

EARNINGS AND STOCK SPLITS IN THE EIGHTIES

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Abstract

Prior literature presents evidence on the nature of the earnings information conveyed by stock splits during 1970-1980. During 1970-1980 the information conveyed is that large pre-split earnings increases, usually viewed by the market as transitory and likely to be followed by earnings decreases, are in fact permanent. This paper presents evidence on the nature of the earnings information conveyed by splits during 1982-1989, a period of lower inflation and higher real economic growth. Results for 1982-1989 indicate that the market interprets stock splits as signals of subsequent earnings increases. Thus, the information conveyed by stock splits is time-period specific, with the market interpreting splits more optimistically during the period when economic conditions are stronger.

INTRODUCTION

Results of numerous studies are consistent with the idea that stock splits signal earnings information.¹ Asquith, Healy, and Palepu [2], hereafter AHP, present evidence on the nature of the earnings information conveyed. They find that the price response to splits is positively related to pre-split but not post-split earnings changes. Thus, they conclude that the earnings information conveyed by stock splits is not about subsequent earnings increases. Rather, the information conveyed is that recent large earnings increases, usually viewed by the market as transitory and likely to be followed by earnings decreases, are in fact permanent.

AHP's results give the impression that the good news conveyed by stock splits is relatively weak, in that splits signal the ability to maintain rather than improve upon current earnings performance. However, their findings are not surprising given the economic climate that prevailed during the 1970-1980 period from which their sample is drawn. 1970-1980 was a period of high inflation and low real economic growth, with annual inflation averaging 8.1 percent and annual real GNP growth averaging 1.7 percent.² When long-term growth prospects are poor, a market characterized by rational expectations is likely to interpret firms' positive signals cautiously. In such an environment, the ability to maintain prior superior performance may be as good as news gets. However, when long-term growth prospects are good, the market is likely to interpret positive signals more optimistically. That is, good news probably involves subsequent earnings increases. Thus, AHP's choice of sample period raises an interesting question. Does the market interpret stock splits more optimistically when economic conditions are stronger?

Two other studies also examine the relation between earnings and the price response to splits; unfortunately, due to methodological differences their results provide no evidence regarding the issue raised by AHP. For example, McNichols and Dravid [19] find that split announcement-period abnormal returns are positively related to analysts' earnings forecast errors observed for the fiscal year-end that follows the announcement. At first glance, this result appears inconsistent with AHP. However, unless one knows the source of analysts' underestimation of post-split earnings, i.e., unanticipated earnings increase after the split or analysts not recognizing that pre-split earnings increases are permanent, it is impossible to conclude that their results either confirm or fail to confirm AHP. Similarly, Klein and Peterson's [17] finding of a positive relation between price response and analysts' forecast revisions can neither confirm nor fail to confirm AHP. Only tests based on raw earnings changes can do so.

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This paper is similar in spirit to AHP. It examines earnings changes surrounding stock splits and focuses on splits by non-dividend-paying firms to isolate the earnings implications of splits from those of cash dividends. However, the sample is drawn from the 1982-1989 period. Unlike 1970-1980, 1982-1989 was a period of low inflation and high real growth, with annual inflation averaging 3.9 percent and annual real GNP growth averaging 3.5 percent.

Contrary to the conclusions of AHP for 1970-1980, for 1982-1989 the evidence supports the conclusion that stock splits signal subsequent earnings increases. This conclusion is based on two findings that reverse those of AHP. First, stock split announcement-period abnormal returns are not related to earnings changes prior to the split, but are significantly positively related to subsequent earnings changes. Second, stock price reactions at earnings announcements subsequent to splits are smaller than is usual for the earnings change size, confirming that post-split earnings increases are partially anticipated at split announcements.

Clearly, the nature of the earnings information conveyed by splits changed in the nineteen-eighties. The most likely explanation for the change in the market's interpretation of stock splits is the change in economic environment.

The remainder of this study is organized as follows. The next section is a discussion of hypotheses tested. The third section is a discussion of the data and sample selection procedure. The fourth section presents the tests and results. The final section contains the summary, conclusions, and implications.

HYPOTHESES

This paper tests two potential explanations of the positive average price response associated with stock splits announced during 1982-1989. The first explanation is that splits signal improved subsequent earnings performance. The second is that splits signal management's judgement that pre-split earnings increases are permanent rather than temporary. Both explanations are consistent with Lakonishok and Lev's [18] finding that firms experience positive earnings growth immediately before and after announcing stock splits. Both explanations are also consistent with Klein and Peterson's [17] and McNichols and Dravid's [19] evidence that financial analysts' pre-split earnings forecasts underestimate post-split earnings.

The idea that stock splits convey management's private information regarding improved subsequent earnings performance is extensively discussed in the literature (for example, see Fama, Fisher, Jensen, and Roll [12], Grinblatt, Masulis, and Titman [15], Lakonishok and Lev [18], Brennan and Copeland [7], Klein and Peterson [17], and McNichols and Dravid [19]). Three hypotheses are tested to evaluate whether splits convey information on subsequent earnings performance:

- H1: Firms that split their common shares experience earnings increases subsequent to the split announcement.
- H2: The stock price response to a split announcement is positively related to earnings changes subsequent to the split.
- H3: The relation between earnings announcement-period abnormal returns and contemporaneous earnings changes is attenuated following the split announcement.

Hypothesis H1 is straight-forward. If splits signal good news about future earnings, split announcements will be followed by earnings increases. Hypothesis H2 focuses on the relation between split announcement abnormal returns and subsequent earnings changes. If investors have rational expectations and split announcement abnormal returns are a result of investors adjusting their earnings expectations, the earnings change forecasts implicit in split announcement abnormal returns will be positively related to subsequently realized earnings changes. Hypothesis H3 examines the relation between abnormal returns on earnings announcement dates and contemporaneous earnings changes. A positive relation between earnings changes and abnormal returns is documented by Ball and Brown [3], Beaver, Lambert, and Morse [6], and Brown, Hagerman, Griffin, and Zmijewski [9]. However, if splits convey information about future earnings, subsequent earnings changes will be partially anticipated and the stock price response per dollar change in earnings will be less for post-split earnings announcements than for pre-split earnings announcements.

The alternative explanation for the positive stock price response to stock splits, that splits convey information about pre-split earnings, is developed in Asquith, Healy, and Palepu [2]. This explanation is based on evidence reported in Brooks and Buckmaster [8], Beaver, Lambert, and Morse [6], and Freeman, Ohlson, and Penman [14] that firms that experience large earnings increases in one year are likely to have earnings declines the following year. In other words large earnings increases consist of both permanent and temporary components. Thus, the market reaction to a large earnings increase will reflect the fact that part of the earnings increase is expected to be reversed in the following year. In this context, the positive information conveyed by stock splits can be that managers do not believe that large pre-split earnings increases will be reversed.

Three hypotheses are tested to evaluate whether stock splits convey information on pre-split earnings changes:

- H4: Firms that split their common shares experience earnings increases prior to the split announcement. These earnings increases are not reversed in subsequent years.
- H5: The stock price response to a split announcement is positively related to earnings changes prior to the split.
- H6: The relation between earnings announcement-period abnormal returns and contemporaneous earnings changes is attenuated prior to the split announcement.

Hypotheses H4, H5, and H6 correspond to Hypotheses H1, H2, and H3 for the post-split earnings information explanation of the positive market response to splits. The difference between H4 and H1 is that if splits signal pre-split as opposed to post-split earnings information, it is pre-split earnings changes rather than post-split earnings changes that must be positive. The difference between H5 and H2 is that if splits signal information about pre-split as opposed to post-split earnings, split announcement abnormal returns are determined by pre-split rather than post-split earnings changes. Thus, split abnormal returns are predicted to be positively related to pre-split rather than post-split earnings changes. Hypothesis H6 predicts that the stock price response to earnings announcements is attenuated in the pre-split rather than the post-split period as predicted by hypothesis H3. The contrary prediction of H6 is based on the transitory nature of large earnings increases. If the market views pre-split earnings increases as largely transitory, the stock price response per dollar change in earnings will be less than normal for earnings announcements immediately preceding split announcements.

DATA AND SAMPLE SELECTION

The sample consists of firms that: (1) have a stock distribution of at least 25 percent during the 1982-1989 time period; (2) have the stock distribution announcement date available in *The Wall Street Journal Index*; (3) have quarterly earnings per share data (before extraordinary items and discontinued operations) available on the Quarterly *COMPUSTAT* file from 8 quarters before to 8 quarters after the stock distribution announcement date; (4) have earnings announcement dates available on the Quarterly *COMPUSTAT* file from 4 quarters before to 8 quarters after the stock distribution announcement; and (5) pay no cash dividends from 4 quarters before to 8 quarters after the stock distribution announcement date.

The definition of a stock split as any stock distribution of 25 percent or more is consistent with previous studies.³ Stock split announcement dates are needed to determine the market's reaction to splits. The quarterly earnings data are used to construct quarterly and annual earnings changes during the year before and two years after the stock split announcements. Earnings announcement dates are required to estimate the market response to earnings announcements, so the relation between market response and earnings changes can be compared for the pre-split and post-split periods. The restriction of the sample to non-dividend-paying firms is used to insure that empirical tests are not contaminated by the information in dividend announcements. That stock split announcements are often accompanied by or closely followed by dividend increases is documented by Fama, Fisher, Jensen, and Roll [12] and Grinblatt, Masulis, and Titman [15]. That the tests employed in this paper are sensitive to dividend information is documented in Healy and Palepu [2].

For each firm in the sample the following additional data are collected from the Center for Research of Security Prices (*CRSP*) Daily Returns and Monthly Master Files: (1) returns on the firm's common stock, and on the *CRSP* equal weighted market index, for the day of and day prior to each split announcement date, (2) returns on the firm's common stock, and on the *CRSP* equal weighted market index, for the day of and day prior to each earnings announcement date, and (3) the price of the firm's common stock at the month-end preceding the split announcement dates.

The returns collected for split and earnings announcement dates are used to calculate market adjusted returns for split and earnings announcement periods. Two-day market adjusted returns serve as estimates of the market responses to split and earnings announcements.⁴ Month-end stock prices are used to deflate earnings changes in cross-sectional tests of the relation between market response and earnings changes.

The final sample consists of 88 stock split announcements by non-dividend-paying firms during the 1982-1989 time period. The number of stock splits in each calendar year is reported in Table 1. There is evidence that splits are clustered in time. 73.9% of the observations occur during the four-year period 1983-1986. This is consistent with the findings of other stock split studies.⁵ While there is some clustering by year, all 88 split announcements occur on different days and the mean interval between announcements is 30 days. Thus, event date clustering is not a problem in estimating announcement-period abnormal returns.

TABLE 1
Distribution Of Stock Splits By Year For 88
Firms That Pay No Cash Dividends

Year	Number Of Firms	Percent Of Total Sample
1982	7	8.0
1983	21	23.9
1984	10	11.4
1985	9	10.2
1986	25	28.4
1987	5	5.7
1988	6	6.8
1989	<u>5</u>	<u>5.7</u>
Total	88	100.0

NOTE: The sample consists of stock distributions of 25% or more by firms that pay no cash dividends. Only observations having a complete set of desired data items are included. The desired items are: 1)the split announcement date, 2)Quarterly *COMPUSTAT* earnings per share data from 8 quarters before to 8 quarters after the split announcement date, 3)earnings announcement dates from 4 quarters before to 8 quarters after the split announcement date, 4)*CRSP* returns for the day of and day following each split and earnings announcement date, and 5)the price of the firm's common stock at the month-end preceding the split announcement date.

RESULTS

Market Reaction To Stock Splits

Split announcement-period abnormal returns are estimated by the market adjusted return for the two-day period consisting of the day of and day prior to the first published announcement of the split in *The Wall Street Journal*. The mean announcement-period abnormal return is 3.24 percent with a cross-sectional t-statistic of 6.03. There are 68 positive and 20 negative abnormal returns. The mean abnormal return is similar to those reported in earlier studies of stock splits and is consistent with the idea that splits convey valuable information to the market.⁶

Tests Of H1 And H4

This section reports the analysis of earnings performance before and after stock split announcements. While AHP analyze only annual earnings, I analyze both quarterly and annual earnings. Tests based on quarterly data provide more precise evidence regarding the timing of the earnings information conveyed by splits. Quarter 0 is defined as the quarter of the first quarterly earnings announcement to follow the split announcement. Quarters +1 and -1 are the quarters following and preceding quarter 0. Other quarters are similarly defined. An annual earnings series is constructed from the quarterly data, in order to separate pre- and post-announcement earnings information. Thus, year 0 earnings is defined as the sum of quarterly earnings for quarters 0 to 3; year -1 earnings is defined as the sum of quarterly earnings for quarters -4 to -1; and other annual earnings are similarly defined.⁷

The analysis of earnings performance before and after splits is based on annual and quarterly earnings changes. The annual earnings change for firm j in year t , $aec_{j,t}$, is defined as:⁸

Equation 1

$$aec_{j,t} = E_{j,t} - E_{j,t-1}$$

where $E_{j,t}$ is the annual earnings per share (constructed from quarterly data) for firm j in year t .⁹ To make earnings changes more economically comparable across firms and reduce heteroscedasticity in the cross-sectional data, each earnings change is standardized by expressing it as a percent of the stock price at the month-end prior to the stock split announcement, P_j . The standardized annual earnings change for firm j in year t , $saec_{j,t}$, is therefore defined as:

Equation 2

$$saec_{j,t} = aec_{j,t} / P_j$$

Christie [11] concludes that market value is the correct deflator for studies relating rates of return to accounting variables.¹⁰

Foster [13] concludes that quarterly earnings series have a seasonal component. Therefore, the quarterly earnings change for firm j in quarter t , $qec_{j,t}$, is defined as:

Equation 3

$$qec_{j,t} = QE_{j,t} - QE_{j,t-4}$$

where $QE_{j,t}$ is the quarterly earnings per share for firm j in quarter t . The standardized quarterly earnings change for firm j in quarter t , $sqfe_{j,t}$, is defined as:

Equation 4

$$sqec_{j,t} = qec_{j,t} / P_j$$

A minor difference in methodology, relative to AHP, is the time horizon examined. AHP examine ten years of earnings changes surrounding split announcements. I examine three years to insure that each sample firm has a complete set of the desired earnings data. My approach insures that the earnings behavior of the same set of firms is compared over time, without a large sacrifice of sample size. Since results reported in Table 2 show that positive earnings changes are concentrated in the quarters immediately surrounding split announcements, the exclusion of the additional years should not influence the results of any tests reported in this paper.

Mean and median standardized annual earnings changes (*saecs*) are reported in Panel A of Table 2.¹¹ The mean *saecs* for years -1, 0, and 1 are 1.31 percent, 1.98 percent, and -0.46 percent, respectively. The means differ significantly from zero for years -1 and 0, but not for year 1. Thus, both the year before and year after a stock split announcement are characterized by earnings increases. By the second year following the split, earnings performance has stabilized. The median *saecs* and Wilcoxon Z statistics support the same conclusions.

Panel B of Table 2 reports results for standardized quarterly earnings changes (*sqecs*). The results for quarterly earnings are consistent with the results for annual earnings in documenting significant positive *sqecs* before and after stock splits. The tests based on median *sqecs* seem to provide a more powerful test for abnormal earnings performance. They document significant positive earnings changes from quarter -4 to quarter +4. The tests based on mean *sqecs* document significant positive earnings changes from quarter -3 to quarter +2.

To summarize, firms that split their shares during 1982-1989 experience earnings increases immediately before and after announcing the split. There is no evidence of a significant reversal of earnings performance after the split. The significant positive earnings changes after splits is consistent with hypothesis H1. The significant positive earnings changes prior to splits and absence of significant negative earnings changes after splits are consistent with hypothesis H4. The results reported in this section are consistent with results reported by AHP.

TABLE 2
Summary Statistics On Standardized Earnings Changes
Surrounding Announcements Of Stock Splits By
88 Firms That Pay No Cash Dividends (1982-1989)

Year/Quarter Relative To Split Announcement	Mean	Student t Statistic	Median	Wilcoxon Z Statistic
Panel A. Standardized Annual Earnings Changes (saecs)				
-1	1.31%	3.04***	1.18%	4.22***
0	1.98	3.93***	1.55	4.51***
1	-0.46	-0.66	0.44	0.36
Panel B. Standardized Quarterly Earnings Changes (sqecs)				
-4	0.21%	1.37	0.21%	3.17***
-3	0.24	1.78*	0.18	3.14***
-2	0.39	1.91*	0.33	4.12***
-1	0.47	2.81***	0.37	5.78***
0	0.68	5.53***	0.46	6.42***
1	0.58	4.16***	0.43	4.98***
2	0.47	2.56**	0.47	3.92***
3	0.25	1.01	0.22	2.42**
4	-0.34	-0.92	0.23	1.89*
5	-0.04	-0.25	0.05	0.22
6	-0.12	-0.48	0.19	0.65
7	0.05	0.20	0.19	0.38

NOTE: Year (quarter) 0 is the year (quarter) following the stock split announcement. Annual earnings are constructed from quarterly earnings data to insure that year 0 earnings are computed from four quarterly earnings announcements subsequent to the split (quarters 0 to 3) and year -1 earnings are computed from four quarterly announcements prior to the split (quarters -4 to -1). For each splitting firm j and year (quarter) t , $saec_{j,t} = (E_{j,t} - E_{j,t-1}) / P_j$ and $sqec_{j,t} = (QE_{j,t} - QE_{j,t-4}) / P_j$, where $E_{j,t}$ is the annual earnings per share for firm j for year t , $QE_{j,t}$ is the quarterly earnings per share for firm j for quarter t , and P_j is firm j 's share price at the month-end preceding the split announcement.

* Two-tailed test significant at 0.10 level.

** Two-tailed test significant at 0.05 level.

*** Two-tailed test significant at 0.01 level.

Tests Of H2 And H5

In this section hypotheses H2 and H5 are tested by estimating the relations between split announcement-period abnormal returns and earnings changes surrounding splits. If stock splits convey information about earnings changes for time periods surrounding split dates, the market reaction will be positively related to those earnings changes. The following regressions are estimated for annual and quarterly earnings, respectively:

Equation 5

$$AR_j = \alpha + \beta saec_{j,t} + \varepsilon_j$$

Equation 6

$$AR_j = \alpha + \beta sqec_{j,t} + \varepsilon_j$$

where AR_j is the two-day market adjusted return for firm j for one day prior to and the day of the stock split announcement.

Panel A of Table 3 reports results of estimating regression (5) for years -1, 0, and 1. The market reaction to splits is significantly positively related to the annual earnings change for the year following the split, year 0. The market reaction is not significantly related to annual earnings changes for years -1 or 1. Thus, the results for annual earnings support hypothesis H2 and the conclusion that splits signal earnings increases in the following year. Hypothesis H5 is not supported. Splits do not seem to convey information about pre-split earnings changes.

Panel B of Table 3 reports results of estimating regression (6) for quarters -4 to 7. Results are consistent with those for annual earnings. Significant positive relations between abnormal returns and $sqaec$ s are reported for three of the four quarters immediately following splits, quarters 0, 1, and 3. No other significant positive relations are reported. Thus, splits appear to convey earnings information up to four quarters ahead.

An alternative method of estimating the β s reported in Table 3 is with a multivariate regression, that is, by regressing the split announcement abnormal return on all of the annual (or quarterly) earnings changes simultaneously. For annual earnings the alternative approach provides β estimates very close to those reported in Table 3. However, for quarterly earnings there is a severe multicollinearity problem that renders the results unreliable. Because of the multicollinearity problem, only the more reliable univariate regressions are reported.¹²

TABLE 3
Tests Of The Relation Between Stock Split Announcement Abnormal Returns And Standardized Earnings Changes Surrounding Stock Splits By 88 Firms That Pay No Cash Dividends (1982 - 1989)

Year/Quarter Relative To Split Announcement	α	t(α)	β	t(β)	R ²
Panel A. Annual Earnings: $AR_j = \alpha + \beta saec_{jt} + \epsilon_j$					
-1	3.23	5.68***	0.01	0.06	0.00
0	2.72	4.78***	0.26	2.36**	0.06
1	3.25	5.99***	0.02	0.22	0.00
Panel B. Quarterly Earnings: $AR_j = \alpha + \beta sqec_{jt} + \epsilon_j$					
-4	3.19	5.85***	0.22	0.60	0.00
-3	3.16	5.76***	0.32	0.75	0.01
-2	3.37	6.17***	-0.35	-1.25	0.02
-1	3.16	5.60***	0.17	0.48	0.00
0	2.30	3.87***	1.38	3.08***	0.10
1	2.76	4.77***	0.83	2.04**	0.05
2	3.16	5.65***	0.16	0.52	0.00
3	3.14	5.87***	0.40	1.72*	0.03
4	3.29	6.10***	0.16	1.03	0.01
5	3.25	6.04***	0.30	0.87	0.01
6	3.24	5.98***	0.00	0.00	0.00
7	3.26	6.12***	-0.44	-1.70	0.03

NOTE: $saec_{jt}$ = standardized annual earnings change for year t relative to the split announcement;
 $sqec_{jt}$ = standardized quarterly earnings change for quarter t relative to the split announcement;
 AR_j = market adjusted abnormal return for the two-day period encompassing *The Wall Street Journal* announcement date for split j and the day prior.

* Two-tailed test significant at 0.10 level.

** Two-tailed test significant at 0.05 level.

*** Two-tailed test significant at 0.01 level.

To summarize, the results of regressions of split announcement-period abnormal returns on surrounding earnings changes are consistent with hypothesis H2 and inconsistent with hypothesis H4. These results are directly opposed to results reported in AHP. They find split abnormal returns are positively related to annual earnings changes prior to splits, but are unrelated to subsequent earnings changes. AHP's methodology is similar to that used here. The major difference between their approach and this one is the choice of sample period. AHP examine the 1970 to 1980 period and this study examines 1982 to 1989. The contrary results of the two studies indicate that the information conveyed by splits is time-period specific, with the market interpreting splits more optimistically during the period when the long-run potential for economic growth is higher.

Tests Of H3 And H6

Hypotheses H3 and H6 are tested by estimating the effect of stock splits on the market reaction to earnings changes. The relation between earnings announcement-period abnormal returns and earnings changes is estimated as follows:

Equation 7

$$AR_{j,t} = \alpha + \beta sqec_{j,t} + \lambda D_t sqec_{j,t} + \varepsilon_{j,t}$$

where $AR_{j,t}$ is the market adjusted return for firm j for the day of and day prior to the quarter t earnings announcement, $sqec_{j,t}$ is the standardized quarterly earnings change for firm j for quarter t , and D_t is a dummy variable that equals one for earnings announcements that follow the split announcement and zero for earnings announcements that precede the split announcement.¹³ The parameter β is an estimate of the price to earnings elasticity for earnings announcements prior to splits and λ is an estimate of the change in β following splits. If stock splits convey favorable information about post-split earnings, post-split $sqecs$ will be partially anticipated and λ will be negative. If stock splits signal that large, usually transitory pre-split earnings increases are permanent, λ will be positive. In this case a lower pre-split price to earnings elasticity is expected because the market should react less strongly to earnings changes that are expected to be transitory. Regression (7) differs slightly from the approach of AHP, who relate annual earnings changes to annual returns. I relate quarterly forecast errors to two-day earnings announcement returns because Foster [13] finds that the price reaction to the information in quarterly earnings is concentrated in a two-day period. Since, the two-day excess returns are less noisy estimates of the price reaction than are annual returns, my approach should provide lower standard errors for estimated coefficients.

The results of estimating regression (7) are reported in Table 4. The β and λ estimates each differ significantly from zero. β is 0.73, indicating a positive relation between earnings changes and the price response to earnings announcements in the year prior to stock splits. λ is -0.70, indicating that the price response to earnings announcements is attenuated in the two years following splits. These estimates of β and λ are consistent with hypothesis H3, but are inconsistent with hypothesis H6.

The following regression, based on quarterly dummy variables is also estimated:

Equation 8

$$AR_{j,t} = \alpha + \beta sqec_{j,t} + \sum_{q=0}^7 \lambda_q D_{q,t} sqec_{j,t} + \varepsilon_{j,t}$$

where $D_{q,t}$ equals 1 if the earnings announcement is for quarter q relative to the split announcement; 0 otherwise, the parameters λ_q measure the attenuation effects in the quarters following the split, and quarter 0 is the quarter of the first quarterly earnings announcement to follow the split.

Results of estimating regression (8) are consistent with those for regression (7) and are reported in Table 4. The estimate of β is positive and significant. All eight of the λ_q estimates are negative and four differ significantly from zero. The significant λ_q estimates are scattered throughout the eight quarters following stock split announcements, indicating that the market response to quarterly earnings announcements is attenuated during the two years subsequent to splits and that splits convey information about at least two years of subsequent quarterly earnings changes.

To summarize, results reported in Table 4 are consistent with hypothesis H3 and inconsistent with hypothesis H6. Like the results reported in Table 3, the Table 4 results are contrary to results reported in AHP. They find that the market response to earnings changes is attenuated in the time prior to split announcements, while I find that market response is

attenuated in the time following split announcements. The Table 4 results are further evidence that the nature of the earnings information conveyed by splits is time-period specific.

TABLE 4
Tests Of The Relation Between Abnormal Returns At Earnings
Announcements And Contemporaneous Earnings Changes In Time
Period Surrounding Stock Splits By Firms That Do Not Pay Cash Dividends

Model A: $AR_{j,t} = \alpha + \beta sqec_{j,t} + \lambda D_t sqec_{j,t} + \epsilon_{j,t}$											
α	β	λ								R^2	n
-.02 (-.10)	.73 (5.68)***	-.70 (-5.00)***								.03	1056
Model B: $AR_{j,t} = \alpha + \beta sqec_{j,t} + \sum_{q=0}^7 \lambda_q D_{q,t} sqec_{j,t} + \epsilon_{j,t}$											
α	β	λ_0	λ_1	λ_2	λ_3	λ_4	λ_5	λ_6	λ_7	R^2	n
-.01 (-.04)	.73 (5.73)***	-.81 (-1.99)**	-.38 (-.77)	-.13 (-.30)	-.15 (-.61)	-.74 (-4.84)***	-.03 (-.12)	-.92 (-5.99)***	-.52 (-2.34)**	.06	1056

NOTE: $AR_{j,t}$ = market adjusted abnormal return for two-day period encompassing the announcement date of quarter t earnings and the day prior;
 D_t = dummy variable equal to 1 for earnings announcements in years 0 and 1 relative to split, zero otherwise;
 $D_{q,t}$ = dummy variables equal to 1 if earnings announcement is for quarter q relative to split, zero otherwise;
 $sqec_{j,t}$ = standardized quarterly earnings change for quarter t relative to the split announcement;

* Two-tailed test significant at 0.10 level.

** Two-tailed test significant at 0.05 level.

*** Two-tailed test significant at 0.01 level.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

This paper examines the nature of the earnings information conveyed by a sample of stock splits that occurred during the 1982 to 1989 time period. Empirical tests are designed to test two potential explanations of the positive average market reaction to stock split announcements. The first is that splits signal improved subsequent earnings performance. The second is that splits signal management's judgement that large pre-split earnings increases are permanent rather than temporary. There are three major empirical results: (1) the year before and year after split announcements are years of earnings increases, (2) stock split announcement-period abnormal returns are not related to earnings changes prior to the split, but are positively related to subsequent earnings changes, and (3) the stock price reaction to earnings announcements is attenuated following stock splits. All results are consistent with the idea that splits convey information about subsequent earnings increases. Results (2) and (3) are inconsistent with the idea that splits convey information about pre-split earnings.

The results reported in this paper are contrary to those reported by Asquith, Healy, and Palepu [2]. Using a similar sample selection procedure and methodology for a different time period (1970-1980), they find that splits signal only that prior earnings increases will not be reversed. Clearly, the nature of the earnings information conveyed by splits changed in the nineteen-eighties. The most likely explanation for the change in the market's interpretation of stock splits is the change in economic environment. The nineteen-seventies were a period of high inflation and low real economic growth, while the nineteen-eighties were a period of low inflation and high real economic growth. It is reasonable for a rational market to interpret an earnings signal more optimistically during a period when the long-run potential for growth is stronger.

My results are consistent with a stock market that efficiently incorporates information about economic conditions when interpreting stock splits. Thus, there are implications beyond the study of splits. If the economic environment affects the market's interpretation of stock splits, it should affect the market's interpretation of other announcements as well. Empirical examinations of other events can confirm or negate the role of economic conditions in the market's interpretation of firms' announcements.

ENDNOTES

1. A positive average stock price response to splits is documented by Fama, Fisher, Jensen, and Roll [12], Bar-Yosef and Brown [5], Charest [10], and Grinblatt, Masulis, and Titman [15]. Lakonishok and Lev [18] document that splitting firms experience positive earnings growth in the years immediately preceding and following split announcements.
2. Inflation and GNP growth rates are based on data collected from the Federal Reserve Bulletin.
3. This is the definition used by Fama, Fisher, Jensen, and Roll [12], Klein and Peterson [17], and Asquith, Healy, and Palepu [2].
4. Market adjusted returns are reported for comparability with Asquith, Healy, and Palepu [2]. Results based on market model prediction errors support the same conclusions.
5. See Fama, Fisher, Jensen and Roll [12, page 12], Asquith, Healy, and Palepu [2, page 391], Klein and Peterson [17, page 918], and Lakonishok and Lev [18, page 918].
6. Asquith, Healy, and Palepu [2] report a mean two-day market adjusted return of 3.7 percent for their sample of stock splits by non-dividend-paying firms. Grinblatt, Masulis, and Titman [15] report a mean two-day announcement-period return of 3.29 percent for a sample of clean stock split announcements.
7. Annualizing quarterly earnings data in this fashion insures that year 0 earnings consist entirely of earnings announced after the stock split announcement and that year -1 earnings consist entirely of earnings announced before the stock split announcement. This would not be the case if annual earnings from the Annual Industrial *COMPUSTAT* Files were used in the analysis.
8. Ball and Watts [4], Albrecht, Lookabill, and McKeown [1], and Watts and Leftwich [20] present evidence on the statistical properties of annual earnings figures.
9. For each firm, all earnings per share observations are adjusted for stock distributions so that they are based on the number of shares outstanding at the end of quarter -1.
10. Scaling in this manner is intuitively appealing when relating saecs to rates of returns. Since returns are stock price changes deflated by dividing by stock prices, deflating earnings per share by dividing by stock price insures that the variables related are scaled by the same variable.
11. Both means and medians are reported because statistical tests based on mean forecast errors require that forecast errors be normally distributed, and an analysis of the forecast errors indicates that they are not. Estimates of skewness and kurtosis for both annual and quarterly forecast errors differ from the values expected for normally distributed random variables. Tests based on median forecast errors require no distributional assumption.
12. AHP report the multivariate regression for annual earnings changes. They do not report results for quarterly earnings changes.
13. Since regression (7) relates earnings forecast errors to earnings announcement abnormal returns, the definition of $sqfe_{j,t}$ is modified as follows:

$$sqfe_{j,t} = (E_{j,t} - E_{j,t-4}) / P_{j,t}$$

Thus, each earnings change is scaled by dividing by the stock price for the month-end preceding the announcement of quarter t earnings, $P_{j,t}$, rather than by the month-end stock price preceding the split announcement, P_j . Also, for each $sqfe_{j,t}$, both E_t and E_{t-4} are based on the number of shares outstanding at the end of quarter t . These alterations are consistent with the methodology used by AHP.

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