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EARNINGS INFORMATION CONVEYED BY
DIVIDEND INITIATIONS AND OMISSIONS

by

Paul M. Healy

and

Krishna G. Palepu

October, 1987

WP #1943-87

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ABSTRACT

This paper examines earnings changes surrounding firms' decisions to initiate or omit dividend payments. Firms that initiate (omit) dividend payments have positive (negative) earnings changes both before and after the dividend policy change. The subsequent earnings changes are positively related to the dividend announcement return. Also, the stock price reactions at the announcement of subsequent earnings are smaller than usual. These results suggest that:

- (1) dividend initiation/omission decisions reflect both past and future earnings performance; and
- (2) the market interprets the announcement of these decisions as managers' forecasts of future earnings changes.

I. INTRODUCTION

This paper examines whether dividend policy changes convey information about future earnings. The topic has been widely discussed in the finance literature. Modigliani and Miller (1958) demonstrate that, under conditions of perfect capital markets and zero taxes, dividends do not affect the value of the firm. However, they contend that dividends may have information content if managers have superior information to investors on the firm's future earnings and use that information to set current dividends (see Miller and Modigliani (1961) and Lintner (1956)).¹ That is, a dividend change may indicate a change in management's expectations of future earnings. Dividend changes can thus be thought of as management forecasts of future earnings changes substantiated by cash.

The hypothesis on the information content of dividend changes has been formalized by Bhattacharya (1979, 1980), John and Williams (1985), Miller and Rock (1985) and Offer and Thakor (1987). Miller and Rock summarize this idea as follows:

In a world of rational expectations, the firm's dividend (or financing) announcements provide just enough pieces of the firm's sources and uses statements for the market to deduce the unobserved piece, to wit, the firm's current earnings. The market's estimate of current earnings contributes in turn to the estimate of the expected future earnings on which the firm's market value largely hinges. (p. 1031).

Watts (1973), in an one of the early empirical studies of the information content of dividends, examines two issues: (1) the relation between unexpected current dividends and future earnings; and (2) abnormal stock returns for firms that announce unexpected increases and decreases in dividends. He concludes that current dividends provide little information on future earnings and there are no abnormal returns in months surrounding the dividend announcements.² As Watts points out, his study has two limitations. First, the use of monthly, rather than daily stock price data, makes it difficult to distinguish between the effect of dividend and other

¹ Lintner provides empirical evidence that managers consider past as well as future earnings in setting current dividends.

² Gonedes (1978) also reports similar findings.

contemporaneous information releases. Second, the potential noise in the dividend expectation model reduces the power of the tests.

A recent study by Asquith and Mullins (1983) attempts to mitigate the above problems. They use daily stock price data to control for other contemporaneous information announcements, such as earnings announcements. Also, they select a sample of dividend changes that they believe are least likely to be anticipated, namely dividend initiations. Asquith and Mullins find that there are significant positive abnormal returns at the dividend initiation announcements. Other studies also use daily data and document abnormal returns at the announcement of unanticipated dividend increases and decreases.³

While recent studies document a significant stock price reaction to dividend policy changes, they do not re-examine the relation between dividend policy changes and subsequent earnings, the second issue analyzed by Watts. The purpose of this paper is to provide fresh evidence on this issue. Our tests differ from those of Watts in two ways. (1) we use dividend announcement returns, rather than unexpected dividends, as a measure of the information inferred by the market from dividend announcements; and (2), we focus on the two dividend policy changes that have been documented in the literature as having the largest average announcement returns, dividend initiations and omissions.⁴

³ These include Aharoney and Swary (1980), Brickley (1983), Kalay and Lowenstein (1985), and Dielman and Oppenheimer (1984).

⁴ While dividend initiations and omissions have on average the largest announcement returns, this does not necessarily imply that they are the largest dollar or percentage dividend changes. Restricting our analysis to initiations and omissions allows us to examine dividend policy changes with the largest information content, thereby increasing the power of our tests. However, this research design restricts the generalizability of our results beyond these extreme dividend changes. The reader should therefore be careful not to interpret our findings as relevant to all dividend policy changes.

Our sample comprises 131 firms that pay dividends for the first time or resume payments after a hiatus of at least ten years and 172 firms that omit dividend payments for the first time or after continuously paying for at least ten years. The tests are designed to examine three issues. First, we document changes in a firm's earnings performance for five years before and after a dividend initiation or omission. Next, we examine whether subsequent earnings changes are related to the information released at the dividend announcement, as measured by the announcement return. Finally, we analyze the market reaction to earnings announcements subsequent to the dividend policy change to assess whether the market anticipates these earnings from the dividend announcement.

The results of our tests are as follows. Firms that initiate dividends have significant increases in their annual earnings for as many as five years before and the year of the dividend initiation. Firms that omit dividend payments have a significant decrease in their annual earnings two years before and in the year of the dividend omission. These findings are consistent with those reported by Lintner (1956), Fama and Blasiak (1968) and Watts (1972), and suggest that dividend initiations and omissions can, in part, be predicted by changes in past and current earnings. Similar to earlier studies, we find that there is a significant market reaction to the announcement of these dividend policy changes, indicating that they cannot be perfectly predicted and convey new information.

Tests of the earnings performance subsequent to the dividend policy changes lead to three conclusions. First, there are significant increases in earnings for firms that initiate dividends for two years after this event. These earnings increases appear to be permanent. For dividend omission firms there is a significant decrease in earnings for only one year following the event. Further, this earnings decrease appears to be temporary since there are significant offsetting earnings increases in the subsequent two years. Second, earnings changes in the year of and year following a dividend initiation or omission are positively related to the information that is

revealed by the dividend announcement as measured by the two day abnormal stock price reaction at the dividend initiation or omission announcement. This relation is found to exist after controlling for prior earnings changes and information on future earnings performance that is available prior to the dividend announcements. For dividend omissions there is a negative relation between the announcement return and earnings changes three years subsequent to the event, consistent with the earnings recovery noted above. Finally, the magnitude of the stock price reactions to earnings announcements following the dividend initiation or omission are significantly less than normal, indicating that these earnings changes are, at least in part, anticipated by the market at the date of the dividend announcement.

Together, the above three findings indicate that the information conveyed by dividend initiations and omissions is related to earnings changes in the year of and one year subsequent to the announcement of these dividend policy changes. This evidence is consistent with the dividend information hypothesis. The results are also consistent with Lintner's description that in making dividend policy decisions managers consider past, current and future earnings. Investors therefore interpret dividend initiations and omissions as changes in managements' forecasts of firms' future earnings.⁵

One limitation of our study is that there is an ex post selection bias in our sample since we examine firms' which have post-dividend earnings data. One possible manifestation of this bias is the pattern of earnings recovery for the dividend omission firms. However, the full effect of the bias on our results is unknown.

The remainder of the paper is organized as follows. In the next section, we describe the

⁵ Our research does not address whether investors value dividends per se, that is whether higher payouts are associated with higher stock prices. Also, our results cannot be interpreted as indicating that managers consciously use dividends as "signals" of future earnings.

data employed in our empirical analysis. The third section describes the empirical tests and their results. The paper concludes with a summary and discussion of the results.

2. DATA

2.1 Dividend Initiation Test Sample

Our dividend initiation sample comprises the firms used by Asquith and Mullins (1983) in their study of the effect of initiating dividend announcements on shareholders' wealth. Asquith and Mullins define an initiating dividend as the first dividend in a firm's history or the resumption of a dividend after a hiatus of at least ten years. Their initial ten year screen was January 1954 to December 1963. All first dividend payments in the sample therefore occur after 1963, and the period studied extends to 1980. For all sample firms, the initial dividend was paid at least one year after the firm was listed on either the New York or American Stock Exchange.

Asquith and Mullins' sample of 168 firms is selected from several sources: Moody's Dividend Record, Standard and Poor's Dividend Record, the Center for Research in Security Prices, and the Wall Street Journal. The dividend announcement date, defined as the date when news of the forthcoming dividend first appeared in the Wall Street Journal, the stock price two days before the dividend announcement and stock returns for the day before and the day of the dividend announcement are collected by Asquith and Mullins for each of the sample firms.

For the above 168 firms we collect the following additional data: (1) The six fiscal year earnings announcement dates prior to the dividend initiation announcement and the five subsequent annual earnings announcement dates. These earnings announcement dates are collected from the Wall Street Journal Index. (2) Annual earnings per share before extraordinary items and discontinued operations reported at the above eleven earnings announcement dates. These data are collected from the 1984 Compustat Annual Industrial and

Research tapes. Firms are included in the final sample if at least eight of the eleven earnings announcement dates and earnings data are available.⁶

Our usable sample comprises 131 firms. Of the 37 firms that are eliminated from Asquith and Mullin's sample, 14 are not listed on Compustat files; ten do not have the required number of Wall Street Journal earnings announcement dates; three have insufficient earnings data before the dividend announcement as they were new listings on the NYSE or ASI; and ten have insufficient earnings data after the dividend initiation announcement (eight of these firms were acquired, one was involved in an exchange transaction and one was delisted).⁷

We define the first fiscal year earnings announced prior to the dividend initiation announcement as earnings for year -1; the first annual earnings announced after the dividend announcement is defined as earnings for year 0.⁸ The five annual earnings announced prior to the year -1 announcement are defined as earnings for years -6 to -2. Similarly, the four annual earnings announced subsequent to the year 0 announcement are defined as earnings for years 1 to 4.

Since dividend announcements occur throughout the fiscal year, year 0 earnings defined above include quarterly earnings that are announced before, as well as after the dividend

⁶ One of our tests compares market reactions to annual earnings announcements before and after the dividend announcements using time-series data for each sample firm. The data restriction, that at least eight earnings observations are available for each firm, is imposed primarily to perform this test. This restricted sample is used in all tests reported in the paper so that the results are consistent. However, we also perform all tests other than this market reaction test using available earnings data for the 168 firms. The results are similar to those reported in the paper.

⁷ As noted above, excluding these companies from the analysis creates an ex post survival bias for our study. Discussion of the effect of this bias on the results is deferred to later in the paper.

⁸ Six firms report annual earnings concurrently with the dividend initiation announcement. Each of these earnings announcements is assigned to year-1, thereby ensuring that all the earnings assigned to years 0 to 4 are announced subsequent to the dividend announcement.

announcement. This introduces a potential bias to our findings regarding earnings performance subsequent to the dividend initiation. To address this problem, we perform additional tests using quarterly earnings data.⁹

We collect the first quarterly earnings announcement date prior to the dividend initiation date from the Wall Street Journal Index. Quarterly earnings per share before extraordinary items and discontinued operations reported on this date, and earnings reported at the three prior quarterly announcements are summed and defined as earnings for year -1. The four quarterly earnings reported following the dividend date are summed to construct earnings for year 0. Earnings for year -2 are also constructed from quarterly data using this procedure. Defined this way, earnings for years -2 and -1 are announced strictly before the dividend initiation announcement, and earnings for year 0 are announced after the dividend date. We use Standard and Poor's Compustat Quarterly Industrial tapes as the source of quarterly earnings data.¹⁰ Quarterly data are available for 129 of our 131 test firms from a search of these tapes.

The 131 dividend initiation firms are in 38 different 2-digit SIC industries. There is no evidence of industry clustering within the sample. Table 1 presents the number of sample firms initiating dividends by year. The most frequent years of dividend initiation in the sample are 1976 (32 firms) and 1977 (25 firms). The dividend initiating year for the remaining 74 firms in the sample ranges from 1970 to 1979.

2.2 Dividend Omission Sample

Our initial dividend omission sample is identified by searching the 1984 Standard and Poor's Compustat Annual Industrial and Research tapes, and the CRSP tapes. We first list all the New

⁹ We are grateful to the referee for the suggestion leading to this analysis.

¹⁰ Standard and Poors do not construct a Research tape for quarterly data. To collect information for companies that were delisted, we searched old copies of the Compustat Quarterly Industrial tape.

York and American Stock Exchange firms on these tapes which omitted dividends during the period 1969-1980. From this list we select firms that omit dividends for the first time in their history (if they have been listed for less than ten years) and firms that omit after continuously paying dividends for at least ten years (if they have been listed for ten years or more). Out of the 240 firms identified from this search, the Wall Street Journal Index does not list a dividend omission announcement date for thirty firms. The initial sample thus comprises 210 companies.

We collect the following data for each of the above firms: (1) the dividend omission announcement date, the date when news of the forthcoming dividend omission first appeared in the Wall Street Journal Index; (2) the stock price two days before the dividend omission announcement date from the CRSP Daily Master Tape or Standard and Poor's Daily Stock Price Record; (3) stock returns for the day before and the day of the dividend omission announcement from the CRSP data files; (4) annual earnings announcement dates and reported earnings per share before extraordinary items and discontinued operations for years -6 to 4, using the procedures described above for the dividend initiation sample.¹¹

The final sample consists of 172 firms. Of the 38 firms excluded for data availability reasons, 17 firms had missing earnings announcement dates in the Wall Street Journal Index; ten have insufficient data prior to the dividend omission as they were new listings on the NYSE or ASE; and eleven firms have insufficient data after the dividend announcement (four were acquired, six were delisted and one firm's exchange listing was suspended).¹²

¹¹ Fifteen firms report annual earnings concurrently with the dividend omission announcement. Each of these earnings announcements is assigned to year-1, thereby ensuring that all the earnings assigned to years 0 to 4 are announced subsequent to the dividend announcement.

¹² Discussion of the effect on our results of the ex post survival bias that arises from excluding these firms is deferred to later in the paper.

As noted for dividend initiations, our method of aligning annual earnings relative to the dividend announcement date leads to a potential bias in our tests of post-omission earnings. To correct this problem, we adopt the procedure described in Section 3.1 to construct earnings variables for years -2, -1 and 0 using quarterly earnings per share before extraordinary items and discontinued operations. Quarterly data are available for 129 of our 172 test firms.¹³

The 172 dividend omission firms are in 42 different 2-digit SIC industries. There is no evidence of industry clustering within the sample. Table 1 presents the number of sample firms omitting dividends by year. The most frequent years of dividend omission are 1970 (50 firms) and 1971 (33 firms). The dividend omission years for the remaining 89 firms in the sample range from 1969 to 1980.

2.3 Comparison Samples

A matched sample of comparison firms is collected to provide an earnings benchmark for evaluating test firms' earnings performance. Each comparison firm is randomly selected from the same industry as its test firm match.¹⁴ Industry matches are based on the test firm's SIC code at the date of the dividend initiation or omission announcement. Each firm in the comparison sample is required to: (1) be listed on either the New York or American Stock Exchange; (2) have stock price data on the CRSP Master Tape or in Standard and Poor's Daily Stock Price Record two days prior to the dividend initiation or omission by its match test firm; and (3) meet the same earnings data requirements as the initiation and omission test firms.

¹³ Quarterly data are available for relatively fewer dividend omission firms than for the initiating sample. As can be seen in Table 1, the omissions are clustered in the early 1970s, when quarterly data available on Compustat are less complete, whereas the initiations tend to occur in the mid-1970s.

¹⁴ For test firms currently listed on the Compustat Research tape, we select the comparison firms from the Research tape. This is done to avoid survivorship bias in the comparison samples. For the remaining test firms we select the comparison firms from the regular Compustat tape.

We are able to find comparison firms for 130 dividend initiation test firms and 171 dividend omission test firms.¹⁵ One firm each in the dividend initiation and omission samples could not be matched.¹⁶ For tests that require quarterly earnings per share we are able to find data for 118 initiating comparison firms and 101 omission comparison firms.

3. TESTS AND RESULTS

The results of four tests are reported in this section. First, we describe the market reaction to the announcement of dividend initiations and omissions. Second, we examine earnings changes in the five years before and after these dividend events. Third, the relation between the market reaction to the dividend announcements and subsequent earnings changes is analyzed. Finally, we test whether the the market reaction to the subsequent earnings announcements is less than the normal reaction. These tests and results are described below.

3.1 Market Reaction to Dividend Initiations and Omissions

We estimate abnormal returns for dividend initiation and omission firms for the period 60 days before to 20 days after the announcement. Abnormal returns are defined as market-adjusted returns, that is, the difference between firms' returns and returns on the CRSP equal-weighted market portfolio.¹⁷

Mean abnormal returns for various holding periods surrounding the dividend announcements are reported in Table 2. The mean announcement return (days -1 and 0) for the initiation firms

¹⁵ Where possible, SIC matches are based on 4-digit codes. We are able to find 122 4-digit matches for the initiation sample, and 159 such matches for the omission sample. The remaining matches are based on 2-digit industry codes.

¹⁶ The dividend initiation firm that is unmatched is in the amusement and recreation services, except motion picture, industry. The dividend omission firm that is unmatched is in the apparel and accessory stores industry.

¹⁷ Abnormal returns were also estimated as risk-adjusted returns from a market model. The results reported in Table 2 and the other tests reported later in the paper are not sensitive to the definition of abnormal returns.

is 3.9% and is statistically significant at the 1% level. There is also evidence that initiating firms have significant positive returns in the pre-announcement period. Mean returns for days -60 to -21, -20 to -11 and -10 to -1 are 3.5%, 1.1% and 4.0% respectively, all significant at the 1% level. These results are similar to those reported by Asquith and Mullins for their full sample of 168 firms.¹⁸

For the dividend omission firms, the mean two day announcement return is -9.5%, significant at the 1% level. As in the case of dividend initiations, we find evidence of significant pre-announcement returns. Mean returns for days -60 to -21, -20 to -11 and -11 to -1 are -7.0%, -2.7% and -7.0% respectively, all significant at the 1% percent level. Once again our results are similar to those reported in earlier studies.¹⁹

The above findings indicate that investors partially anticipate dividend initiations and omissions from other information available prior to the announcement of the dividend policy change. However, these events are not fully anticipated: the actual announcement of the policy changes conveys information to the market.

3.2 Earnings Changes Surrounding Dividend Initiations and Omissions

Studies by Ball and Brown (1968), Ball and Watts (1972), and Watts and Leftwich (1977) suggest that annual earnings follow a random walk. Thus, the average earnings changes for a random sample of firms is expected to be zero. However, Lintner (1956) implies that dividend initiations (omissions) are preceded by a number of years of earnings increases (decreases).

¹⁸ Asquith and Mullins report a two day announcement return of 3.7 percent for the full sample. Dielman and Oppenheimer report a two day announcement return of 3.5 percent for a sample of 39 firms that resume cash dividends.

¹⁹ For example, Dielman and Oppenheimer report a mean two day announcement return of -8.1 percent for a sample of 53 firms that omitted cash dividends.

Further, if dividend policy changes convey information on future earnings, dividend initiations (omissions) are expected to be followed by earnings increases (decreases).

To examine whether there are systematic earnings patterns exhibited by firms that initiate or omit dividends, we calculate earnings changes for five years before (years -5 to -1), the year of (year 0) and the four years after (years 1 to 4) the dividend policy change. To aggregate results across firms, we express earnings changes in these years as a percentage of the stock price two days prior to the dividend announcement, P_j . The standardized change in earnings for firm j in year t , ΔE_{jt} , is therefore defined as:

$$\Delta E_{jt} = (E_{jt} - E_{jt})/P_j \quad t = -5, \dots, 4 \quad (1)$$

where E_{jt} are earnings per share before extraordinary items and discontinued operations for firm j in year t .

Standardized earnings changes are computed for years -5 to 4 for the dividend initiation and omission firms and for the same fiscal years for the comparison matches. Our tests examine mean and median standardized earnings changes for the initiation and omission firms. In addition, we analyze industry-adjusted standardized earnings changes for these firms, defined as the difference in standardized earnings changes for the initiation/omission and comparison firms.

Dividend initiation results

Mean and median earnings changes as a percentage of equity price are reported in Panel A of Table 3 for the dividend initiating firms for years -5 to 4.²⁰ Panel B reports industry-

²⁰ The number of firms with available earnings change data differs across years -5 to 4 since we only require that firms have earnings change data in seven of the ten years.

adjusted numbers for these same firms. Mean standardized earnings changes for the initiation firms are insignificant in years -5 to -2. In year -1 the mean is 4.3% and is significant at the 1% level. In year 0, the year of the dividend announcement, there is a further 5.5% increase in standardized earnings. As the results in Panel B indicate, the earnings increases of the initiating firms are matched by similar earnings increases for the industry comparison firms in year -1. However, the earnings increase for initiating firms in year 0 cannot be attributed to industry factors. These findings indicate that dividend initiating firms are in growth industries but have superior earnings performance in the year of the dividend initiation.

One year subsequent to the dividend announcement we find that the mean standardized earnings change is 2.2% ($p = 0.07$); the following year the mean change is 3.5% ($p = 0.01$). Mean earnings changes are insignificant in years 3 and 4. The earnings increase for the test firms is significantly larger than that for the industry comparison firms only in year 2.²¹

Conclusions from median earnings changes are generally consistent with the above findings. For the test firms there are significant median earnings increases in four of the periods before (years -5, -4, -2 and -1), the year of (year 0) and two years after (years 1 and 2) the dividend announcement. Median industry-adjusted standardized earnings changes are significant in two of the years before (years -4 and -3), the year of (year 0) and two years following the dividend event.

Thus, firms that initiate dividends experience earnings growth starting as many as five years prior to the dividend announcement. The earnings growth continues in the year of the dividend announcement and two subsequent years. These findings are consistent with the hypothesis that

²¹ The mean earnings change for year 1, reported in Table 3, includes an observation which has an earnings decline that is 86% of price. This company is Valmac Industries, which in this year acquired Rite Care Corporation and recorded a large loss on this new business. If this observation is excluded, the sample mean in year 1 is significant at the 1% level in both Panels A and B.

managers consider past and current performance as well as expectations of future earnings in the dividend initiation decision.

One limitation of the above results is that they are based on earnings data that are reported annually whereas changes in dividend policy are reported throughout the year. The median number of trading days between the announcement of the dividend initiation and the first subsequent annual earnings announcement date is 171 trading days. This indicates that dividend initiation announcements occur after approximately one quarter of the fiscal year. Therefore, part of the year 0 earnings in Table 3 may have been reported in quarterly earnings announcements that precede the dividend announcement.

To examine whether our results are sensitive to the use of fiscal year earnings data, we replicate the above tests using quarterly earnings. We redefine annual earnings so that they are strictly aligned with the dividend announcements: year 0 earnings are created from the four quarterly announcements subsequent to the dividend change; year -1 earnings are constructed from the four quarterly earnings announced prior to the event; and year -2 earnings are created from announcements for quarters -5 to -8.²² Realigned earnings changes are then calculated for year 0 and year -1 and are standardized by the stock price two days prior to the dividend announcement.

Mean and median values of raw standardized earnings changes in years -1 and 0 for the initiation firms are report in Panel A of Table 4. Industry-adjusted figures are reported in Panel B. In contrast to the year 0 earnings in Table 3, year 0 earnings in this table are announced strictly after the dividend announcement.

²² We adopt this approach since we do not have enough time series observations to estimate firm-specific quarterly earnings expectation models. Previous results suggest that, unlike annual earnings, quarterly earnings do not follow a random walk. (See Foster (1977)).

Mean standardized earnings changes for the initiation firms are 5.4% in year -1 and 4.5% in year 0. These are both significant at the 1% level. In contrast to results for fiscal year earnings, the earnings change one year prior to the dividend announcement is larger than the earnings change in the event year, indicating that the fiscal year findings understate earnings changes prior to the dividend initiation and overstate earnings changes subsequent to the event. The mean industry-adjusted standardized earnings change is 2.85% in year -1 and is significant at the 5% level. The mean for year 0 is 1.23% and is not significant. However, this finding is attributable to a small number of extreme observations in the comparison sample: the median difference for year 0 is 1.72% and is significant at the 5% level. These findings indicate that the significant annual earnings changes for year 0, reported in Table 3, cannot be fully attributed to quarterly earnings announced before the dividend announcement.

Dividend omission results

Panel A of Table 5 presents summary statistics for the dividend omission firms' standardized earnings changes in years -5 to 4. Panel B presents the industry-adjusted standardized earnings changes for the same years.

The test firms' mean standardized earnings changes are insignificant in years -5 to -3. The means for years -2 and -1 are -1.2% and -7.7% respectively and are statistically significant. There is also a significant -13.5% mean earnings change in year 0, the year of the dividend omission. The results in Panel B indicate that the earnings decline in year -2 could be attributed to industry-related factors. However, in years -1 and 0 the omission firms have earnings declines even after adjusting for industry performance. Thus, similar to dividend initiations, dividend omissions follow significant earnings changes.

Subsequent to the dividend announcement, the omitting firms experience two years of significant positive earnings: 6.3% in year 1 and 9.4% in year 2. The earnings increases cannot

be attributed to industry factors as they persist in Panel B. These results differ from the earnings patterns following dividend initiations. The earnings increases prior to a dividend initiation persist for several years subsequent, whereas the declines in earnings prior to dividend omissions reverse in subsequent years.

The above findings indicate that dividend omissions are preceded by declines in earnings. However, these declines do not persist beyond year 0. Year 0 earnings include quarterly earnings announced both before and after the dividend omission. (The median number of trading between the announcement of the dividend omission and the first subsequent annual earnings announcement date is 136 days, about two fiscal quarters.) Based on the above results, we cannot infer that there are earnings declines following the dividend omission. To explore this issue further, we analyze quarterly earnings data around the dividend omission date.

Once again, we redefine annual earnings so that they are strictly aligned with the dividend announcements. Year 0 (-1) earnings changes are the sum of earnings changes announced in the four quarters subsequent (prior) to the dividend omission. These numbers are standardized by the stock price two days prior to the dividend announcement.

Dividend omission mean and median standardized changes in raw earnings in years -1 and 0 are reported in Panel A of Table 6. Industry-adjusted numbers are reported in Panel B. The omission firms have mean standardized earnings changes of -10.3% and -10.0% in years -1 and 0 respectively. These values are significant at the 1% level. The mean industry-adjusted changes are -9.0% in year -1 and -6.6% in year 0. Since all year 0 earnings changes here are announced after the dividend omission date, these results indicate that there are significant earnings declines for up to four quarters subsequent to the dividend omission.

In summary, the above results indicate that dividend initiating firms have positive earnings changes for up to five years prior to and in the year of the dividend announcement; the dividend omitting firms exhibit negative earnings changes for up to two years before and the year of the dividend event. These patterns persist even after controlling for the performance of these firms' industries. They are consistent with the proposition that these dividend decisions are preceded by systematic earnings patterns.

Evidence on the post-announcement earnings patterns is mixed. For initiations, we find earnings growth for two years after the dividend announcement. The increased level of earnings for these firms appears to be permanent. In contrast, the dividend omission firms have earnings declines only for one year after the dividend announcement. Further, the earnings decline experienced by these firms before and shortly after the omissions announcement appears to be temporary as indicated by the subsequent earnings recovery. One possible explanation for the post-announcement performance of the omission firms is the survival bias in our sample. This issue is discussed later in the paper.

3.2 Relation Between Dividend Information and Earnings Changes

We next test whether the post-announcement earnings changes documented in the previous section are related to the market reaction to the announcement of the dividend initiation or omission. If dividend policy changes are based on managers' expectations of future earnings, there will be a positive relation between dividend announcement returns and subsequent earnings changes. A simple regression framework is used to test this prediction for fiscal year earnings changes in years 0 to 4 and annualized quarterly earnings changes in year 0. Tests using fiscal year earnings are described below. Discussion of modifications to these tests for annualized quarterly earnings are deferred to the results section.

In examining the relation between the earnings changes and the market reaction to the dividend announcement, our tests control for information on future earnings from sources other than the dividend announcement. First, Tables 3 and 5 indicate that the earnings time series of dividend initiation and omission firms deviates from a random walk. Therefore, prior earnings changes may be used to forecast subsequent earnings changes. The standardized change in earnings in year $t-1$ is included as an independent variable in the regression model for year t to control for this earnings pattern.

The second source of information on future earnings we control for is information released to the market between the earnings announcement for year -1 and the dividend initiation or omission announcement. Results reported in section 3.1 show that there are significant abnormal returns prior to the dividend announcements, indicating that information regarding the sample companies' future performance is released during this period.²³ The market-adjusted return cumulated from one day subsequent to the earnings announcement for year -1 to two days prior to the dividend date is used to proxy for this information.

We estimate the following cross-sectional regression separately for each year t , $t = 0$ to 4:

$$\Delta E_{jt} = B_0 + B_1 DRET_j + B_2 \Delta E_{jt-1} + B_3 PRET_j + u_{jt} \quad j = 1, \dots, N \quad (2)$$

where ΔE_{jt} is the standardized earnings change for firm j in year t as defined in equation (1); $DRET_j$ is the market-adjusted return for one day before and the day of the dividend initiation or omission announcement; and $PRET_j$ is the cumulative market-adjusted return from one day subsequent to the earnings announcement for year -1 to two days prior to the dividend initiation or omission announcement.

²³ This information could be from prior quarterly earnings announcements or anticipation of the dividend news.

The coefficient of primary interest in equation (2) is β_1 . If dividend initiations and omissions convey information about future earnings, this coefficient is positive and significant. In addition, if earnings changes in year $t-1$ can be used to forecast the change in year t earnings, the coefficient β_2 will be non-zero. Finally, if information released prior to the dividend announcement but after the previous earnings announcement is related to subsequent earnings performance, the coefficient β_3 will be positive.

Dividend initiation results

Equation (2) is estimated cross-sectionally, using the 131 dividend initiating firms, for each of the five years subsequent to the dividend initiating announcement.²⁴ These estimates are reported in Panel A of Table 7.²⁵ The estimates for the dividend announcement return coefficients (β_1) in years 0 and 1 are 0.197 and 0.356 and are significant at the 10% and 5% levels respectively using a two-tailed test.²⁶ This evidence is consistent with the hypothesis that dividend initiation announcements convey information about firms' earnings prospects in the year of and the year following the dividend initiation: a 1% abnormal price reaction to a dividend initiation implies a 0.2% and 0.36% increase in standardized earnings in these years.

²⁴ The actual number of observations used to estimate the regression in each year varies and is reported in Table 7. The number for each year is different from the number of observations reported by year in Table 3 for two reasons. First, we use earnings changes in two successive years in each regression. Second, we require the annual earnings announcement date prior to the dividend announcement to calculate PRET. These additional data requirements reduce the number of usable observations.

²⁵ White tests for heteroscedasticity are not significant for any of the five regressions (see White (1980) for a description of this test). Belsley, Kuh and Welsh diagnostics, which assess the effect of extreme observations on the regression coefficients, are also examined (see Belsley, Kuh and Welsh (1980) for a description of these diagnostics). The reported coefficient estimates do not appear to be influenced by extreme observations.

²⁶ Since the information hypothesis predicts the sign of the dividend return coefficient to be positive, a one-tailed test is probably more appropriate. Under a one-tailed test the coefficients for years 0 and 1 are significant at the 5% level. The significance levels reported in the tables are for a more conservative two-tailed test.

The coefficients for year 2 to 4 are insignificant, indicating that dividend announcements convey no information on earnings changes beyond year 1.

The coefficient estimate for the change in earnings in year $t-1$, β_2 , is positive and significant at the 10% level in the year 0 regression. The estimated coefficient for year 3 is negative and significant at the 1% level. Estimates for other years are not significant. Finally, the coefficient estimates for the market adjusted stock return, cumulated from the earnings announcement in year -1 to the dividend initiation announcement (β_3) is 0.12 and is significant at the 1% level in the year 0 regression. The estimates of β_3 are not significant for years 1 to 4.

We also replicate the test of the relation between the earnings change in year 0 and the market reaction to the announcement of the dividend policy change using annualized quarterly earnings. Equation (2) is estimated cross-sectionally for year 0 for the 129 initiating test firms for which quarterly earnings data are available. $PRET_j$ is redefined as the market-adjusted return for firm j cumulated from one day following the previous quarterly earnings announcement to two days prior to the dividend announcement.²⁷ Table 8 reports the estimated regression coefficients.

The estimate of the dividend announcement return coefficient is 0.31 and is statistically significant at the 5% level using a two-tailed test. The estimate implies that a 1% abnormal price increase at a dividend initiation announcement is associated with a 0.3% change in standardized earnings year 0. The earnings change measure for year 0 corresponds to information strictly released after the dividend announcement. Therefore, this finding provides

²⁷ Quarterly earnings announcements for 16 initiating firms are reported on the same date as the dividend announcement. Equation (3) is estimated after excluding these firms and the results do not differ from those reported.

further support for the hypothesis that dividend initiations provide information on subsequent earnings.

Dividend omission results

The parameters of regression equation (2) are estimated cross-sectionally using the 172 dividend omitting firms in the sample. Separate equations are estimated for each of the fiscal years 0 to 4.²⁸ These estimates are reported in Panel B of Table 7.²⁹

The estimates for β_1 , the dividend omission return coefficient, are 0.42 and 0.39 in years 0 and 1 and are significant at the 5% and 10% levels respectively in a two-tailed test. These findings are consistent with the information hypothesis: the estimates indicate that a 1% unexpected decline in price at the omission announcement is accompanied by about a 0.4% decrease in standardized earnings in the year of the dividend announcement and the following year. The estimate for year 3 is negative and significant, reflecting the earnings recovery subsequent to the dividend omission documented above. The estimated coefficients for years 2 and 4 are not significant.

The estimate for β_2 , the coefficient of the earnings change in year $t-1$, is not significant in years 0, 3 and 4. For years 1 and 2, the estimated coefficient is negative and significant at the 1% level. This is consistent with the turnaround in the earnings performance of the dividend omission sample in these years. The coefficient estimates for the cumulative market-adjusted return between the earnings announcement in year -1 and the dividend omission

²⁸ The actual number of observations used to estimate the regression in each year varies and is reported in Table 7. The number for each year is different from the number of observations reported by year in Table 4. This is due to additional data requirements discussed earlier.

²⁹ Once again, White heteroscedasticity tests and Belsley, Kuh and Welsch influence diagnostics indicate that the regressions are well-specified.

announcement, β_3 , is 0.13 in year 0 and is significant at the 5% level. The estimates of β_3 for years 1 to 4 are insignificant.

Once again, we replicate the test of the relation between the earnings change in year 0 and the market reaction to the announcement of the dividend policy change using annualized quarterly earnings. Equation 2 is re-estimated cross-sectionally for year 0 for the 129 omission test firms for which quarterly earnings data are available.³⁰ Table 8 reports the estimated regression coefficients. The estimate of the dividend announcement return coefficient is 0.39 and is statistically significant. Since year 0 earnings are announced strictly after the dividend date, this finding provides further support for the dividend information hypothesis.

In summary, the results for both the dividend initiation and the dividend omission sample indicate that there is a positive relation between the market reaction to the dividend announcements and earnings changes for the year of the dividend policy change and for one year following. These results are obtained after controlling for the earnings changes in prior years, and information on future earnings available before the dividend announcement. They are consistent with the hypothesis that dividend initiations or omissions convey information on future earnings performance.

3.4 Market Reaction to Earnings Announcements After Dividend Initiations/Omissions

A number of accounting studies have documented that there is a significant stock price reaction to the announcement of unexpected earnings.³¹ We use the following model to

³⁰ Quarterly earnings announcements for 30 omission firms are reported on the same date as the dividend announcement. Equation (2) is estimated after excluding these firms and the results do not differ from those reported.

³¹ See Ball and Brown (1968), Beaver, Clarke and Wright (1979) and Beaver, Lambert and Morse (1980).

represent the usual relation between earnings announcement returns and the size of unexpected earnings:

$$ARET_{jt} = \beta_{0j} + \beta_{1j} \Delta E_{jt} + e_{jt} \quad t = -5 \text{ to } 4, \quad j = 1 \text{ to } N \quad (4)$$

where $ARET_{jt}$ is the market-adjusted return at the time of the annual earnings announcement for firm j in year t and ΔE_{jt} is unexpected earnings based on a random-walk earnings expectation model deflated by the firm's equity price two days before the earnings announcement. The parameters β_0 and β_1 are assumed to be firm specific. β_1 is the elasticity of the market reaction to unexpected earnings and is expected to be positive, consistent with the findings of the earlier studies.

The results presented in the previous section show that dividend initiation or omission announcements convey information on subsequent earnings. These announcements enable the market to revise its expectation of earnings and thus reduce its forecast errors. However, measures of unexpected earnings based on a random walk model do not reflect this additional information in earnings forecasts. In years subsequent to the dividend initiation or omission, therefore, the elasticity of the market reaction to unexpected earnings based on a random walk model will be less than "normal".

To test the above prediction, we use the following modified form of equation (4):

$$ARET_{jt} = \beta_{0j} + \beta_{1j} \Delta E_{jt} + \sum_{i=0}^4 \mu_i D_{ti} \Delta E_{jt} + e_{jt} \quad t = -5 \text{ to } 4, \quad j = 1 \text{ to } N \quad (5)$$

The five parameters μ_0 to μ_4 are cross-sectional average adjustments to β_{1j} , the elasticity of the market reaction to unexpected earnings, in each of the five years following the dividend initiation or omission. The multiplicative dummy variable D_{ti} takes the value one in year i following the dividend initiation or omission, and zero in other years. If the dividend policy announcement leads the market to revise its forecast of subsequent earnings, changes in earnings will be noisier estimates of unexpected earnings in years 0 to 4 than in -5 to -1, and the parameters μ_0 to μ_4 will be negative.

The sample distribution of estimated t statistics is used to test the significance of the company-specific coefficients β_{0j} and β_{1j} . For each parameter the following Z statistic is computed.

$$Z = \frac{1}{\sqrt{N}} \sum_{i=1}^N t_j / \sqrt{k_j / (k_j - 2)}$$

where t_j is the t statistic for firm j associated with the estimate of the parameters β_0 or β_1 ; k_j is the degrees of freedom in the regression for firm j ; and N is the number of firms in the sample. The t statistic for firm j is distributed Student t with variance $k_j / (k_j - 2)$. Under the Central Limit Theorem, the sum of the standardized t statistics is normally distributed with a variance of N . The Z statistic for each parameter is therefore a standard normal variate under the null hypothesis that the parameter (β_0 or β_1) is not significantly different from zero.³² A Student t test is used to test the significance of the parameters that are assumed constant across firms (μ_0 to μ_4).

³² For a detailed discussion of this test see Christie (1986). The test is based on the sample distribution of the parameter estimates. It is assumed that the parameters are independent across firms in the sample.

Dividend initiation results

The parameters of regression equation (5) are estimated jointly using the observations over ten years for the 131 dividend initiation test firms. The distribution of the estimated regression coefficients β_{0j} and β_{1j} , and the estimated values of the μ coefficients are shown in Table 9. The sample mean value of β_0 is 0.0039, and is statistically significant at the 1% level using a two-tailed test. The sample mean of β_1 is 0.2894 and is also significant at the 1% level. The estimate of μ_1 is -0.1280 and is statistically significant at the 5% level using a two-tailed test. The estimates of μ_1 , μ_2 , μ_3 , and μ_4 are not significantly different from zero. The adjusted R^2 of the regression is 0.272, which is statistically significant. These results are consistent with the hypothesis that the magnitude of the market reaction to the earnings change during the one year following the dividend initiation is less than the "normal" market reaction for a given level of earnings change.³³

Dividend omissions results

The coefficients of regression equation (5) are estimated for the 172 dividend omission test firms using ten years' observations. These results are reported in Table 10. The sample mean values of β_0 and β_1 are 0.0038 and 0.2714 respectively. Both these values, which are very similar to those obtained for the dividend initiation sample, are statistically significant at the 1% level. The coefficient estimates for μ_0 to μ_4 are, respectively, -0.1148, -0.1182, -0.1323, -0.1194, and -0.1048. The estimates of μ_0 , μ_1 , μ_2 , and μ_3 are significant at the 1% level, and the estimate of μ_4 is significant at the 5% level using a two tailed test. These results are consistent with the hypothesis that the magnitude of the market reaction to the earnings change during the five years following the dividend omission is less than the market reaction before the dividend omission for a given level of earnings. The adjusted R^2 of the regression is 0.296, which is statistically significant at the 1% level.

³³ An alternate explanation is that there is abnormally high noise in earnings subsequent to the dividend initiation, reducing the earnings coefficient in these years.

The regression results for the dividend omission sample differ from those for the dividend initiation sample in one important respect. The parameter μ is significantly negative only in year 0 for the dividend initiation sample, whereas the estimates of the μ parameters are significantly negative for the dividend omission sample in all five years following the dividend omission. This is particularly noteworthy given that the earnings changes for the dividend omission sample change from negative to positive after year 0. The negative value of μ in later years for the dividend omission sample cannot be attributed to information revealed by the dividend omission announcement. One possible explanation for the negative coefficients is that the market receives more non-accounting information than usual on the firm's performance once a dividend omitting firm starts showing a turnaround in its performance. If this is the case, earnings announcements in these years are likely to convey less information than usual.

3.5 Sample Selection Bias

Our tests use earnings data for a minimum of two years and a maximum of five years subsequent to the date of the dividend initiation or omission announcement.³⁴ This data requirement is violated for one of five reasons: (1) new listing prior to the dividend date (three initiation firms and ten omission firms); (2) corporate control change subsequent to the dividend date (nine initiation firms and four omission firms); (3) delisting or suspension from the exchange subsequent to the dividend date (one initiation firm and seven omission firms); (4) no Compustat coverage (14 initiation firms³⁵); and (5) earnings announcement dates missing in the Wall Street Journal. The firms that are excluded account for 22% of the original initiating sample and 18% of the initial omission sample.

³⁴ This requirement is imposed to ensure that we have sufficient observations to estimate firm-specific coefficients in the regression tests reported in Section 3.4

³⁵ No omission firms are excluded for lack of coverage on Compustat since Compustat was used to generate the initial sample.

The exclusion of the above companies for data availability reasons leads to a potential selection bias. If the reason for exclusion is related to the dividend initiation or omission decision, the bias systematically influences the reported results. For example, if the dividend initiation firms which are excluded are the worst performers, the sample mean earnings increases surrounding the dividend announcement overstate mean earnings changes for the population. Similarly, if the best performing firms are excluded from the omission sample, the sample mean earnings decline overstates the population mean change in earnings.

The most frequent reasons for exclusion are that firms are not covered on Compustat or have missing earnings announcement dates in the Wall Street Journal. Twenty-four initiating firms and 17 omitting firms (65% and 45% of those excluded respectively) are excluded for these reasons. There is little evidence on the characteristics of firms that are not covered by Compustat or the Wall Street Journal. Therefore, the effect of the bias from excluding these firms is uncertain. It seems plausible that Compustat and the Wall Street Journal cover firms that they consider to be of interest to the investment community. If, for some reason, the worst performing initiating firms and the best performing omitting firms are considered uninteresting, then the bias increases the probability of finding results similar to those reported in the paper.

New listings prior to, and acquisitions subsequent to the dividend date account for 32% and 37% of the firms excluded from the initiation and omission samples respectively. The effect of excluding these firms is again uncertain: they could either be performing well or poorly. If the newly listed and acquired firms are poor performers in the initiation sample and good performers in the omission sample, our results are biased.

The one systematic bias that can be identified is for firms that have been excluded because of delistments subsequent to the dividend date. It is likely that these firms are poor

performers. Hence, the seven omitting firms (19% of the excluded initiating firms) which are excluded for this reason lead to an understatement of the mean earnings decline surrounding omissions. The earnings recovery documented for dividend omission firms may, in part, be attributed to this bias. Since only one initiating firm (3% of the excluded omitting firms) is excluded for this reason, the effect of the bias on the initiating sample results is likely to be small.

In summary, the effect of the selection bias on our results is uncertain. This problem is unavoidable in studies which rely on ex post time-series data, and suggests that our results be interpreted with caution.

4. SUMMARY AND DISCUSSION

The tests reported in this paper examine whether there are significant changes in firms' earnings performance surrounding either a dividend initiation or omission and, if so, whether these changes are consistent with the market reaction to the dividend policy changes. We examine a sample of 131 firms that pay dividends for the first time or after a hiatus of ten years, and a sample of 172 firms that omit dividends for the first time or after continuously paying dividends for at least ten years. All the dividend policy changes examined occur between 1969 and 1980.

The statistical tests and results presented in the paper lead to four conclusions. First, there are significant earnings increases for as many as five years prior to dividend initiation announcements and significant earnings decreases for two years prior to dividend omission announcements. Second, firms have earnings increases for the year of, and two years following a dividend initiation; these increases appear to be permanent. Firms that omit dividends have earnings declines for only one year prior to the dividend date; subsequently, the omission firms experience a recovery in earnings. Third, the abnormal stock price reactions to the dividend

initiations or omissions are correlated with the firms' earnings changes in the year of and one year subsequent to the dividend announcements. This relation is found to exist after controlling for prior earnings changes and information available to the stock market at the time of the dividend announcement. Therefore, dividend initiations and omissions seem to provide incremental information firms' future earnings performance. Finally, the market reaction to earnings changes is less than usual in the year following dividend initiation announcements, and for five years following announcements of dividend omissions. Once again, this is consistent with the hypothesis that the dividend initiation or omission announcements anticipate subsequent earnings changes.

The dividend initiation findings provide strong support for Lintner's (1956) description of managers' dividend decision-making process, and the dividend information hypothesis proposed by Modigliani and Miller (1961). Managers appear to consider both past and future earnings performance when they decide to initiate cash dividends. Dividend initiation decisions are therefore interpreted by the market as managers' forecasts of future earnings increases. The dividend omission results are less conclusive. While firms appear to have earnings declines surrounding the dividend omission, most of the declines occur before the dividend announcement. The subsequent earnings declines are short-lived and are quickly reversed.

There are two caveats to the interpretation of our results. First, since our tests use ex post earnings time-series data, the results may have been influenced by a sample selection bias. Second, while there is evidence that dividend initiation and omission decisions are informative about future earnings, this does not necessarily imply that managers make these decisions solely to communicate their earnings forecasts.

One possible extension of this paper is to examine earnings changes surrounding unexpected

dividend increases and decreases.³⁶ As noted earlier, our sample comprises only dividend initiations and omissions. These are relatively rare changes in dividend policy. While they have large announcement returns, thereby increasing the power of our tests, they may not be representative of the population of dividend policy changes. It would be interesting to examine whether our findings can be generalized to a wider class of dividend policy changes.

³⁶ Ofer and Siegel (1987) examine a sample of unexpected changes in dividends. They report evidence of revisions in analysts' forecasts of earnings subsequent to these dividend changes which are consistent with our findings.

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Table 1

Number of sample firms initiating and omitting dividends by year in the period 1970-1979^{a,b}

Year	Companies initiating dividends		Companies omitting dividends	
	Number	Percent	Number	Percent
1969	0	0.0	11	6.4
1970	2	1.5	50	29.1
1971	3	2.3	33	19.2
1972	10	7.6	16	9.3
1973	15	11.5	7	4.1
1974	13	9.9	13	7.6
1975	13	9.9	16	9.3
1976	32	24.4	4	2.3
1977	25	19.1	2	1.1
1978	15	11.5	7	4.1
1979	3	2.3	10	5.8
1980	0	0.0	3	1.7
Total	131	100.0	172	100.0

^a Dividend initiations are first dividend payments in a firm's history or dividend resummptions after a hiatus of at least ten years. Dividend omissions are first time eliminations by firms that paid dividends continuously throughout their history or for at least ten years.

^b To be included in the sample, firms are required to meet the following requirements: (1) be listed on the NYSE or ASE; (2) have dividend initiation/omission announcement dates available in the Wall Street Journal Index; (3) have stock price data available for two days before the dividend initiation/omission announcement on the CRSP daily Master Tape or Standard and Poor's Daily Stock Price Record; (4) have stock returns available on the CRSP data files for the day before and the day of the dividend initiation/omission announcement; (5) have annual earnings per share before extraordinary items and discontinued operations available from the 1984 Compustat for 8 of the 11 years surrounding the dividend initiation/omission announcement date; and (6) have earnings announcement dates available in the Wall Street Journal Index for these same years.

Table 2

Abnormal returns for 131 dividend initiating and 172 dividend omitting firms for selected holding periods surrounding the public announcement date (t statistics in parentheses)^a

Holding period ^b	Dividend initiating firms	Dividend omitting firms
PD-60 to PD-21	3.5% (4.8)	-7.0% (-4.0)
PD-20 to PD-11	1.1 (2.7)	-2.7 (-3.1)
PD-10 to PD-1	4.0 (10.0)	-7.0 (-8.0)
PD-1 to PD	3.9 (15.4)	-9.5 (-24.8)
PD+1 to PD +10	1.4 (3.6)	-1.2 (-1.4)
PD+11 to PD+20	0.6 (1.4)	-0.5 (-0.5)

^a Abnormal returns prior surrounding the dividend announcement are market-adjusted returns using CRSP equal-weighted market returns. The sample firms initiate/omit dividends in the period 1969 to 1980.

^b PD is the date the dividend initiation or omission is announced in the Wall Street Journal.

Table 3

Summary statistics on changes in earnings per share as a percent of equity price for dividend initiating firms in years surrounding the dividend announcement^{a,b}

Period relative to dividend initiation	Number of firms	Mean	Student t probability ^c	Median	Wilcoxon probability ^c	
<i>Panel A: Raw earnings changes</i>						
Year	-5	130	0.94%	0.20	1.02	0.01
	-4	130	1.49	0.14	1.74	0.01
	-3	129	-0.71	0.38	0.76	0.91
	-2	128	1.29	0.22	1.05	0.02
	-1	131	4.27	0.01	2.80	0.01
	0	130	5.50	0.01	4.02	0.01
	1	130	2.20	0.07	3.59	0.01
	2	130	3.50	0.01	2.82	0.01
	3	128	0.35	0.82	1.95	0.14
	4	126	-3.04	0.12	1.51	0.88
<i>Panel B: Industry-adjusted earnings changes</i>						
Year	-5	127	2.36	0.10	0.21	0.36
	-4	127	0.53	0.73	0.75	0.06
	-3	126	4.27	0.02	1.14	0.05
	-2	124	-0.35	0.87	0.66	0.36
	-1	123	1.82	0.24	1.18	0.15
	0	124	3.84	0.01	2.06	0.01
	1	126	2.56	0.18	1.18	0.08
	2	127	5.80	0.02	2.20	0.04
	3	119	-0.01	0.98	-0.19	0.89
	4	115	-2.16	0.41	0.63	0.97

^a The dividend initiation sample comprises 131 firms that announce dividend initiations in the period 1970 to 1979. Industry-adjusted earnings changes are available for 130 of these firms. They are defined as the difference in standardized earnings changes for the initiation firms and for matched comparison firms that are randomly selected from the same industry.

^b Changes in earnings per share before extraordinary items and discontinued operations for initiation and comparison firms are standardized by their stock price two days prior to the dividend initiation announcements.

^c Student t and Wilcoxon statistics test the hypotheses that the mean and median earnings changes are different from zero. The probability levels reported are for two-tailed tests of significance.

Table 4

Summary statistics on annualized quarterly earnings changes as a percent of equity price for dividend initiation firms in years surrounding the dividend announcements^{a,b}

	Period relative to dividend initiation	Number of firms	Mean	Student t probability ^c	Median	Wilcoxon probability ^c
<i>Panel A: raw earnings changes</i>						
Year	-1	129	5.44%	0.01	3.73%	0.01
	0	129	4.51	0.01	3.36	0.01
<i>Panel B: industry-adjusted earnings changes</i>						
Year	-1	118	2.85%	0.05	1.34%	0.01
	0	118	1.23	0.39	1.72	0.03

^a Earnings changes are estimated using quarterly earnings that are announced in the eight quarters prior to the dividend announcement and the four quarters subsequent. Changes in earnings per share before extraordinary items and discontinued operations for each firm are standardized by its stock price two days prior to the dividend announcement.

^b The dividend initiation sample comprises 129 firms that announce dividend initiations in the period 1970 to 1979. Industry-adjusted earnings changes are available for 118 of these firms. They are defined as the difference in standardized earnings changes for the initiation firms and for matched comparison firms that are randomly selected from the same industry.

^c Student t and Wilcoxon statistics test the hypotheses that the mean and median earnings changes are different from zero. The probability levels reported are for two-tailed tests of significance.

Table 5

Summary statistics on changes in earnings per share as a percent of equity price for dividend omitting firms in years surrounding the dividend announcement^{a,b}

	Period relative to dividend omission	Number of firms	Mean	Student t probability ^c	Median	Wilcoxon probability ^c
<i>Panel A: raw earnings changes</i>						
Year	-5	151	0.58%	0.32	1.29	0.01
	-4	171	0.38	0.57	0.95	0.11
	-3	172	-0.57	0.49	1.37	0.13
	-2	172	-1.21	0.05	-0.40	0.06
	-1	172	-7.73	0.01	-5.10	0.01
	0	172	-13.50	0.01	-9.82	0.01
	1	170	6.29	0.01	4.18	0.01
	2	169	9.37	0.01	5.56	0.01
	3	164	2.03	0.24	3.25	0.01
	4	151	0.22	0.93	1.65	0.04
<i>Panel B: industry-adjusted earnings changes</i>						
Year	-5	138	1.43	0.19	0.65	0.27
	-4	165	1.10	0.35	0.22	0.71
	-3	171	-1.03	0.39	1.28	0.17
	-2	171	0.25	0.81	-0.32	0.47
	-1	170	-5.62	0.01	-2.82	0.01
	0	169	-11.35	0.01	-7.19	0.01
	1	164	6.13	0.01	4.58	0.01
	2	167	5.89	0.01	3.07	0.01
	3	152	2.44	0.24	2.72	0.01
	4	151	-0.32	0.92	0.70	0.17

^a The dividend omission sample comprises 172 firms that announce dividend omissions in the period 1969 to 1980. Industry-adjusted earnings changes are available for 171 of these firms. They are defined as the difference in standardized earnings changes for the omission firms and for matched comparison firms that are randomly selected from the same industry.

^b Changes in earnings per share before extraordinary items and discontinued operations for omission and comparison firms are standardized by their stock price two days prior to the dividend omission announcements.

^c Student t and Wilcoxon statistics test the hypotheses that the mean and median earnings changes are different from zero. The probability levels reported are for two-tailed tests of significance.

Table 6

Summary statistics on annualized quarterly earnings changes as a percent of equity price for dividend omission firms in years surrounding the dividend announcements^{a,b}

	Period relative to dividend omission	Number of firms	Mean	Student t probability ^c	Median	Wilcoxon probability ^c
<i>Panel A: raw earnings changes</i>						
Year	-1	140	-10.32%	0.01	-6.76%	0.01
	0	140	-9.97	0.01	-7.97	0.01
<i>Panel B: Industry-adjusted earnings changes</i>						
Year	-1	101	-9.04%	0.01	-7.00%	0.01
	0	101	-6.64	0.01	-5.88	0.01

^a Earnings changes are estimated using quarterly earnings that are announced in the eight quarters prior to the dividend announcement and the four quarters subsequent. Changes in earnings per share before extraordinary items and discontinued operations for each firm are standardized by its stock price two days prior to the dividend announcement.

^b The dividend initiation sample comprises 129 firms that announce dividend omissions in the period 1970 to 1979. Industry-adjusted earnings changes are available for 101 of these firms. They are defined as the difference in standardized earnings changes for the omission firms and for matched comparison firms that are randomly selected from the same industry.

^c Student t and Wilcoxon statistics test the hypotheses that the mean and median earnings changes are different from zero. The probability levels reported are for two-tailed tests of significance.

Table 7

Tests of the relation between standardized changes in earnings following announcements of dividend initiations/omissions, and the dividend announcement return (t statistics in parentheses)^a

$$\Delta E_{jt} = \beta_0 + \beta_1 DRET_j + \beta_2 \Delta E_{j,t-1} + \beta_3 PRET_j + \epsilon_{jt}^b$$

Period relative to dividend announcement	Number of firms	β_0	β_1	β_2	β_3	R ²
<i>Panel A: dividend initiation sample</i>						
Year 0	124	0.029 (2.67) ^c	0.197 (1.72) ^e	0.204 (1.84) ^e	0.117 (3.77) ^c	0.140
1	123	0.014 (0.89)	0.356 (2.06) ^d	-0.208 (-1.57)	0.065 (1.35)	0.053
2	123	0.047 (3.47) ^c	-0.056 (-0.35)	-0.406 (-4.83) ^c	0.005 (0.13)	0.171
3	121	0.016 (0.87)	0.028 (0.133)	-0.049 (-1.45)	-0.162 (-0.90)	0.025
4	120	-0.030 (-1.28)	0.033 (0.12)	0.139 (1.16)	-0.014 (-0.20)	0.012
<i>Panel B: dividend omission sample</i>						
Year 0	161	-0.085 (-3.12) ^c	0.423 (2.24) ^d	0.031 (0.24)	0.131 (2.13) ^d	0.055
1	159	0.013 (0.40)	0.386 (1.74) ^e	-0.683 (-7.41) ^c	0.100 (1.37)	0.261
2	158	0.091 (3.31) ^c	-0.095 (-0.48)	-0.350 (-5.63) ^c	-0.077 (-1.19)	0.179
3	152	-0.036 (-1.28)	-0.624 (-3.06) ^c	-0.017 (-0.24)	-0.023 (-0.35)	0.059
4	141	-0.039 (-0.90)	-0.327 (-1.02)	0.151 (1.12)	0.030 (0.30)	0.023

^a The sample comprises 131 firms that announced dividend initiations in the period 1970 to 1979 and 172 firms that announced dividend omissions in the period 1969 to 1980. The number of observations for each year is different from the numbers reported in Table 3 for two reasons: (1) we use earnings changes in two successive years in each regression; and (2) we require the annual earnings announcement date prior to the dividend announcement to calculate PRET.

^b ΔE_{jt} is firm j 's change in earnings standardized by its stock price two days prior to the dividend announcement, $DRET_j$ is the market-adjusted return for firm j for one day before and the day of the dividend announcement, and $PRET_j$ is the market-adjusted return for firm j from one day following year -1 's earnings announcement to two days prior to the dividend announcement.

^c Significant at the 1% level using a two-tailed test.

^d Significant at the 5% level using a two-tailed test.

^e Significant at the 10% level using a two-tailed test.

Table 8

Tests of the relation between standardized changes in annualized quarterly earnings one year following announcements of dividend initiations/omissions, and the dividend announcement return (t statistics in parentheses)^a

$$\Delta E_{jt} = \beta_0 + \beta_1 \text{DRET}_j + \beta_2 \Delta E_{j,-1} + \beta_3 \text{PRET}_j + \varepsilon_{jt}^b$$

Number of firms	β_0	β_1	β_2	β_3	R ²
<i>Dividend initiation sample</i>					
129	0.029 (2.85) ^c	0.315 (2.49) ^d	-0.178 (-2.11) ^d	0.123 (1.98) ^e	0.086
<i>Dividend omission sample</i>					
140	-0.079 (-3.42) ^c	0.394 (2.26) ^d	-0.008 (-0.40)	-0.062 (-0.51)	0.032

^a The sample comprises 129 firms that announced dividend initiations in the period 1970 to 1979, and 140 firms that announced dividend omissions in the period 1969 to 1980. Annualized earnings are estimated using earnings for the eight quarters prior to the dividend announcement and the four subsequent earnings.

^b ΔE_{jt} is firm j's change in earnings standardized by its stock price two days prior to the dividend initiation (omission) announcement; DRET_j is the market-adjusted return for firm j for one day to and the day of the dividend initiation (omission) announcement; and PRET_j is the market-adjusted return for firm j from one day following the quarterly earnings announcement immediately prior to the dividend announcement to two days prior to the dividend date.

^c Significant at the 1% level using a two-tailed test.

^d Significant at the 5% level using a two-tailed test.

^e Significant at the 6% level using a two-tailed test.

Table 9

Tests of the relation between unexpected stock returns at earnings announcements and standardized changes in earnings for years surrounding initiation of dividends^a

$$\text{ARET}_{jt} = \beta_0 + \beta_1 \Delta E_{jt} + \sum_{\tau=0}^4 \mu_{\tau} D_{\tau t} \Delta E_{jt} + \epsilon_{jt}^b$$

	β_0	β_1	μ_0	μ_1	μ_2	μ_3	μ_4
Mean	0.0039	0.2894	-0.1280	-0.0422	-0.0957	-0.0223	-0.0134
Z statistic ^c	10.79 ^d	7.26 ^d					
t statistic			-2.04 ^e	-0.64	-1.49	-0.45	-0.27
First quartile	-0.0092	0.0003					
Median	0.0013	0.1418					
Third quartile	0.0194	0.3738					
Adj. R ²	0.272 ^d						

^a The results for coefficients β_0 and β_1 are for the cross-sectional distribution of time-series regression coefficients for 131 firms that initiate dividends in the period 1970 to 1979. The coefficients μ_{τ} ($\tau=0, \dots, 4$) are assumed to be constant across firms.

^b ARET_{jt} is the market-adjusted return for one day prior to and the day of the Wall Street Journal annual earnings announcement; ΔE_{jt} is the change in earnings per share in year t standardized by the stock price two days prior to the earnings announcement; and $D_{\tau t}$ is a dummy variable that takes the value one τ years following the dividend initiation announcement and zero otherwise.

^c Under the null hypothesis, each Z statistic is distributed unit normal.

^d Significant at the 1% level using a two-tailed test.

^e Significant at the 5% level using a two-tailed test.

Table 10

Tests of the relation between unexpected stock returns at earnings announcements and standardized changes in earnings for years surrounding omission of dividends^a

$$\text{ARET}_{jt} = \beta_{0j} + \beta_{1j}\Delta E_{jt} + \sum_{\tau=0}^4 \mu_{\tau} D_{\tau t} \Delta E_{jt} + \varepsilon_{jt}^b$$

	β_0	β_1	μ_0	μ_1	μ_2	μ_3	μ_4
Mean	0.0038	0.2714	-0.1148	-0.1182	-0.1323	-0.1194	-0.1048
Z statistic ^c	4.43 ^d	17.79 ^d					
t statistic			-2.76 ^d	-2.81 ^d	-2.96 ^d	-2.66 ^d	-2.33 ^e
First quartile	-0.0094	0.0794					
Median	0.0032	0.1791					
Third quartile	0.0167	0.3664					
Adj. R ²	0.296 ^d						

^a The results for coefficients β_0 and β_1 are for the cross-sectional distribution of time-series regression coefficients for 172 firms that omit dividends in the period 1969 to 1980. The coefficients μ_{τ} ($\tau=0,\dots,4$) are assumed to be constant across firms.

^b ARET_{jt} is the market-adjusted return for one day prior to and the day of the Wall Street Journal annual earnings announcement; ΔE_{jt} is the change in earnings per share in year t standardized by the stock price two days prior to the earnings announcement; and $D_{\tau t}$ is a dummy variable that takes the value one τ years following the dividend omission announcement and zero otherwise.

^c Under the null hypothesis, each Z statistic is distributed unit normal.

^d Significant at the 1% level using a two-tailed test.

^e Significant at the 5% level using a two-tailed test.

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