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Operating performance following dividend decreases and omissions

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Abstract

Using quarterly data and benchmarks based on past performance characteristics, I find little evidence that earnings change following 661 dividend decreases and 484 dividend omissions between 1980 and 1998. The exception is that earnings deteriorate during the quarter of dividend omissions, but they recover within a couple of quarters. My results further suggest that the lack of a more pronounced earnings decline is neither attributable to a contemporaneous and confounding increase in share repurchases, to earnings management, nor to improving investment opportunities, and the results are similar for firms that are not predicted to cut dividend payouts based on their financial flexibility. Instead, I find some evidence that the negative stock price reaction reflects the dismal performance during the quarter of the announcement, especially for firms that omit dividends, and that the market interprets the dividend announcements too pessimistically.

JEL classification: D82; G35
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1. Introduction

Theoretical models and conventional wisdom suggest that payouts to shareholders convey valuable information to the capital market (Bhattacharya, 1979; Miller and

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Rock, 1985; John and Williams, 1985). Even in the absence of a deliberate signaling motive, the sources and uses of funds identity suggests that both dividend increases and decreases convey information about current or future earnings (Miller and Rock, 1985). Indeed, the stock price reaction is positive upon announcements of dividend increases and negative upon announcement of dividend decreases (Aharony and Swary, 1980; Asquith and Mullins, 1983; Kalay and Loewenstein, 1985). However, studies that examine earnings around dividend changes offer mixed evidence. Healy and Palepu (1988) find that firms that initiate dividends experience subsequent earnings increases and that firms that omit dividends experience contemporaneous earnings decreases followed by earnings increases. In contrast, DeAngelo et al. (1996) find no evidence that earnings increase following dividend increases. Further, Benartzi et al. (1997) and Grullon et al. (2002) find that firms that increase dividends experience increases in earnings during the same year, but no increases thereafter, while firms that decrease dividends experience decreases in earnings during the same year and increases thereafter.

Nissim and Ziv (2001) argue that earlier results on earnings changes around dividend changes are based on misspecified earnings models. When controlling for the earnings levels at the end of the event year and other variables likely to affect future earnings, they find that earnings are abnormally high during the subsequent 2 years for firms that increase dividends and that subsequent earnings are normal for firms that decrease dividends. Thus, dividend increases appear to signal favorable information about future performance, while there is no evidence that dividend decreases contain information about future performance.[1] Similarly, Dhillon et al. (2001) find that earnings increase relative to analyst forecasts after dividend increases that exceed forecasted dividend increases, but unexpected future earnings are unrelated to dividend decreases.

In this study, I examine six potential explanations for the lack of a decline in operating performance following dividend decreases and omissions in past studies. First, Nissim and Ziv (2001) suggest that the information contained in dividend decreases might relate to the current year's performance, which would be consistent with findings in Benartzi et al. (1997) and Grullon et al. (2002) that earnings decrease during the year of the dividend decrease. To examine this possibility, I examine quarterly data for a sample of 661 dividend decreases and 484 dividend omissions from 1980 to 1998. Past studies have used annual data, but annual data conceal, at least partially, any deterioration in performance that occurs during the quarters immediately after the announcements. An additional advantage of using quarterly data is that it allows me to generate a matching sample based on performance very closely before the announcement, which is important to the extent that performance changes during the quarters immediately prior to the event. My results show that the operating performance declines before both dividend decrease and omission announcements and increases thereafter. However, when I compare the performance to firms matched on pre-event performance characteristics and market-to-book ratios, there is

[1] Benartzi et al. (2001) challenge some of the results and conclusions in Nissim and Ziv (2001). In particular, they question Nissim and Ziv's convention of assigning a dividend change that occurs in the first fiscal quarter to the prior year, and further argue that Nissim and Ziv's regression of future changes in earnings should control for past changes in earnings.

no change in performance. The exception is that the earnings drop during the quarter of the dividend-omission announcement, but they recover within a couple of quarters. Thus, it is conceivable that announcements of dividend omissions convey unfavorable information about the current and next quarters' earnings.

A second possibility for the absence of a performance decline following dividend decreases is that survivorship bias taints the results in this and earlier studies. In particular, firms that lack data for future quarters (nonsurvivors) might exhibit worse performance than survivors. However, the rate of survivorship is not lower for the sample firms than for the control firms. Further, the stock price reaction to the dividend announcement is not more negative for nonsurvivors than for survivors, suggesting that the capital market does not predict greater performance deterioration for nonsurvivors. Lastly, the operating performance does not deteriorate leading up to quarters with missing data, such that there is no evidence that nonsurvivors perform especially poorly.

A third possibility is that dividend-decreasing and omitting firms simultaneously increase share repurchases. To the extent that share repurchases convey favorable information about future earnings (Vermaelen, 1981; Dann et al., 1991; Lie and McConnell, 1998), the impact of dividend decreases on future earnings is disguised. Consistent with such a substitution effect, Grullon and Michaely (2002) find that firms that pay lower than predicted dividends repurchase more shares than other firms. However, there is little evidence that the firms in my sample substitute share repurchases for dividends. The average size of share repurchases for firms that decrease or omit dividends does not change significantly, and the fraction of firms that repurchases shares declines.

A fourth possibility for the lack of a performance decline is that earnings management contaminates the earnings. Nissim and Ziv (2001) suggest that managers might elect to take a "big bath" concurrently with the dividend decrease. Such earnings management would drive down contemporaneous earnings, but as the effect of any earnings management fades, future earnings would bounce back. To examine this possibility, I estimate discretionary accruals for the sample firms. The discretionary accruals indicate that any downward earnings management is more prevalent during the quarters after the dividend announcement than before. Thus, it is unlikely that earnings management drags pre-event earnings down relative to post-event earnings.

A fifth possibility is that the results are confounded by firms that need to cut dividends because of tight financial flexibility rather than poor prospects. That is, firms might cut dividends either because the current liquidity situation necessitates that the firm limit payouts to shareholders or because the future cash flow is such that the firm cannot sustain the present dividend payouts. If so, I would only expect deteriorating operating performance for the latter group of firms. The notion that firms cut dividends because of tight financial flexibility is consistent with Grullon et al. (2002), who report that dividend-decreasing firms have particularly high debt ratios and low cash ratios. In my sample, the cash ratios are significantly lower than those for control firms for both firms that decrease and omit dividends, while the debt ratios are significantly higher for firms that omit dividends. To examine whether firms with the least need to cut dividend payouts based on their financial flexibility exhibit more pronounced

performance decreases, I identify firms that decrease or omit dividends but are not predicted to do so based on a logistic regression. Next, I study the operating performance for this subsample. However, there is no evidence that the firms in the subsample experience a more pronounced performance decline than other sample firms.

A sixth possibility is that firms decrease or omit dividends to fund improving investment opportunities. This could in turn give rise to better operating performance, at least in the longer term. However, the evidence suggests that firms spend less on capital expenditures after dividend decreases and omissions than before, thus casting doubt on the notion that investment opportunities improve or, alternatively, suggesting that if the investment opportunities improve, the firms are not fully exploiting them. Consequently, it is unlikely that improving investment opportunities explain the lack of a decline in operating performance.

Finally, I study the stock price reaction to quarterly earnings announcements around announcements of dividend decreases and omissions. An advantage of this analysis is that it should not be affected by survivorship bias, because the capital market's response to the earnings announcements is conditional on the status of the company (i.e., survivor or nonsurvivor) at the time of the announcement. A further advantage is that it might aid in the interpretation of the operating performance results, because it reveals how the capital market assesses the performance. The stock price reaction to earnings announcements during the quarters before the dividend announcements is negative on average, reflecting the deteriorating earnings during this period. Despite the dismal earnings during the quarter of the dividend announcements, there is no significant stock price reaction when these earnings are announced. A likely reason is that the market already capitalized these poor earnings at the preceding announcement of the dividend decrease or omission. Thus, the announcements of dividend decreases and omissions appear to partially reflect the poor performance of the current quarter. The stock price reactions to the quarterly earnings announcements following the dividend announcement are positive, suggesting that the capital market is positively surprised about the post-event performance. One interpretation of this result is that the market reacts overly pessimistically to the news of a dividend cut or omission.

The paper proceeds as follows. The next section describes the sample. Section 3 presents empirical results. Finally, Section 4 summarizes and concludes.

2. Sample

I identify my sample of dividend decreases and omissions from the Center for Research in Security Prices (CRSP) during the period from 1980 through 1998. A dividend decrease is defined to occur if a firm declared a quarterly (semiannual) [annual] dividend per share and the next quarterly (semiannual) [annual] per share is lower. A dividend omission is defined to occur if a firm declared several consecutive dividends followed by no dividends for a specified period. In particular, I require that the firm declared at least eight consecutive quarterly dividends and then paid no cash payment during the next quarter, four consecutive semiannual dividends and no cash payment during the next 6 months, or

two consecutive annual dividends and no cash payment during the next year.[2] I exclude observations if (1) the firm is a financial or utility firm, (2) stock splits or other cash distributions occur between the previous and the current (and lower) dividend (as in Denis et al., 1994), (3) the firm lacks earnings data in Compustat during the quarter prior to the event,[3] (4) the firm changes its fiscal year between the year of the event and the subsequent year, or (5) the dividends of the firm fluctuate up and down during the sample period.[4] Because CRSP does not provide any announcement dates for dividend omissions, I further require that announcements of dividend omissions are available from *Dow Jones Interactive* or *LexisNexis*, thus allowing me to identify the fiscal quarter of the announcements.[5] These criteria yield a final sample of 661 dividend decreases and 484 dividend omissions.[6]

Table 1 presents the frequency of dividend decreases and omissions in my final sample by year and by fiscal quarter. The number of observations in a given year ranges from 11 in 1994 to 89 in 1982 for dividend decreases and from 11 in 1997 to 45 in 1982 for dividend omissions. There is no strong evidence that dividend decreases or omissions are concentrated to certain fiscal quarters (the p-values for the null-hypothesis that the proportions are the same exceed 0.10).

[2] To ensure that a dividend is omitted and not merely delayed, I require that no dividend is paid 150 trading days after the last quarterly dividend, 300 trading days after the last semiannual dividend, and 400 trading days after the last annual dividend.

[3] Sometimes a quarterly figure in Compustat represents either a semiannual or annual figure. If so, the prior quarter's figure has a missing code of either −0.002 or −0.003, respectively, and I treat both quarters as having missing information.

[4] Firms whose dividends fluctuate up and down during the sample period include Dart Group, Unimar, Diamond Shamrock Offshore, Rayonier Timberlands, Sun Energy Partners, TEL Offshore Trust, Borden Chemicals and Plastics, and Dominion Resources Black Warrior. These eight firms collectively had as many as 124 dividend decreases and two omissions during the sample period. I exclude these firms because their dividend reductions are often followed by dividend increases, and, thus, their decision to reduce dividends appears to differ fundamentally from that for other firms. Nevertheless, I also examined the operating performance of these firms separately. It turns out that these firms are fundamentally different from the other sample firms in that their operating performance is actually superior to that of their industry peers. Thus, there is no indication that these firms are struggling at the time of the dividend cuts. Further, there is no evidence that these firms experience declines in operating performance during the subsequent quarters, not even in the event quarter. Thus, the exclusion of these firms is inconsequential for the conclusions of my analysis.

[5] Dividends are announced on similar dates within every period, thereby making it possible to make reasonable predictions as to when such announcements will occur. However, there are cases in which the dividend omission is never announced or is announced much earlier or later than predicted. In my sample, the mean (median) deviation of the actual announcement date from the estimated announcement date is 1 (1), while the mean (median) *absolute* deviation is 18 (9). In light of these deviations, I am uncomfortable including observations for which I cannot ascertain the announcement date. It turns out, however, that the results are similar if I include these.

[6] Dhillon et al. (2001) argue that it might be important to compare actual dividends to forecasted dividends to assess whether any change is unexpectedly small or large. However, according to their results, this issue is primarily critical for dividend increases, because 45% of increases (306 of 681) represent negative or no surprises, while only 13% of dividend decreases (4 of 31) represent positive or no surprises. Further, because a dividend omission brings the dividend level to its minimum, an omission by definition cannot represent a positive surprise, so the issue is likely to be even less critical for these events.

Table 1
Sample distribution

Year or quarter	Dividend decreases		Dividend omissions	
	N	Fraction (%)	*N*	Fraction (%)
1980	26	3.9	28	5.8
1981	17	2.6	25	5.2
1982	89	13.5	45	9.3
1983	41	6.2	21	4.3
1984	17	2.6	13	2.7
1985	27	4.1	33	6.8
1986	42	6.4	37	7.6
1987	22	3.3	20	4.1
1988	26	3.9	25	5.2
1989	29	4.4	26	5.4
1990	32	4.8	24	5.0
1991	65	9.8	37	7.6
1992	62	9.4	33	6.8
1993	33	5.0	26	5.4
1994	11	1.7	24	5.0
1995	33	5.0	26	5.4
1996	27	4.1	16	3.3
1997	31	4.7	11	2.3
1998	31	4.7	14	2.9
Quarter 1	179	27.1	121	25.0
Quarter 2	171	25.9	105	21.7
Quarter 3	143	21.6	122	25.2
Quarter 4	168	25.4	136	28.1
Total	661	100.0	484	100.0

Distribution of the sample of dividend decreases and omissions by the year of announcement and by the fiscal quarter of the announcement. A dividend decrease is defined to occur if a firm declared a quarterly (semiannual) [annual] dividend per share and the next quarterly (semiannual) [annual] per share is lower. A dividend omission is defined to occur if a firm declared at least eight (4) [2] consecutive quarterly (semiannual) [annual] dividends and then paid no cash payment during the next quarter (6 months) [year]. Observations have been excluded if (1) the firm is a financial or utility firm, (2) stock splits or other cash distributions occur between the past and the current (and lower) dividend, (3) the firm lacks data in Compustat during the quarter prior to the event, (4) the firm changes its fiscal year between the year of the event and the subsequent year, or (5) the dividends of the firm fluctuate up and down during the sample period.

Table 2 presents descriptive statistics for the sample. The mean (median) market value of equity of $994 million ($122 million) for firms that decrease dividends is considerably larger than the mean (median) of $258 million ($54 million) for firms that omit dividends. The mean and median dividend cuts scaled by price are roughly 1% for dividend omissions and marginally smaller for dividend decreases. The mean (median) stock returns during the year prior to the announcements is −5.3% (−8.4%) for firms that decrease dividends and −15.9% (−20.9%) for firms that omit dividends, indicating that the financial markets perceive these firms to be struggling even before making the announcements.

Table 2 also provides the abnormal stock returns around the announcement date. The abnormal returns are computed using the one-factor model, where the CRSP equal-

Table 2
Descriptive statistics

	Dividend decreases		Dividend omissions	
	Mean	Median	Mean	Median
Market value of equity (in millions)	994	122	258	54
Dividend decrease scaled by price	0.009	0.006	0.011	0.009
Prior year's stock return (days −260 through −10)	−0.053	−0.084	−0.159	−0.209
Prior year's value-weighted market return	0.157	0.161	0.162	0.169
Announcement period return (days −1 through +1)	−0.030	−0.020	−0.057	−0.045

Descriptive statistics for the sample of dividend decreases and omissions. The announcement dates for dividend omissions are predicted based on past dividend announcement dates and could therefore be somewhat inaccurate. The announcement period return is the abnormal stock return based on the one-factor model, where the equal-weighted index is used to proxy overall market returns and the estimation period spans from −250 to −10 days prior to the announcement. All mean and median announcement period returns are significantly different from zero at the 0.01 level.

weighted index is used to proxy overall market returns and the estimation period spans from 250 to 10 days prior to the announcement.[7] The mean (median) 3-day announcement period returns are −3.0% (−2.0%) for dividend decreases and −5.7% (−4.5%) for dividend omissions. These returns are statistically different from zero at the 1% level of significance, suggesting that the market interprets dividend decreases and omissions as unfavorable news.

3. Empirical results

Past studies and this study document that announcements of dividend decreases and omissions are accompanied by a negative stock price reaction. It is often hypothesized that the negative stock price reaction reflects the deteriorating future prospects of the firm. Yet past studies have either documented increases (Healy and Palepu, 1988; Benartzi et al., 1997; Grullon et al., 2002) or no changes in performance (Nissim and Ziv, 2001) following these events. In the following, I examine possible reasons for why past studies have not found a decline in post-event performance.

3.1. Operating performance using quarterly data

I start by analyzing the operating performance around the dividend announcements. Unlike past studies, I use quarterly data. There are two reasons for this. First, Nissim and Ziv (2001) suggest that "the information content of dividend decreases may be captured by current year's earnings, which are disclosed after the dividend decrease announcement". If

[7] Admittedly, I have no theoretical underpinning for using the equal-weighted index as a proxy for the market-index. I use the equal-weighted index because it has often been used in past studies (e.g., Dann et al., 1991; Michaely et al., 1995; Lie, 2000) and because Brown and Warner (1980) find that, unlike the use of the value-weighted index, the use of the equal-weighted index does not cause the null hypotheses to be rejected too often. Incidentally, all of the results in this study are similar if I use the value-weighted index instead.

so, it is beneficial to partition the year into quarters to assess whether any changes in performance during the announcement year are attributable to changes during the quarters before or after the announcement. A second reason is that Healy and Palepu (1988) and Grullon et al. (2002) report that the operating performance declines prior to dividend omissions and decreases, respectively, thus making it desirable to match on performance as close to the announcement as possible (see later discussion on performance-matching). Naturally, the end of the preceding fiscal quarter is generally closer to the announcement than the end of the preceding fiscal year.[8]

I examine both unadjusted and adjusted operating performance. Unadjusted performance is operating income scaled by book value of assets at the end of the quarter.[9] Adjusted performance is the unadjusted performance less the performance for control firms. I generate two sets of control firms. The first set is composed of firms in the same industry that are similar in size. In particular, for each sample firm, I choose as a control firm the firm with the same two-digit SIC code that has book value of assets closest to that of the sample firm. I call the adjusted performance based on these control firms industry-adjusted performance. Note that the use of adjusted performance should alleviate concerns about seasonality in quarterly performance.

The second set of control firms is composed of firms in the same industry that have similar pre-event performance characteristics and market-to-book ratios, as outlined in Lie (2001). In particular, for each sample firm, I first identify all firms with the same two-digit SIC code, with operating performance within $\pm 20\%$ or within ± 0.01 of the performance of the sample firm in the pre-announcement quarter (quarter -1), with a change in operating performance from quarter -5 to quarter -1 within $\pm 20\%$ or within ± 0.01 of the change in performance of the sample firm, and with pre-announcement market-to-book value of assets within $\pm 20\%$ or within ± 0.1 of that of the sample firm. I match on pre-announcement performance characteristics because these characteristics predict future performance (Barber and Lyon, 1996; Fama and French, 2000) and because dividend-decreasing firms exhibit declining and low pre-announcement performance (Healy and Palepu, 1988; Grullon et al., 2002). I match on market-to-book ratio because this ratio likely contains information about future operating performance (Fama and French, 2000) and because Fama and French (2001) and Grullon et al. (2002) show that firms that change dividends have abnormal market-to-book ratios. If no firms meet the criteria, I relax the industry criterion to a one-digit SIC. Finally, if still no firms meet the criteria, I disregard

[8] Quarterly data are also associated with potential drawbacks. First, the level of details and quality of information might be lower than in the annual data, thus introducing more noise. Second, quarterly data contain seasonal trends that might bias the results if the events are clustered in certain quarters. The use of control firms should mitigate this problem. Nevertheless, as a robustness check, I also repeated my tests of operating performance changes using annual data. Appendix A shows the annual levels and changes. Consistent with DeAngelo et al. (1996), Benartzi et al. (1997), and Grullon et al. (2002), I find evidence of performance declines during the announcement year but not in subsequent years. Although not tabulated, I fail to find performance declines in subsequent years for subsamples based on repurchase activity and prior liquidity also.

[9] Operating income is quarterly data item number 21 on Compustat. To maximize the number of observations during the quarters after the event, I include semiannual operating income figures also (i.e., those coded with -0.002 in the current or previous quarter), but adjust them by dividing by two. This has an inconsequential effect on the results.

the SIC code and the performance and market-to-book criteria. From these firms, I choose the firm with the lowest sum of absolute differences, defined as

$$\begin{aligned}&\left|\text{Performance}_{\text{Quarter } -1,\ \text{Sample firm}} - \text{Performance}_{\text{Quarter } -1,\ \text{Firm i}}\right|\\&\quad + \left|\text{Performance change}_{\text{Quarter } -5 \text{ to quarter } -1,\ \text{Sample firm}}\right.\\&\quad \left. - \text{Performance change}_{\text{Quarter } -5 \text{ to quarter } -1,\ \text{Firm i}}\right|\end{aligned}$$

If the sample firm lacks operating performance for quarter −5, I disregard the performance change criterion. I label the adjusted performance based on these control firms performance-adjusted performance.[10]

Table 3 presents the unadjusted and adjusted operating performance. Both firms that decrease and omit dividends perform poorly before and after the announcement quarter when compared to industry peers. Further, both sets of firms exhibit declining performance during the pre-announcement quarters and improving performance during the post-announcement quarters. However, the performance-adjusted operating performance tells a different story. By design, the performance-adjusted performance is close to zero during the pre-announcement quarters. During quarters −1 and 0, the performance-adjusted performance is significantly negative for firms that omit dividend but only modestly negative for firms that decrease dividends. During the subsequent quarters, there is little evidence of abnormal performance-adjusted performance for either set of firms. Thus, the improvement in unadjusted and industry-adjusted post-announcement performance appears to be attributable to factors such as mean reversion in earnings.

Collectively, there is some evidence that announcements of dividend omissions signal unfavorable information about the current and next quarter's earnings. However, there is no evidence that announcements of dividend decreases signal unfavorable information about future earnings or that dividend omissions signal unfavorable information about earnings beyond the quarter after the announcement. Thus, I examine alternative reasons for the lack of a decline in post-announcement performance.[11]

[10] In comparison, Healy and Palepu (1988) report unadjusted and industry-adjusted performance. Benartzi et al. (1997) report unadjusted, industry-adjusted, and drift-adjusted performance, where drift-adjusted performance is the performance of the sample firms less the performance of firms with similar pre-event changes in performance. Grullon et al. (2002) report unadjusted and performance-adjusted performance, where performance-adjusted performance is the performance of the sample firms less the performance of firms with similar average performance during the 3 years before the announcement. Nissim and Ziv (2001) regress unscaled future earnings against dividend variables, book value, market value, and past earnings. Thus, Nissim and Ziv control for similar variables as I do. Unlike my procedure of simply comparing the future performance changes of the sample firms to the changes of control firms with similar pre-event characteristics, the regression procedure assumes a linear relation between future earnings and the independent variables. However, Fama and French (2000) and Lie (2001) find evidence of complex nonlinearities and interactions, suggesting that Nissim and Ziv's assumption of a linear relation is violated.

[11] To test for robustness, I also regressed the changes in performance from quarter −1 to either quarter +1, +3, +7, or +11 against control variables (performance in quarter −1, change in performance from quarter −5 to quarter −1, and market-to-book ratio in quarter −1) and dummy variables for dividend reductions and omissions using the universe of Compustat firms except financial firms and utilities. The coefficients on the dummy variables do not differ from zero at the 5% level of significance in any of the regression models.

Table 3
Operating performance

Quarter	Dividend-decreasing firms				Dividend-omitting firms			
	N	Unadjusted	Industry-adjusted	Performance-adjusted	*N*	Unadjusted	Industry-adjusted	Performance-adjusted
Panel A: median levels								
−5	592	0.031	0.000	0.000	433	0.025	−0.008[a]	0.000
−4	607	0.028	−0.002	0.000	447	0.021	−0.010[a]	0.000
−3	627	0.026	−0.003[a]	0.000	463	0.021	−0.011[a]	0.000
−2	642	0.023	−0.004[a]	0.000	471	0.015	−0.014[a]	−0.001
−1	661	0.020	−0.005[a]	0.000	484	0.010	−0.021[a]	0.000
0	650	0.021	−0.007[a]	0.000	476	0.010	−0.017[a]	−0.005[a]
1	639	0.023	−0.003[b]	0.000	462	0.013	−0.013[a]	−0.003[b]
2	627	0.024	−0.003[b]	0.000	446	0.017	−0.009[a]	0.000
3	614	0.026	−0.002	0.001[b]	432	0.018	−0.011[a]	0.000
4	600	0.027	−0.002	0.001	426	0.018	−0.009[a]	−0.001
5	587	0.026	−0.002[b]	0.001	420	0.020	−0.011[a]	−0.003
6	581	0.027	−0.002	0.000	415	0.020	−0.010[a]	0.000
7	569	0.028	−0.002	0.001	404	0.021	−0.010[a]	0.003
8	558	0.028	−0.002	0.002	392	0.021	−0.006[a]	0.002
9	551	0.027	−0.003[b]	−0.001	385	0.023	−0.008[a]	0.000
10	537	0.028	−0.001[b]	0.001	378	0.023	−0.010[a]	−0.001
11	528	0.028	−0.001	0.001	366	0.022	−0.008[a]	0.001
12	523	0.028	−0.001	0.000	361	0.024	−0.009[a]	0.002
Panel B: median changes								
−5 to −1	592	−0.009[a]	−0.004[a]	0.000	433	−0.013[a]	−0.010[a]	0.000
−1 to +1	639	0.001[b]	0.001	0.000	461	0.003	0.004[b]	−0.004[b]
−1 to +3	614	0.004[a]	0.002[a]	0.002[b]	431	0.005[a]	0.007[a]	0.000
−1 to +7	569	0.006[a]	0.004[a]	0.001	403	0.008[a]	0.011[a]	0.002
−1 to +11	528	0.006[a]	0.004[a]	0.002	366	0.013[a]	0.010[a]	0.001

Median levels and median changes of operating income scaled by assets. Medians are reported because Barber and Lyon (1996) find that nonparametric tests are more powerful than parametric tests in studies of operating performance. Quarter 0 is the fiscal quarter of the announcement. Industry-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry- and size-matched control firms. Performance-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively. (All unadjusted levels are significantly different from zero at the 0.01 level.)

3.2. Survivorship bias

Survivorship bias might affect my results and those in other studies of operating performance around dividend changes. In particular, it is conceivable that firms that have available data for several quarters following the event exhibit superior performance relative to firms that drop out, in which case the apparent lack of a performance deterioration is deceptive. In this section, I attempt to assess the extent of survivorship bias in my results.

Table 3 shows that the number of observations decreases from 661 (484) in quarter −1 to 614 (432) the year thereafter for dividend decreases (omissions), a decrease of 7%

(11%). The corresponding decreases for the performance-based control samples for dividend decreasing and omitting firms are 8% and 11%, respectively. Thus, the fraction of survivors is similar across the sample and control firms, such that the survivorship bias among the sample firms appears to be mitigated by similar bias among the control firms.

I further estimate the abnormal stock returns around the original announcements separately for survivors, defined as firms that have operating income data for quarter +3, and nonsurvivors. More negative returns for nonsurvivors could indicate that the capital market expects those firms to experience a decline in performance relative to survivors. The mean (median) 3-day announcement period returns are −3.0% (−2.0%) for survivors that decrease dividends, −2.9% (−1.3%) for nonsurvivors that decrease dividends, −6.2% (−4.8%) for survivors that omit dividends, and −1.6% (−1.6%) for nonsurvivors that omit dividends. Thus, there is no evidence to indicate that the capital market perceives nonsurvivors to exhibit a performance-deterioration relative to survivors at the time of the original announcements.

Finally, I examine the operating performance for nonsurvivors for the quarters immediately following the announcements. Due to small samples, I collapse dividend decreases and omissions into one group. Table 4 presents the changes in operating performance from quarter −1 to either quarter 0, +1, or +2 for nonsurvivors that have data for quarters −1 through +2 (panel A), nonsurvivors that only have data for quarters −1 through +1 (panel B), or nonsurvivors that only have data for quarters −1 and 0 (panel C). Regardless of whether we look at unadjusted, industry-adjusted, or performance-adjusted changes, there is no evidence that nonsurvivors exhibit a deterioration leading up to the quarter for which they no longer have available data.

Overall, there is no evidence to indicate that survivorship bias gives rise to the lack of performance deterioration in my sample. Of course, I still cannot rule out this possibility completely. The advantage of the later analysis of the stock market reaction to earnings announcements is that it should be even less susceptible to survivorship bias.

3.3. Share repurchases

Fama and French (2001) and Grullon and Michaely (2002) both hypothesize that the increased incidence of repurchases over time is caused by firms gradually substituting share repurchases for dividends, but their evidence leads them to reach different conclusions. Fama and French show that repurchases are primarily undertaken by dividend payers, and, hence, they argue that the increase in repurchases cannot explain the decline in the fraction of firms that pay dividends. Instead, the primary effect of the recent surge in repurchases has been to increase the total payouts of dividend payers. Grullon and Michaely find that firms that pay low dividends relative to predictions based on Lintner's (1956) dividend model repurchase more shares than other firms, which is consistent with the substitution hypothesis.

Share repurchases are accompanied by positive announcement returns, and Vermaelen (1981), Dann et al. (1991), and Lie and McConnell (1998) find some evidence that they convey favorable news about operating performance. Thus, if firms that decrease or omit

Table 4
Operating performance for firms with no data for quarter +3

	Change from quarter −1 to quarter		
	0	+1	+2
Panel A: firms with data for quarters −1 to +2 (N=28)			
Unadjusted	0.003	0.003	0.003
Industry-adjusted	0.014[b]	0.003	0.000
Performance-adjusted	0.007	0.007	−0.001
Panel B: firms with data for quarters −1 to +1 (N=32)			
Unadjusted	0.002	0.003	na
Industry-adjusted	0.002	0.011	na
Performance-adjusted	0.000	−0.003	na
Panel C: firms with data for quarters −1 and 0 (N=25)			
Unadjusted	−0.004	na	na
Industry-adjusted	−0.003	na	na
Performance-adjusted	−0.001	na	na

Median changes of operating income scaled by assets for firms that decrease or omit dividends but lack data for quarter +3 relative to the announcement. Medians are reported because Barber and Lyon (1996) find that nonparametric tests are more powerful than parametric tests in studies of operating performance. Quarter 0 is the fiscal quarter of the announcement. Industry-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry- and size-matched control firms. Performance-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively.

dividends simultaneously increase share repurchases in accordance with the substitution hypothesis, the net signal about future prospects is unclear.

To examine whether firms in my sample substitute share repurchases for dividends, I estimate and present average share repurchases and the fraction of firms that repurchase shares during the quarters around the dividend announcements (I do not present median share repurchases, because they are all zero). The substitution hypothesis predicts that these statistics increase from before to after the events. Table 5 presents the average share repurchases. Note that the number of firms is smaller than in other tables, because share repurchase data are not available from Compustat before 1984.[12] The average hovers around 0.002 for firms that decrease dividends, and it goes up to 0.004 in quarter 0. The average hovers around 0.003–0.004 before dividend omissions, peaks at 0.005 in quarter +1, and then drops to 0.001 in quarters +3 and +4. Thus, both sets of firms experience a slight spike in repurchases around the event quarter. However, any

[12] I take information on share repurchases from Compustat (quarterly data item #93), which includes (i) conversion of class A, class B, special stock, and preferred stock into common stock, (ii) purchase of treasury stock, and (iii) redemption of common and preferred stock. While Jagannathan et al. (2000) argue that this measure overstates repurchases of common stock, they nevertheless believe that it is more accurate than measures based on information from CRSP.

Table 5
Share repurchases

Quarter	Dividend-decreasing firms				Dividend-omitting firms			
	N	Unadjusted	Industry-adjusted	Performance-adjusted	*N*	Unadjusted	Industry-adjusted	Performance-adjusted
Panel A: mean levels								
−5	395	0.004	0.002	0.000	312	0.004	0.000	0.002
−4	405	0.004	0.002	0.001	319	0.003	0.001	0.000
−3	416	0.002	−0.001	−0.006	328	0.004	−0.002	0.003
−2	424	0.002	0.000	−0.002	330	0.003	−0.001	0.000
−1	433	0.002	0.000	0.000	337	0.003	0.002	−0.002
0	442	0.004	−0.001	0.001	341	0.004	−0.001	0.000
1	455	0.002	0.000	−0.001	344	0.005	0.000	0.003
2	443	0.002	−0.001	−0.002	345	0.004	0.000	0.001
3	445	0.002	−0.004	−0.002	341	0.001	−0.005[b]	−0.001
4	456	0.002	0.000	−0.002	335	0.001	−0.003	0.001
5	481	0.002	−0.001	−0.001	344	0.003	0.002	0.002
6	495	0.003	0.001	−0.004	346	0.002	−0.003	−0.002
7	509	0.002	−0.001	−0.002	344	0.000	−0.002	−0.003
8	501	0.004	0.002	0.004	343	0.001	−0.003[b]	−0.002
Panel B: mean changes								
−5 to −1	379	−0.001	−0.002	0.000	302	−0.001	0.002	−0.004
−1 to +1	421	−0.001	−0.001	−0.001	323	0.002	−0.003	0.005
−1 to +3	401	0.000	−0.004	−0.002	308	−0.002	−0.007	0.001
−1 to +7	386	0.001	−0.001	−0.002	283	−0.004	−0.006	−0.003

Mean levels and mean changes of share repurchases scaled by market value of equity at the beginning of the quarter. All median levels are zero. Quarter 0 is the fiscal quarter of the announcement. Industry-adjusted repurchases are the paired differences between the repurchases of the sample firms and the repurchases of their respective industry- and size-matched control firms. Performance-adjusted repurchases are the paired differences between the repurchases of the sample firms and the repurchases of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively. (All unadjusted levels are significantly different from zero at the 0.01 level.)

increase is temporary and statistically indiscernible. Moreover, none of the averages are statistically different from those of control firms in the quarters immediately around the events.

Fig. 1 shows the fraction of firms that repurchase shares. The fraction remains relatively constant for the control firms. For firms that decrease dividends, the fraction decreases from quarter −5 through quarter +1, and subsequently reverts gradually to what it was a year prior to the event. For firms that omit dividends, the fraction decreases notably prior to the announcement, and this decrease continues through quarter +1. After quarter +5, it tends to bounce back.

Firms might announce open market repurchase programs with the intention of using the program as a substitute for cash dividends, and then wait to optimally time the actual repurchases. Indeed, Stephens and Weisbach (1998) show that only about one quarter (one half) of firms that announced share repurchase programs repurchase 100% (50%) of their announced shares during the four quarters after the announcement, starting with the

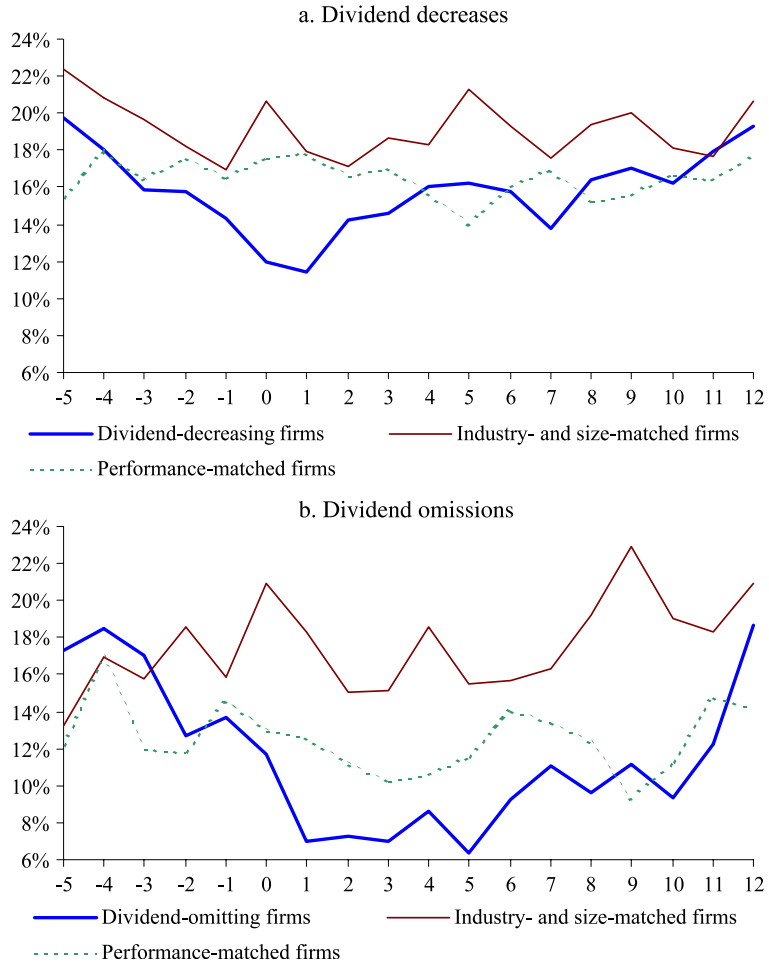

Fig. 1. Fraction of firms that repurchase shares. Fractions of firms that repurchase shares during the fiscal quarters around dividend decreases and omissions. Quarter 0 is the fiscal quarter of the announcement.

announcement quarter. Thus, I also examine announcements of repurchase programs around the announcements to decrease or omit dividends based on information from Security Data Company's (SDC) Mergers and Acquisitions database, which is available from Thomson Financial. I identify 17 (12) announcements of share repurchase programs from 3 months before through 3 months after the announcements of dividend decreases (omissions), whereas the corresponding figures are 17 (11) for the size- and industry-matched control sample and 16 (10) for the performance-matched control sample.

In sum, there is scant evidence that the sample firms systematically substitute share repurchases for dividends. These results are interesting by themselves, and contribute to the question as to whether firms use dividends and share repurchases as complements or

substitutes. More importantly for the purposes of this study, the results indicate that it is unlikely that contemporaneous increases in share repurchase activity offset any negative signal associated with the dividend cuts on an aggregate basis.[13]

3.4. Discretionary earnings accruals

Nissim and Ziv (2001) suggest that managers might take a "big bath" in connection with negative news events such as dividend cuts. If such a big bath occurs prior to the announcement of a dividend cut, it would drive down pre-event earnings.[14] A further consequence of this earnings management is that future earnings will improve as the earnings management ceases, because accounting procedures constrain accruals to reverse over time. For example, if a firm defers revenues in a period, thereby driving down the earnings, the next period's earnings will tend to bounce back again, possibly even to a higher level than it would have been in the absence of earnings management.[15]

It is conceivable that any earnings management effect is mitigated by the use of a performance-based control sample. That is, if a sample firm manages pre-event earnings downward, its control firm will exhibit a similar pre-event decline in performance, and both firms are therefore expected to experience a subsequent earnings increase. However, to the extent that earnings management generally produces more temporary shocks to earnings than do other factors (such as demand shocks), comparing the performance to control firms with similar pre-event performance characteristics is insufficient. Thus, it is necessary to examine directly whether earnings management takes place around the events.

In my effort to uncover any earnings management by the sample firms, I calculate discretionary current accruals. Current accruals are adjustments to either current assets or current liabilities. Of course, changes in sales or overall business conditions generate such adjustments. To remove these effects from current accruals, I predict the normal accruals using a regression model based on firms in the same industry (see Appendix A of Teoh et al. (1998) for a complete description). Discretionary current accruals are defined as total current accruals less predicted current accruals, and have been used by, e.g., Rangan (1998) and Teoh et al. (1998) as an indicator of earnings management.

Table 6 displays discretionary current accruals for firms that decrease or omit dividends. There is some evidence of downward earnings management immediately prior to announcements of dividend decreases and omissions. In particular, the mean and

[13] As an additional test of robustness, I excluded firms that were in the top 5% based on the change in repurchases from quarter −2 to either quarter 0 or quarter +1 (8% of the firms with repurchase data fall in this category), and reexamine the changes in operating performance for the remaining firms. The results are qualitatively similar to those reported in Table 3, suggesting that the exclusion of firms with increases in share repurchases is inconsequential. Moreover, I excluded firms that announced repurchase programs from 3 months before through 3 months after the announcements to decrease or omit dividends, and the results are yet again similar to those reported.

[14] One might alternatively argue that managers attempt to inflate earnings prior to dividend cuts to offset deteriorating real performance. However, this would not explain the absence of a decline in reported operating performance following dividend cuts.

[15] See Healy and Wahlen (1999) for a comprehensive review of the literature on earnings management.

Table 6
Discretionary current accruals

Quarter	Dividend-decreasing firms			Dividend-omitting firms		
	N	Mean	Median	*N*	Mean	Median
−5	319	0.0043	0.0026	214	−0.0014	−0.0025
−4	316	0.0059	0.0019	220	0.0068	0.0040
−3	317	0.0073[b]	0.0022	230	0.0067	0.0045
−2	331	0.0027	−0.0014	238	−0.0044	0.0013
−1	354	−0.0107[b]	−0.0049[a]	228	−0.0094[b]	−0.0059[a]
0	356	−0.0008	−0.0010	242	−0.0019	0.0008
1	354	−0.0019	−0.0010	240	−0.0137[a]	−0.0049[a]
2	349	−0.0062[b]	−0.0035[a]	241	−0.0087[b]	−0.0002
3	359	−0.0027	0.0014	237	−0.0025	−0.0019
4	357	−0.0073[b]	−0.0038[b]	251	−0.0018	−0.0009
5	368	0.0045	0.0008	249	−0.0059	−0.0043
6	373	−0.0027	−0.0010	254	−0.0075	−0.0030
7	389	−0.0022	0.0008	243	−0.0104[a]	−0.0039[a]
8	377	−0.0014	0.0005	253	−0.0024	−0.0003
9	375	0.0028	0.0040	250	−0.0039	0.0005
10	346	−0.0064	−0.0021	258	−0.0032	−0.0020
11	354	−0.0033	−0.0004	262	−0.0009	0.0022
12	353	−0.0005	0.0012	260	0.0007	−0.0004
−4 through −1	280	0.0081	0.0047	175	0.0022	−0.0036
+1 through +4	300	−0.0178[a]	−0.0124[a]	190	−0.0147	−0.0099[a]
+5 through +8	298	−0.0011	−0.0015	188	−0.0201[a]	−0.0228[a]
+9 through +12	297	−0.0049	−0.0024	202	−0.0150	−0.0025

Discretionary current accruals scaled by assets. The accruals are estimated as described in Appendix A of Teoh et al. (1998), except that quarterly figures are used in place of annual figures. This procedure implicitly adjusts for the use of accruals by firms in the same industry. Quarter 0 is the fiscal quarter of the announcement. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively.

median discretionary current accruals in quarter −1 are negative and statistically different from zero for both samples. The downward earnings management continues during the quarters after the announcement, and is most pronounced in quarters +2 and +4 for firms that decrease dividends and in quarters +1, +2, and +7 for firms that omit dividends. The mean and median discretionary current accruals for the combined quarters −4 through −1 are statistically insignificant for both samples, but negative and statistically different from zero for the combined quarters +1 through +4 for both samples. Thus, there is little evidence of more pronounced downward earnings management before than after dividend decreases and omissions.[16]

Managers might take steps beyond accruals management to take an earnings bath prior to or coinciding with the dividend cuts. Thus, following Pourciau (1993), I also examine

[16] I also estimated the differences in discretionary current accruals between the sample firms and the performance-based control firms (not tabulated). None of the mean or median differences are statistically different during the quarters before dividend decreases or omissions, while the mean and median differences are negative and statistically different from zero at the 5% level for quarter +4 after dividend decreases and for quarter +7 after dividend omissions.

special items (which include write-downs and write-offs) scaled by assets, even though such items are not captured in my measure of operating performance. The results are not tabulated for parsimony. The medians are zero around announcements of dividends decreases and omissions for both the sample firms and the control firms. The means hover between 0 and −0.01 during quarters −4 to +4 for firms that decrease or omit dividends, but there is little evidence that the means are more negative before the announcements. In fact, the performance-adjusted means are not statistically different from zero for firms that decrease dividends and only statistically negative for firms that omit dividends in quarters 0 and +1.

It is also possible that firms manipulate R&D expenditures to affect current earnings, even though this behavior might hurt longer term earnings. Indeed, Darrough and Rangan (2001) find that firms reduce R&D expenditures around initial public offerings, especially if insiders sell a large fraction of their shares, suggesting that managers attempt to inflate short-term earnings. Therefore, I examine the R&D levels for the sample firms to determine whether the lack of a deterioration in operating performance is attributable to a reduction in R&D expenditures. However, for the sample firms that report R&D expenditures, I find no evidence of a significant change in R&D expenditures from before to after the announcements.

In sum, there is evidence of downward earnings management in connection with dividend decreases and omissions. However, the evidence is stronger yet for the quarters after the announcements. Thus, it is unlikely that earnings management gives rise to a significant and artificial increase in earnings following announcements of dividend decreases and omissions.

3.5. Operating performance for firms with strong liquidity

Firms might cut dividends for a variety of reasons. One possible reason is that managers believe that future cash flow will be too low to sustain the present dividend level. Thus, the dividend cut is a proactive measure to alleviate future cash flow shortages. A second possible reason is that the firm currently faces a tight financial situation that prevents it from paying out any funds. This might be the cumulative result of poor cash flow in recent periods. In support of this, Grullon et al. (2002) report evidence that dividend-decreasing firms tend to have high debt ratios and low cash ratios relative to control firms. A dividend cut that is undertaken for the first reason is more likely to convey unfavorable news about future performance than the second reason. One could even argue that if a firm cuts its dividends to restore financial flexibility as in the second reason, it will subsequently operate more smoothly and be better able to take advantage of investment opportunities, which could translate into better future performance.

I first examine whether poor financial flexibility is likely to be a prevalent reason for the dividend cuts made by my sample firms. Table 7, panel A, presents unadjusted and adjusted cash and debt ratios for the sample firms at the end of the fiscal quarter preceding the announcements. The adjusted ratios are the ratios of the sample firms less the ratios for control firms identified based on industry, performance, and market-to-book ratios. The mean and median adjusted cash ratios are negative and statistically different from zero for both firms that decrease and omit dividends, suggesting that both sets of firms have

Table 7
Financial flexibility

	Dividend-decreasing firms		Dividend-omitting firms	
Panel A: descriptive statistics	Mean	Median	Mean	Median
Cash ratio	0.062	0.028	0.058	0.024
Adjusted cash ratio	−0.028[a]	−0.004[a]	−0.028[a]	−0.004[a]
Debt ratio	0.301	0.291	0.339	0.343
Adjusted debt ratio	0.012	0.000	0.044[a]	0.045[a]
Panel B: logistic regressions	(a)	(b)	(c)	(d)
Intercept	0.125	0.182	−0.145	0.152[b]
Cash ratio	−2.364[a]	−2.451[a]	−1.535[b]	−2.169[a]
Debt ratio	0.096		0.817[b]	
Number of observations	1240	1318	901	960

Descriptive statistics and logistic regressions that relate cash and debt ratios to the decision to decrease or omit dividends. Cash ratio is cash and cash equivalents scaled by assets at the end of the fiscal quarter prior to the dividend announcement. Debt ratio is long-term debt plus debt in current liabilities scaled by assets at the end of the fiscal quarter prior to the dividend announcement. Adjusted cash and debt ratios are the differences between cash and debt ratios for firms that decrease or omit dividends and those for their respective control firms based on industry, performance, and market-to-book ratios. The dependent variable in the logistic regressions equals one if the firms decrease or omit a dividend and zero if the firms are control firms matched on industry, performance, and market-to-book ratios. a and b denote that the adjusted ratios or coefficients differ significantly from zero at the 0.01 and 0.05 levels, respectively.

abnormally low cash ratios. The mean and median adjusted debt ratios are positive or zero for both firm sets, but only statistically different from zero for firms that omit dividends. Panel B presents results from logistic regressions of the choice to decrease or omit dividends using the sample firms combined with control firms based on industry, performance, and market-to-book ratios. These results suggest that firms that decrease dividends have low cash ratios and normal debt ratios, whereas firms that omit dividends have low cash ratios and high debt ratios. Overall, there is evidence that the sample firms have poor financial flexibility in the form of low cash levels and, in the case of dividend-omitting firms, high debt ratios.

Next, I remove firms from the sample that are most likely to undertake the dividend cut because of current liquidity problems. In particular, I remove firms that are predicted to decrease or omit dividends based on models (b) and (c), respectively, of Table 7, panel B. I believe that the remaining firms are most likely to cut dividends because of poor future prospects. Table 8 presents the operating performance for the remaining sample firms. The results are quite similar to those presented earlier for the whole sample, although the statistical power is naturally smaller due to a smaller sample. Hence, there is no evidence that these firms experience a greater performance decline than other sample firms.

3.6. Changes in investment opportunities and capital expenditures

Yet another potential reason that firms cut dividends is that their investment opportunities are improving, thus requiring more funds to invest in value-enhancing

Table 8
Operating performance for firms with high liquidity

Quarter	Dividend-decreasing firms				Dividend-omitting firms			
	N	Unadjusted	Industry-adjusted	Performance-adjusted	*N*	Unadjusted	Industry-adjusted	Performance-adjusted
Panel A: median levels								
−5	146	0.034	0.003	−0.001	88	0.024	−0.008	0.001
−4	146	0.028	0.001	0.000	96	0.023	−0.006	0.001
−3	149	0.027	−0.002	0.001	96	0.020	−0.003	−0.001
−2	152	0.026	0.000	0.001	99	0.015	−0.014[a]	0.002
−1	159	0.023	−0.005	0.000	103	0.010	−0.020[a]	0.000
0	157	0.022	−0.008	0.000	100	0.010	−0.014[a]	−0.005[b]
1	151	0.024	0.000	−0.001	99	0.016	−0.006	−0.005
2	149	0.025	0.002	0.000	94	0.017	0.000	−0.001
3	148	0.029	−0.001	−0.001	89	0.019	−0.004	0.002
4	144	0.029	−0.004	−0.004	90	0.012	−0.010[b]	−0.003
5	148	0.026	−0.005	−0.005	89	0.013	−0.013[b]	−0.006
6	146	0.027	0.000	0.000	86	0.018	−0.012	0.002
7	142	0.029	0.000	0.003	83	0.020	−0.009	0.008
8	136	0.027	−0.002	−0.002	84	0.020	−0.004	0.008
9	135	0.026	−0.003	−0.001	82	0.022	0.000	−0.002
10	132	0.030	0.001	0.000	82	0.021	−0.008[b]	−0.009
11	132	0.028	−0.002	0.000	78	0.025	−0.007[b]	−0.008
12	132	0.026	−0.003	−0.003	78	0.026	−0.009	−0.001
Panel B: median changes								
−5 to −1	146	−0.007[a]	−0.005	0.000	88	−0.009[a]	−0.010[b]	0.000
−1 to +1	151	0.002	0.002	−0.001	99	0.003	0.008	−0.006
−1 to +3	148	0.003	0.004[b]	0.000	89	0.002	0.006	0.003
−1 to +7	142	0.005[b]	0.008[b]	0.002	83	0.007[b]	0.009	0.009
−1 to +11	132	0.003	0.001	0.002	78	0.001	0.000	−0.004

Median levels and median changes of operating income scaled by assets for firms that decrease or omit dividends but are not predicted to do so based on their cash levels. The predictions are based on models (b) and (c) in Table 7. Medians are reported because Barber and Lyon (1996) find that nonparametric tests are more powerful than parametric tests in studies of operating performance. Quarter 0 is the fiscal quarter of the announcement. Industry-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry- and size-matched control firms. Performance-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively. (All unadjusted levels are significantly different from zero at the 0.01 level.)

projects. If so, I would expect that capital expenditures increase after dividend cuts, and this increase could favorably affect operating performance.[17] To test this conjecture, I examine capital expenditures around announcements of dividend decreases and omissions.

Table 9 presents median capital expenditures scaled by book value of assets at the beginning of each quarter (the patterns in the means are qualitatively similar, and are not

[17] Note, however, that this reason appears inconsistent with the negative average stock price reaction documented earlier.

Table 9
Capital expenditures

Quarter	Dividend-decreasing firms				Dividend-omitting firms			
	N	Unadjusted	Industry-adjusted	Performance-adjusted	*N*	Unadjusted	Industry-adjusted	Performance-adjusted
Panel A: median levels								
−5	425	0.015	0.000	0.000	335	0.014	0.000	0.001
−4	434	0.014	−0.001	0.000	340	0.013	0.001	0.002
−3	445	0.014	−0.001	0.000	349	0.013	0.000	0.002
−2	460	0.013	−0.001	0.000	351	0.012	0.000	0.002
−1	474	0.011	−0.001[a]	0.000	355	0.010	−0.001[b]	0.000
0	478	0.011	−0.001[a]	0.000	355	0.008	−0.002[a]	0.000
1	480	0.010	−0.002[a]	−0.001[a]	360	0.007	−0.003[a]	0.000
2	470	0.010	−0.002[a]	−0.002[a]	357	0.008	−0.002[a]	−0.001[b]
3	473	0.010	−0.002[a]	0.000	352	0.007	−0.005[a]	0.000
4	482	0.009	−0.002[a]	−0.001[b]	351	0.007	−0.003[a]	−0.001[b]
5	491	0.010	−0.001[a]	0.000	363	0.007	−0.004[a]	−0.001[b]
6	513	0.010	−0.003[a]	−0.001[b]	364	0.008	−0.003[a]	0.000
7	533	0.010	−0.001[a]	−0.001[b]	361	0.008	−0.002[a]	0.000
8	523	0.010	−0.002[a]	−0.001	356	0.008	−0.001[a]	0.000
Panel B: median changes								
−5 to −1	423	−0.002[a]	0.000	−0.001[b]	328	−0.003[a]	−0.001	0.000
−1 to +1	463	−0.001[a]	−0.001[a]	−0.001[b]	347	−0.002[a]	−0.002[a]	−0.001[b]
−1 to +3	442	−0.001[a]	0.000	0.000	328	−0.002[a]	−0.004[a]	−0.002[b]
−1 to +7	427	−0.001[b]	0.001	0.000	307	−0.002[a]	−0.002	−0.002

Median levels and median changes of capital expenditures scaled by book value of assets at the beginning of the quarter. Quarter 0 is the fiscal quarter of the announcement. Industry-adjusted capital expenditures are the paired differences between the capital expenditures of the sample firms and the capital expenditures of their respective industry- and size-matched control firms. Performance-adjusted capital expenditures are the paired differences between the capital expenditures of the sample firms and the capital expenditures of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively. (All unadjusted levels are significantly different from zero at the 0.01 level.)

reported). The level of capital expenditures is normal prior to announcements of both dividend decreases and omissions when compared to industry peers, but tend to be abnormally low afterwards. The changes from quarter −1 to quarters +1, +3, and +7 are all negative and statistically different from zero at the 5% level of significance for both sets of firms. These results are consistent with those reported in Grullon et al. (2002) for a sample of dividend decreases. Thus, there is no evidence that firms increase their investment levels after dividend decreases and omissions. If anything, firms decrease their investment levels. Based on this evidence, it seems unlikely that dividend decreases and omissions are undertaken in response to improving investment opportunities.

3.7. Multivariate analysis of changes in operating performance

Although none of the subsamples I have examined exhibit declines in subsequent performance, some of the factors analyzed might still explain the cross-sectional

differences in subsequent performance changes. To examine this possibility more closely, I regress the change in operating performance against control variables and measures for past liquidity, contemporaneous share repurchases, past discretionary current accruals, and changes in capital expenditures. In addition, I include the announcement period return as another independent variable to test whether the capital market reaction is related to subsequent performance changes. A caveat here is that while we know that past performance patterns are related to expected future performance changes, we do not know the functional form of these relations. For simplicity, I assume that future performance changes are linearly related to past performance changes and past performance levels, but I recognize that my specification might be incorrect and therefore induce bias.

Table 10 presents the regression results. Because so many of the observations lack data on share repurchases, discretionary current accruals, and changes in capital expenditures, I introduce these variables separately. The results show that subsequent performance changes are positively related to the predicted probability based on past liquidity and to the announcement period returns for dividend-omitting firms. Thus, there is some evidence that the dividend-omitting firms with the greatest liquidity exhibit the worst changes in future performance, and that the capital market to some extent can infer future performance changes from the omission announcement. On the other hand, the performance changes are unrelated to liquidity and announcement period returns for dividend-increasing firms. Further, the performance changes are unrelated to share repurchases, discretionary current accruals, and changes in capital expenditures for both samples.

3.8. Announcement period returns around quarterly earnings announcements

The evidence thus far suggests that firms that omit dividends experience poor performance-adjusted performance during quarters 0 and +1 relative to the announcements, and normal performance thereafter, while firms that decrease dividends experience normal performance-adjusted performance following the announcements. One might have expected a more pronounced and persistent decline in performance. To assess whether the capital market is surprised by the documented performance pattern, I analyze the stock price reaction to quarterly earnings announcements around dividend decreases and omissions.

When viewed in combination with prior analysis, an analysis of the abnormal stock returns around earnings announcements could yield valuable incremental insight into the underlying performance changes of the sample firms. The stock return analysis reveals the capital market's interpretation and appraisal of the performance changes, and as such provides an independent perspective. Moreover, it offers two related advantages over the analysis of operating performance changes. The capital market response to an earnings announcement reflects the capital market's updated knowledge of the status of the company, its pre-announcement expectation of the company's performance (which depends on its status), and the new information about the performance embedded in the announcement. Thus, one advantage of the stock return analysis is that it should be immune to survivorship bias. For example, if surviving firms tend to perform better, the capital market's performance expectation is higher for these firms, such that the capital

Table 10
Regressions of subsequent changes in operating performance

	Dividend-decreasing firms				Dividend-omitting firms			
Intercept	0.019 (0.029)	−0.002 (0.852)	−0.003 (0.856)	−0.001 (0.920)	−0.131 (0.002)	−0.175 (0.001)	−0.166 (0.006)	−0.164 (0.001)
Past performance change	−0.252 (0.000)	−0.406 (0.000)	−0.494 (0.000)	−0.406 (0.000)	−0.155 (0.007)	−0.209 (0.004)	−0.136 (0.064)	−0.189 (0.005)
Past performance	−0.276 (0.000)	−0.286 (0.000)	−0.267 (0.000)	−0.301 (0.000)	−0.355 (0.000)	−0.305 (0.000)	−0.400 (0.000)	−0.300 (0.000)
Probability based on liquidity	−0.021 (0.228)	0.019 (0.311)	0.021 (0.501)	0.019 (0.279)	0.274 (0.001)	0.362 (0.001)	0.357 (0.003)	0.338 (0.001)
Announcement period return	0.013 (0.324)	0.004 (0.793)	0.003 (0.896)	0.005 (0.718)	0.031 (0.043)	0.036 (0.051)	0.056 (0.002)	0.031 (0.073)
Share repurchases		0.042 (0.146)				−0.023 (0.379)		
Discretionary current accruals			−0.007 (0.569)				−0.015 (0.397)	
Change in capital expenditures				0.008 (0.781)				−0.053 (0.424)
Number of observations	519	348	206	375	355	253	154	272
Adjusted R-square	0.285	0.421	0.481	0.431	0.238	0.253	0.358	0.232

Regressions of the change in operating income scaled by assets during the year from quarter −1 to quarter +3, where quarter 0 is the quarter of the announcement. Independent variables include past operating performance change (change from quarter −5 to −1), past operating performance (performance for quarter −1), the probability that firms decrease or omit dividends based on models (b) and (c) in Table 7, the abnormal stock return during the 3-day window centered on the announcements, share repurchases scaled by the market value of equity for quarters −1 through +1, discretionary current accruals scaled by assets for quarters −4 through −1, and the change in capital expenditures scaled by assets from quarter −1 to quarter +3. p-values are given in parentheses.

Table 11
Abnormal stock price returns around earnings announcements

Quarter	Dividend-decreasing firms			Dividend-omitting firms		
	N	Mean (%)	Fraction positive (%)	*N*	Mean (%)	Fraction positive (%)
−4	575	−0.47[b]	46.4	451	−0.93[a]	40.8
−3	585	−0.71[a]	43.6	454	−0.89[a]	39.9
−2	580	−0.41	45.3	456	−1.74[a]	43.0
−1	607	−1.65[a]	38.4	456	−3.14[a]	36.4
0	604	−0.37	44.5	452	0.17	46.2
1	609	0.26	51.1	441	0.51	50.1
2	596	0.44[b]	51.3	438	0.93[b]	50.2
3	589	0.44	52.0	419	0.56	50.6
4	578	0.92[a]	52.8	417	0.45	49.2
5	569	−0.16	47.5	415	−0.32	49.6
6	552	0.01	50.5	407	0.83	46.9
7	551	0.08	48.3	393	−0.22	46.3
8	520	0.30	52.9	382	0.08	44.5
9	513	0.72[b]	51.3	370	0.60	49.7
10	496	0.14	46.8	363	0.93	49.0
11	489	−0.08	46.8	348	0.04	46.8
12	474	0.06	46.0	344	0.05	42.7
−4 through −1	2347	−0.82[a]	43.4	1817	−1.68[a]	40.0
+1 through +4	2372	0.51[a]	51.8	1715	0.61[a]	50.0
+5 through +8	2192	0.05	49.7	1597	0.09	46.9
+9 through +12	1972	0.22	47.8	1425	0.42	47.2

Abnormal stock price returns during the 3 days centered on the announcements of quarterly earnings announcements. Quarter 0 is the fiscal quarter of the announcement. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote that the means differ significantly from zero at the 0.01 and 0.05 levels, respectively.

market response to the earnings announcement implicitly accounts for the firm's status. A second advantage is that because the response reflects the pre-announcement expectations, no proxy for pre-announcement expectation is needed. Thus, we do not need to generate control samples designed to mimic the pre-event expectations of the sample firms, thereby eliminating an additional source of noise.

The mean announcement period returns are reported in Table 11. The abnormal stock returns are estimated as described earlier, and the announcement period is defined as days −1 through +1 relative to the announcement. The means are negative for the quarters leading up to the dividend announcements, reflecting the deteriorating performance during this period.[18] Despite the poor performance during quarter 0, especially for firms that omit dividends, the market does not react negatively when this performance is announced. This suggests that the market anticipates the poor performance for this quarter, possibly because of the preceding announcement that the dividends would be cut or omitted. Thus, the

[18] The dividend announcement occurs within 2 days of the quarterly earnings announcement for quarter −1 in 28% of the cases. When I exclude these confounded earnings announcements, the average earnings announcement for quarter −1 is −0.98% for dividend decreases and −1.48% for dividend omissions, both of which still differ statistically from zero at the 1% level.

negative stock price reaction to the dividend announcement appears, at least partially, to reflect the poor performance in quarter 0. That is, in the absence of the dividend announcement, the stock price reaction to the earnings announcement for quarter 0 might be significantly negative.

Following the dividend announcements, the mean announcement period returns for earnings announcements tend to be positive. In particular, the mean is positive and statistically different from zero at the 5% level of significance for quarters +2, +4, and +9 for dividend decreases and for quarter +2 for dividend omissions. Further, the aggregated means for quarters +1 through +4 are 0.5–0.6% and statistically different from zero at the 1% level of significance for both firms that decrease dividends and firms that omit dividends.[19] Thus, the market appears to be pleasantly surprised about the performance during the quarters following announcements of dividend decreases and omissions. One interpretation for these results is that the market revises its future earnings expectations downward too much upon the initial news that the dividends will be cut. Such an interpretation also seems consistent with the patterns in operating performance.[20]

4. Summary and conclusion

Past studies of dividend decreases and omissions report that post-announcement operating performance either improves or remains the same relative to pre-announcement performance. These results are inconsistent with the notion that dividend changes convey news about future prospects and are surprising in light of the negative stock price reaction to announcements that firms will decrease or omit dividends. In this study, I examine more closely the operating performance and factors that could affect operating performance.

Using quarterly data and benchmarks based on pre-announcement performance characteristics and market-to-book ratios, I find that firms that omit dividends exhibit poor performance during the announcement quarter and the following quarter, but the performance is normal thereafter, and firms that decrease dividends exhibit normal performance following the announcement. There is scant evidence that the sample firms substitute share repurchases for dividends, and, hence, it is unlikely that a contemporaneous increase in share repurchases contaminates the operating performance results. There is some evidence of downward earnings management before the dividend announcements. However, there is even stronger evidence of downward earnings management after the

[19] Note that this estimate does not fully capture the market's surprise relative to its expectations immediately after the dividend announcement, as information about quarterly earnings slowly leaks out prior to the earnings announcement.

[20] The abnormal stock price returns around earnings announcements following dividend decreases and omissions seem inconsistent with the negative long-term stock price drift documented in Michaely et al. (1995). However, it is notoriously difficult to extract the abnormal component in long-term stock returns, because it relies heavily on identifying the correct return-generating process. According to Fama (1998) "all models for expected returns are incomplete descriptions of the systematic patterns in average returns during any sample period" (p. 291) and, consequently, "long-run return anomalies are sensitive to methodology" (p. 284). Similarly, Barber and Lyon (1999) state that "the analysis of long-run abnormal returns is treacherous" (p. 198). My analysis of short-term returns around earnings announcements mitigates these problems.

dividend announcements. Thus, it is unlikely that earnings management artificially elevates post-announcement performance relative to pre-announcement performance. Lastly, there is no evidence that the performance changes differ for firms that cut dividends despite high pre-announcement liquidity or that firms increase their investment levels in response to improving investment opportunities around the announcements.

I further find that the market responds negatively to earnings announcements for the quarters leading up to announcements of dividend decreases and omissions, neutrally to earnings announcements for the quarter of the dividend announcements, and positively to earnings announcements for the next few quarters. The neutral reaction for the quarter of the dividend announcement despite poor performance, especially for dividend omissions, suggests that the market capitalizes this upon the preceding dividend announcement. Thus, the negative stock market reaction to the dividend announcement might in large part reflect the performance of the current quarter. The positive reaction to earnings announcements for post-event quarters suggests that the market reacted too pessimistically to the dividend cut.

Ever since the seminal paper by Lintner (1956), dividends have been considered to be sticky, in the sense that managers are reluctant to changing (especially reducing) firms' dividend levels. This paper provides strong evidence of this reluctance. Managers might very well expect downturns in firm performance. Yet, perhaps because they hope that the performance unexpectedly improves, they do not cut dividends until after a period of poor performance forces them do so. When available, the motivations for dividend cuts in corporate announcements generally support this notion and the results in this study. For example, the president and CEO of Ames Department Stores stated that "the board of directors determined that common stock cash dividends will be suspended until Ames returns to a significant level of profitability" while the CEO of CrownAmerican said that "in light of recent operating results, the company's board of directors has unanimously agreed to omit a cash dividend for the third quarter". Further anecdotal evidence is given in a lengthy story in the Wall Street Journal on February 19, 2003, which describes the recent problems of Goodyear Tire and Rubber and its eventual decision to eliminate its dividend for the first time since the Great Depression. Consequently, a dividend cut might say more about changes in past performance than future performance.

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Appendix A. Annual operating performance

Median levels and median changes of operating income scaled by assets. Medians are reported because Barber and Lyon (1996) find that nonparametric tests are more

powerful than parametric tests in studies of operating performance. Year 0 is the fiscal year of the announcement. Industry-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry- and size-matched control firms. Performance-adjusted operating income is the paired difference between the operating income of the sample firms and the operating income of their respective industry-, performance- and M/B-matched control firms. *N* is the number of dividend decreasing or omitting firms with available data. a and b denote significantly different from zero at the 0.01 and 0.05 levels, respectively. (All unadjusted levels are significantly different from zero at the 0.01 level.)

Quarter	Dividend-decreasing firms				Dividend-omitting firms			
	N	Unadjusted	Industry-adjusted	Performance-adjusted	*N*	Unadjusted	Industry-adjusted	Performance-adjusted
Panel A: median levels								
−2	627	0.132	0.004	0.001	483	0.121	−0.003	0.000
−1	641	0.109	−0.004	0.000	482	0.082	−0.033[a]	0.000
0	634	0.086	−0.019[a]	−0.017[a]	464	0.052	−0.062[a]	−0.036[a]
1	602	0.100	−0.013	−0.011[b]	438	0.071	−0.039[a]	−0.017[a]
2	559	0.104	−0.009	−0.005	399	0.081	−0.032[a]	−0.013[b]
3	525	0.109	−0.001	0.002	369	0.094	−0.031[a]	−0.005
Panel B: median changes								
−1 to 0	621	−0.022[a]	−0.012[a]	−0.019[a]	463	−0.031[a]	−0.023[a]	−0.032[a]
−1 to +1	591	−0.011[a]	−0.004	−0.014[b]	437	−0.009[a]	0.000	−0.016[a]
−1 to +2	548	−0.004[a]	0.005	−0.003	398	−0.002	0.002	−0.009[b]
−1 to +3	516	−0.003[a]	0.011	−0.002	368	0.004	0.020[b]	−0.002

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