-0.11005	0.69955	32.23194	0.0001
A7	481	0.10170	0.07097	-0.10648	0.66968	31.42718	0.0001
A8	481	0.09759	0.07088	-0.15211	0.58546	30.19543	0.0001

Table 48
Bi-Weekly Market Average Earnings/Price Ratios for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
M1	481	0.11131	0.01815	0.07277	0.13743	134.53641	0.0001
M2	481	0.11114	0.01840	0.07277	0.13106	132.45065	0.0001
M3	481	0.11085	0.01848	0.07277	0.13106	131.53419	0.0001
M4	481	0.10968	0.01883	0.07211	0.12984	127.74914	0.0001
M	481	0.10903	0.01906	0.07204	0.13242	125.47141	0.0001
M5	481	0.10818	0.01942	0.07160	0.13169	122.16357	0.0001
M6	481	0.10832	0.02006	0.07026	0.13200	118.44262	0.0001
M7	481	0.10793	0.01984	0.06855	0.13200	119.34018	0.0001
M8	481	0.10576	0.02248	0.	0.13106	103.19689	0.0001

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Table 49
Bi-Weekly Revisions in Earnings/Price Ratios for the Entire Sample Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
C2	450	0.00000	0.01393	-0.07108	0.14793	0.00474	0.9962
C3	478	-0.00090	0.01406	-0.07070	0.14661	-1.40108	0.1618
C4	481	-0.00082	0.01597	-0.15190	0.14005	-1.13171	0.2583
C	373	0.00007	0.01371	-0.04809	0.08543	0.09716	0.9227
C5	465	-0.00222	0.01362	-0.10804	0.05634	-3.50927	0.0005
C6	465	0.00172	0.02010	-0.08380	0.21014	1.84986	0.0650
C7	480	-0.00100	0.01379	-0.16624	0.12606	-1.58172	0.1144
C8	481	-0.00118	0.01772	-0.27873	0.08455	-1.45828	0.1454

Table 50
Bi-Weekly Revisions in Earnings/Price Ratios for the Entire Sample Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
E2	450	0.00021	0.01387	-0.07091	0.14420	0.31553	0.7525
E3	478	-0.00060	0.01389	-0.07092	0.14229	-0.94886	0.3432
E4	481	0.00035	0.01581	-0.14553	0.13892	0.48405	0.6286
E	373	0.00049	0.01310	-0.04467	0.08525	0.71716	0.4737
E5	465	-0.00074	0.01353	-0.10447	0.05898	-1.18265	0.2376
E6	465	0.00157	0.01976	-0.08122	0.20596	1.71276	0.0874
E7	480	-0.00061	0.01365	-0.16170	0.12242	-0.97767	0.3287
E8	481	0.00100	0.02044	-0.26913	0.11567	1.07250	0.2840

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Table 51
Bi-Weekly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples
Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
C2	243	0.00028	0.01433	-0.05742	0.14793	0.30021	0.7643
C3	258	-0.00056	0.01189	-0.04674	0.07638	-0.76146	0.4471
C4	260	-0.00114	0.01476	-0.15190	0.06323	-1.24164	0.2155
C	196	0.00013	0.01285	-0.03560	0.06897	0.14391	0.8857
C5	250	-0.00186	0.01334	-0.10804	0.05634	-2.19939	0.0288
C6	250	0.00254	0.01934	-0.04221	0.20043	2.07687	0.0388
C7	259	-0.00047	0.00826	-0.04189	0.03015	-0.91173	0.3628
C8	260	-0.00243	0.01990	-0.27873	0.03864	-1.96646	0.0503
Bad News							
C2	207	-0.00032	0.01346	-0.07108	0.05242	-0.33897	0.7350
C3	220	-0.00130	0.01626	-0.07070	0.14661	-1.18281	0.2382
C4	221	-0.00046	0.01732	-0.11674	0.14005	-0.39194	0.6955
C	177	-0.00000	0.01463	-0.04809	0.08543	-0.00086	0.9993
C5	215	-0.00264	0.01396	-0.08959	0.04460	-2.76925	0.0061
C6	215	0.00078	0.02096	-0.08380	0.21014	0.54284	0.5878
C7	221	-0.00161	0.01825	-0.16624	0.12606	-1.31410	0.1902
C8	221	0.00029	0.01465	-0.08486	0.08455	0.29560	0.7678

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Table 52
Bi-Weekly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
E2	243	0.00040	0.01414	-0.05349	0.14420	0.43677	0.6627
E3	258	-0.00016	0.01193	-0.04760	0.07721	-0.20963	0.8341
E4	260	0.00006	0.01455	-0.14553	0.06332	0.06849	0.9454
E	196	0.00063	0.01222	-0.03687	0.05868	0.72302	0.4705
E5	250	-0.00033	0.01330	-0.10447	0.05898	-0.38798	0.6984
E6	250	0.00211	0.01902	-0.04012	0.19349	1.75371	0.0807
E7	259	0.00004	0.00858	-0.04197	0.02851	0.06821	0.9457
E8	260	0.00092	0.02434	-0.26913	0.11567	0.60665	0.5446
Bad News							
E2	207	-0.00002	0.01357	-0.07091	0.05259	-0.01763	0.9860
E3	220	-0.00113	0.01590	-0.07092	0.14229	-1.05153	0.2942
E4	221	0.00069	0.01719	-0.11430	0.13892	0.59367	0.5533
E	177	0.00033	0.01404	-0.04467	0.08525	0.30901	0.7577
E5	215	-0.00122	0.01380	-0.08477	0.04467	-1.30137	0.1945
E6	215	0.00094	0.02061	-0.08122	0.20596	0.66942	0.5040
E7	221	-0.00137	0.01784	-0.16170	0.12242	-1.13808	0.2563
E8	221	0.00110	0.01464	-0.08058	0.08400	1.11555	0.2658

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Table 53
Bi-Weekly Revisions in Earnings/Price Ratios for the Good News & Large/Small Surprise Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
C2	126	-0.00075	0.01770	-0.05742	0.14793	-0.47665	0.6344
C3	131	-0.00026	0.01296	-0.04674	0.07638	-0.23102	0.8177
C4	132	-0.00263	0.01756	-0.15190	0.06323	-1.72205	0.0874
C	96	0.00059	0.01275	-0.03560	0.06897	0.45699	0.6487
C5	126	-0.00313	0.01500	-0.10804	0.04062	-2.34385	0.0207
C6	126	0.00455	0.02573	-0.04221	0.20043	1.98377	0.0495
C7	132	-0.00095	0.00987	-0.04189	0.03015	-1.11150	0.2684
C8	132	-0.00383	0.02633	-0.27873	0.03742	-1.67149	0.0970
Good News/Large Surprise							
C2	117	0.00138	0.00940	-0.02411	0.04938	1.59070	0.1144
C3	127	-0.00088	0.01071	-0.03982	0.04369	-0.92038	0.3591
C4	128	0.00040	0.01104	-0.07541	0.05723	0.41485	0.6790
C	100	-0.00031	0.01299	-0.03398	0.05771	-0.24019	0.8107
C5	124	-0.00056	0.01133	-0.04088	0.05634	-0.54988	0.5834
C6	124	0.00050	0.00872	-0.04093	0.03117	0.63980	0.5235
C7	127	0.00004	0.00617	-0.02840	0.01895	0.06832	0.9456
C8	128	-0.00098	0.00942	-0.04147	0.03864	-1.17771	0.2411

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Table 54
Bi-Weekly Revisions in Earnings/Price Ratios for the Bad News & Large/Small Surprise Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Bad News/Small Surprise							
C2	111	-0.00063	0.01174	-0.07108	0.02981	-0.56433	0.5737
C3	121	-0.00163	0.01042	-0.04199	0.04525	-1.72364	0.0873
C4	121	-0.00129	0.01322	-0.11674	0.03417	-1.07313	0.2854
C	95	-0.00093	0.01183	-0.04525	0.05071	-0.76274	0.4475
C5	119	-0.00179	0.01048	-0.04072	0.04460	-1.86738	0.0643
C6	119	0.00067	0.02111	-0.06676	0.21014	0.34618	0.7298
C7	121	-0.00272	0.01659	-0.16624	0.01692	-1.80052	0.0743
C8	121	0.00018	0.01215	-0.04563	0.08455	0.16583	0.8686
Bad News/Large Surprise							
C2	96	0.00004	0.01528	-0.06380	0.05242	0.02749	0.9781
C3	99	-0.00089	0.02139	-0.07070	0.14661	-0.41236	0.6810
C4	100	0.00055	0.02127	-0.08181	0.14005	0.25945	0.7958
C	82	0.00107	0.01734	-0.04809	0.08543	0.55897	0.5777
C5	96	-0.00368	0.01734	-0.08959	0.04252	-2.08027	0.0402
C6	96	0.00091	0.02090	-0.08380	0.16891	0.42571	0.6713
C7	100	-0.00028	0.02009	-0.07702	0.12606	-0.13946	0.8894
C8	100	0.00042	0.01727	-0.08486	0.05452	0.24455	0.8073

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Table 55
Bi-Weekly Revisions in Earnings/Price Ratios for the Good News & Large/Small Surprise Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
E2	126	-0.00069	0.01737	-0.05349	0.14420	-0.44752	0.6553
E3	131	0.00040	0.01283	-0.04760	0.07721	0.35640	0.7221
E4	132	-0.00142	0.01707	-0.14553	0.06332	-0.95670	0.3405
E	96	0.00122	0.01175	-0.03259	0.05540	1.01372	0.3133
E5	126	-0.00162	0.01490	-0.10447	0.04207	-1.21770	0.2256
E6	126	0.00377	0.02512	-0.03799	0.19349	1.68324	0.0948
E7	132	-0.00021	0.01014	-0.04197	0.02851	-0.24029	0.8105
E8	132	-0.00236	0.02571	-0.26913	0.03541	-1.05323	0.2942
Good News/Large Surprise							
E2	117	0.00157	0.00943	-0.02142	0.05287	1.79935	0.0746
E3	127	-0.00073	0.01095	-0.04158	0.03916	-0.74973	0.4548
E4	128	0.00159	0.01126	-0.07141	0.05780	1.59849	0.1124
E	100	0.00007	0.01270	-0.03687	0.05868	0.05521	0.9561
E5	124	0.00099	0.01135	-0.03824	0.05898	0.96643	0.3357
E6	124	0.00043	0.00923	-0.04012	0.03083	0.51274	0.6091
E7	127	0.00029	0.00662	-0.02707	0.01787	0.50192	0.6166
E8	128	0.00429	0.02245	-0.04026	0.11567	2.16286	0.0324

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Table 56
Bi-Weekly Revisions in Earnings/Price Ratios for the Bad News & Large/Small Surprise Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Bad News/Small Surprise							
E2	111	-0.00029	0.01203	-0.07091	0.02853	-0.24965	0.8033
E3	121	-0.00173	0.01011	-0.04020	0.04452	-1.88025	0.0625
E4	121	-0.00011	0.01313	-0.11430	0.03471	-0.09255	0.9264
E	95	-0.00062	0.01141	-0.04467	0.03715	-0.52615	0.6000
E5	119	-0.00045	0.01072	-0.04026	0.04467	-0.45369	0.6509
E6	119	0.00061	0.02086	-0.06607	0.20596	0.31885	0.7504
E7	121	-0.00238	0.01649	-0.16170	0.01639	-1.58896	0.1147
E8	121	0.00117	0.01233	-0.04764	0.08400	1.03983	0.3005
Bad News/Large Surprise							
E2	96	0.00029	0.01521	-0.06102	0.05259	0.18926	0.8503
E3	99	-0.00039	0.02095	-0.07092	0.14229	-0.18639	0.8525
E4	100	0.00165	0.02112	-0.08099	0.13892	0.78169	0.4363
E	82	0.00142	0.01659	-0.04280	0.08525	0.77367	0.4414
E5	96	-0.00219	0.01687	-0.08477	0.03855	-1.27236	0.2064
E6	96	0.00135	0.02039	-0.08122	0.16355	0.64921	0.5178
E7	100	-0.00014	0.01937	-0.07505	0.12242	-0.07067	0.9438
E8	100	0.00102	0.01708	-0.08058	0.05287	0.59530	0.5530

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Table 57
Monthly Mean Earnings/Price Ratios
for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
A1	481	0.11057	0.06218	-0.09164	0.56931	38.99640	0.0001
A2	481	0.10959	0.06352	-0.08789	0.55611	37.83874	0.0001
A	481	0.08308	0.06813	-0.08598	0.55747	26.74595	0.0001
A3	481	0.10789	0.06637	-0.09632	0.60711	35.65087	0.0001
A4	481	0.10739	0.06663	-0.12169	0.56931	35.34787	0.0001

Table 58
Monthly Market Average Earnings/Price Ratios
for the Entire Sample

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
M1	481	0.11126	0.01829	0.07453	0.13141	133.41120	0.0001
M2	481	0.11009	0.01864	0.07289	0.12919	129.54917	0.0001
M	481	0.10903	0.01906	0.07204	0.13242	125.47141	0.0001
M3	481	0.10810	0.01964	0.07109	0.13033	120.69128	0.0001
M4	481	0.10633	0.02251	0.	0.12897	103.58512	0.0001

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Table 59
Monthly Revisions in Earnings/Price Ratios for the Entire Sample Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
C2	478	-0.00142	0.00985	-0.04446	0.08681	-3.15336	0.0017
C	373	-0.00042	0.01287	-0.10362	0.06958	-0.62789	0.5305
C3	480	-0.00183	0.01140	-0.08141	0.07987	-3.51829	0.0005
C4	480	-0.00073	0.01031	-0.06997	0.11314	-1.54188	0.1238

Table 60
Monthly Revisions in Earnings/Price Ratios for the Entire Sample Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
E2	478	-0.00024	0.00960	-0.04180	0.08332	-0.54340	0.5871
E	373	0.00049	0.01237	-0.10182	0.06305	0.76269	0.4461
E3	480	0.00016	0.01146	-0.07743	0.08163	0.30715	0.7589
E4	480	0.00105	0.01520	-0.06744	0.12676	1.51055	0.1316

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Table 61
Monthly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
C2	258	-0.00155	0.00877	-0.04446	0.04422	-2.83096	0.0050
C	196	-0.00020	0.01177	-0.04395	0.06958	-0.23451	0.8148
C3	259	-0.00092	0.01115	-0.07307	0.07987	-1.32281	0.1871
C4	259	-0.00033	0.00813	-0.04128	0.07207	-0.65282	0.5145
Bad News							
C2	220	-0.00127	0.01100	-0.03412	0.08681	-1.71768	0.0873
C	177	-0.00066	0.01402	-0.10362	0.06206	-0.62956	0.5298
C3	221	-0.00290	0.01161	-0.08141	0.05100	-3.71488	0.0003
C4	221	-0.00119	0.01239	-0.06997	0.11314	-1.42707	0.1550

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Table 62
Monthly Revisions in Earnings/Price Ratios for the Good News & Bad News Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News							
E2	258	-0.00025	0.00863	-0.04180	0.04474	-0.47311	0.6365
E	196	0.00078	0.01114	-0.03966	0.06305	0.98609	0.3253
E3	259	0.00096	0.01128	-0.06942	0.08163	1.37429	0.1705
E4	259	0.00241	0.01723	-0.04010	0.12676	2.24880	0.0254
Bad News							
E2	220	-0.00022	0.01065	-0.03070	0.08332	-0.30702	0.7591
E	177	0.00016	0.01363	-0.10182	0.06155	0.15665	0.8757
E3	221	-0.00078	0.01163	-0.07743	0.05008	-0.99738	0.3197
E4	221	-0.00055	0.01225	-0.06744	0.11312	-0.66212	0.5086

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Table 63
Monthly Revisions in Earnings/Price Ratios for the Good/Bad News & Large/Small Surprise Samples Unadjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
C2	131	-0.00265	0.00955	-0.04446	0.04422	-3.17109	0.0019
C	96	-0.00038	0.01184	-0.04395	0.06958	-0.31652	0.7523
C3	132	-0.00202	0.01172	-0.07307	0.05684	-1.97495	0.0504
C4	132	-0.00052	0.01003	-0.04128	0.07207	-0.59498	0.5529
Good News/Large Surprise							
C2	127	-0.00041	0.00777	-0.02183	0.03720	-0.59829	0.5507
C	100	-0.00002	0.01175	-0.02737	0.06117	-0.01633	0.9870
C3	127	0.00022	0.01045	-0.03136	0.07987	0.24219	0.8090
C4	127	-0.00013	0.00552	-0.02964	0.01378	-0.26985	0.7877
Bad News/Small Surprise							
C2	121	-0.00232	0.00770	-0.03412	0.01330	-3.31709	0.0012
C	95	-0.00187	0.01457	-0.10362	0.04793	-1.24855	0.2149
C3	121	-0.00187	0.01077	-0.05282	0.05100	-1.90877	0.0587
C4	121	-0.00284	0.00946	-0.06997	0.01623	-3.29897	0.0013
Bad News/Large Surprise							
C2	99	0.00000	0.01396	-0.02723	0.08681	0.00408	0.9968
C	82	0.00073	0.01331	-0.03662	0.06206	0.49730	0.6203
C3	100	-0.00415	0.01248	-0.08141	0.03365	-3.32286	0.0012
C4	100	0.00081	0.01500	-0.03787	0.11314	0.53771	0.5920

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Table 64
Monthly Revisions in Earnings/Price Ratios for the Good/Bad News & Large/Small Surprise Samples Adjusted for Market-Wide Revisions

Variable	N	Mean	Std Dev	Minimum	Maximum	T	Prob>|T|
Good News/Small Surprise							
E2	131	-0.00113	0.00927	-0.04180	0.04474	-1.40020	0.1638
E	96	0.00068	0.01090	-0.03966	0.05865	0.60963	0.5436
E3	132	-0.00032	0.01182	-0.06942	0.05890	-0.31584	0.7526
E4	132	0.00030	0.00998	-0.04010	0.06939	0.34825	0.7282
Good News/Large Surprise							
E2	127	0.00065	0.00784	-0.02116	0.03967	0.93886	0.3496
E	100	0.00089	0.01143	-0.02925	0.06305	0.77654	0.4393
E3	127	0.00230	0.01057	-0.02960	0.08163	2.45442	0.0155
E4	127	0.00459	0.02224	-0.02944	0.12676	2.32823	0.0215
Bad News/Small Surprise							
E2	121	-0.00147	0.00747	-0.03070	0.01454	-2.16016	0.0327
E	95	-0.00112	0.01432	-0.10182	0.03700	-0.76192	0.4480
E3	121	0.00004	0.01063	-0.05035	0.05008	0.04197	0.9666
E4	121	-0.00212	0.00957	-0.06744	0.01546	-2.43428	0.0164
Bad News/Large Surprise							
E2	99	0.00130	0.01344	-0.02589	0.08332	0.96522	0.3368
E	82	0.00164	0.01270	-0.03025	0.06155	1.17129	0.2449
E3	100	-0.00177	0.01271	-0.07743	0.03749	-1.39532	0.1660
E4	100	0.00136	0.01469	-0.03552	0.11312	0.92403	0.3577