

A TEMPORAL ANALYSIS OF EARNINGS SURPRISES: PROFITS VERSUS LOSSES

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Abstract

I show that the median earnings surprise has shifted rightward from small negative (miss analyst estimates by a small amount) to zero (meet analyst estimates exactly) to small positive (beat analyst estimates by a small amount) during the 16 years, 1984 to 1999. I show that a rightward temporal shift in median surprise from negative to positive describes earnings, but neither profits nor losses. Median profit surprise shifts within the positive quadrant, from zero to one cent per share. Median loss surprise shifts within the negative quadrant from extreme negative (about -33 cents per share) to zero. I show that the median surprise for profits exceeds that for losses in every year. I document significant positive temporal trends in both meet and beat analyst estimates for both profits and losses, but I find a greater frequency of profits that either meet or beat analyst estimates in every year. I find a significant positive temporal trend in positive profits that are ‘a little bit of good news,’ and a significant negative temporal trend in managers who report losses that are an ‘extreme amount of bad news.’ My results are robust to the four internal validity threats I consider—namely temporal changes in: (1) analyst forecast accuracy, (2) the mix of earnings of one sign preceded by earnings of another sign four quarters ago, (3) the timeliness of the most recent analyst forecast, and (4) the I/B/E/S definition of actual earnings. I find that managers of growth firms are relatively more likely than managers of value firms to report good news profits. I show that when they do report positive profit surprises, managers of growth firms are more likely to report ‘a little bit of good news’ in every year.

A TEMPORAL ANALYSIS OF EARNINGS SURPRISES: PROFITS VERSUS LOSSES

1. Introduction

I provide temporal evidence of the distribution of earnings surprises partitioned into profits and losses.¹ For earnings, profits and losses, I conduct temporal analyses of the median surprise. For profits and losses, I conduct temporal analyses of the frequency of zero surprise (meet estimates) and positive surprise (beat estimates). For profits, I conduct a temporal analysis of the frequency of small positive profit surprise conditional on positive profit surprise. For losses, I conduct a temporal analysis of the frequency of extreme negative loss surprise conditional on negative loss surprise. I examine if temporal rightward shifts in the distributions of profit and loss surprises are robust to four internal validity threats—namely temporal changes in: (1) analyst forecast accuracy, (2) the mix of earnings of one sign preceded by earnings of another sign four quarters ago, (3) the timeliness of the most recent analyst forecast, and (4) the I/B/E/S definition of actual earnings. Finally, I conduct temporal analyses of profit surprises for growth versus value firms.

I find that the median earnings surprise generally is slightly negative early in my sample period (1984-90), zero in the middle (1991-93), and slightly positive in the end (1994-99). Thus, I document a temporal shift in reported earnings from: (1) fail to meet analyst estimates, to (2) meet analyst estimates exactly, to (3) beat analyst estimates. I show that the temporal shift from small negative to small positive surprise describes neither profits nor losses. For profits, median surprise shifts temporally from zero to one cent per share, indicating a shift from just meeting analyst estimates to beating them slightly. For losses, median surprise shifts temporally from nearly -33 cents per share to zero, revealing a shift from failing to meet analyst estimates by a large amount

to meeting them exactly. I document that the significant rightward temporal shift in the profit and loss surprise distributions is robust to the four validity threats I consider. I show that managers of growth firms are relatively more likely than managers of value firms to report profits that meet or beat analyst estimates, and, when they do, they are more likely to report profits that create small positive surprises.

Burgstahler and Dichev [1997] find that managers seek to avoid reporting losses and earnings decreases. Degeorge, Patel and Zeckhauser [1999] go a step further, showing that managers try to prevent reporting earnings that miss analyst estimates. Both studies find that avoiding losses is more prevalent than avoiding earnings decreases, and Degeorge et al. find that meeting or beating analyst estimates is less prevalent than avoiding losses or earnings decreases. Burgstahler and Eames [1998] confirm Degeorge et al.'s results that managers tend to report earnings that meet or beat analyst estimates. Unlike Degeorge et al., neither Burgstahler and Dichev [1997] nor Burgstahler and Eames [1998] dichotomize their sample into profits and losses. Moreover, none of these three studies conducts a temporal analysis. The increased attention by the Securities and Exchange Commission Levitt [1998], investors Fox [1997]; Vickers [1999]; McGough [2000]), and academics regarding 'managing earnings surprises' (Burgstahler and Eames [1998]; Degeorge, Patel and Zeckhauser [1999]) makes provision of temporal evidence regarding earnings surprises important to financial statement users. The finding that the distributions of profit and loss surprises differ fundamentally (Degeorge, Patel and Zeckhauser [1999]) makes it important to dichotomize earnings into profits and losses.²

2. Predictions

Brown [1997] documents significant rightward temporal shifts in mean earnings surprises between 1984 and 1996. Consistent with the view of practitioners that managers seek to report earnings that beat analyst estimates (Levitt [1998]; Vickers [1999]; Turner [2000]), I/B/E/S

[2000] documents positive earnings surprises for S&P 500 firms in every quarter beginning in 1993.³ The extant literature (Downen [1996]; Hwang, Jan and Basu [1996]; Degeorge, Patel and Zeckhauser [1999]) finds that positive surprises are more prevalent when firms report profits, suggesting that managers are more likely to meet or beat analyst estimates when they report profits. To test whether managers who report profits are more likely to meet (beat) estimates than those who report losses, I compare the percent of zero (positive) surprises for profits versus losses for each year of my study. If managers who report profits are more likely to meet or beat analyst estimates than those who report losses are, I should observe this phenomenon in most years of my study.⁴

Given the heightened concern of managers with litigation (Skinner [1994]; Kasznik and Lev [1995]; Vickers [1999]), the substantial temporal growth in ‘momentum investors’ who sell stocks of firms whose reported earnings fall below analyst estimates (Fox [1997]; Byrnes, Melcher and Sparks [1998]; McGough [2000]), and the large temporal increases in stock and option ownership (Reingold and Glover [1999]; *The Economist* [1999]), I expect managers have increased their propensity to report both profits and losses that either meet or beat analyst estimates. To test whether managers have increased their propensity to meet (beat) analyst estimates, I regress the percent of zero (positive) surprises in a given fiscal year on the fiscal year, and test whether the time trend coefficient is positive and significant for both profits and losses. If the time trend coefficient for the zero (positive) surprise regressions is positive and significant, I infer the existence of a significant temporal increase in the tendency of managers to report profits and losses that meet (beat) analyst estimates.

In addition to examining temporal trends in zero and positive surprises for profits and losses, I conduct three other principal temporal analyses. First, I run separate regressions of median surprise on the fiscal year representing the firm’s fiscal quarter for earnings, profits and

losses. Second, for profit observations, I regress the median frequency of small positive surprise conditional on positive surprise occurring in the fiscal year representing the firm's fiscal quarter on the fiscal year. Third, for loss observations, I regress the median frequency of extreme negative surprise conditional on negative surprise occurring in the fiscal year representing the firm's fiscal quarter on the fiscal year. I expect the slope coefficient (temporal trend term) in the first set of regressions to be positive, revealing a rightward temporal shift in the median surprise for earnings, profits and losses. I expect the slope coefficient in the second regression to be positive, indicating a temporal increase in 'a little bit of good profits news.' I expect the slope coefficient in the third regression to be negative, suggesting a temporal decrease in 'extreme negative loss news.'

I examine the robustness of the rightward temporal shift in the distribution of profit and loss surprises to four internal validity threats. First, Brown [1997] documents a significant temporal increase in forecast accuracy. Since earnings surprise squared equals earnings forecast accuracy squared when the same expectation proxy is used to measure earnings surprise and forecast accuracy, earnings surprise and accuracy are likely to be correlated. Thus, I examine if my results are due to temporal changes in forecast accuracy. Second, if analysts under-react (over-react) to prior losses (profits), surprises are more likely to be positive when losses precede losses than when profits precede losses, and they are more likely to be negative when losses precede profits than when profits precede profits (Easterwood and Nutt [1999]). I examine if temporal changes in the mix of cases where earnings of one sign are preceded by earnings of another sign may provide an alternative explanation for my findings. Third, increased attention paid to analyst forecasts, methodological improvements of delivering forecasts (e.g., the Internet), and increased competition among forecast data providers suggest my expectation proxy has become timelier in recent years. Since timelier forecasts are relatively more accurate (O'Brien [1988]; Brown [1991]; Stickel [1993]), I test whether my results are due to increased forecast

timeliness. Fourth, Abarbanell and Lehavy [2000] argue that temporal changes in analyst forecast errors are partly attributable to changing definitions and procedures that determine the reported earnings component of earnings surprises, especially when firms report extreme negative, non-recurring items. A better matching of forecasts with actual earnings should increase the frequency of ‘perfect forecasts’ and small surprises, and decrease the frequency of extreme surprises (Abarbanell and Lehavy [2000]). To assess the seriousness of this validity threat, I re-examine my principal results for a portion of my data where Abarbanell and Lehavy contend this validity threat is of least concern—when the I/B/E/S actual equals the Compustat primary earnings per share before extraordinary items number (Compustat item Q19).

Growth firms are relatively more likely than value firms to experience adverse valuation consequences when managers report earnings that miss analyst estimates (Dreman and Berry [1995]; Fox [1997]; Skinner and Sloan [1998]), and growth firm managers have relatively more compensation in stock and options (McDonald and McGough [1999]; *The Economist* [1999]).⁵ Thus, I expect managers of growth firms to be more likely than managers of value firms to meet or beat analyst estimates. To test this, I form five market value of common equity to book ratio quintiles each year, using data at the end of the previous fiscal year to measure the factors, and I define the quintile with the smallest (largest) ratio as value (growth) firms. I replicate my principal analyses for the reported profits of value and growth firms. I exclude 1999 since the Compustat data I access are available through 1998.

3. Data and Variable Definitions for My Principal Analyses

My primary data source is the I/B/E/S International Inc. U.S. detail file, where I obtain 176,519 quarterly observations of actual earnings and analyst forecasts spanning the 16 years, 1984-99. My secondary data source is Compustat, which I access only when necessary.⁶ The only constraints I impose for my principal analyses are that the I/B/E/S file contains the quarterly

earnings report date, and that at least one earnings forecast be made before that date so I can obtain the single most timely estimate prior to the quarterly earnings announcement. I use the single most timely forecast as my expectation proxy rather than the consensus because:

- (1) It is relatively more accurate than the consensus (O'Brien [1988]; Brown [1991]);
- (2) Earnings surprises based on it, rather than the consensus, are more highly associated with stock prices (Brown and Kim [1991]);
- (3) It better represents the definition of earnings surprise used by researchers who desire a timely expectation when earnings are announced, and;
- (4) The increasingly competitive nature of the earnings forecasting business has made the consensus estimate a more timely measure of analyst estimates over time, posing a potential validity threat to my results (e.g., First Call Corporation began providing earnings estimates in the early 1990's).

I define earnings surprise as actual reported quarterly earnings minus the analyst forecast closest to, but before, the quarter's earnings announcement.⁷ I use the single most recent I/B/E/S analyst forecast for a given firm prior to the earnings announcement, not the forecast by a particular analyst.

I define the median earnings surprise as the median of the distribution of all quarterly earnings surprises in the given fiscal year. I define the percent of zero earnings surprises as the number of exact quarterly analyst forecasts divided by the number of firms whose quarterly earnings are forecast by analysts in the fiscal year. I define the percent of positive surprises as the number of quarterly analyst forecasts that fall short of the I/B/E/S actual quarterly earnings number divided by the number of firms whose quarterly earnings are forecast by analysts in the fiscal year. I define the percent of small positive profit surprises conditional on positive profit surprises as the number of positive quarterly profit surprises in a given fiscal year that are less

than or equal to three cents divided by the number of positive profit surprises in the fiscal year. I define the percent of extreme loss surprises in a given fiscal year as the number of negative quarterly loss surprises in a given fiscal year of at least 25 cents in magnitude divided by the number of negative loss surprises in the fiscal year.

To perform the analyses where I/B/E/S actual EPS equals Compustat's EPS, I obtain EPS before extraordinary items and discontinued operations (Compustat item Q19). I require that the earnings announcement date on the Compustat file be the same as the report date on the I/B/E/S file. (The I/B/E/S file refers to the earnings announcement date as the report date.) For the analyses of growth versus value firms, I obtain the market value of the common equity to book ratio from Compustat (item mnemonic MKBK) as of the end of the previous fiscal year.

4. Results

4.1 Distribution of Losses and Profits Surprises

Figure 1, panel A shows the cumulative percent frequency distributions of earnings surprises for losses and profits, where the data are pooled temporally and cross-sectionally. The distributions differ dramatically. Earnings surprise for losses is generally negative (65.8% of the sample), indicating that managers reporting losses usually miss analyst estimates. Earnings surprise for profits is generally positive (53.0% of the sample), indicating that managers reporting profits usually beat analyst estimates. Earnings surprise is more than 13 times as likely to be extreme bad news (i.e., a negative surprise of magnitude 25 cents per share or more) when managers report losses versus profits (i.e., 21.5% versus 1.6%), suggesting that extreme bad news earnings reports usually pertain to reported losses, not profits. The cumulative percent frequency distribution of profits does not cross that of losses, indicating stochastic dominance. A Kolmogorov-Smirnov test rejects the null hypothesis of equality of the cumulative frequency distributions ($D= 0.382$, significance level less than one percent).

Figure 1, panel B shows the percent frequency distributions of surprises for losses and profits. I present the distributions at the zero point plus the 50 integers, ranging from -25 to +25 cents per share. The zero point represents exact predictions (meet estimates exactly). The other points represent surprises in one-cent per share increments. A one-cent per share positive surprise is good news not to exceed one cent per share; a one-cent negative surprise is bad news not to exceed one cent per share in absolute magnitude. The 25 integers to the right of zero represent good news; those to the left represent bad news. The modal surprise when managers report losses is -25 cents per share (extreme bad news, frequency = 21.5%); the modal surprise when managers report profits is +1 cent per share (a little bit of good news, frequency = 19.5%). The frequency of +1 cent per share surprise for profits is nearly three and one-half times that of losses (19.5% versus 5.6%), revealing that earnings reports containing a ‘little bit of good news’ generally represent reported profits, not losses.

To determine if positive and negative surprises are equally likely, I compare the frequencies of integers of the same magnitude but different sign. All 25 comparisons favor the negative surprises for losses and 24 of them favor the positive surprises for profits. While the probability of falsely rejecting the null hypothesis of equal probability of good and bad news surprise is less than one percent for both groups, the sign of surprise is opposite for the two groups: managers reporting losses generally report bad news; managers reporting profits generally report good news.

4.2 Temporal Changes in Surprises

Table 1 presents temporal evidence regarding surprises for earnings, profits and losses. Figure 2 presents the evidence for profits and losses in pictorial form. Table 1 reveals a significant temporal shift in median earnings surprise from small negative (1984-90, excepting 1988), to zero (1991-93), to small positive (1994-99, excepting 1995). However, this shift from the

negative to the positive quadrant represents neither profits nor losses. For profits, median surprise shifts from meet estimates (zero cent per share surprise) in seven of the first eight years of the sample (1984-91, excepting 1985) to beat estimates in all eight years in the second half of the sample (1992-99). In each of the last four years (1996-99), median surprise is exactly one cent per share, highlighting the nature of the ‘profit surprise game’ in recent years. For losses, median surprise shifts from -32.93 cents per share in 1984 (miss analyst estimates by a lot) to zero cents in 1999 (meet analyst estimates exactly). Table 1 and figure 2A document a significant positive temporal trend for both profits and losses, showing that median surprise increases yearly by 0.08 and 1.89 cents per share per year for profits and losses.⁸ They also show that the median surprise for profits exceeds that for losses in every year.

As expected, figure 2, panel B shows that managers reporting profits are more likely to meet analyst estimates, and this finding pertains to every year (p-value = 0.001). For example, the frequency of perfect forecasts for profits (losses) is 4.37% (0%) in 1984 and 19.21% (9.86%) in 1999. As expected, regressing the percent frequency of zero surprise in a fiscal year on the fiscal year shows that the tendency to meet estimates has changed significantly over time for both profits and losses (adjusted R-square = 96% for both). The slope coefficients indicate positive increases of 1.13% and 0.69% per year in the frequency of meet estimates for profits and losses. The temporal increase in exact forecasts for profits is greater than that for losses and the frequency of exact forecasts is greater for profits than for losses in every year. However, the frequency of reported losses meeting estimates in 1998-99 is more than twice that for reported profits meeting estimates in 1984-85, highlighting the large temporal increase in the tendency of managers to meet analyst estimates exactly.

As expected, figure 2, panel C shows that managers who report profits are more likely than managers who report losses to beat analyst estimates, and this finding pertains to every year

(p-value = 0.001). For example, in the first (last) year of my sample period, the frequency of positive surprises for profits is 49.3% (60.6%) versus losses of 9.1% (43.6%). As expected, the regression of the percent frequency of positive surprise in a fiscal year on the fiscal year reveals that the tendency of managers to beat analyst estimates has changed significantly over for my sample period for both profits and losses (adjusted R-square = 65% and 96%). The slope coefficients indicate larger yearly increases in the frequency of reports that beat estimates for losses than for profits (2.16% versus 0.83%), due to my loss sample starting out from a much smaller base. Figure 1, panel A reveals that when all the loss data are pooled temporally and cross-sectionally, the frequency of positive surprises is only 34.21%, but figure 2, panels B and C combined reveal that in recent years, managers reporting losses are more likely to either meet or beat analyst estimates than to miss them. Figure 1, panel A shows that when all the profit data are pooled temporally and cross-sectionally, the frequency of positive surprises is 66.39%. Figure 2, panels B and C combined show that managers reporting profits are more likely to either meet or beat analyst estimates than to miss them in every year.

As expected, figure 2, panel D shows a significant positive time trend in the percent of small positive profit surprise conditional on positive profit surprise (slope = 1.02% per year, p-value = 0.001), revealing that managers reporting positive profit surprises have increased their propensity to create ‘a little bit of good news.’ This frequency has increased about 25 percent, from 44.9% in 1984 to 56.3% in 1999 (adjusted R-square = 80%). And as expected, there is a significant temporal decrease in the percent of extreme negative loss surprise conditional on negative loss surprise (slope = -2.86%, p-value = 0.001), indicating that managers reporting negative loss surprises have decreased their propensity to report ‘extreme bad news.’ This frequency has decreased about two-thirds, from 63% to 21.6% (adjusted R-square = 92%).

5. Alternative Explanations for My Principal Results

I examine four alternative explanations for my principal results: temporal changes in analyst forecast accuracy, frequency of earnings of one sign preceded by earnings of a different sign four quarters prior, timeliness of my estimates proxy, and definition of the I/B/E/S actual quarterly earnings number. Brown [1997] shows that analyst earnings forecast accuracy has increased significantly over time. Since accuracy squared equals surprise squared, temporal changes in accuracy and surprise are likely to be correlated. Increased forecast accuracy for losses and decreased forecast accuracy for profits could help explain the decrease in the absolute magnitude of earnings surprise for losses and the shift from zero to positive surprise for profits. To examine these issues, I regress the median unsigned surprise on the fiscal year, and determine if the slope coefficient for losses (profits) is negative (positive), indicating an increase (decrease) in analyst forecast accuracy over my time period. Figure 3 shows a significant temporal increase in accuracy for both losses and profits (slopes = -1.78 and -0.09 per year). The median unsigned surprise for losses has decreased more than 85 percent (from 35 to five cents per share), while that for profits has diminished by a third (from three to two cents per share). Improved accuracy may help explain why the median loss surprise has dropped from about -33 cents per share to zero, but it cannot explain why the median profit surprise has shifted from zero to one cent per share.

Easterwood and Nutt [1999] find that analysts under-react (over-react) to prior losses (profits), suggesting that surprises are less likely to be negative when losses are preceded by losses than by profits, and surprises are more likely to be positive when profits are preceded by losses than by profits. Panel A of table 2 bears this out for every year in my 16-year sample. The median surprise for all years combined when managers report losses preceded by losses versus profits four quarters ago is -10.13 and -16.16 cents per share. The median surprise for all years combined when managers do report profits preceded by profits versus losses four quarters

ago is 0.27 and 1.26 cents per share. Significant temporal increases in the percent frequency of losses preceded by losses and profits preceded by losses ($p = 0.001$ and $p < 0.05$) can help explain my table 1 results.

Panel B of table 2 shows significant temporal increases in the frequency of losses preceded by losses but decreases in the frequency of profits preceded by losses ($p = 0.001$). The increase in frequency of losses preceded by losses, but not the decrease in frequency of profits preceded by losses, may partially explain my table 1 findings. To ascertain whether this phenomenon can explain my table 1 findings for losses, I examine temporal changes in surprise for two loss sub-samples: those preceded by losses and those preceded by profits. If I can document a significant temporal decrease in the magnitude of negative surprises for both loss sub-samples, my finding of a temporal decrease in the magnitude of negative surprise for losses would exist even if a temporal increase in the frequency of reported losses preceded by losses did not occur. Panel A of table 2 reveals a significant temporal decrease in the magnitude of median negative surprise for both loss sub-samples ($p\text{-value} = 0.001$). The temporal increase in the frequency of reported losses preceded by losses four quarters earlier cannot explain my evidence of significant temporal decreases in the magnitude of negative loss surprises.

A third potential validity threat is increased timeliness of my expectation proxy. If my expectation proxy has become timelier for losses, but not for profits, this provides an alternative explanation for my table 1 results. Figure 4 plots the median number of days between the most recent analyst forecast prior to the quarterly report and the report date on the fiscal year. The regressions reveal a significant temporal decrease in forecast horizon for both profits and losses (slopes = -0.50 and -0.35 calendar days per year; $p\text{-values} = 0.001$). Increased timeliness may help explain my results for losses but not for profits (i.e., it cannot explain the shift in the median profit surprise from zero to positive).

Abarbanell and Lehavy [2000] [hereafter AL] contend that temporal changes in the definition of earnings surprise by financial data providers (I/B/E/S, Zacks, First Call) lead to temporal increases in perfect forecasts and small earnings surprises, and temporal decreases in extreme earnings surprises. To ascertain the seriousness of this potential validity threat, I replicate my tests in figure 2 for a subset of my data where AL contend this validity threat is least serious—when I/B/E/S actual earnings per share equals Compustat earnings per share before extraordinary items (Compustat item Q19). I do not find this to be a validity threat with my sample. I obtain qualitatively similar results (not tabulated) with this subset of my sample.

I consider three other possible factors, macroeconomic effects, temporal increases in prices per share, and the SEC's fair disclosure regulation on post-1999 earnings surprises. The time period I consider is one of an unprecedented boom in the United States. It is conceivable that analysts underestimated the positive impact of technology and globalization on firms' earnings numbers, causing them to underestimate firms' earnings numbers. Thus, my results may not pertain to a future time period, especially one where macroeconomic factors lead to a prolonged and unanticipated contraction.

Increasing prices per share are correlated with increasing earnings per share so my results may reflect unanticipated stock price and earnings increases. To assess the validity of this issue, I replicate my results after deflating the earnings surprise for each firm by its common equity stock price (not tabulated). My principal results are unchanged, namely I still document a significant temporal shift for earnings surprise from negative to positive, and a significant rightward temporal shift within the negative (positive) quadrant for loss (profit) surprises.

It has been alleged that the SEC's disclosure rule will make it more difficult for firms to report earnings that meet or slightly beat analyst estimates (Opdyke [2000]; McGough and Matthews [2000]). Future research may wish to examine if the "FD Regulation" will have this

alleged effect on post-1999 data. Preliminary evidence suggests that the FD Regulation has increased the variance of analyst earnings forecasts and decreased analyst forecast accuracy (McGough and Bryan-Low [2000]).

6. Growth versus Value Firms

Similar to Collins and Kothari [1989], I define growth stocks as those with high market value of common equity to book ratios. Each fiscal year, I sort my data in descending order by firms' market value of common equity to book ratios and form five quintiles. I define growth and value firms as the top and bottom quintiles. Based on the extant literature's finding that negative surprises are more likely for growth than value firms (Hagin [1991]; LaPorta [1996]; Frankel and Lee [1998]), I do not expect growth firms to have a relatively greater percent of positive surprises than value firms. However, when they report 'good news profits,' I expect managers of growth firms to be relatively more likely than managers of value firms to report 'a little bit of good news.'

Figure 5 provides temporal evidence of the percent of positive profit surprise (panel A) and small surprise conditional on positive profit surprise (panel B). Figure 5, panel A reveals positive and significant slope coefficients for growth and value firms, indicating significant upward trends in 'beat estimates,' but the slope for growth firms is nearly three times larger (slope = 1.25% and 0.45%; p-value = 0.001). There is a greater frequency of positive surprises for growth firms for the last 13 years of the sample, suggesting that prior research documenting a greater frequency of positive surprises for value firms (Hagin [1991]; LaPorta [1996]; Frankel and Lee [1998]) does not pertain to recent years.

Figure 5, panel B reveals positive and significant slope coefficients for growth and value firms (slope = 0.59% and 2.09% per year; p-value = 0.001), indicating significant temporal increases in managers reporting positive 'small' profit surprises for both groups. As expected, the growth firm line lies everywhere above the value firm line, indicating that managers of growth

firms who report positive profit surprises are more likely than managers of value firms to report ‘a little bit of good news.’

7. Summary

I document a significant temporal shift in median earnings surprise from small negative (miss analyst estimates) to zero (meet estimates) to small positive (beat estimates) during the 16 years, 1984 to 1999. I show that this rightward temporal shift in surprise from the negative to the positive quadrant describes neither profits nor losses. The median profit surprise shifts within the positive quadrant, from zero to one cent per share. The median loss surprise shifts within the negative quadrant from extreme negative surprise (about -33 cents per share) to zero. I show that the median surprise for profits exceeds that for losses in every year. I document a significant positive temporal trend in zero surprises and positive surprises for both profits and losses, and a greater frequency for profits than for losses to meet or beat analyst estimates in all 16 years. I find a significant positive temporal trend in managers who report positive profits that are ‘a little bit of good news’. I document a significant negative temporal trend in managers who report negative losses that are ‘extreme bad news.’ I show that my results are robust to four internal validity threats: temporal changes in: (1) analyst forecast accuracy, (2) the mix of earnings of one sign preceded by earnings of another sign four quarters ago, (3) the timeliness of the most recent analyst forecast, and (4) the I/B/E/S definition of actual earnings. I find that managers of growth firms are relatively more likely than managers of value firms to report good news profits in the last 13 years of my study. When they do report positive profit surprises, I show that managers of growth firms are more likely than managers of value firms to report ‘a little bit of good news’ in every year.

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FOOTNOTES

¹ In a contemporaneous study, Matsumoto [1999] examines temporal changes in the earnings surprise distribution. Unlike my study, she does not partition her sample into profits and losses, and she uses the consensus analyst forecast as her measure of estimates rather than the single most timely forecast. She attributes her results to temporal changes in managing estimates. Some question this interpretation (Abarbanell and Lehavy [2000]; Bradshaw, Moberg and Sloan [2000]). I take no position on whether my results are indicative of managing reported earnings, analyst estimates or both.

² Earnings are occasionally zero cents per share (0.72% of my sample). I include these observations in my earnings sample. I exclude them from my profit and loss samples.

³ The third quarter of 2000 is the 31st consecutive quarter in which positive earnings surprises for S&P 500 firms occur more often than negative ones (I/B/E/S 2000). As reported in Vickers [1999]: “Richard Bernstein, director of quantitative research at Merrill Lynch & Co. (says): ‘The negative earnings surprise is becoming extinct as companies manage earnings estimates.’”

⁴ If I find this effect in 12 or more years of my 16 year sample, I can reject the null hypothesis that it is a chance result at better than the 5 percent level (one-tail test). In fact, I show below that this phenomenon pertains in all 16 years.

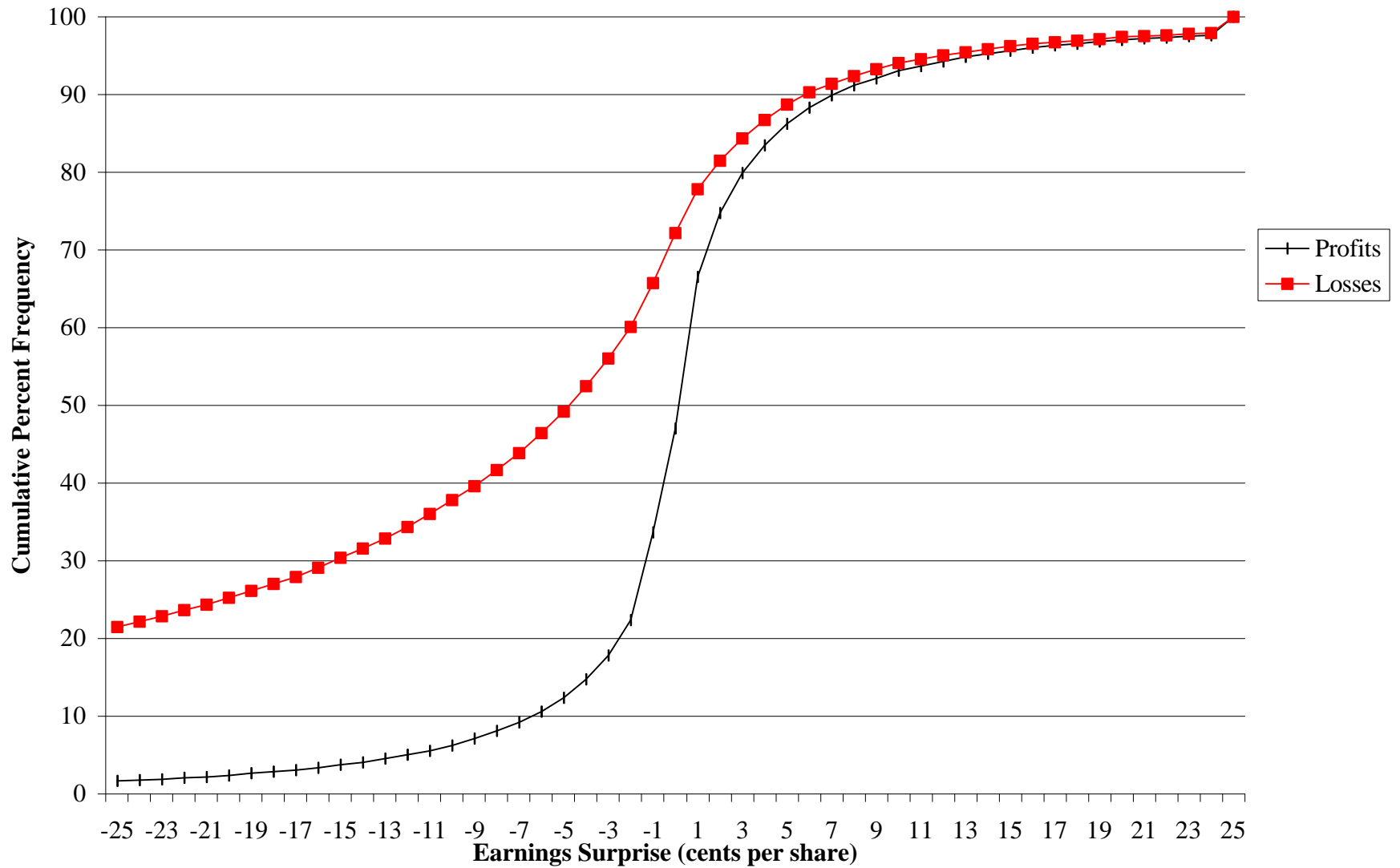
⁵ Since the extant literature has shown that earnings surprises are more likely to be negative for growth than for value firms (Hagin [1991]; LaPorta [1996]), I do not expect managers of growth firms to create more positive earnings surprises than managers of value firms. However, using a more recent period than these studies, I find (figure 6) that earnings surprises are more likely to be positive for growth than for value firms in each of the last 12 years of my sample period.

⁶ Most of my results are based on the larger I/B/E/S sample. I require Compustat data only when I address the fourth potential validity threat, the Compustat definition of reported quarterly earnings, and when I classify my sample into growth and value firms.

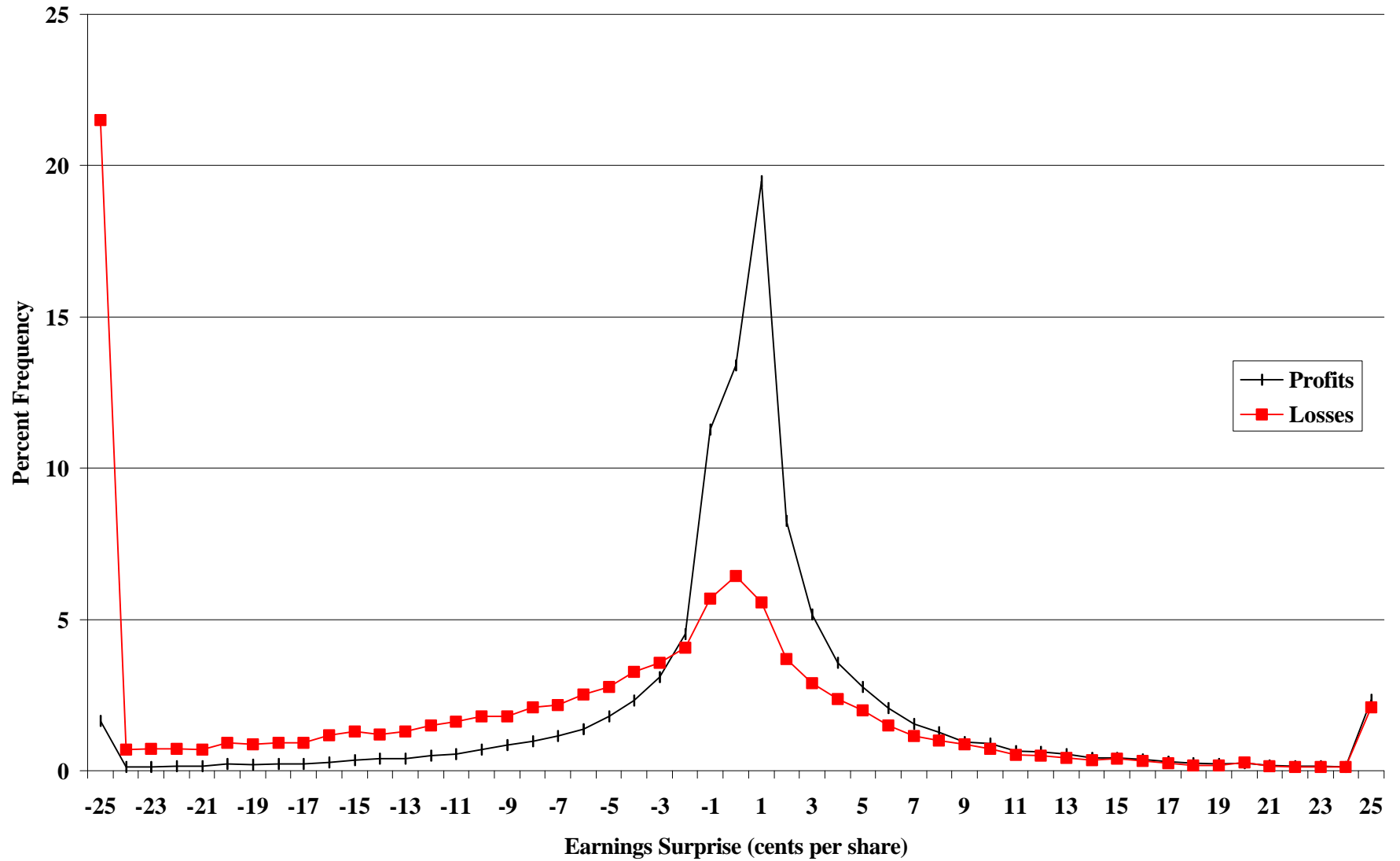
⁷ There are numerous cases in the I/B/E/S database of forecasts of quarter t dated after the quarter t earnings number is known. I eliminate these data from consideration.

⁸ The table and figure include the following information on the regression model: the trend coefficient (regression slope), its t-value (in parentheses following the trend coefficient), and the adjusted R-square.

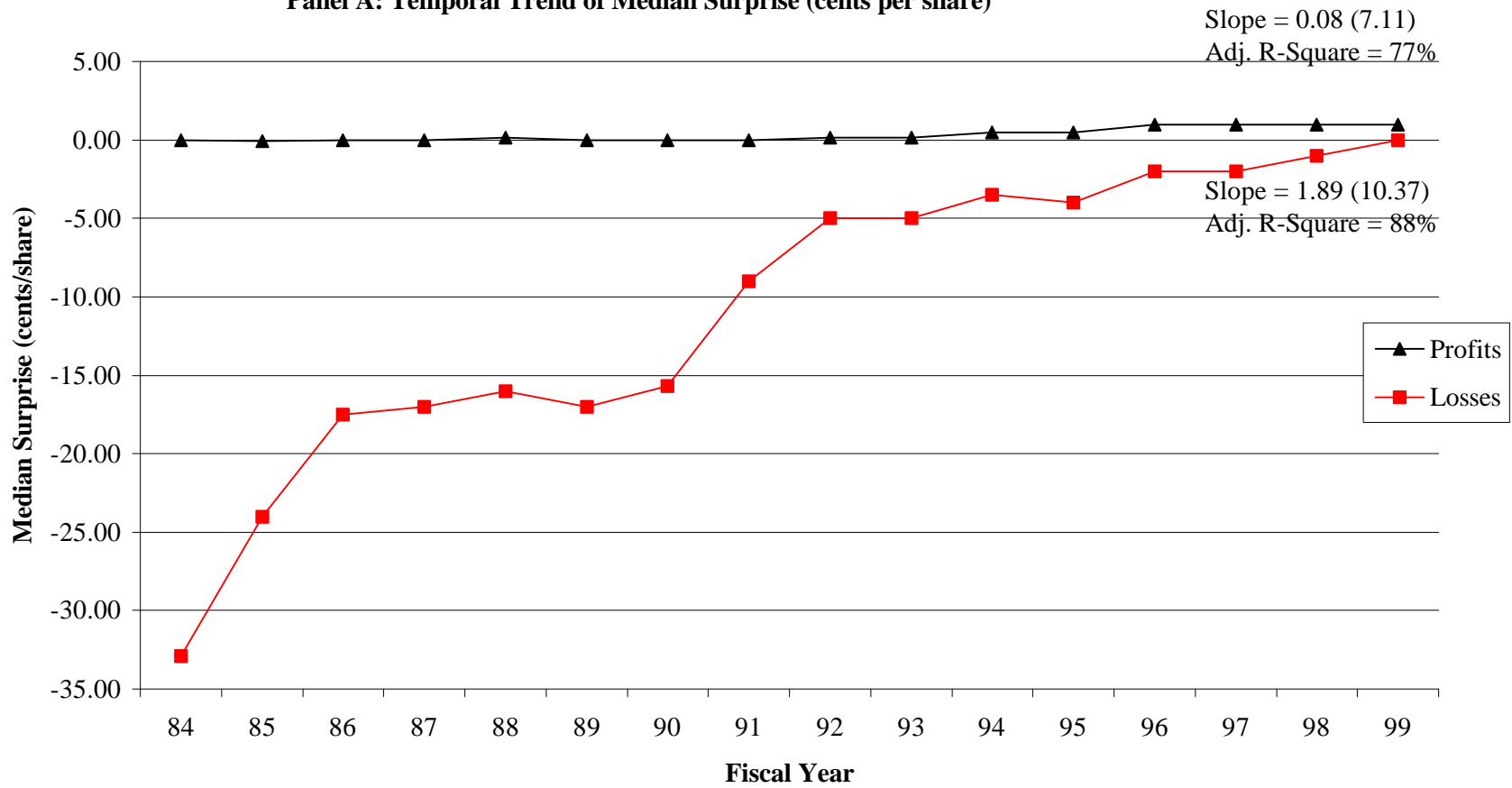
Panel A: Cumulative Percent Frequency Distributions of Earnings Surprise (cents per share) for Profits and Losses



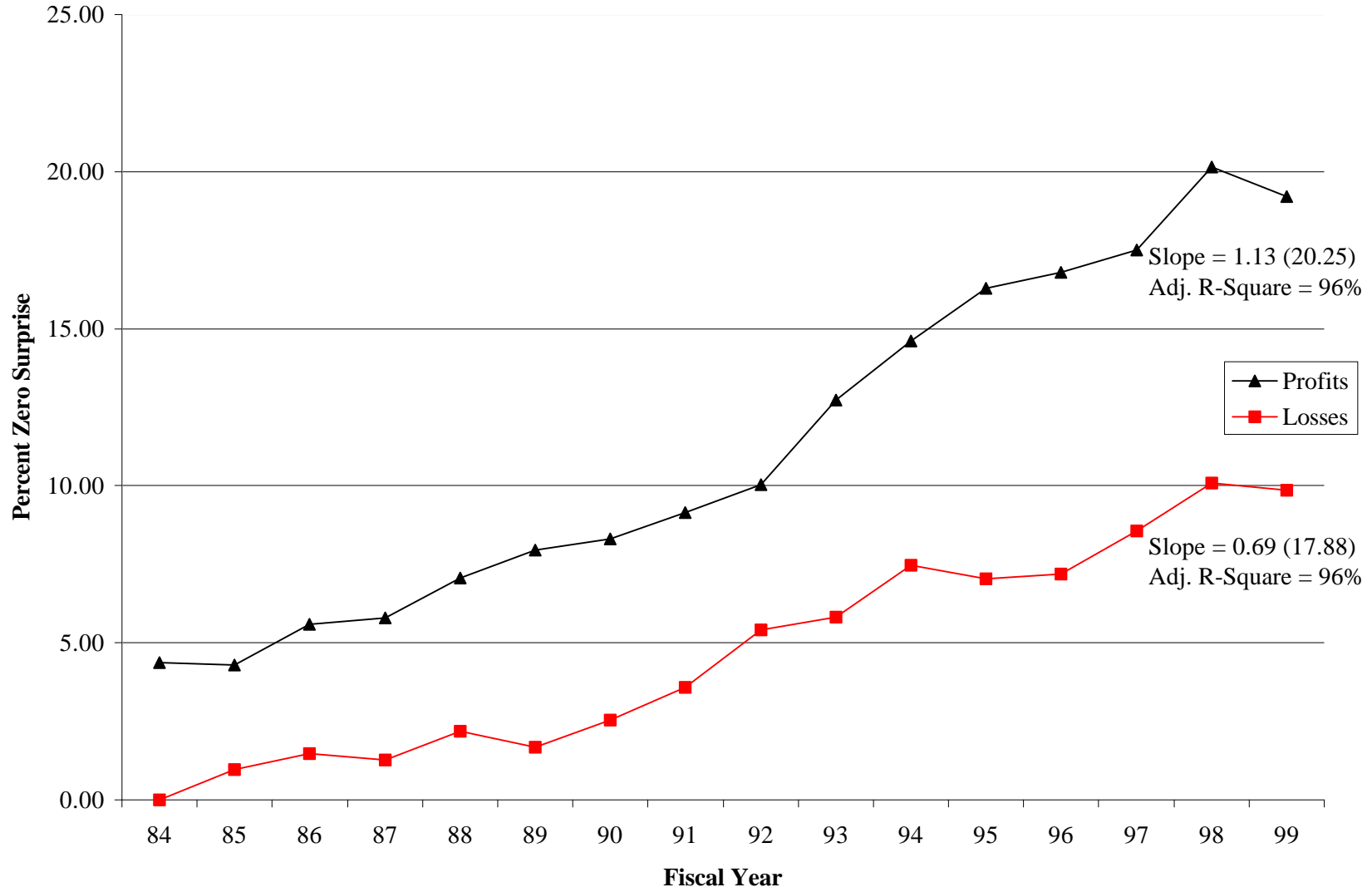
Panel B: Percent Frequency Distributions of Earnings Surprise (cents per share) for Profits and Losses



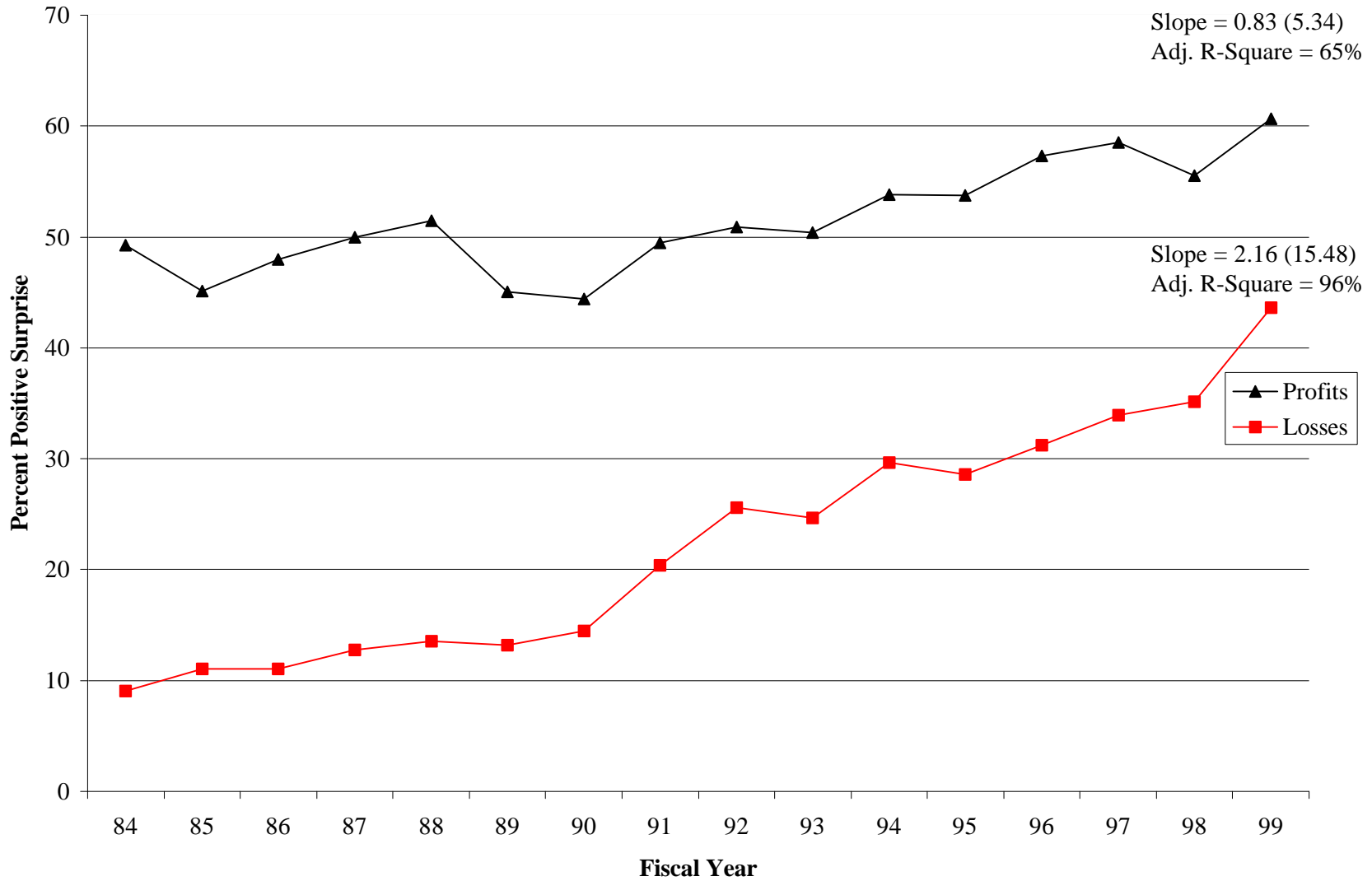
Panel A: Temporal Trend of Median Surprise (cents per share)



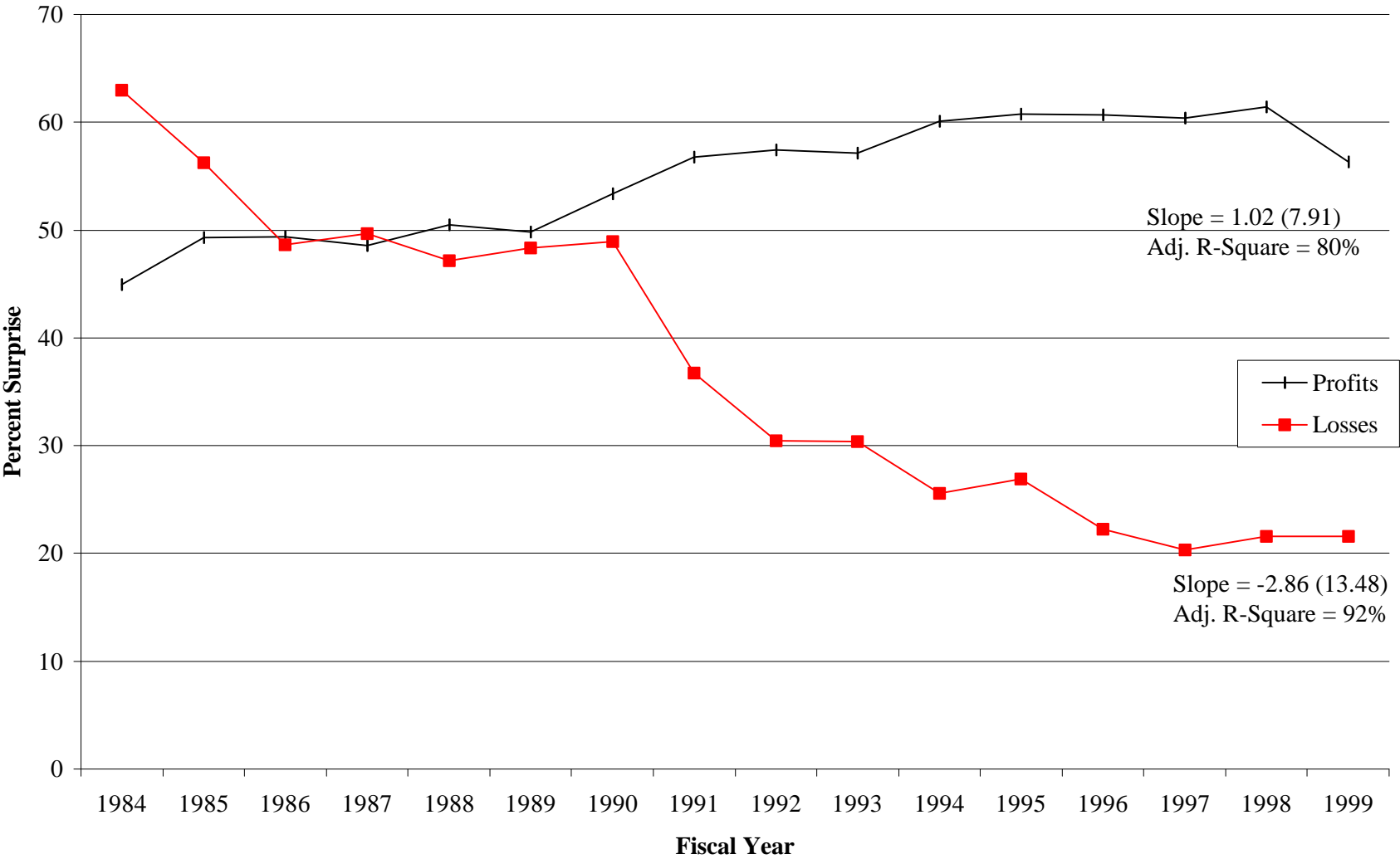
Panel B: Temporal Trend of Percent Zero Surprise (Meet Expectations)

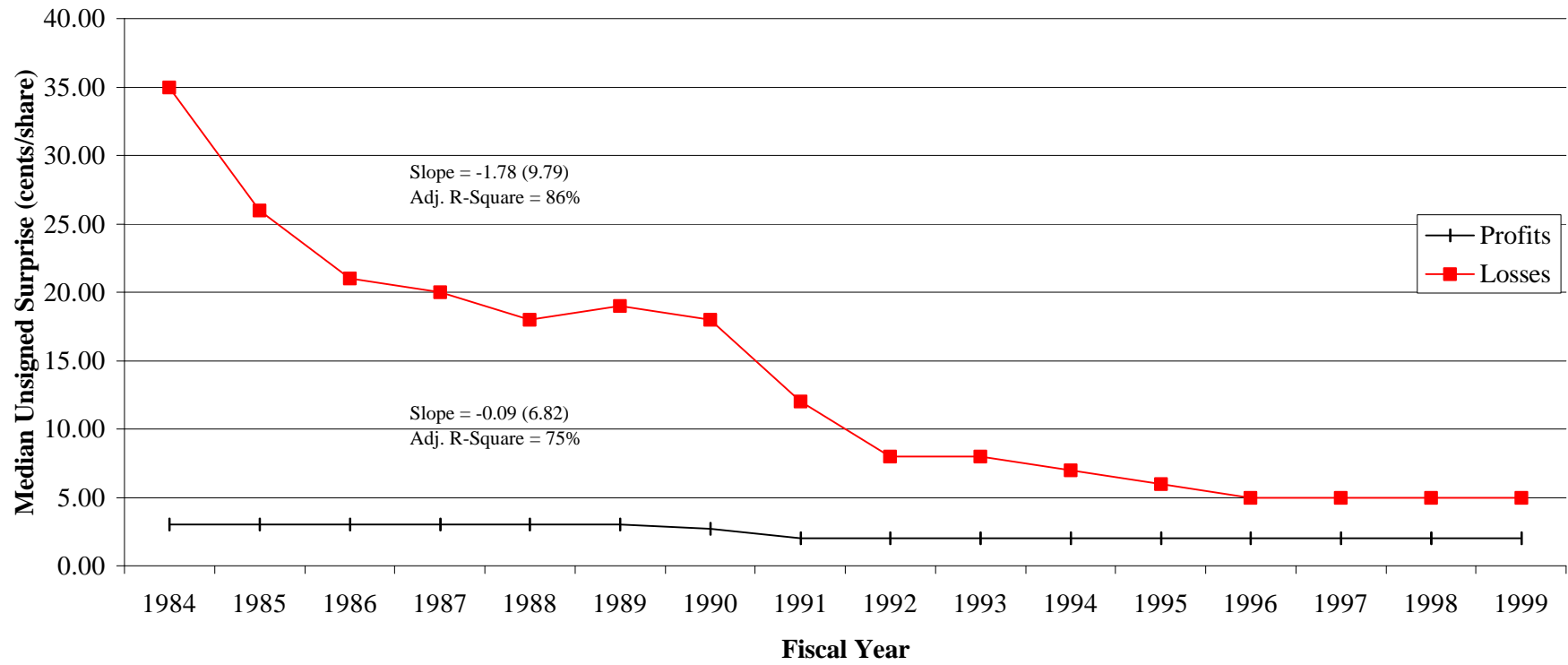


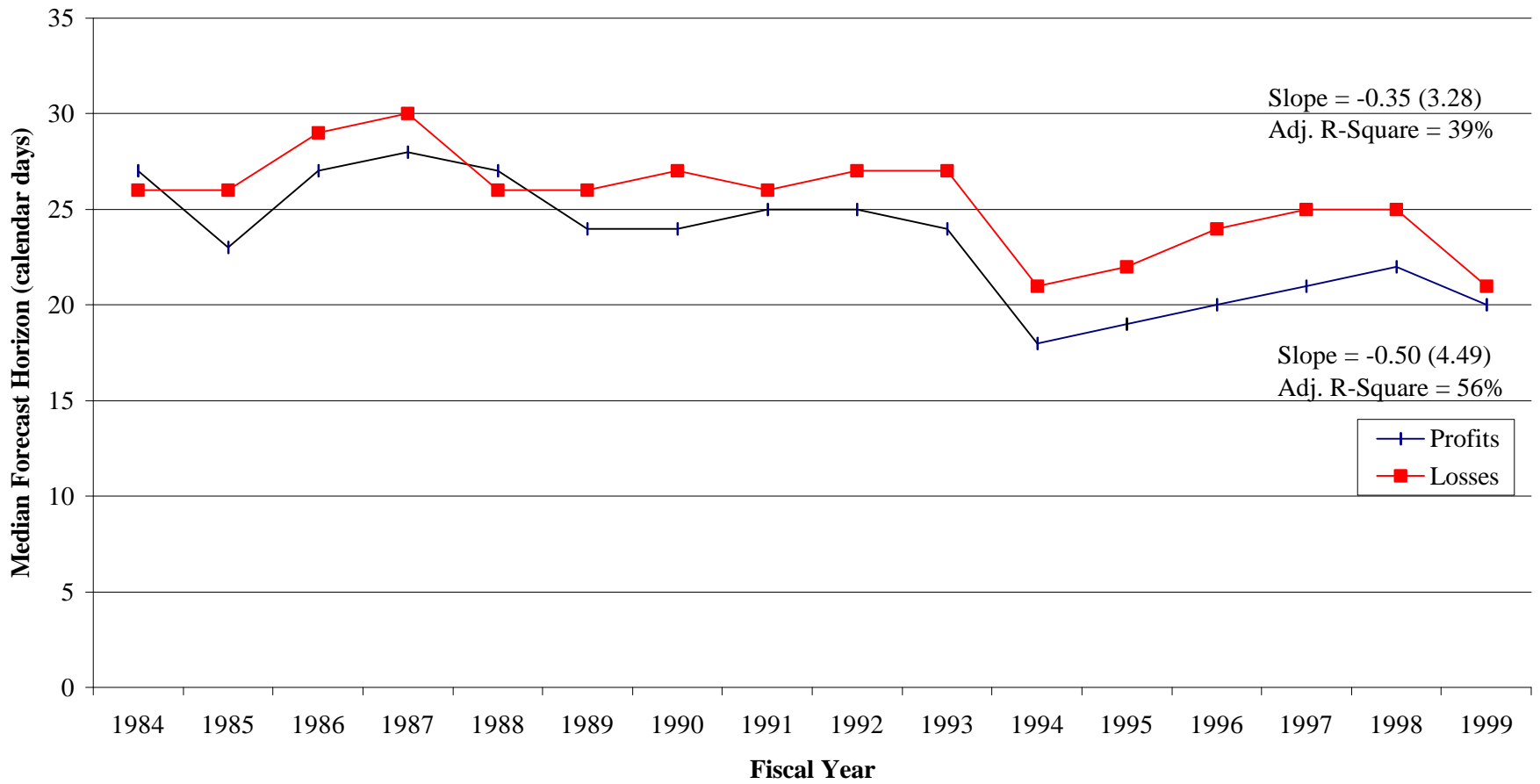
Panel C: Temporal Trend of Percent Positive Surprise (Beat Expectations)



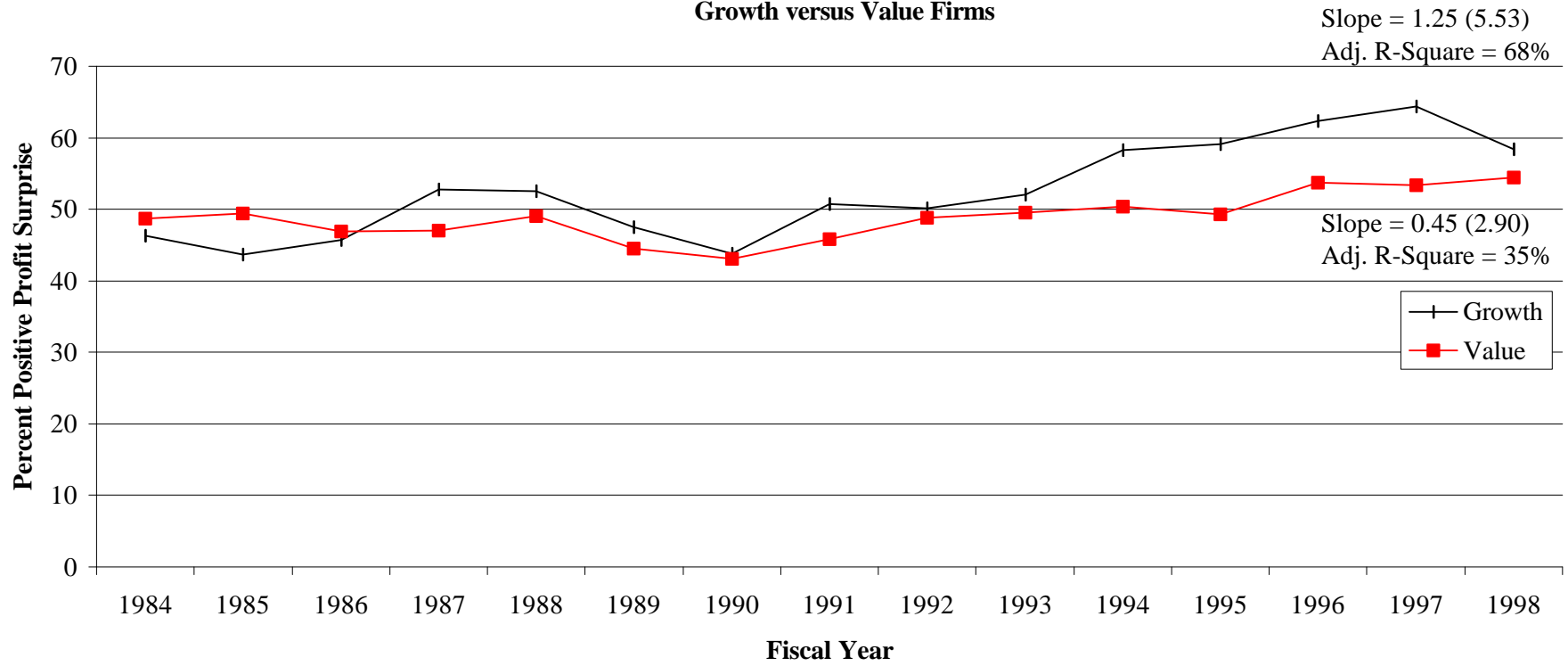
**Panel D: Temporal Trend of Percent Small Positive Profit Surprise| Positive Profit Surprise
and Percent Extreme Negative Loss Surprise| Negative Loss Surprise**







**Panel A: Temporal Trend of Percent Positive Profit Surprise (Beat Expectations)
Growth versus Value Firms**



**Panel B: Temporal Trend of Percent Small Positive Profit Surprise | Positive Profit Surprise
Growth versus Value Firms**

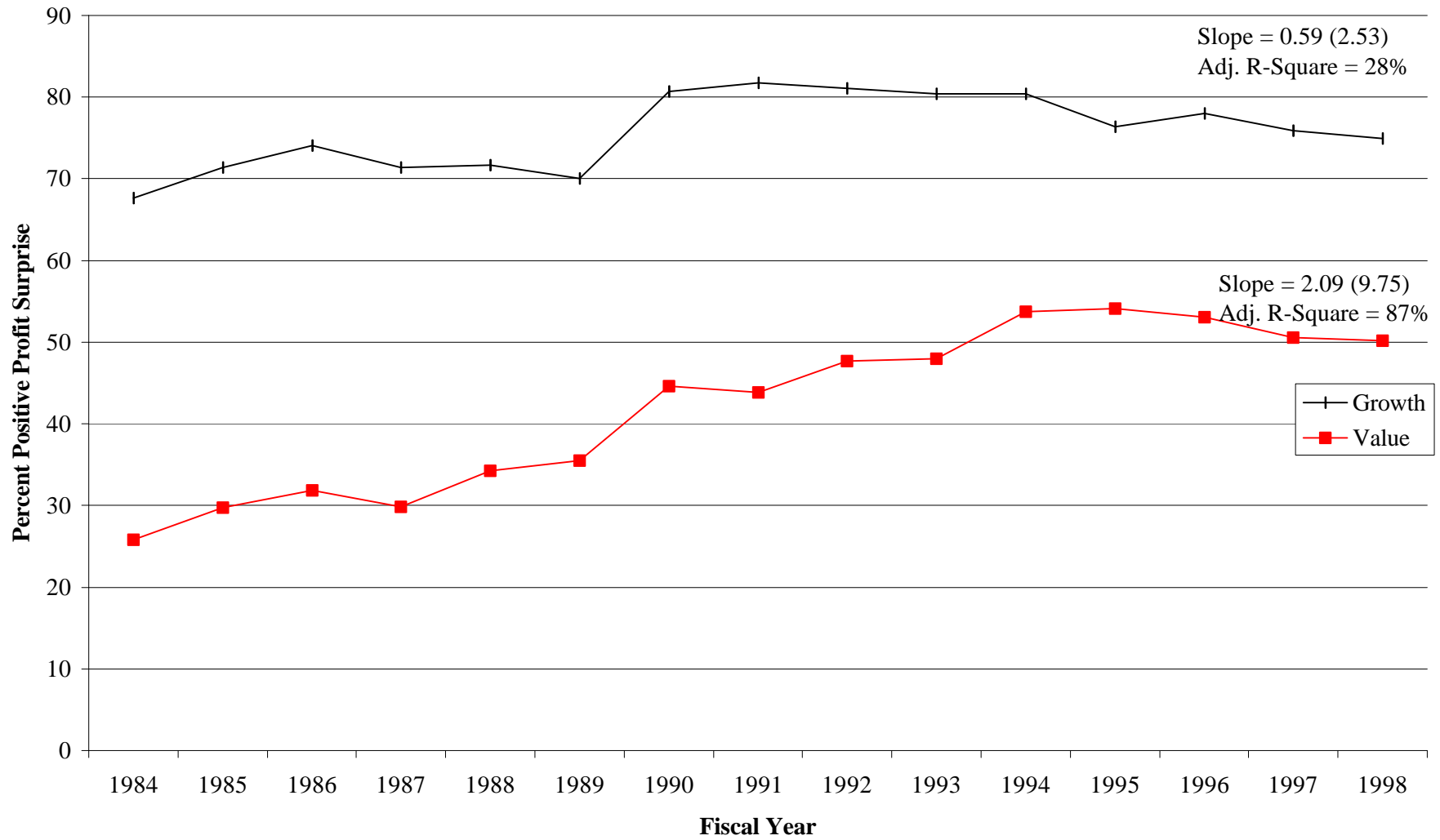


Table 1*Temporal Patterns of Earnings Surprise (cents per share)*

Fiscal Year	Panel A: Earnings		Panel B: Profits			Panel C: Losses			
	Sample Size	Median Surprise (cents/share)	Median Surprise (cents/share)	% Zero Surprise	% Positive Surprise	% Small Surprise Positive Surprise	Median Surprise (cents/share)	% Zero Surprise	% Positive Surprise
1984	3378	-0.19	0.00	4.37	49.3	44.9	-32.93	0.00	9.1
1985	4649	-0.67	-0.08	4.29	45.1	49.3	-24.00	0.97	11.1
1986	5387	-0.38	0.00	5.60	48.0	49.4	-17.50	1.46	11.1
1987	5745	-0.03	0.00	5.80	50.0	48.6	-17.00	1.26	12.8
1988	6827	0.00	0.17	7.06	51.5	50.5	-16.00	2.17	13.5
1989	8797	-0.50	0.00	7.95	45.0	49.8	-17.00	1.68	13.2
1990	9640	-0.50	0.00	8.32	44.4	53.4	-15.70	2.54	14.5
1991	10208	0.00	0.00	9.14	49.5	56.7	-9.00	3.58	20.4
1992	11227	0.00	0.14	10.03	50.9	57.4	-5.00	5.40	25.6
1993	11579	0.00	0.13	12.73	50.4	57.1	-5.00	5.82	24.7
1994	14611	0.09	0.50	14.61	53.8	60.1	-3.50	7.47	29.7
1995	15243	0.00	0.50	16.29	53.8	60.7	-4.00	7.05	28.6
1996	17136	0.50	1.00	16.78	57.3	60.7	-2.00	7.18	31.3
1997	18202	0.75	1.00	17.51	58.6	60.4	-2.00	8.55	33.9
1998	18499	0.50	1.00	20.15	55.5	61.4	-1.00	10.08	35.1
1999	15391	1.00	1.00	19.21	60.6	56.3	0.00	9.86	43.6
Average	11032	0.04	0.34	11.24	51.5	54.8	-10.73	4.69	22.4
Trend		0.08	0.08	1.13	0.83	1.02	1.89	0.69	2.16
t-value		5.61	7.11	20.25	5.34	7.91	10.37	17.88	15.48
Adj. R-Square		67%	77%	96%	65%	80%	88%	96%	96%

Table 2*Profits and Losses Preceded by Earnings of the Same Sign versus a Different Sign Four Quarters Ago*

Fiscal Year	Panel A: Median Surprise (in cents per share)				Panel B: Percent Frequencies of Profits and Losses Preceded by Earnings of the Same versus a Different Sign			
	Profits Preceded by Profits	Profits Preceded by Losses	Losses Preceded by Losses	Losses Preceded by Profits	Profits Preceded by Profits	Profits Preceded by Losses	Losses Preceded by Losses	Losses Preceded by Profits
1984	0.00	0.63	-31.00	-39.57	83.33	16.23	35.76	63.06
1985	-0.15	1.89	-24.00	-37.50	89.17	10.42	47.66	51.06
1986	0.00	1.50	-21.00	-27.88	89.12	10.53	50.75	48.53
1987	0.00	1.00	-16.95	-26.42	89.57	10.05	49.37	49.07
1988	0.13	1.00	-13.00	-22.00	91.20	8.34	50.00	48.63
1989	0.00	1.00	-13.00	-24.00	92.33	7.23	48.60	50.31
1990	0.00	0.95	-12.00	-12.00	92.13	7.56	52.65	45.80
1991	0.00	1.00	-7.00	-12.00	91.96	7.51	61.70	36.76
1992	0.12	1.00	-3.00	-9.00	92.53	7.05	63.21	35.52
1993	0.01	1.00	-3.00	-9.00	92.89	6.66	63.92	33.96
1994	0.50	1.00	-2.00	-6.00	93.20	6.28	64.95	33.25
1995	0.50	1.00	-2.00	-6.00	93.41	6.07	61.77	36.69
1996	1.00	2.00	-2.00	-4.00	92.80	6.64	62.86	35.42
1997	1.00	2.00	-1.00	-4.00	93.40	6.03	69.91	28.31
1998	1.00	2.00	-1.00	-3.00	93.40	6.03	67.51	30.31
Average	0.27	1.26	-10.13	-16.16	91.36	8.17	56.71	41.78
Trend	0.08	0.05	2.02	2.64	0.49	-0.50	1.97	-2.04
t-value	5.81	1.73	9.94	11.17	5.07	5.29	8.61	8.89
Adj. R- Square	70%	12%	87%	90%	64%	66%	84%	85%

Panel A presents the median surprise of reported quarterly profits and losses preceded by earnings of the same sign versus a different sign four quarters ago. The four groups are presented each year: profits preceded by profits, profits preceded by losses, losses preceded by losses, and losses preceded by profits. Profits are positive reported quarterly earnings numbers in a given fiscal year. Losses are negative reported quarterly earnings numbers in the same fiscal year. Profits and losses preceded by earnings equal to zero are excluded. The earnings surprise is computed as the reported quarterly earnings number minus the most recent individual analyst forecast thereof for each sample firm when these data are available from the I/B/E/S International Inc. detail file. The median surprise for the year is the median of the distribution of surprises in cents per share for the sample where each firm is included approximately four times representing the four quarters of the fiscal year. Panel B shows the percent frequency of reported quarterly profits and losses preceded by earnings of the same sign versus a different sign four quarters ago for the same four groups in panel A. The averages reported in the all years row are the time-series means of the 16 annual median earnings surprises for the 16-year time period, 1984-99. The trend and the t-value pertain to the slope coefficient of the univariate regression of the column on fiscal year. The adjusted R-Square pertains to this univariate regression.

The table values include median earnings surprises (cents per share) for the distribution of sample firms. An earnings surprise is computed each quarter for each sample firm with the reported quarterly earnings number and the most recent individual analyst forecast thereof available from the I/B/E/S International Inc. detail file. The earnings surprise equals the reported quarterly earnings number minus the most recent individual analyst forecast thereof. The median earnings surprise for the fiscal year is the median of the distribution of earnings surprises where each firm is included approximately four times representing the four quarters of the fiscal year. Earnings are reported quarterly earnings numbers in a given fiscal year. Losses are reported negative quarterly earnings numbers in the same fiscal year. Profits are positive quarterly earnings numbers in that fiscal year. The sample size for earnings equals the sample size for losses plus the sample size for profits plus the sample size for earnings equal to zero. % zero surprise is the frequency of reported earnings in a given fiscal year that are predicted exactly by analysts (meet expectations). % positive surprise is the frequency of reported quarterly profits in a given fiscal year that exceed the analyst forecast thereof (beat expectations). % extreme surprise | negative surprise is the frequency of negative quarterly loss surprises conditional on negative loss surprise of at least 25 cents per share in amount. % small surprise | positive surprise is the frequency of positive quarterly profit surprises of at most three cents per share in magnitude. The averages reported in the all years row are the time-series means of the 16 annual observations. The trend and the t-value pertain to the slope coefficient of the univariate regression of the column on fiscal year. The adjusted R-Square pertains to this univariate regression.

<u>% Extreme Surprise</u>
<u> Negative Surprise</u>
63.0
56.2
48.6
49.7
47.1
48.3
48.9
36.8
30.5
30.3
25.6
26.9
22.3
20.4
21.6
21.6
37.4
-2.86
13.48
92%

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FIG. 5.-Temporal trend of profit surprise for growth and value firms

Panel A relates percent positive profit surprise (beat expectations) of growth and value firms to fiscal year. Panel B relates percent positive profit surprise conditional on positive profit surprise to fiscal year. At the end of each fiscal quarter, all firms with positive reported earnings numbers are sorted in descending order by their market value of equity to book ratios at the end of the previous fiscal year (source: Compustat item MKBK). Firms reporting quarterly profits in the top (bottom) quintile of a given fiscal year proxy for growth (value) firms. Each panel contains the slope coefficient, the t-value and the adjusted R-square of the regression of percent surprise in a given fiscal year on fiscal year. Results are provided for that subset of the table 1 sample where both I/B/E/S and Compustat data are available. All terms are defined in table 1.

FIG. 4.-Temporal trend of median forecast horizon (timeliness in calendar days)

The median forecast horizon is defined as the median number of calendar days between the most recent analyst forecast and the report day of the quarterly earnings number being forecast. The figure contains the slope coefficient, the t-value and the adjusted R-square of the regression of median forecast horizon in a given fiscal year on fiscal year.

FIG. 3.-Temporal trend of median unsigned earnings surprise (accuracy, in cents per share)

The figure values are median unsigned earnings surprises (accuracy, in cents per share) for the distribution of sample firms. An unsigned earnings surprise is computed as the absolute value of the difference between the reported quarterly earnings number and the most recent individual analyst forecast thereof when these data are available from the I/B/E/S International Inc. detail file. The median unsigned earnings surprise for each fiscal year is the median of the distribution of the unsigned earnings surprises, where each firm is included approximately four times representing the four quarters of the fiscal year. Profits (losses) are positive (negative) quarterly earnings numbers in a given fiscal year. The figure contains the slope coefficient, the t-value and the adjusted R-square of the regression of median unsigned earnings surprise in a given fiscal year on the fiscal year.

FIG. 2.-Temporal trend of profit and loss surprises

Panel A relates median profit and loss surprises to the fiscal year to which they pertain. Panel B relates percent zero profit and loss surprise (meet expectations) to fiscal year. Panel C relates percent positive profit and loss surprise (beat expectations) to fiscal year. Panel D relates percent small positive profit surprise conditional on positive profit surprise and percent extreme negative loss surprise conditional on negative loss surprise to fiscal year. Each panel contains the slope coefficient, the t-value and the adjusted R-square of the regression of median surprise (Panel A) and percent surprise (Panels B-D) in a given fiscal year on the fiscal year. All terms are defined in table 1.

FIG. 1.— Distribution of earnings surprises (cents per share)

Panel A is the cumulative percent frequency distribution of earnings surprises (cents per share) for profits and losses pooled cross-sectionally and temporally over the 16-years, 1984-99. Panel B is the percent frequency distribution of earnings surprises (cents per share) for profits and losses pooled cross-sectionally and temporally over the same time period. Losses are negative reported quarterly earnings, and equal 29,106 observations. Profits are positive reported quarterly earnings, and equal 146,141 observations. Earnings surprise in cents per share is the reported quarterly earnings number minus the most recent individual analyst forecast thereof for firms with data available from the I/B/E/S International Inc. detail file. The distribution is shown from -25 to +25 cents per share. The percent frequency of zeros pertains to exact predictions. The percent frequency of earnings surprises of -1 cent (-2 cents) per share is negative earnings surprises of at most one cent (two cents) per share...-24 cents (-25 cents) per share is negative earnings surprises of at most (more than) 24 cents per share. The percent frequency of earnings surprises of 1 cent (2 cents) per share is positive earnings surprises of at most one cent (two cents) per share...24 cents (25 cents) per share is positive earnings surprises of at most (more than) 24 cents per share.