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Reversal of fortune Dividend signaling and the disappearance of sustained earnings growth

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Abstract

We study the signaling content of managers' dividend decisions for 145 NYSE firms whose annual earnings decline after nine or more consecutive years of growth. Using a variety of model specifications and definitions of favorable dividend signals, we find virtually no support for the notion that dividend decisions help identify firms with superior future earnings. Dividends tend not to be reliable signals because (i) a behavioral bias (overoptimism) leads managers to overestimate future earnings when growth prospects fade; and (ii) managers make only modest cash commitments when they increase dividends, undermining the reliability of such signals.

Key words: Dividends; Signaling; Earnings growth; Disclosure policy

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1. Introduction

Many theorists hypothesize that managers use dividends to signal their views of future earnings prospects (e.g., Miller and Modigliani, 1961; Bhattacharya, 1979; Miller and Rock, 1985; John and Williams, 1985). In this paper, we assess the empirical importance of dividend signaling in a sample of 145 NYSE corporations whose annual earnings decline after nine or more consecutive years of growth.¹ The median sample firm has 17.9% annualized earnings growth over the five years before the initial (Year 0) earnings decline. Had this trend continued, Year + 3 median earnings would have reached 193% of peak (Year – 1) earnings, more than double their actual level. Thus, Year 0 not only represents the first earnings decline in many years; it also marks the transition from a sustained growth phase to a period in which most firms have essentially zero earnings growth. Our signaling tests focus on Year 0 dividend decisions, since at that time outsiders should be especially interested in managers' views of whether sample firms' current earnings problems are likely to be transitory or persistent.

We employ a variety of model specifications and definitions of favorable dividend actions to assess the empirical importance of dividend signaling in our sample. Our tests yield no indication that favorable dividend decisions represent reliable signals of superior future earnings performance for these firms. For example, managers of 99 firms (68.3%) increase dividends in Year 0 and, for 67 of these cases, the dollar size of the dividend increase equals or exceeds the increase in the peak earnings year. For the 99 dividend-increasing firms, we find no evidence of positive earnings surprises – and some indication of negative earnings surprises – in the three years after Year 0. We observe a similar pattern of disappointing future earnings for various subsamples in which managers announce especially large dividend increases.

We also investigate a variant of the dividend-signaling hypothesis in which dividend decisions conform to a separating equilibrium: managers of firms with relatively good prospects (that are mediocre in absolute terms) use dividend increases to differentiate their companies from other firms in seemingly similar situations that have comparatively poor prospects. Almost all our evidence is inconsistent with this separating equilibrium argument.

We explore six possible explanations why sample firms' favorable dividend actions are not informative signals of future prospects:

- (1) Current earnings are so informative about future earnings that there is little additional useful signaling content to nonearnings sources.

¹The sample contains many large, prominent firms, including American Express, BankAmerica, Coca-Cola, Walt Disney, General Mills, Humana, Johnson & Johnson, Merck, Philip Morris, Pillsbury, Procter & Gamble, TRW, Union Pacific, United Technologies, and Waste Management.

- (2) Managers reduce capital outlays, so that the dividend increases are primarily free-cash-flow payouts rather than favorable signals about future earnings.
- (3) The dividend increases are lagged responses to prior earnings increases, not favorable signals about future earnings.
- (4) Managers mistakenly send favorable dividend signals, but these mistakes are understandable given the information available at the time.
- (5) Because managers tend to be overly optimistic about company growth, they send signals that are overly optimistic about future earnings.
- (6) Managers make only modest cash commitments when they increase dividends, which undermines the reliability of such signals.

The evidence does not support (1) through (3), but does suggest that (5) and (6), and perhaps (4), can help explain our findings. Although (4) does not apply systematically, it does have merit for a few sample firms. For 12.1% of dividend increasers, managers probably have poor information about future prospects when they increase dividends in Year 0, since they subsequently cut dividends at some time over the next three years. However, for the full sample of firms that increase Year 0 dividends, average abnormal stock returns over Years 1–3 are zero, indicating that the stock market (hence presumably managers) did not receive systematically negative news during Years 1–3 that was unanticipated in Year 0.

Regarding (5), we find evidence that Jensen's (1993, pp. 847–848) behavioral hypothesis – that the managerial mindset and corporate culture often make managers overly optimistic about continued growth – helps explain why many sample firms increase dividends when earnings growth ends. We analyze managers' letters to stockholders in the Year 0 annual reports because, like dividends, these letters are vehicles managers can use to signal their views about company prospects. The stockholder letters of only seven firms (4.9% of the sample) indicate that managers are *not* optimistic about future prospects. Managers of 89 firms (61.4%) express varying degrees of optimism, while the remaining managers take no position on future earnings. We also find that a subset of managers is less than forthright in their discussions of the Year 0 earnings decline, suggesting that some managers deliberately send unduly optimistic signals about future earnings.

Managers may be overly optimistic (deliberately or naively) in their stockholder letters because they perceive only minor costs of sending signals that turn out to be 'wrong'. Consistent with (6), our median firm's Year 0 dividend increase totals only 3.5% of earnings, 2.1% of operating cash flow, and 3.7% of cash plus marketable securities. These data suggest that sample firms' dividend increases are not systematically reliable signals because they entail only

a modest incremental cash drain on resources available to managers. This observation, in turn, suggests that future (theoretical and empirical) analysis should consider the possibility that credible dividend signaling requires a substantial cash commitment and that, as an empirical matter, many dividend increases are simply too small to meet this criterion.

Overall, our findings offer almost no support for the signaling hypothesis and, when taken together with the findings of prior studies, raise serious doubts about the general empirical importance of dividend signaling. Our conclusions are close in spirit to those of an early study by Watts (1973) who examines a random sample of dividend changes and concludes that, at best, dividends have trivial information content about future earnings. Our experimental design differs from that of Watts because we focus on dividend decisions during a period when investors should be especially interested in managers' views of future earnings prospects. Our finding that dividend signaling is empirically insignificant even in a context like this poses a difficult challenge to the view that such signaling is a broadly important determinant of corporate dividend policy.

A number of studies do find evidence supportive of signaling, but they either focus on dividend decisions in unusual contexts or, consistent with Watts, suggest that the magnitude of any signaling effect is trivial. On the first point, some evidence suggests that the dividend decisions of financially troubled companies have marginal information content. For example, DeAngelo, DeAngelo, and Skinner (1992) find that more favorable dividend actions help predict superior future earnings performance when firms initially report an annual loss. And various authors report that dividend reductions are associated with large share price declines (e.g., Charest, 1978, Table 13; Woolridge and Ghosh, 1985, Table 1).

On the second point, many studies document that dividend increases are associated with share price increases (e.g., Charest, 1978, Table 12; Aharony and Swary, 1980, Table II; Lang and Litzenberger, 1989, Table 1). However, these studies typically find an average share price increase on the order of 1% or less. If we assume that this price change exclusively reflects a permanent increase in future earnings, then the typical favorable dividend signal translates to an abnormal future earnings surprise of 1% or less of earnings in perpetuity – a message of questionable economic significance.

As noted by Miller and Rock (1985), a firm's current dividend decision can largely reveal information about current earnings (through the familiar sources and uses constraint), thus may affect share price even though it signals little or no information about expected future earnings. An estimate of the marginal information content of dividends that controls for current earnings is provided by Leftwich and Zmijewski (1994), who examine the stock market reaction to simultaneous announcements of dividends and earnings. They find that dividends have marginal information content *only* when firms simultaneously reveal

good news about earnings and bad news about dividends.² Viewed collectively, extant evidence on dividend signaling (including that in the current paper) indicates that dividends are not pervasively useful signals of future earnings performance.

2. Sampling procedure and descriptive statistics

We construct our sample of 145 firms by searching Compustat's primary and research tapes for NYSE-listed firms with a decline in annual earnings that follows at least ten earnings reports indicating strictly increasing earnings, i.e., after nine or more consecutive annual earnings increases. Our sample excludes public utilities, limited partnerships, American depositary receipts (ADRs), and Canadian companies. To confirm the accuracy of the Compustat earnings data, we inspect each firm's annual report for the year Compustat indicates that earnings first decline (and drop one firm as a result). Since we are concerned with the use of dividend policy to signal future prospects, we drop seven firms that satisfy our other sampling criteria, but that do not pay dividends. Finally, we exclude ten firms that change fiscal year-ends while on Compustat, because such changes create nonuniform earnings intervals, making it difficult to measure earnings growth.

Our sample exhibits industry clustering at the two-digit SIC level, with 23 firms (15.9%) classified as depository institutions (SIC 60) and 16 firms (11.0%) in chemicals and allied products (SIC 28). Eight firms (5.5%) are in industrial, commercial machinery, and computer equipment (SIC 35); another eight are in measurement instruments, photo goods, watches (SIC 38); and seven firms (4.8%) are in food and kindred products (SIC 20). Of the remaining 83 firms, one two-digit industry has five firms, eight industries have four firms, five industries have three firms, six industries have two firms, and 19 industries have one firm each.

The time distribution of initial annual earnings declines is as follows: 1980 has 13 firms (9.0% of the sample); 1981 has 22 firms (15.2%); 1982 has 36 firms (24.8%); 1983 has 13 firms (9.0%); 1984 has 8 firms (5.5%); 1985 has 11 firms (7.6%); 1986 has 23 firms (15.9%); and 1987 has 19 firms (13.0%). A substantial proportion of sample firms' initial earnings declines occurs during

²There is some disagreement about the generality of this finding. For example, DeAngelo, DeAngelo, and Skinner (1992) find that more favorable dividend actions help predict superior future earnings when firms first report an annual loss (a combination of good dividend news and bad earnings news). These studies disagree about the particular special circumstances under which dividends have information content. For present purposes, however, it is more important to recognize that they agree that dividends have information content only in special circumstances.

the major recession of the early 1980s (note especially the 24.8% incidence for 1982). There is also some evidence of joint time and industry clustering: twelve of the 19 earnings declines in 1987 are for depository institutions (SIC 60), many of which wrote down large amounts of third world debt at that time. Moreover, 11 firms in chemicals and allied products (SIC 28) have initial earnings declines in 1981 (seven firms) or 1982 (four firms). As we report in Section 8.4, our signaling test results are unchanged when we exclude observations for the recession years 1981 and 1982.

Our sample firms are large, with a median \$822 million market value of equity in Year -1 (mean, \$1.6 billion). The median firm appears about average relative to the Compustat population in terms of its (book-value-based) financial leverage, holdings of cash and marketable securities, and dividend payout ratio. Our median firm has a 0.43 total debt/total assets ratio, a 0.07 (cash plus marketable securities)/total assets ratio, and a 0.29 dividend payout ratio in Year -1 , all of which are close to the ratios in Foster (1986, Table 4.2) for the median Compustat firm in 1983. Our median sample firm has a 1.77 ratio of market-to-book value of equity in Year -1 , indicating that the stock market valued these companies highly, and that their market-value-based financial leverage was probably below average. The median 0.18 return on equity in Year -1 exceeds the 0.10 return for the median Compustat firm (see Foster, 1986, Table 4.2) and is also consistent with our firms' high market-to-book-value ratios.

3. Sample firms' earnings growth

The shaded profile in Fig. 1 plots *actual* earnings for the median sample firm over the ten years before the initial earnings decline (Years -10 to -1), the decline in Year 0, and the next three years (Years 1 to 3). The dotted curve plots *projected* earnings in Years 0–3 for the median firm, assuming that each firm's earnings continue to grow at the annual growth rate that prevails over Years -5 to -1 . Although not shown, mean value plots are similar to those for the median that appear in Fig. 1. [Consistent with Watts' (1973, pp. 194–195) argument that dividends are set primarily in response to annual rather than quarterly earnings, Fig. 1 and our subsequent empirical tests focus on annual earnings.]

Fig. 1 shows that median earnings grow steadily at a substantial 21.5% per year over Years -10 to -1 (17.9% over Years -5 to -1). These median growth rates exceed the comparable 12.6% and 14.1% rates for the Compustat population, and rank approximately at the 60th or 70th percentile of Compustat firms (excluding foreign firms, ADRs, and limited partnerships).

Fig. 1 also shows that our firms' substantial earnings growth comes to a halt in Year 0. For the median firm, Year 0 earnings decline by 18.2%, and over the next three years earnings remain essentially flat at about 85% of their

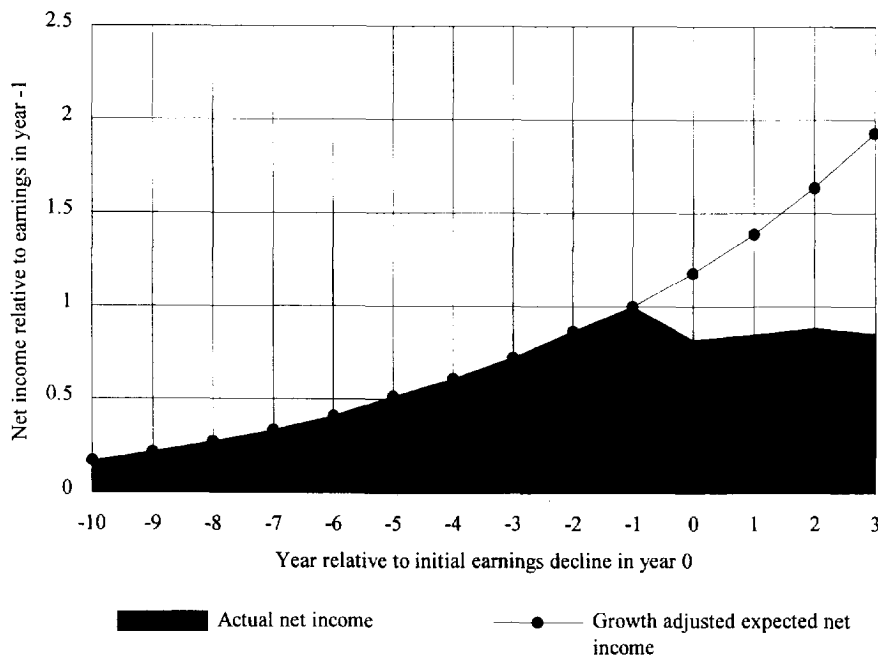


Fig. 1. Median net income in years surrounding initial annual earnings decline in Year 0: 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years.

The sample contains 145 firms (with data on Compustat's primary or research tapes) that reported a decline in annual earnings after earnings growth over at least 10 years (a minimum of 9 consecutive earnings increases). For each firm, event time is defined such that Year -1 is the year of peak reported net income preceding the initial earnings decline in Year 0. 'Actual net income' represents the median value of net income in the specified year divided by net income in Year -1 (hence, this ratio equals 1 by definition for all firms in Year -1). 'Growth adjusted expected net income' for Years 0 through 3 represents the median *projected* value of net income assuming that each firm's earnings had continued to grow at the growth rate experienced over Years -5 through -1 . There are 145 observations for Years -10 through 0 and, primarily because of mergers or LBOs, 140 observations for Year 1, 136 for Year 2, and 131 for Year 3.

peak (Year -1) level. If growth had continued at the annual rate experienced in Years -5 to -1 , Year 3 median earnings would have reached 193% of the Year -1 earnings level, more than double actual earnings in Year 3. Thus, for many sample firms, Year 0 represents a turning point from a sustained period of high earnings growth to a period (at least four years long) of essentially zero growth.

This empirical regularity suggests that Year 0 is a period in which outsiders should be especially interested in managers' views of future company prospects, as communicated for example through their dividend decisions. Given the

earnings pattern in our sample, investors would naturally be concerned whether future earnings will continue to grow at the substantial rate characteristic of sample firms' past performance – i.e., does the current earnings downturn represent a transitory phenomenon or a permanent shift in earnings?

Fig. 1 also sheds some light on the reasonableness of managers' common complaint that they must run their firms to show earnings growth, or else have their firms' shares 'unfairly' marked down by the stock market. Specifically, the fact that sample firms' earnings downturns typically persist for at least four years suggests that a large share-price decline may well be a fair response when annual earnings fall for the first time in many years.³ Section 7 shows that our sample firms' shares do fall significantly in value in Year 0, and the fall is preserved at least through Year 3.

Finally, when we compare firms that increase dividends in Year 0 with nonincreasers, we find virtually identical mean and median earnings for Years –4 through –1. However, dividend increasers have higher earnings beginning in Year 0, i.e., nonincreasers have a significantly larger Year 0 earnings decline and lower earnings through Year 3. The latter observation does not indicate that dividend decisions are informative on the margin in identifying firms with favorable future prospects. To assess whether dividends are useful signals on the margin, we must control for other contemporaneously available information and we pursue this question in Sections 5 and 6.

4. Sample firms' Year 0 dividend decisions

Table 1 reports sample firms' Year 0 dividend changes following the algorithm employed by Watts (1973). Watts treats a dividend change as falling in a given year if announced during the second, third, or fourth fiscal quarter of that year or the first quarter of the next year. (This algorithm treats a first-quarter dividend change as related to the just-prior annual earnings realization.)

Panel A of Table 1 reveals that managers of 99 firms (68.3% of the sample) increase dividends in Year 0, while managers of 44 firms leave them unchanged. [Only ten firms leave dividends unchanged in the prior year (incidence not shown in the table).] Managers of only two sample firms (1.4%) reduce

³To see the importance of growth to value, let E , g , and k equal next year's expected earnings (strictly speaking, net cash flow), the constant perpetual earnings growth rate, and the relevant discount rate (with rates in decimal form). If $g < k$, the present value of the earnings stream is $E/(k - g)$ and the value of the growth component equals the total value minus the value of the level stream E in perpetuity: $[E/(k - g)] - [E/k] = [g/k][E/(k - g)]$. The ratio of the present value of growth to the total present value is then simply g/k . For example, with 5% earnings growth and a 15% discount rate, $g/k = 0.05/0.15 = 0.33$, i.e., growth accounts for one-third of total value.

Table 1

Dividend changes in year of initial annual earnings decline: 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years

The sample contains 145 firms (with data on Compustat's primary or research tapes) that report a decline in annual earnings after earnings growth over at least 10 years (a minimum of 9 consecutive earnings increases). All dividend figures refer to split-adjusted regular dividends per share (as reported by CRSP and confirmed in the *Wall Street Journal*) for the year of the initial decline in annual earnings. Consistent with Watts (1973), a dividend change is treated as falling in the year of the initial earnings decline if it is announced during the second, third, or fourth fiscal quarters of that year, or during the first fiscal quarter of the following year.

Panel A. Dividend change incidence

	Number of firms	Percent of cases	Percentage change in per-share dividend payment	
			Mean	Median
Full sample	145	100.0%	7.2%	6.7%
Dividend increased	99	68.3	11.5	9.5
Dividend unchanged	44	30.3	0.0	0.0
Dividend cut	2	1.4	– 49.3	– 49.3

Panel B. Dollar size of 99 dividend increases

	Number of firms	Percent of cases
Larger dollar increase than in prior year	30	30.3%
Same dollar increase as in prior year	37	37.4
Smaller dollar increase than in prior year	32	32.3

Panel C. Percentage size of 99 dividend increases

	Number of firms	Percent of cases
Larger percentage increase than in prior year	27	27.3%
Same percentage increase as in prior year	1	1.0
Smaller percentage increase than in prior year	71	71.7

dividends in Year 0, a low incidence that conforms to the widely held view that managers are reluctant to cut dividends.

Table 1 also reports dividend changes in dollar (panel B) and percentage (panel C) terms. The dollar comparisons are probably more informative about the true signaling content of dividend changes, since many firms consistently change dividends by a 'rounded off' dollar amount. In 37 cases (37.4% of the 99 dividend increases), managers increase dividends by the same dollar amount in two adjacent years (e.g., ten cents per share), with the second change typically

reported as matching the policy change of the prior year. Although the second percentage increase is obviously smaller than the first, the difference is generally trivial, making it difficult to argue that the second increase is a materially less-favorable earnings signal.

Panel B shows that, in dollar terms, 67 (67.7%) of the 99 dividend increases are equal to or larger than the dividend increases for the prior year (37 equal and 30 larger dollar increases). The message seems to be that managers of these firms are at least as confident about company prospects as they were the year before. Managers of another 32 firms increase the Year 0 dividend by a smaller dollar amount than in the prior year. Although these changes are relatively less favorable dividend signals than the other 67 increases, in absolute terms they nonetheless represent a managerial vote of confidence in the firm's future earnings prospects.

Panel C reveals that, in percentage terms, 28 (28.3%) of the 99 sample firms have Year 0 dividend increases that exceed (27 cases) or equal (one case) the increase in Year -1 . Although 71 firms increase dividends by a smaller percentage in Year 0 than in the prior year, this figure materially overstates the number of instances in which Year 0 dividend increases are more conservative than in Year -1 . As noted above, in 37 of these 71 cases, managers announce the same dollar increase in both years, which is more reasonably interpreted as a message of continued optimism than as an adverse signal about future earnings prospects.

5. Dividend increases and abnormal future earnings

Dividend-signaling models predict that managers use dividend increases to communicate to outside investors their private view that the firm's future earnings prospects are favorable. Accordingly, we first test whether the 99 firms that increase dividends have favorable earnings surprises over Years 1 to 3. In these and subsequent tests, we use two alternative models to assess the abnormal level of future earnings. For a particular firm in a given year, abnormal future earnings equal realized earnings minus the predicted level of earnings under either the random-walk or growth-adjustment model. The random-walk model takes predicted earnings in each future year as equal to the firm's earnings in Year 0. The growth-adjustment model takes predicted earnings as equal to Year 0 earnings compounded forward at the earnings growth rate that prevailed over Years -5 to -1 . For both models, all earnings figures are standardized by the book value of stockholders' equity in Year -1 .

Table 2 reports abnormal future earnings for the 99 firms that increase dividends in Year 0 (panel A), for three subsamples that announce relatively large dividend increases (panels B–D), and for firms that do not increase dividends in Year 0 (panel E). For each firm in the table, abnormal future

Table 2

Abnormal future earnings following the initial decline for 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years: Sample partitioned according to Year 0 dividend decision

Abnormal future earnings equals the annual average difference between the firm's earnings over the 3 years following the initial earnings decline (Years 1, 2, and 3) and predicted earnings, divided by stockholders' book equity in the year before the earnings decline (Year -1). To be included in this analysis, a firm must have complete earnings data available on Compustat through Year 2. The random-walk model takes predicted earnings in each future year as equal to the firm's Year 0 earnings. The growth-adjustment model takes predicted earnings as equal to Year 0 earnings compounded forward for the appropriate number of periods at the geometric growth rate in earnings over Years -5 to -1 . The t -values refer to test statistics to assess the significance of mean values under conventional parametric tests, while the p -values refer to significance levels for Wilcoxon nonparametric tests.

Sample category (# firms; # with complete data)	Random-walk model		Growth-adjustment model	
	Mean (median)	t -value (p -value)	Mean (median)	t -value (p -value)
A. All firms that increase dividends ($n = 99; 92$)	-0.6% (2.3%)	-0.31 (0.129)	-8.2% (-4.3%)	-3.76 (< 0.001)
B. Dollar dividend increase at least as large as in prior year ($n = 67; 61$)	-1.2% (2.3%)	-0.45 (0.226)	-8.1% (-3.5%)	-2.72 (0.013)
C. Dollar dividend increase strictly larger than in prior year ($n = 30; 27$)	-1.1% (2.3%)	-0.23 (0.256)	-8.4% (-4.4%)	-1.60 (0.084)
D. Percent dividend increase at least as large as in prior year ($n = 28; 25$)	-1.7% (2.2%)	-0.32 (0.378)	-8.2% (-4.4%)	-1.46 (0.117)
E. No dividend increase in Year 0 ($n = 46; 43$)	-0.7% (1.5%)	-0.28 (0.840)	-7.0% (-6.1%)	-2.13 (0.034)
E versus A	—	-0.04 (0.625)	—	0.31 (0.871)
E versus B	—	0.13 (0.543)	—	0.24 (0.727)
E versus C	—	0.07 (0.523)	—	0.23 (0.838)
E versus D	—	0.17 (0.638)	—	0.20 (0.760)

earnings refers to the annual average of abnormal earnings over Years 1, 2, and (if earnings are reported on Compustat) 3.

Panels A–D of Table 2 reveal no sign of systematically positive future earnings surprises for dividend-increasing firms. In panel A, the random-walk estimates show that the average firm that increases dividends in Year 0 has

earnings in Years 1–3 that do not differ significantly from Year 0 earnings (under both parametric and nonparametric tests). Estimates under the growth-adjustment model indicate that the typical firm has reliably *negative* earnings surprises following Year 0. These earnings disappointments reflect the fact that the growth-adjustment model calculates expected future earnings by projecting that earnings growth will continue at the generally high rates that prevail over Years –5 to –1.

Panels B–D of Table 2 corroborate the panel A finding of no favorable future earnings surprises following Year 0. Each of these panels presents abnormal future earnings for subsamples of firms whose Year 0 dividend increases are especially large, measured either in dollar or percentage terms (per Table 1). In all cases, the random-walk estimates in panels B–D show no sign of positive earnings surprises, and the growth-adjustment model estimates show negative earnings surprises.

6. Tests for a separating equilibrium

To test for a separating equilibrium, we first analyze the cross-section of sample firms' Year 0 dividend decisions (Section 6.1) and then examine whether their subsequent dividend decisions have marginal information content over and above the information in contemporaneous earnings (Section 6.2).

6.1. Cross-sectional analysis of Year 0 dividend decisions

We assess a separating equilibrium variant of the dividend-signaling argument in which dividend increases represent attempts by a subset of managers to signal their firms' relatively good prospects (that are perhaps mediocre in absolute terms) compared to the pool of firms in seemingly similar circumstances (see, for example, Kumar, 1988; Warther, 1994). This argument assumes that, given their reluctance to reduce dividends (Lintner, 1956), managers of firms with comparatively poor earnings prospects are not likely to reveal themselves by reducing dividends. Hence, managers of firms with *relatively* better prospects are incentivized to differentiate their firms by increasing dividends, even if the expected *absolute* level of future earnings does not warrant a dividend increase.

If dividend changes help differentiate firms with better future prospects, then more favorable current dividend decisions should be associated cross-sectionally with greater future earnings surprises. However, panel E of Table 2 shows that firms that do not increase dividends in Year 0 exhibit abnormal future earnings that are similar to those for each subsample of dividend increasers in panels A–D. None of the differences is significant at conventional levels.

We run similar comparison tests to investigate whether dividend increases announced in later fiscal quarters are more informative about future earnings

prospects. We run four sets of tests analogous to those at the bottom of Table 2. Each test compares firms that increase dividends in a given fiscal quarter to firms that do not increase dividends in Year 0. In these tests, the most significant t -statistic is -1.27 , and the most significant p -value is 0.272 . Thus, all four univariate comparison tests are inconsistent with the separating equilibrium hypothesis outlined above.

Table 3 presents more refined tests of the separating equilibrium hypothesis, using a regression framework that controls for other variables known to help predict future earnings. In these regressions, the dependent variable is abnormal future earnings under the random-walk model. The explanatory variables are the historical earnings growth rate, earnings in Year -1 , earnings in Year 0, and three unusual earnings components that prior research shows improve predictions of future earnings (see DeAngelo, DeAngelo, and Skinner, 1992). Like the dependent variable, these regressors are standardized by the book value of stockholders' equity in Year -1 .

Table 3's four regression specifications differ in their empirical measures of the Year 0 dividend signal. The first regression includes an indicator (dummy) variable that equals one if the firm increases dividends in Year 0, and zero otherwise. The second specification includes the Year 0 percentage change in dividends, while the third includes the difference between the Year 0 and the Year -1 percentage changes in dividends. The final specification includes an indicator variable that equals one if the dollar dividend change in Year 0 exceeds the dollar dividend change in Year -1 , and zero otherwise. (This variable is intended to identify firms that send especially favorable dividend signals in Year 0.)

The coefficients on the dividend variables are close to zero in all Table 3 regressions. Moreover, the dividend coefficient is negative in two of the four specifications, the opposite of what we would expect if more favorable Year 0 dividend decisions identify firms with superior earnings prospects. In sum, none of the regressions in Table 3 indicates that more favorable dividend decisions are associated with greater future earnings surprises after controlling for past and current earnings (and various components thereof).

We obtain similarly insignificant results when we run the Table 3 regressions using indicator variables corresponding to each of the measures of especially large dividend increases described in panels B and D of Table 2. We also experiment with different sets of regressors for these tests. For example, we run the tests with the earnings growth rate entered multiplicatively rather than additively as in Table 3. We also repeat the tests using the modified random-walk specification employed by DeAngelo, DeAngelo, and Skinner (1992, Table 8). In all cases, the dividend variable is not significant at conventional levels.

Finally, we run the Table 3 tests with the dividend-increase indicator variables in the first column replaced with four indicator variables corresponding to the fiscal quarter of the Year 0 dividend increase announcement. These tests yield

Table 3

Regressions of abnormal future earnings on historical earnings growth rate, current and past earnings, and dividend signal: 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years

The sample contains 145 firms with a decline in annual earnings in Year 0 after consistent growth over at least 10 years. These regressions employ the 135 firms with complete earnings data on Compustat at least through Year 2, and complete Year 0 data for extraordinary items, discontinued operations, and special items. Abnormal future net income equals earnings averaged over Years 1, 2, and (if available) 3, minus Year 0 earnings. Abnormal future earnings, Year -1 and 0 earnings, and the Year 0 unusual items are standardized by Year -1 stockholders' book equity. The historical growth rate is the geometric average calculated from earnings for Years -5 through -1 . The dummy for large dollar dividend increase equals 1 if the Year 0 dollar dividend increase exceeds that in Year -1 (and 0 otherwise).

	Estimated coefficient (<i>t</i> -value)			
Constant	-0.01 (-0.21)	0.01 (0.10)	-0.00 (-0.05)	-0.00 (-0.01)
Historical earnings growth rate	-0.42 (-3.23)	-0.41 (-3.16)	-0.42 (-3.16)	-0.42 (-3.27)
Year -1 earnings	0.84 (2.19)	0.78 (2.06)	0.81 (2.11)	0.80 (2.12)
Year 0 earnings	-0.55 (-1.76)	-0.47 (-1.55)	-0.51 (-1.69)	-0.50 (-1.64)
Extraordinary items	0.59 (0.61)	0.76 (0.77)	0.54 (0.55)	0.53 (0.55)
Discontinued operations	-0.60 (-0.38)	-0.70 (-0.44)	-0.68 (-0.42)	-0.71 (-0.44)
Special items	-0.21 (-0.74)	-0.22 (-0.81)	-0.23 (-0.83)	-0.24 (-0.87)
<i>Alternative measures of Year 0 dividend signal</i>				
Dividend increase dummy (1 if increase, 0 otherwise)	0.02 (0.48)			
Year 0 % dividend change		-0.13 (-0.82)		
Year 0 minus Year -1 % dividend change			0.01 (0.09)	
Dummy for large dollar dividend increase in Year 0				-0.01 (-0.33)
Adjusted R^2	8.9%	9.2%	8.8%	8.8%

a *t*-statistic of 1.60 on the indicator variable corresponding to dividend increases announced during the most recent fiscal quarter. The latter finding offers a hint that later dividend announcements help predict future earnings, but the relation is clearly not strong.

6.2. Post-Year 0 dividend decisions and abnormal future earnings

Table 4 presents data on the post-Year 0 dividend decisions of sample firms that enable us to conduct another set of signaling tests. The top panel of the table reveals significant heterogeneity in the dividend decisions of sample firms after Year 0. For example, 50 firms (34.4% of the full sample) increase dividends three or more times over Years 1–3, while 49 firms (33.8%) make no dividend changes over these years. Some firms show signs of persistence in dividend decisions: almost half (46 of 99, or 46.5%) of the Year 0 dividend

Table 4

Dividend changes in the three years following the initial earnings decline for 145 NYSE firms with an annual earnings decline after consistent earnings growth over at least 10 years: Sample partitioned into firms that increase dividends in the year of initial earnings decline (Year 0) and those that do not. The dividend changes reported here refer to changes in the split-adjusted regular dividend per share according to CRSP and/or the *Wall Street Journal*. Consistent with Watts (1973), a dividend change is treated as falling in a given fiscal year if it was announced during the second, third, or fourth quarters of that year or the first quarter of the next fiscal year. The top part of the table reports the frequency with which sample firms increased dividends over the three years following the initial decline in earnings in Year 0 (i.e., over Years 1 through 3). The bottom part of the table gives the frequency with which sample firms had cut the dividend by the end of Year 3.

Dividend increases in Years 1 to 3	Number (percent) of firms in category		
	Full sample	Year 0 dividend increasers	Year 0 nonincreasers
3 or more	50 (34.4%)	46 (46.5%)	4 (8.7%)
2 increases	23 (15.9%)	17 (17.1%)	6 (13.0%)
1 increase	23 (15.9%)	18 (18.2%)	5 (10.9%)
0 increases	49 (33.8%)	18 (18.2%)	31 (67.4%)
Column total	145 (100.0%)	99 (100.0%)	46 (100.0%)

Chi-square test of difference across subsamples of Year 0 dividend increasers and nonincreasers is significant at the < 0.001 level

Dividend cut by the end of Year 3	25 (17.2%)	12 ^a (12.1%)	13 (28.3%)
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Binomial proportions test for difference across Year 0 dividend increasers and nonincreasers is significant at the 0.03 level

^aSix of the 12 firms increased dividends again (after their Year 0 increase) before cutting dividends during Years 1 through 3.

increasers have three or more additional increases over Years 1–3, while two-thirds (31 of 46, or 67.4%) of the Year 0 nonincreasers make no future increases. [A chi-square test shows a significant difference (at better than the 0.001 level) in the post-Year 0 dividend behavior of firms that increase dividends in Year 0 and those that do not.]

To test whether dividend actions are useful signals of future earnings, we use the data summarized in Table 4 and calculate earnings surprises for Years 2 and 3, applying the method employed in Table 2 but with Year 1 earnings now serving as the random-walk benchmark. We reason that the 61 firms that increase dividends in both Years 0 and 1 send especially favorable signals about future earnings. We thus follow the Table 2 method to compare the abnormal future earnings of these firms with the abnormal earnings of all other firms. We also compare their abnormal earnings with those of firms that have no dividend increases in either Year 0 or 1.

We find no statistically significant differences between the earnings surprises of firms that increase dividends in both Years 0 and 1 and either of the two comparison groups. For the comparison with all other firms, the *t*-statistic is 1.08, and the Wilcoxon *p*-value is 0.63. For the comparison with firms that do not increase dividends in either Year 0 or 1, the *t*-statistic is 1.52 and the *p*-value is 0.13. Consistent with the results reported in prior sections, these tests indicate that knowledge of firms' dividend decisions does not improve the prediction of future earnings beyond the predictions one can generate from contemporaneous earnings information.

The bottom panel of Table 4 documents that 25 firms (17.2% of the full sample) reduce dividends by the end of Year 3. The 17.2% incidence of dividend cuts for the full sample is consistent with the evidence (reported in Fig. 1) that our firms experience a significant nontransitory earnings reduction beginning in Year 0. The mean dividend reduction is -64.3% (median, -53.8%), which is more than five times larger than the mean 11.5% (median, 9.5%) dividend increase in Year 0 (per Table 1).

Dividend cutters are about equally split across Year 0 dividend increasers and nonincreasers (12 versus 13 firms), but a smaller proportion of the former firms reduces dividends by the end of Year 3 (12.1% versus 28.3%). The lower proportion of future dividend reductions by dividend increasers may largely reflect their superior overall earnings performance (see Section 3). When we control for earnings performance, as in Tables 2 and 3, we find that Year 0 dividend decisions do not improve the prediction of future earnings.

7. Stock market response to dividend increases

We next analyze the stock market's announcement day reaction to sample firms' Year 0 dividend increases (Section 7.1) and the long-run share price behavior through the end of Year 3 (Section 7.2).

7.1. Announcement day impact

Table 5 documents the stock price reactions to dividend increases both in the year of the initial earnings decline (Year 0) and, for comparison purposes, in the immediately prior year. The table summarizes mean and median abnormal

Table 5

Abnormal daily stock returns surrounding dividend increase announcements by 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years

Year 0 is the year of initial annual earnings decline. Event day 0 is defined as the publication date of the *Wall Street Journal Index's* report of a dividend increase, so that the share price impact of the announcement should occur on either day -1 or day 0. Abnormal stock returns and associated test statistics are calculated from CRSP data according to the market-adjusted returns method. (For a particular firm in a given period, the abnormal return equals the stock's raw return minus the contemporaneous return on the CRSP value-weighted index, which includes NYSE and AMEX stocks.)

Panel A. Two-day abnormal returns at announcement

Days -1 and 0	Year 0	Year -1
Mean	0.66%	0.55%
Median	0.47%	0.31%
Proportion positive	0.606	0.563
Z-statistic	2.43	2.60
Sample size	99	135

Panel B. Daily (AR) and cumulative (CAR) abnormal returns

Event day	Year 0		Year -1	
	AR	CAR	AR	CAR
-15	0.2%	0.2%	0.1%	0.1%
-10	0.0	-0.1	-0.1	0.7
-5	-0.3	-0.6	0.0	0.3
-4	0.1	-0.6	0.1	0.4
-3	0.0	-0.6	0.3	0.6
-2	-0.1	-0.7	-0.1	0.4
-1	0.4	-0.3	0.3	0.8
0	0.2	0.0	0.2	1.0
1	0.4	0.4	0.1	1.0
2	0.0	0.4	0.3	1.2
3	-0.1	0.3	0.0	1.3
4	-0.2	0.1	0.1	1.4
5	-0.3	-0.2	0.0	1.4
10	0.4	0.2	0.2	1.5
15	0.0	0.7	0.2	1.3

returns (and test statistics) associated with the *Wall Street Journal* report of dividend increases for the 99 firms that increase dividends in Year 0 and the 135 firms that do so in Year -1 . The two-day announcement period consists of the day before and the publication day of the WSJ report (event days -1 and 0), since we cannot be sure that the announcement comes before the close of trading on the former day.

We calculate abnormal stock returns using the market-adjusted returns method, with the abnormal return for a given firm in a particular period equal to the stock's raw buy-and-hold return minus the contemporaneous buy-and-hold return on the value-weighted market index. We emphasize market-adjusted returns, rather than market model prediction errors, in part because Year 0 seems likely to have generated a structural shift in the risk–return relation for our firms. Additionally, the market model generates unreasonable intercepts for some firms, e.g., those that imply very negative prediction errors (ignoring market index changes). We calculate test statistics using methods analogous to those of Dodd and Warner (1983).

The top panel of Table 5 shows that both Year 0 and Year -1 dividend increases are associated with share value increases that are statistically significant, but economically modest. The average abnormal return for Year 0 announcements is 0.66% (median, 0.47%) while the average return for Year -1 announcements is 0.55% (median, 0.31%), with respective z -statistics of 2.43 and 2.60.

These announcement day returns are similar to the small positive stock returns (averaging 1% or less for regular dividends and around 2% for special dividends) documented by Aharony and Swary (1980), Brickley (1983), and others. We also find economically small stock returns when we restrict attention to the subset of announcements that, in our judgment, do not also include confounding information (e.g., earnings disclosures). (For clean announcements, the average abnormal returns are 0.30% in Year -1 and 0.79% in Year 0, with respective sample sizes of 80 and 70 and z -statistics of 1.50 and 2.82.) The bottom panel of Table 5 reveals no indication of abnormal share price changes on average for the 15 trading days before and after dividend increase announcements, suggesting that the day 0 and 1 returns accurately reflect the (minor) economic content of the dividend announcements.

Thus, in terms of immediate stock market response, sample firms experience an economically small, but statistically significant average equity value increase – roughly one-half of 1% – when they announce dividend increases during the year of the initial earnings decline. This stock market response is essentially the same magnitude as the response to (i) dividend increases in the prior year for the same sample and to (ii) dividend increases analyzed in numerous previous studies. These findings indicate that the stock market views our sample firm's Year 0 dividend increases as containing at

most a modest amount of new information that would justify a higher equity value.⁴

7.2. Stock performance over longer horizons

This interpretation is further supported by the fact that the stock market's response to the Year 0 dividend increases is small relative to its overall negative response to the Year 0 developments at sample firms. The average firm has a statistically significant abnormal return of -13.96% cumulated over Year 0 (z -statistic = -6.18) and essentially zero abnormal returns over Years 1–3. (We generate long-period average returns by first calculating monthly market-adjusted returns for each firm. We cumulate the resultant returns to obtain that firm's abnormal return over a given long-period interval, and then take the cross-sectional average.) Although details are not reported here, earnings are an important determinant of stock returns in our sample, with the change in the earnings growth rate explaining over 30% of the cross-sectional variation in abnormal returns cumulated through Year 3.

Fig. 2 reports abnormal stock returns separately for firms that increase dividends in Year 0 and those that do not. The figure presents the cumulative abnormal performance beginning the year before the initial earnings decline (Year -1) and ending three years after the decline (Year 3). For both subsamples, abnormal returns through the end of Year -1 do not differ significantly from zero. Firms that increase dividends in Year 0 have abnormal stock returns in that year of -10.17% , while firms that do not increase dividends have abnormal returns of -22.30% . Both these returns are reliably negative (respective z -statistics of -3.59 and -5.73), and the difference between subsamples is also significant (t -statistic = 2.90).

The less-negative Year 0 abnormal returns for dividend increasers raises the possibility that managers are able to 'prop up' share prices by increasing dividends. To assess this possibility, we must control for earnings realizations because the superior share-price performance of dividend increasers may largely reflect their higher average level of earnings in Year 0 (see Section 3). We find some sign of higher Year 0 abnormal stock returns for dividend increasers after controlling for earnings as in Table 3, with the coefficient on the dividend indicator variable positive and significant (t -statistic = 2.14). However, the dividend measures in two of the other three specifications are not significant. Thus,

⁴The stock market reacts much more strongly to sample firms' future dividend reductions which we document in Table 4. The average two-day stock return at dividend reduction announcement is -7.14% (median, -6.09%), with a z -statistic of -15.18 . Consistent with DeAngelo, DeAngelo, and Skinner (1992), the 25 dividend reducers have poor earnings performance over Years 0–3, with 21 firms reporting at least one annual loss in this interval.

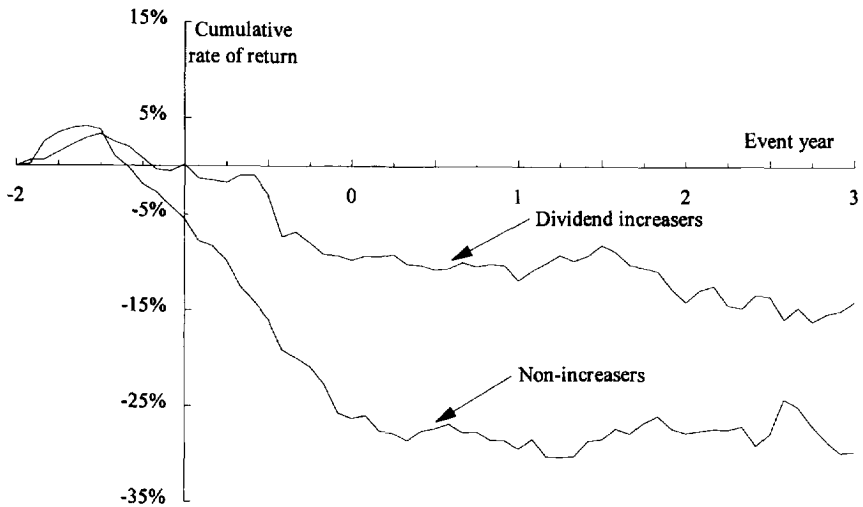


Fig. 2. Abnormal stock returns surrounding the initial annual earnings decline (in event year 0) for 145 NYSE firms with a decline in annual earnings during 1980–1987 after consistent earnings growth over at least 10 years: Sample partitioned into firms that increased and that did not increase dividends in Year 0.

Abnormal stock returns are calculated from CRSP data according to the market-adjusted returns method. (For a particular firm in a given period, the abnormal return equals the stock's raw return minus the contemporaneous return on the CRSP value-weighted index.) The figure presents abnormal returns for the 99 firms that increased dividends in Year 0, and the 46 firms that did not increase dividends in Year 0. The sample sizes decline over time, primarily due to mergers or LBOs. There are 87 dividend increasers and 44 nonincreasers with data available on CRSP through the end of Year 3. In this figure, event time is measured such that 0 represents the end of the year of the initial earnings decline, +1 represents the end of the following year, etc.

these regressions yield some hint that favorable dividend decisions help prop up stock prices in Year 0, but they are not uniformly supportive of this view.

Fig. 2 provides evidence on the related question of whether managers use dividend increases to artificially inflate share values. We expect to observe negative stock returns after Year 0 if managers are able to 'fool' the stock market into temporarily overvaluing their firms by increasing dividends. However, Fig. 2 shows no sign that dividend increasers experience negative stock returns over Years 1–3, either absolutely or relative to nonincreasers. In fact, dividend increasers and nonincreasers both have insignificant abnormal stock returns over these years, so that the cumulative returns over Years 0–3 are close to the Year 0 returns (–10.34% and –26.98%, respectively).

8. Discussion: Possible explanations for our findings

We next consider evidence on potential explanations for our findings that sample firms' dividend increases are not informative signals about future earnings. We find little indication that our findings are attributable to the explanatory power of alternative signals (Section 8.1), to mismeasurement of favorable signals due to free-cash-flow payouts from reductions in investment (Section 8.2), or to mismeasurement of favorable signals due to lagged dividend responses to earnings increases (Section 8.3). We find evidence that a few firms' favorable dividend actions are likely managerial mistakes that are reasonable given information available at the time, but this explanation does not apply systematically to our dividend-increasing firms (Section 8.4). We also find evidence which suggests that dividends are not reliable signals because of managerial overoptimism (Section 8.5) and because managers make only modest cash commitments when they increase dividends (Section 8.6).

8.1. Does current earnings information make other signals redundant?

It is possible that dividend signals do not help forecast future earnings because currently available earnings information yields highly reliable predictions of future earnings. However, the Table 3 regressions indicate that detailed decompositions of extant earnings explain only about 9% of the variation in future earnings. Thus, there clearly seems to be scope for other sources of information to improve the predictions of future earnings that are possible from extant earnings information. (The modest R^2 s do support our a priori reasoning that our sample offers a good experimental forum to test for dividend signaling because firms' current earnings realizations are unusual, which should make outsiders especially interested in managers' views about future earnings in Year 0.)

8.2. Does a desire to pay out free cash flow motivate the dividend increases?

Another possibility is that dividend increases – which ordinarily would be viewed as favorable signals about future prospects – primarily reflect a shift in corporate policy towards a greater payout of free cash flow. In this view, managers interpret the Year 0 earnings downturn as indicating that investment has become less attractive and therefore decide to reduce capital outlays and pay the additional cash to stockholders. In other words, the dividend increases are not independently determined favorable signals, but instead are primarily determined as cash flow 'residuals' by managers' decisions to reduce the level of investment.

Since it seems unlikely that managers could effect large changes in capital outlays until Year + 1, we assess the free-cash-flow argument by focusing on the

change in expenditures from Year -1 through $+1$ (rather than from Year -1 to 0). We restrict attention to the 113 sample firms with capital expenditure data available on Compustat through Year $+1$: 77 firms that increase dividends in Year 0 and 36 firms that do not. (Depository institutions account for more than two-thirds of the missing data, since Compustat does not report capital expenditures for these firms.)

For the full sample, the mean change in capital outlays is 1.4% after we trim a few influential outliers (the average is 53.4% before trimming). For the median firm in the full sample, capital outlays decline by 2.0% from Year -1 until Year $+1$. While the full sample median decline appears consistent with the free-cash-flow explanation for the dividend increases we observe, it is driven by firms that do *not* increase dividends in Year 0. The median change in capital outlays is -19.3% for firms that do not increase dividends versus $+5.4\%$ for firms that increase dividends.

The latter figure indicates that the typical dividend-increasing firm does not finance its Year 0 dividend increase through a reduction in capital expenditures. Moreover, among the minority of 33 dividend increasers that do reduce capital outlays, there is no statistically reliable relation between the dollar change in capital outlays and the dollar change in dividends. Finally, for these 33 firms, the median ratio of the dollar dividend increase to the dollar capital outlay reduction is only 5.8%, which suggests that managers' main concern is the reduction in capital expenditures per se and not the desire to finance dividend increases through investment reductions.

Over Years -5 to -1 , the median firm in the full sample increases its capital expenditures at the rate of 20.7% per year, with rates of 17.9% and 29.1%, respectively, for dividend increasers and nonincreasers. Each of these growth rates substantially exceeds the rate of change in capital outlays over Years -1 to $+1$ for the corresponding sample category (-2.0% for the full sample, $+5.4\%$ for Year 0 dividend increasers, and -19.3% for nonincreasers).

These comparisons suggest that sample managers become more cautious around the Year 0 earnings downturn, but that managers that increase dividends typically seek (and expect) continued growth – albeit at a slower pace than before – while managers that do not increase dividends generally adopt more conservative, retrenchment-oriented policies. This pattern in capital expenditures is consistent with the behavioral argument investigated in Section 8.5 below.

8.3. *Are dividend increases lagged responses to earnings?*

It is possible that we mistakenly classify dividend increases as favorable signals about future earnings when actually they are delayed responses to earnings increases that precede the Year 0 earnings downturn. Although prior earnings realizations may influence some sample firms to increase dividends in

Year 0, the evidence suggests that this phenomenon does not explain our failure to find that dividend decisions are useful signals about future earnings.

In tests reported earlier, we analyze the predictive value of dividend decisions for subsamples in which dividends were increased in Year 0 by larger dollar or percentage amounts than in the prior year. These dividend increases cannot simply be delayed responses to prior earnings, since managers actually *accelerate* dividend increases in response to the Year 0 earnings decline. The delayed-response argument implies at most a Year 0 dividend increase that is *dampened* relative to the increase in Year -1 (when earnings reach their historical peak). However, our tests yield no evidence that sample firms with especially large (dollar or percentage) Year 0 dividend increases have favorable future earnings surprises, either absolutely or relative to other sample firms.

We also conduct two further tests that indicate that the Year 0 dividend increases we observe cannot be explained as delayed responses to past earnings increases. For these tests, we reason that if the Year 0 dividend decisions are delayed responses, firms that increase dividends in Year 0 should have prior years' dividend increases that lag prior earnings growth. Therefore, for each firm, we calculate the difference between the geometric growth rates for earnings and dividends over Years -5 to -1 . Chi-square tests show no sign that, relative to the sample as a whole, firms that increase dividends in Year 0 are those for which prior dividend growth lags earnings growth by the greatest amount. In addition, for the subsample of dividend increasers, we find no significant relation between the magnitude of the percentage change in Year 0 dividends and the difference between prior years' earnings and dividend growth rates.

8.4. Are dividend increases simply reasonable managerial mistakes?

It is possible that sample firms' dividend increases are not reliable signals because it is difficult for managers to predict in Year 0 that future earnings growth will be disappointing. Our data suggest this argument has merit for a few of our firms insofar as 12 (12.1%) of the 99 firms that increase dividends in Year 0 cut the dividend sometime over the next three years (see Table 4). Given the well-known managerial reluctance to reduce dividends, it seems unlikely that these managers would increase dividends if they know they will soon have to reverse themselves. On the other hand, 63.6% of the Year 0 dividend increasers announce multiple additional dividend increases over Years 1–3, which suggests that the majority of sample managers do not come to view their Year 0 actions as mistakes (per Table 4).

Our stock returns data, moreover, indicate that the managerial-mistake argument does not apply systematically to our dividend-increasing firms. To see why, suppose that managers face such substantial uncertainty in Year 0 that they cannot reasonably predict the earnings disappointments that materialize

over the next several years. Under the standard assumption that outside investors are not better informed than managers about a specific firm's future prospects, outsiders will have at least as much difficulty forecasting future earnings as do managers themselves.

Accordingly, if the managerial-mistake argument is at work, we should observe negative abnormal share price performance after Year 0 when managers and the stock market both receive the (unanticipated) news that managers overestimated company prospects in Year 0. (In this context, a negative share price drift does not imply a profitable trading rule, since reasonable managerial mistakes are not systematically identifiable as such by outsiders at the time the decisions are announced.⁵) For our sample, dividend-increasing firms have zero average abnormal stock returns over Years 1–3 (per Fig. 2), which suggests that the stock market (and presumably managers) have sufficient information in Year 0 to anticipate the Year 1–3 developments for the typical sample firm.

We also explore whether our 1981–1982 recession observations cloud our test results, since in these cases managers might reasonably think the Year 0 earnings downturns are transitory. However, a chi-square test yields no sign of disproportionate clustering of dividend increases during this period. Also, we run the tests in Tables 2 and 3 after dropping the recession observations and obtain the same (insignificant) results.

8.5. *Are managers overly optimistic about company prospects?*

Yet another possibility is that sample firms' dividend increases are not informative signals because managers suffer from a behavioral bias – over-optimism – that leads them to overestimate future earnings when growth prospects fade.⁶ This line of reasoning has been advanced by Jensen (1993), who

⁵An implicit assumption here is that the hypothesized reasonable mistakes made by managers in Year 0 are sufficiently unusual that investors cannot accurately predict their occurrence. This assumption seems plausible given that we identify only 99 cases in the Compustat population of a dividend increase accompanying an earnings downturn after a long period of sustained earnings growth. This low incidence suggests that investors (and managers) would probably not find it worthwhile to invest resources in learning that these events imply especially bad news about future earnings. Such learning would reduce the number of managerial mistakes and dampen any post-Year 0 stock price drift predicted by this hypothesis.

⁶The managerial-mistake and overoptimism arguments are close in spirit, yet conceptually distinct. The former holds that managers should not raise dividends in Year 0, *but* their decisions are reasonable given the substantial uncertainty about future prospects prevailing at the time. The latter holds that managers are unduly optimistic when raising dividends *and* there is enough information available at the time for reasonable people to infer that company prospects have faded. The fact that dividend increasers have zero average abnormal stock returns over Years 1–3 indicates that outsiders are not surprised by sample firms' future performance – a finding that is consistent with the overoptimism view, but not with the managerial-mistake argument.

argues that the managerial mindset and corporate culture often hinder or delay managers' recognition that a period of significant growth has ended. This argument is similar in spirit to Roll's (1986) hubris hypothesis of corporate takeovers, in which managers overestimate their own abilities to generate value by acquiring other firms. It can also be viewed as a managerial analogue of Shefrin and Statman's (1984) argument that psychological biases lead investors to demand dividends even with material tax penalties.

Donaldson (1990) provides case evidence on one of our sample firms, General Mills, which indicates that managers required several years to recognize the full extent of that firm's problems. However, Wruck (1994) provides case evidence on another sample firm, Sealed Air Corporation, whose managers apparently recognized the firm's problems at an earlier stage. We next present large sample evidence on whether managerial overoptimism can help explain our dividend findings.

A common feature of dividend-signaling models is that managers use dividend actions to convey their views about company prospects to outside investors. Realistically, managers also communicate their optimism or pessimism about future prospects to investors through a variety of other channels, such as financial statements, press releases, and meetings with analysts. Consequently, the nature of managers' other Year 0 communications can help us assess whether managerial overoptimism works to make managers' favorable Year 0 dividend decisions unreliable predictors of future earnings.

Table 6 summarizes our assessment of managers' portrayal of current earnings performance (panel A) and the firm's future prospects (panel B) in the stockholder letter from the Year 0 annual report.⁷ Panel A reveals that managers of 37 (26.1%) firms portray current earnings favorably, even though Year 0 marks the first earnings decline in many years. The optimistic treatment of earnings problems is consistent with the findings of DeAngelo and DeAngelo (1990) and John, Lang, and Netter (1992), who document that managers of troubled firms often attempt to portray events in a favorable light by blaming their firms' problems on factors beyond their control, such as weak product markets or general economic conditions.

While the methods that our sample managers use to put a positive 'spin' on current earnings vary, some examples should clarify the general tenor of these communications. One approach is to claim that current earnings are a record high after removing nonrecurring gains from last year's earnings. Another is to tout current earnings as the second-highest ever, and to downplay or omit

⁷Some evidence that these letters are meaningful disclosure documents comes from the facts that they are (i) reviewed by the firm's independent auditor (per SAS 8); (ii) periodically the subject of financial press coverage (see, e.g., 'Annual Reports: Upfront and Unstarved', *New York Times*, April 9, 1995); and (iii) cited for allegedly false and misleading statements in stockholder lawsuits (see, e.g., Orion Pictures Corp., *Securities Class Action Alert*, October 1992).

Table 6

Management's discussion of current earnings performance and future earnings prospects in the annual report letter to stockholders for the year of initial earnings decline: 145 NYSE firms with a decline in annual earnings after consistent earnings growth over at least 10 years

The classifications in the table are based on independent assessments of each stockholder letter by two of the co-authors of this study. In panel B, 'contingently optimistic' refers to management statements that were optimistic about future earnings provided that particular events occurred (e.g., the economy improved). The table excludes three firms for which we do not have access to the annual report for Year 0, the year of initial earnings decline. One of these three firms increased dividends in Year 0.

Panel A. Current earnings discussion

	Number of firms (% of column cases)	Year 0 dividend decision	
		Increase	No increase
A. Acknowledge decline	103 (72.5%)	66 (67.3%)	37 (84.1%)
B. Do not mention	2 (1.4%)	1 (1.0%)	1 (2.3%)
C. Portray favorably	37 (26.1%)	31 (31.6%)	6 (13.6%)

Chi-square comparison of A versus C for dividend increasers and nonincreasers: p-value = 0.026

Panel B. Portrayal of future earnings prospects

A. Strongly optimistic	43 (30.3%)	34 (34.7%)	9 (20.5%)
B. Cautiously optimistic	25 (17.6%)	16 (16.3%)	9 (20.5%)
C. Contingently optimistic	21 (14.8%)	11 (11.2%)	10 (22.7%)
D. No mention	46 (32.4%)	35 (35.7%)	11 (25.0%)
E. Not optimistic	7 (4.9%)	2 (2.1%)	5 (11.3%)

Chi-square comparison of A versus pooled sample of B, C, D, and E for dividend increasers and nonincreasers: p-value = 0.088

mention of the earnings decline. Some managers emphasize earnings measures that *did* improve (e.g., operating income) and simply ignore the earnings decline. The common element of these communications is that, although managers understand that current earnings are a disappointment given the firm's long record of earnings growth, they nonetheless attempt to deflect stockholders'

attention from this fact. These findings are consistent with the view that some sample managers deliberately send unduly optimistic signals to investors.

Panel A of Table 6 also shows a higher incidence of favorable portrayals of current earnings for dividend increasers than for nonincreasers – 31.6% versus 13.6% (p -value = 0.026 under a chi-square test). The fact that managers of many more dividend increasers put a favorable spin on Year 0 earnings offers some support for the view that these managers use dividend policy to help convince investors that current earnings are not a material deviation from the firm's sustained record of earnings growth. We are reluctant to push this comparison strongly, however, since the optimism difference across subsamples may be attributable to dividend increasers' higher average level of earnings (see Section 3).

Panel B of Table 6 shows that, in discussing their firm's future earnings prospects, managers of well over half the sample adopt an optimistic tone. In 43 cases (30.3% of the sample), managers paint a strongly optimistic picture of probable future earnings.⁸ Another 17.6% of sample managers are cautiously optimistic about the future, while 14.8% are optimistic about the future provided certain exogenous events occur (e.g., the general economy improves). Managers of roughly one-third the sample (46 firms, or 32.4%) avoid mention of their view of future prospects. In only seven cases (4.9%) are managers *not* optimistic about the firm's earnings prospects. For example, managers of Capital Cities/ABC Inc. indicate that the next year will be difficult, with earnings likely to be unfavorable relative to current earnings.

In sum, a remarkably small number of sample managers both recognizes and is willing to acknowledge that Year 0 marks a material decline in growth prospects. Rather, managers of most sample firms continue to be optimistic at least through the early part of Year 1, when they report to stockholders on their performance for Year 0 and the firm's prospects for the future. Since few managers are appropriately pessimistic in their letters to stockholders, it seems plausible that their Year 0 dividend decisions also represent unduly optimistic signals about future earnings performance.

8.6. Are dividend increases large enough to represent credible signals?

Perhaps managers are overly optimistic in their letters to stockholders (and dividend decisions) because they perceive they will bear only minor costs if their

⁸An example of a strongly optimistic forecast is the statement by managers of Waste Management Inc.: 'Waste Management's outlook is extremely bright. . . . We are confident that Waste Management's greatest growth period still lies ahead.' An example of a cautiously optimistic forecast is the statement by managers of National City Corp.: ' . . . we see reasons to be optimistic, albeit cautiously, about 1981 and the years beyond. Although we were disappointed in 1980 operating results, we believe a solid foundation has been laid for renewed growth and profitability in the future.'

favorable signals turn out *ex post* to be wrong. This reasoning runs counter to the conventional view that dividends are a credible signaling device because managers commit to pay out additional cash – an inherent resource sacrifice – to back up their views of company prospects. For our sample, the median dollar magnitude of the Year 0 dividend increases is only 3.5% of earnings, 2.1% of operating cash flow, and 3.7% of cash plus marketable securities. Thus, our sample firms' favorable dividend actions typically entail only a modest incremental cash drain on company resources.⁹

This observation suggests that sample firms' favorable dividend decisions are not reliable predictors of future earnings because the cash magnitudes of the dividend signals are simply too small to credibly differentiate firms with superior prospects. In this view, unless managers sacrifice command over substantial corporate resources, they do not bear material costs if their favorable signals turn out to be wrong. This argument is consistent with Donaldson (1984), Myers and Majluf (1984), and Jensen (1986), who all posit that corporate financial policies reflect managers' desires to ensure their own access to substantial corporate resources. These arguments suggest that managers should pay serious attention to dividend increases only when substantial amounts of resources are involved.

The literature contains some support for the hypothesis that managerial payout decisions are meaningful signals only when they entail a considerable resource sacrifice. Vermaelen (1980) and Dann, Masulis, and Mayers (1991) study the information content of stock repurchase tender offers, which generally entail substantial cash payouts. They find that repurchases tend to be followed by abnormally positive earnings, *i.e.*, earnings above the level expected given current performance. Brickley (1983) finds that large regular dividend increases tend to be followed by favorable earnings surprises.

We test this hypothesis for our sample by examining the signaling content of the subset of Year 0 dividend increases that are especially large relative to the firm's holdings of cash plus marketable securities. For the top quartile of such increases, we find no indication of favorable future earnings surprises, either absolutely or relative to firms that do not increase dividends. A possible explanation is that, even for this subsample, the incremental dividends are still a modest fraction of the liquid assets under managers' control (the median incremental payout within the top quartile is 13% of cash plus marketable securities). This finding suggests that future research should seek to identify the factors necessary to make managerial signals reliable indicators of future earnings including, but not limited to, the requisite size of incremental cash payouts.

⁹This incremental cash drain can translate to a large present value if capitalized over many future periods. However, capitalization overstates the cost of a current-period 'mistake', since managers can likely offset the current error simply by being more conservative with the frequency and magnitude of future dividend increases.

9. Conclusion

We study the signaling content of dividend decisions made by managers of 145 NYSE companies whose annual earnings decline after nine or more consecutive years of growth. Managers of 99 (68.3%) of these companies increase dividends in Year 0, the year that their firm's long-standing record of consecutive earnings increases is broken. Most dividend increases, moreover, are at least as large as the dividend increase in the firm's peak earnings year. We focus on this sample of 145 firms to test for dividend signaling because a priori it seems likely that, given the interruption of sustained earnings growth, outsiders will be especially interested in managers' views of whether the firm's earnings downturn is likely to be transitory or persistent.

Overall, our findings offer almost no indication that sample managers' dividend decisions in the year of the earnings downturn (Year 0) are useful signals of future earnings prospects. Using a variety of model specifications and definitions of favorable dividend signals, we find no evidence that Year 0 dividend increases are associated with favorable future earnings surprises. We also test whether dividend increases are used by managers of firms with relatively good prospects (that are mediocre in absolute terms) to differentiate their companies from other seemingly similar firms with comparatively poor earnings prospects. Almost all our evidence is inconsistent with this separating equilibrium hypothesis.

Our evidence suggests that three factors help explain why our sample firms' favorable dividend actions are not informative signals about future earnings prospects: managerial overoptimism, modest resource commitments, and (to a lesser extent) managerial mistakes. With respect to the latter, managers of a small subset (12.1%) of dividend-increasing firms subsequently cut dividends, which suggests they have poor information about future earnings when they increase dividends in Year 0. However, this explanation does not apply pervasively to our sample, since dividend-increasing firms have zero average abnormal stock performance over Years 1–3, indicating that outsiders (and therefore presumably managers) are able to anticipate in Year 0 that sample firms will have disappointing earnings over the next several years.

Our evidence is broadly consistent with the view that sample firms' dividend increases are not informative signals because managers suffer from a behavioral bias – overoptimism – that leads them to overestimate future earnings when growth prospects fade (Jensen, 1993). We examine managers' letters to stockholders because, like dividends, these letters represent vehicles managers can employ to communicate their views about company prospects. The stockholder letters in the Year 0 annual reports indicate that managers are *not* optimistic about future prospects in only seven (4.9%) cases. Yet the average firm experiences large negative stock price performance in Year 0 and earnings growth over Years 1–3 evaporates for the median firm. It thus appears that few managers are appropriately pessimistic in Year 0. In addition, managers of 37 (26.1%) firms

are less than forthright in their discussions of Year 0 earnings, suggesting that some managers deliberately send overly optimistic dividend signals.

Our negative findings on signaling may also reflect the fact that sample managers make only modest cash commitments when they increase dividends. For the median firm that increases dividends in Year 0, the dollar magnitude of the increase is just 3.5% of earnings, 2.1% of operating cash flow, and 3.7% of cash plus marketable securities. The small magnitude of the incremental payout raises doubts about the conventional argument that dividends are credible signals because they require managers to use cash to substantiate their views of future earnings. When the incremental cash payout is small, managers can send overly optimistic dividend signals to outsiders at low cost, undermining the reliability of such signals. This reasoning suggests that future (theoretical and empirical) research should recognize the possibility that reliable signals require a substantial resource sacrifice by managers and that, as an empirical matter, many dividend increases are simply too small to meet this criterion.

More generally, a promising area for future research is to investigate the factors that affect managers' incentives to send false or unreliable signals to stockholders (via dividends or other decisions). These factors include the magnitude of the incremental cash payout, the potential personal costs to managers who are discovered sending false signals, and the likelihood of discovery (which depends on economic conditions, such as the perceived uncertainty in the firm's operating environment). Although it is difficult a priori to know precisely when factors such as these will lead managers to deliberately send unreliable signals to stockholders, it does seem clear that the nature and extent of false managerial signaling is a worthwhile subject for future research.

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