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Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis

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I. Introduction

ASSUMING THAT MANAGERS POSSESS inside information about their firms' future prospects, they may use various signaling devices to convey this information to the public. Two of the most important signaling devices available are earnings and dividend figures. The "information content of dividends" hypothesis asserts that managers use cash dividend announcements to signal changes in their expectations about future prospects of the firm.[1] Since dividend decisions are almost solely at management's discretion,[2] announcements of dividend changes should provide less ambiguous information signals than earnings numbers. Furthermore, given the discrete nature of dividend adjustments, signals transmitted by these changes may even provide information beyond that conveyed by the corresponding earnings numbers. If dividends, then, do convey useful information, in an efficient capital market this will be reflected in stock price changes immediately following a public announcement. It is, therefore, an empirical question whether dividend information content is useful to capital market participants.

A major difficulty in assessing dividend information content lies in the fact that dividend and earnings announcements often are closely synchronized. Thus, one has first to adequately identify information reflected in both earnings and dividends and then consider the remainder of the information conveyed by dividend announcements.

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[1] Miller and Modigliani [9] have shown that in the presence of perfect capital markets, the dividend policy of the firm per se, is irrelevant to its valuation.

[2] Managers probably would be reluctant to use this discretionary signaling device falsely, because when the underlying results are revealed, the usefulness of this device for future signaling could be dramatically reduced. For an analysis of managers' incentives to signal information, see Ross [12].

The information content of dividends hypothesis has been tested in several recent empirical studies, and the evidence presented seems inconclusive. Watts [14, 15, 16], using annual data, argued that the information content of dividends can only be trivial. Pettit [10, 11] and Laub [7], using quarterly data, suggested that dividend announcements convey information beyond that already reflected in contemporaneous earnings numbers. The main dispute between the studies centers on the issue of adequate identification and control of the information conveyed by earnings. Charest [2] examined investment performance and capital market efficiency with respect to trading based on quarterly dividend information. His findings indicated significant abnormal returns in months following the announcement of selected dividend changes. He made no attempt, however, to isolate the effect of dividend information from that of information already reflected in contemporaneous earnings numbers.

The main purpose of this study is to ascertain whether quarterly dividend changes provide information beyond that already provided by quarterly earnings numbers. The study uses a methodology different from any used in previous studies, and provides evidence on the usefulness of both quarterly dividend and earnings announcements as signals of changes in future prospects of the firm.

II. The Data

A sample of 149 industrial firms[3] was selected from those listed on the New York Stock Exchange. Each firm met the following criteria:

1. Quarterly earnings per share and quarterly cash dividends per share, including extra dividends, were available on the quarterly industrial compustat tapes of the Investor Management Sciences for the period I/1963—IV/1976.
2. Daily rates of return were available on the tapes constructed by the Center for Research in Security Prices (CRSP) at the University of Chicago for the period 1/1/63—12/31/76.
3. Declaration dates of quarterly dividend payments were available in the annual cumulative issues of *Moody's Dividend Record* (published by Moody's Investors Service, Inc., New York). It is assumed that these dates are available through public media such as the *Wall Street Journal* on the next business day after announcement.
4. Announcement dates of quarterly earnings per share were available in the different annual issues of the *Wall Street Journal Index*.[4]

In addition, the daily closing Standard and Poor's Industrial Common Stock Price Index was obtained from the annual issues of *Standard and Poor's Trade and Securities Statistics-Security Price Index Record*, for the period 1/1/63—12/31/76.

[3] This sample consists of the largest set that could be obtained given our selection criteria.

[4] For the purpose of the current study, the data are constructed so that each quarter contains reported quarterly earnings and dividends. (The original compustat tapes contain in any given quarter the earnings earned and the dividends reported in that quarter.) All per-share data were adjusted for stock splits and stock dividends.

III. Methodology and Estimation Procedures

A. *Dividend Expectation Model*

To examine empirically the adjustment of common stock prices to quarterly dividend announcements, a measure of unexpected change in dividends first must be derived. The expectation model used in this study is a naive model.[5] It forecasts no change in dividends from one quarter to another;[6] that is:

$$\hat{D}_{j,q} = D_{j,q-1}, \tag{1}$$

where: $\hat{D}_{j,q}$ = expected dividend per share for the j-th firm in the q-th quarter and $D_{j,q}$ = actual dividend per share announced by the j-th firm in the q-th quarter. Accordingly, a dividend announcement is considered favorable[7] if $D_{j,q} > \hat{D}_{j,q}$, neutral if $D_{j,q} = \hat{D}_{j,q}$ and unfavorable[8] if $D_{j,q} < \hat{D}_{j,q}$.

Justification for the naive expectation model is derived from the reluctance-to-change dividends assertation, which states that managers do not change dividend payments unless they have reasons to expect a significant change in the future prospects of the firm. Hence, an increase in dividends should signal a favorable change in managers' expectations, whereas a decrease in dividends should indicate a pessimistic view of the firm's future prospects. The empirical observation that most firms follow a policy of dividend stabilization is consistent with the reluctance-to-change dividends assertion. In our sample, for example, about 87 percent of all cases falls in the category of no change in quarterly dividend payments (see Table I). Furthermore, Laub [6] has shown that the adjustment process of quarterly dividends is more likely to be discrete.

B. *The Timing of Quarterly Dividend and Earnings Announcements*

The major issue to consider is whether quarterly dividend announcements provide information beyond that already provided by quarterly earnings numbers.[9] A major difficulty lies in the fact that quarterly earnings and dividend figures often are released to the public at approximately the same time. In these

[5] An alternative dividend expectation model was also used in this study. This is a modified version of the Lintner [8] model proposed by Fama and Babiak [3] and adjusted here for quarterly data:

$$D_{j,q} - D_{j,q-1} = b_{1j}D_{j,q-1} + b_{2j}E_{j,q} + b_{3j}E_{j,q-4} + \delta_{j,q},$$

where:

$E_{j,q}$ = earnings per share reported by the j-th firm in the q-th quarter, and

$\delta_{j,q}$ = a disturbance term assumed to satisfy the usual requirements of the OLS regression model. It represents the unexpected change in quarterly dividends.

This model provided results (not reported) similar to those presented below.

[6] No seasonality is observed in the data with respect to changes in dividends from one quarter to another. Furthermore, Laub [6, p. 558] provides evidence that "... there seems to be some additional information in the quarterly dividends and earnings not present in the annual dividends and earnings."

[7] The cases examined include dividend increases due to the distribution of extra cash dividend only if the extra dividend differs from that distributed in the same quarter of the previous year.

[8] Only decreases in regular dividends are considered.

[9] The effect of published quarterly and annual earnings-per-share numbers on common stock prices has been demonstrated by Ball and Brown [1], Joy, Litzenberger and McEnally [5], and others.

cases, any observable adjustment of stock prices may be the result of a confounding of the information conveyed by earnings and dividends.

In order to isolate possible dividend effects from those of earnings, this study examines only those quarterly dividend and earnings announcements conveyed to the public on different dates within any given quarter. In this way, a distinction is made between earnings announcements that precede or follow and those that accompany dividend announcements within any given quarter. The sample data frequency is presented in Table I.

The sample data are grouped according to the direction of dividend changes from one quarter to another,[10] and by the number of trading days between earnings and dividend announcement dates in any given quarter. The sample includes 2612 dividend announcements that follow (Panel A) and 787 that precede (Panel B) quarterly earnings announcements by at least eleven trading days. Among these are 384 increases, 47 decreases, and 2968 cases of no change in dividends.

C. *Measurement of Abnormal Performance*

Assuming that security returns are distributed multivariate normal, the following market model is used:[11]

$$\tilde{R}_{jt} = \alpha_j + \beta_j \tilde{R}_{mt} + \tilde{\epsilon}_{jt}, \tag{2}$$

where:

$\tilde{R}_{jt}$ = the geometric mean[12] of the daily rates of return of security j, over a five consecutive trading-day period, t,

$\tilde{R}_{mt}$ = the geometric mean of the daily rates of return of Standard and Poor's Industrial Stock Price Index, over a five consecutive trading-day period, t,

β_j = covariance $(\tilde{R}_{jt}, \tilde{R}_{mt})$/variance $(\tilde{R}_{mt})$,

α_j = $E(\tilde{R}_{jt}) - \beta_j E(\tilde{R}_{mt})$, and

$\tilde{\epsilon}_{jt}$ = disturbance term of security j at period t, and $E(\tilde{\epsilon}_{jt}) = 0$.

Using an OLS regression, equation (2) is run for each stock over the entire period studied.[13] Return observations are excluded for fifteen days before and fifteen days after each quarterly dividend and earnings announcement because if these announcements affect stock prices, the residual terms $\tilde{\epsilon}_{jt}$ will not have a zero expected value in the period surrounding each announcement date.

In order to derive a dividend effect that is not confounded with an earnings

[10] All three categories exclude cases that involve stock splits or stock dividends (larger than 10 percent) in either the current or previous quarter in question.

[11] See Fama [4, pp. 63–132] for a discussion of this model.

[12] As pointed out by Scholes and Williams [13], many securities listed on organized exchanges are traded only infrequently, and this introduces into the market model a potentially serious econometric problem of errors in variables. This nonsynchronous trading problem appears particularly severe with daily prices. To overcome such a potential problem we estimate the market model using the geometric means of the daily rates of return over five consecutive trading-day periods. The coefficients obtained $(\hat{\alpha}_j, \hat{\beta}_j)$ are then used to estimate daily residuals. (Notice that Scholes and Williams [13] suggest a different estimation procedure to attack this problem.)

[13] Joy, et al. [5, Appendix] estimate the slope coefficient of equation (2) in alternative ways and conclude that empirical results obtained using these estimates are similar.

Table I

The Sample Frequency of Quarterly Dividend Announcements Relative to Quarterly Earnings Announcements

A. Earnings Announcements precede Dividend Announcements

	Number of Trading Days Between Announcement Dates of Quarterly Dividends and Earnings					
Category	0–10	11–20	21–40	41–60	61+	11–61+ (Total)
Increase in Dividends[a]	379	132	136	33	9	310
No Change in Dividends	2726	974	988	274	42	2278
Decrease in Dividends	68	13	10	1	0	24[b]
B. Earnings Announcements follow Dividend Announcements						
Increase in Dividends	78	45	27	1	1	74
No Change in Dividends	644	464	211	13	2	690
Decrease in Dividends	8	14	8	1	0	23[c]

[a] Comparing quarter-to-quarter change in dividend per-share.
[b] From 15 different companies.
[c] From 12 different companies.

effect, the dividend expectation model is applied only to stock/quarters where cash dividends are announced at least eleven trading days preceding or following the earnings announcement in the same quarter. The market model is then used to determine whether stockholders realized abnormal returns in the days surrounding these quarterly dividend and earnings announcements. Abnormal returns, $\hat{\epsilon}_{ji}$, for firm j on day i are estimated as the difference between the actual return on day i and the return predicted from the market model

$$\hat{\epsilon}_{ji} = \tilde{R}_{ji} - \hat{\alpha}_j - \hat{\beta}_j \cdot \tilde{R}_{mi}, \tag{3}$$

where i denotes the i-th day relative to a given announcement date for firm j. Then, for any day i within the interval of ten days before to ten days after an announcement date, the average residual (AR) across sample members is

$$\mathrm{AR}_i = \frac{1}{Q} \sum_{q=1}^{Q} \frac{1}{N_q} \sum_{j=1}^{N_q} \hat{\epsilon}_{jqi}, \tag{4}$$

where N_q is the number of firms in a calendar quarter q, and Q is the number of quarters for a given group. (The various groups considered will be discussed in Section IV.)

The variables $\hat{\epsilon}_{ji}$ and AR_i are used to measure the information content of quarterly dividend and earnings announcements and the efficiency with which this information is incorporated into stock prices. The null hypothesis is that $\hat{\epsilon}_{ji}$ are drawn from a distribution with zero mean; that is, that the announcements of quarterly dividends and earnings have no systematic effect on corresponding stock prices. To test the hypothesis that the average residual at day i is statistically different from zero, the following t-statistic is used:

$$t(\mathrm{AR}_i) = \frac{\mathrm{AR}_i \cdot \sqrt{Q}}{S(e_{qi})} \sim t(Q-1), \tag{5}$$

where:[14]

$$e_{qi} = \frac{1}{N_q} \sum_{j=1}^{N_q} \hat{\epsilon}_{jqi}, \quad \text{and} \quad S(e_{qi}) = \sqrt{\frac{1}{(Q-1)} \sum_{q=1}^{Q} (e_{qi} - \mathrm{AR}_i)^2}.$$

Cumulative effects of the abnormal returns (CAR) behavior in the days surrounding the dividend and earnings announcement dates (event time zero) are obtained by summing AR_i over event time ($K = -10, \ldots, 0, \ldots, +10$):

$$\mathrm{CAR}_K = \sum_{i=-10}^{K} \mathrm{AR}_i. \tag{6}$$

IV. Empirical Results and Analysis

A. *Information Content of Dividend Changes*

Using the dividend expectation model, the sample data are divided into three subsets: (a) no change in dividends, (b) increases in dividends and (c) decreases in dividends. Each of these subsets is further divided into two groups: (1) cases in which earnings announcements precede dividend announcements, and (2) cases in which earnings announcements follow dividend announcements (by at least eleven trading days). The daily average (AR) and the cumulative daily average (CAR) abnormal returns realized by stockholders in the twenty days surrounding the dividend announcement dates (hereafter AD) are presented in Panels A, B, and C of Table II, for each of these groups. The *t*-statistics presented indicate whether the AR are significantly different from zero. Finally, the CAR plotted in Figure 1 provide an overview of the results.

Results in Panel A of Table II indicate that stockholders of companies that did not change their dividends, earned, on average, only normal returns (as predicted from the market model) over the twenty days surrounding the announcement dates. The CAR during this period are of small magnitudes and the AR do not differ significantly from zero. These results are similar whether earnings announcements precede or follow dividend announcements.

Results in Panel B indicate that stockholders of companies that announced dividend increases realized, on average, positive abnormal returns over the twenty days surrounding announcement dates. Most of the statistically significant abnormal returns occurred during days AD-1 and AD.[15] Moreover, they are of similar magnitude for both groups whether earnings announcements precede or follow dividend announcements (.72 and 1.03 percent, respectively, for these two days combined).

Finally, stockholders of companies that reduced their dividends sustained, on average, negative abnormal returns during the twenty days surrounding an-

[14] Since residuals of different securities in any calendar time may be cross-sectionally correlated due to industry and other factors, $\hat{\epsilon}_{jqi}$ are averaged in each calendar quarter q to obtain e_{qi}. The t test assumes that the e_{qi} are identically independent distributed across time (quarters). Watts [17] used the same t-statistic and examined this assumption. Watts (pp. 142–143) indicated that "... the distribution of abnormal returns is relatively stationary and that the t tests reported ... are well-specified." A similar examination of the present study's abnormal returns reached the same conclusions.

[15] Day AD is the dividend announcement date when the information is assumed to become publicly available through the media. Day AD-1 is the declaration date and in many cases the announcement is revealed by the wire services on that day.

Table II

Performance Measures for Days Surrounding Dividend Announcement Dates

Days Relative to AD	−10	−9	−8	−7	−6	−5	−4	−3	−2	−1	AD	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
A. No Change in Dividend																					
I. Earnings precede Dividend[a]																					
AR (%)	− .04	.00	− .00	− .00	.04	− .07	.05	− .02	.03	− .03	.03	.06	.07	− .11	.01	.05	− .03	− .01	− .03	.01	.00
t Value	−1.22	.03	− .04	− .14	1.03	−1.42	1.09	− .25	.73	− .80	.92	1.42	1.77	− .77	.16	1.18	− .75	− .27	− .81	.34	.09
CAR (%)	− .04	− .04	− .04	− .04	.00	− .07	− .02	− .04	− .01	− .04	− .01	.05	.12	.01	.02	.07	.04	.03	− .00	.01	.01
II. Earnings follow Dividend[b]																					
AR (%)	.05	.12	.08	.06	− .02	.01	.01	.13	− .06	− .05	− .05	.03	.01	.10	.05	.03	.01	− .00	.03	− .06	− .08
t Value	.80	1.72	1.12	.94	− .29	.16	.12	1.74	−1.01	− .73	− .58	.52	.14	1.67	.78	.40	.22	− .05	.59	− .71	−1.24
CAR (%)	.05	.17	.25	.31	.29	.30	.31	.44	.38	.33	.28	.31	.32	.42	.47	.50	.51	.51	.54	.48	.40
B. Dividend Increase																					
I. Earnings precede Dividend[c]																					
AR (%)	.15	− .13	.14	− .02	− .23	− .04	.19	− .14	.14	.37	.35	.17	.00	.08	− .09	− .06	.09	− .07	− .09	− .00	.04
t Value	1.37	−1.24	.87	− .21	−1.71	− .43	1.94	− .92	1.13	3.23*	2.35**	1.44	.00	.72	− .62	− .66	.77	− .44	− .83	− .02	.33
CAR (%)	.15	.02	.16	.14	− .09	− .13	.06	− .08	.06	.43	.78	.95	.95	1.03	.94	.88	.97	.90	.81	.81	.85
II. Earnings follow Dividend[d]																					
AR (%)	− .05	.40	.20	.45	− .03	− .13	− .13	− .08	.03	.67	.36	.06	.07	− .41	− .14	.06	− .26	− .04	.13	.09	.14
t Value	− .27	1.74	1.29	1.76	− .22	− .71	− .52	− .36	.14	3.00*	2.29**	.36	.46	−2.23	−1.17	.27	−1.89	− .28	.80	.63	.70
CAR (%)	− .05	.35	.55	1.00	.97	84	71	63	.66	1.33	1.69	1.75	1.82	1.41	1.27	1.33	1.07	1.03	1.16	1.25	1.39
C. Dividend Decrease																					
I. Earnings precede Dividend[e]																					
AR (%)	− .40	.55	− .62	.24	− .72	.12	.38	− .47	.06	−2.30	−1.46	.35	.25	.35	− .05	− .43	.02	.13	− .33	− .22	.14
t Value	− .90	1.18	−1.78	.86	−1.39	.21	1.25	− .64	.13	−1.88***	−1.08	.67	.30	1.18	− .14	−1.20	.07	.27	− .80	− .29	.32
CAR (%)	− .40	.15	− .47	− .23	− .95	− .83	− .45	− .92	− .86	−3.16	−4.62	−4.27	−4.02	−3.67	−3.72	−4.15	−4.13	−4.00	−4.33	−4.55	−4.41
II. Earnings follow Dividend[f]																					
AR (%)	− .20	− .11	− .70	− .44	− .08	− .04	− .79	.46	− .67	−1.69	−1.13	.95	.59	.07	.03	− .24	.29	.10	−1.25	.39	− .65
t Value	− .46	− .26	−1.39	− .98	− .22	− .18	−2.23	1.13	−2.68	−1.70	−1.97***	1.79	1.00	.33	.12	− .64	.76	.24	−1.92	.74	−1.83
CAR (%)	− .20	− .31	−1.01	−1.45	−1.53	−1.57	−2.36	−1.90	−2.57	−4.26	−5.39	−4.44	−3.85	−3.78	−3.75	−3.99	−3.70	−3.60	−4.85	−4.46	−5.11

[a] 2278 cases; [b] 690 cases; [c] 310 cases; [d] 74 cases; [e] 24 cases; [f] 23 cases.

* Significant at 0.5 percent level (one-tailed test).

** Significant at 2.5 percent level (one-tailed test).

*** Significant at 5 percent level (one-tailed test).

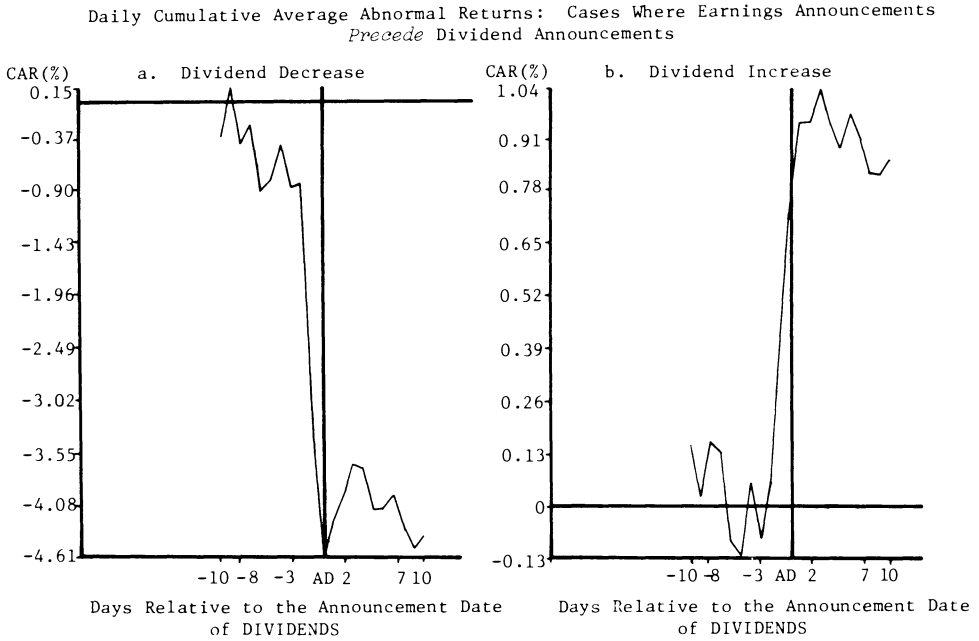

Figure 1. Daily cumulative Average Abnormal Returns: Cases where Earnings Announcements precede Dividend Announcements

nouncement dates. Again, most of the statistically significant abnormal returns occurred during days AD-1 and AD, and they are of similar magnitude for both groups whether earnings announcements precede or follow dividend announcements (−3.76 and −2.82 percent, respectively, in Panel C of Table II). Notice that abnormal returns for the decreased dividend groups are of much greater magnitude (in absolute terms) than those of the corresponding increased dividend groups.

These findings of capital market reaction to dividend announcements strongly support the information content of the dividend hypothesis, namely that changes in quarterly cash dividends do provide information about changes in management's assessment of future prospects of the firm. Furthermore, analyzing only the cases where dividends and earnings are announced at different points in time and obtaining similar results for either group whether earnings announcements precede or follow dividend announcements, lends support to the hypothesis that quarterly dividend announcements contain useful information beyond that already provided by quarterly earnings numbers.

The results also support the semi-strong form of the efficient capital market hypothesis that on average, the stock market adjusts in an efficient manner to new dividend information. Almost all of the price adjustment occurred within days AD-1 and AD.

B. *Information Content of Earnings: Stocks Classified According to Dividend and Earnings Changes*

To investigate further the hypothesis that quarterly dividend announcements provide useful information beyond that provided by corresponding quarterly

earnings numbers, we examine stock performance in the days surrounding earnings announcement dates (hereafter AE) in quarters where both dividend and earnings changes provide favorable signals. For this purpose, a naive earnings expectation model is applied to the cases included in each dividend increase group.[16] This model forecasts no change in earnings announced in a given quarter from those announced in the same quarter of the previous year. Accordingly, an increase in earnings over those of the corresponding quarter for the previous year is considered a favorable signal and a decrease in earnings, an unfavorable signal.[17] Of the 310 dividend increase cases where earnings precede dividend announcements, 89 percent (i.e., 276 cases) were also in the earnings increase category. Similarly, of the 74 dividend increase cases where earnings follow dividend announcements, 86 percent (i.e., 64 cases) were also in the earnings increase category. Results are presented in Table III and Figure 2 and are discussed below.

Results in Table III indicate that stockholders of companies that announced both earnings and dividend increases in the same quarter realized, on average, significant positive abnormal returns at the earnings announcement dates (or at AE-1) whether these earnings announcements preceded or followed the corresponding dividend increase announcements. These results, combined with evidence presented in Table II, provide further support of the hypothesis that announcements of quarterly dividend changes provide information beyond that already provided by corresponding quarterly earnings numbers. When dividend increases are announced before or after earnings increases, stockholders realize abnormal returns in the days surrounding both dividend and earnings announcement dates.[18] This indicates that the significant abnormal returns realized at the time of the announcements of dividend changes do not reflect a diffusion or a leakage of the information conveyed by earnings numbers but rather, additional information generated by the dividend announcements. Thus, these findings have important implications for the effectiveness of using quarterly dividend and earnings numbers as devices for signaling management expectations, namely that changes in quarterly dividends provide a signaling device that is at least as effective as quarterly earnings numbers.

V. SUMMARY

This study attempts to resolve the empirical issue as to whether quarterly dividend announcements convey useful information beyond that provided by quarterly earnings numbers. The methodology used examines only those quarterly dividend and earnings announcements made public on different dates within any given quarter. This distinguishes earnings announcements that precede or follow from those that accompany dividend announcements. Findings about

[16] When the naive earnings expectation model was applied to the cases included in the two dividend decrease groups, of the twenty-four (twenty-three) dividend decrease cases where earnings precede (follow) dividend announcements, thirteen (six) cases were also in the earnings decrease category. Due to the small number of observations in these categories, analysis was restricted to favorable signals only.

[17] See Joy, et al. [5] for a justification of this model.

[18] Stock performance for the 276 and 64 cases analyzed in this section was also examined for the days surrounding the dividend announcement dates. Results were similar to those presented in Panel B of Table II.

Table III

Performance Measures for Days Surrounding Earnings Announcement Dates: Cases where both Earnings and Dividends Increase

Days Relative to AE	−10	−9	−8	−7	−6	−5	−4	−3	−2	−1	AE	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10
I. Earnings precede Dividend[a]																					
AR (%)	.00	.07	.05	− .14	.17	.24	− .25	.09	.52	.33	.58	.06	.25	− .05	.32	.09	− .05	− .10	− .09	.02	.02
t Value	.02	.56	.33	−1.20	1.82	1.41	−1.27	.88	1.71	1.59	3.14*	.41	1.64	− .28	1.72	.38	− .35	− .85	− .56	.20	.20
CAR (%)	.00	.07	.12	− .02	.15	.39	.14	.23	.75	1.08	1.66	1.72	1.97	1.92	2.24	2.33	2.28	2.18	2.09	2.11	2.13
II. Earnings follow Dividend[b]																					
AR (%)	.11	− .19	−.13	.12	− .00	− .03	.07	.19	.11	.62	.29	.36	.26	.06	.12	.13	.10	.03	− .32	− .03	.22
t Value	.57	−1.11	−.61	.82	− .02	− .19	.40	.79	.85	2.62**	1.46	1.33	1.55	.46	.79	.87	.45	.19	−1.39	− .13	1.04
CAR (%)	.11	− .08	−.21	− .09	− .09	− .12	− .05	.14	.25	.87	1.16	1.52	1.78	1.84	1.96	2.09	2.19	2.22	1.90	1.87	2.09

[a] 276 cases; [b] 64 cases.

* Significant at 0.5 percent level (one-tailed test).

** Significant at 1 percent level (one-tailed test).

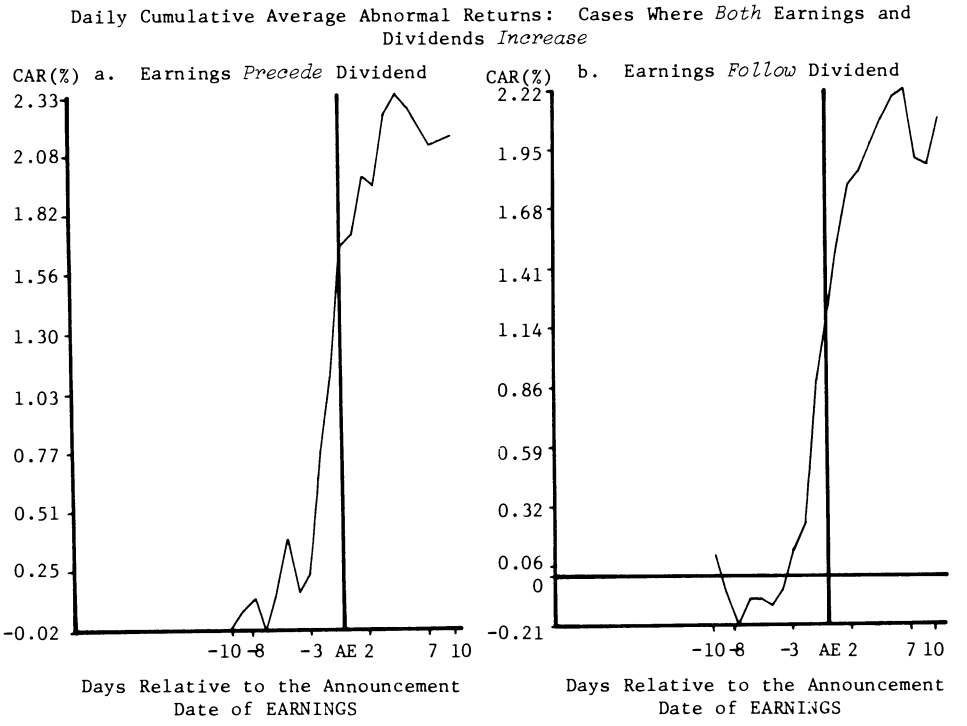

Figure 2. Daily cumulative Average Abnormal Returns: Cases where both Earnings and Dividends Increase

capital market reaction to the dividend announcements studied strongly support the hypothesis that changes in quarterly cash dividends provide useful information beyond that provided by corresponding quarterly earnings numbers. In addition, the results also support the semi-strong form of the efficient capital market hypothesis; that is, on the average, the stock market adjusts in an efficient manner to new quarterly dividend information.

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