The Information Content of Dividend Decreases: Earnings or Risk News?

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February 2005

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Abstract

This paper demonstrates that dividend cut announcements convey new information regarding earnings in the current and subsequent year. While dividend decreases are also associated with an increase in firm risk, the change in risk occurs prior to the dividend announcement. Consistent with these findings, the abnormal stock return during the three-day dividend cut announcement window is approximately equal to the present value of unexpected current and next year's earnings.

I. Introduction

Dividend cut announcements trigger substantial negative returns (e.g., Aharony and Swary (1980), Michaely et al. (1995)). Yet, prior research generally finds that dividend reductions are unrelated to future earnings after controlling for current earnings (e.g., Healy and Palepu (1988), Benartzi et al. (1997), Nissim and Ziv (2001)).[1] Several recent studies interpret this evidence as indicating that dividend decreases do not convey new information about future earnings but rather imply an increase in firm risk (e.g., Benartzi et al. (1997), Allen and Michaely (2002), Grullon et al. (2002), Grullon et al. (2003), Chen et al. (2004)). This study provides new evidence on the earnings and risk implications of dividend cuts. In particular, I show that essentially all of the market response to dividend cut announcements is due to new information about current and next year's earnings, and that little if any risk information is conveyed by these announcements.

The differences between the findings of the current and prior studies are due primarily to methodological choices. Specifically, I use alternative approaches for measuring earnings expectations and examine changes in risk premiums using short rather than long intervals. While these choices potentially involve trading-off one bias for another, I provide evidence that supports my choices and demonstrate their impact on the results. In particular, I document the sources and extent of bias associated with using different methodologies for measuring expected earnings. I also show that using long intervals for estimating risk disguises the fact that essentially all of the increase in the riskiness of dividend cut firms occurs before the dividend announcement. Finally, I demonstrate that my estimates of the magnitudes of earnings and risk news conveyed by dividend cut announcements are consistent with observed market responses.

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[1] One exception is DeAngelo et al. (1992). Focusing on firms with positive earnings and dividends in the prior ten years and a loss in the current year, DeAngelo et al. (1992) find that those firms that cut their dividends in the current year report lower next year earnings even after controlling for current year earnings.

The study proceeds as follows. Section II discusses difficulties and trade-offs involved in measuring expected earnings for dividend decrease firms. Section III develops the methodology used to examine the future earnings implications of dividend cuts. Section IV describes the sample, and Section V presents the empirical findings of the earnings and risk analyses. Section VI concludes the paper.

II. Issues in Measuring Earnings Expectations for Dividend Decrease Firms

To examine the future earnings implications of dividend change announcements, previous studies regress future earnings on the dividend change, current earnings (i.e., earnings in the year during which the dividend change occurs) and proxies for expected future earnings. They then use the estimated coefficient of the dividend change as a measure of the information content of dividends. Current earnings are included in the regression because they help explain future earnings and are partially predictable at the time of the dividend change (e.g., using information from intermediate quarterly reports or from the financial press). As many of these studies recognize, however, this choice induces bias against finding information content in dividends because current earnings, which are only partially known at the time of the dividend announcement, are positively related to the dividend change. Thus, the decision to control for current earnings potentially involves trading-off bias against versus towards accepting the information content of dividends hypothesis.

How important is this choice? According to Miller and Rock (1985), this issue is at the core of the information content of dividend hypothesis. Miller and Rock argue that dividend changes convey information about future earnings indirectly by changing the market's estimate of current earnings, which in turn contributes to the estimate of future earnings. Thus, if dividend decreases predict lower current earnings, which in turn imply lower future earnings, the negative

future earnings implications of the dividend change will be captured by the coefficient of current earnings rather than by the dividend coefficient. In other words, controlling for current earnings exposes the analysis to the risk of "throwing the baby out with the bathwater."

The Miller and Rock argument applies both to dividend increases and decreases. But controlling for current earnings may introduce an additional bias which is unique to dividend decreases. To the extent that dividend cut firms are more likely to recognize negative "special items," their earnings will be less persistent than those of other firms.[2] If this is not incorporated in the analysis, the model will overstate the persistence of the negative shock to earnings in the dividend decrease year, leading to an understatement of expected future earnings. Accordingly, unexpected earnings (i.e., realized earnings minus expected earnings) of dividend decrease firms will be overstated, and this bias may offset the negative earnings implications of dividend cuts.

Negative special items may be more prevalent for dividend decrease firms due to two accounting phenomena: conservatism and "big bath." Conservatism is an accounting convention which requires the recognition of anticipated losses, such as those due to impairment of assets or restructuring of operations. Thus, if dividend reductions signal lower future cash flows, they should be associated with impairment losses, restructuring charges and other negative special items. The big bath effect is related to management behavior. Theoretical, empirical and anecdotal evidence suggests that in the presence of bad news (such as those causing a dividend cut), managers often choose to take a "big bath;" that is, they overstate estimated liabilities such as accrued restructuring costs or they write down assets.[3] These charges are generally not

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[2] Skinner (2003) shows that the persistence of earnings is positively related to the level of dividends, especially for low levels of dividends. That is, low dividend firms have particularly low earnings persistence. This evidence suggests that dividend decrease firms may also have low earnings persistence. The current study examines this conjecture by focusing on the magnitude of transitory earnings.

expected to recur in future periods and are typically classified as "special items." I next discuss the methodology used in this study to mitigate these biases in measuring expected earnings.

III. Methodology

With a perfect measure of expected earnings immediately prior to the dividend announcement, testing whether dividend cuts convey new earnings information is straightforward; one only needs to calculate the *t*-statistic of the mean difference between realized and expected earnings for a sample of dividend decrease firms. Equivalently, one could run the following regression:

$$EPS(t)/P = E[EPS(t)]/P + \lambda\, DIV\_DEC + \varepsilon, \qquad (1)$$

where *EPS(t)* is earnings per share in year t (t = 0, 1, 2, …), *E[.]* is the expected value operator conditioned on publicly available information prior to the dividend announcement (in year 0), *P* is price per share prior to the dividend announcement, and *DIV_DEC* is a qualitative variable indicating a dividend decrease. Realized and expected earnings per share are deflated by price per share to mitigate heteroscedasticity since the standard deviation of EPS is approximately proportional to price (e.g., Baker and Ruback (1999)).

Unfortunately, *E[EPS(t)]* is unobservable. I therefore estimate this quantity using information from two market-based proxies for expected earnings: analysts' forecasts and price per share. Specifically, I model expected EPS as follows:

$$E[EPS(t)] = \beta\, ECR(t) \times P + \delta\, AF(t), \qquad (2)$$

where *ECR(t)* (*E*arnings *C*apitalization *R*ate) is a proxy for the rate at which investors capitalize expected *EPS(t)* into price, and *AF(t)* (*A*nalysts' *F*orecast) is a measure of available analysts'

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[3] For examples of anecdotal, empirical, and analytical evidence, see Jacksonth and Pitman (2001), Elliott and Hanna (1996) and Kirschenheiter and Melumad (2002), respectively.

EPS forecast for year t at the time of the dividend announcement. Both analysts' forecasts and price reflect expectations of market participants regarding future earnings. However, prior research establishes that both measures are somewhat inefficient and biased, and that each contains incremental information relative to the other.[4] Thus, by incorporating information from both measures, equation (2) may generate a more efficient estimate of expected earnings than estimates based on price or analysts' forecasts alone.

The rate at which investors capitalize expected earnings, $ECR(t)$, is a function of macroeconomic variables (e.g., interest rates, market risk premium) as well as firm-specific risk, expected growth and payout.[5] I therefore specify $ECR(t)$ as a linear combination of the following variables:

$$ECR(t) = \alpha_{year} + \alpha_{industry} + \alpha_{distance} + \alpha_1 \, BETA + \alpha_2 \, VOLAT$$

$$+ \alpha_3 \, LEV + \alpha_4 \, SIZE + \alpha_5 \, BM + \alpha_6 \, GROWTH + \alpha_7 \, YIELD, \qquad (3)$$

where α_{year} is a year fixed effect, included to capture the average effect of macroeconomic variables; $\alpha_{industry}$ is an industry (2-digit SIC) fixed effect, which controls for industry-specific risk and growth prospects; and $\alpha_{distance}$ is a fixed effect which controls for the number of months between the dividend announcement and the end of the fiscal year. This latter effect is important because the present value of earnings depends on the length of time until their realization.

The continuous variables in equation (3) are commonly used measures of risk, expected growth and payout. *BETA* is a measure of systematic risk, estimated from monthly stock returns

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[4] For a review of this literature, see Kothari (2001). Note that the precision of the price-based measure of expected earnings is affected by the quality of the empirical proxy for $ECR(t)$ in addition to price efficiency. Similarly, analysts' forecasts may contain error due to their discrete nature (i.e., they may be stale at the time of the dividend announcement) in addition to error due to analysts' inefficiencies in processing information.

[5] For example, under the Gordon (1962) model, $ECR(1) = (r – g) / d$, where r is the cost of equity capital, g is expected growth, and d is the dividend payout. For empirical specifications of ECR models, see Beaver and Morse (1978), Zarowin (1990), Fairfield (1994), and Greenspan (1997).

and the CRSP value-weighted returns during the five years that end in the month prior to the dividend announcement. *VOLAT* reflects idiosyncratic risk and is measured as the root-mean-squared error from the *BETA* regression. *LEV*, the ratio of total liabilities to the sum of total liabilities and the market value of equity, is a proxy for financial risk. *SIZE* (log of market value of equity) and *BM* (book-to-market ratio) capture risk and growth prospects. *GROWTH* is a measure of analysts' long-term earnings growth forecast available at the time of the dividend announcement. *YIELD* is the ratio of the indicated annual dividend (the most recent quarterly dividend times four) divided by closing price two days prior to the dividend announcement.[6]

I next substitute equation (3) into equation (2) and divide both sides by price:

$$E[EPS(t)]/P = \gamma_{year} + \gamma_{industry} + \gamma_{distance} + \gamma_1\ BETA + \gamma_2\ VOLAT + \gamma_3\ LEV$$

$$+\ \gamma_4\ SIZE + \gamma_5\ BM + \gamma_6\ GROWTH + \gamma_7\ YIELD + \delta\ AF(t)/P \qquad (4)$$

Finally, I substitute equation (4) into equation (1):

$$EPS(t)/P = \gamma_{year} + \gamma_{industry} + \gamma_{distance} + \gamma_1\ BETA + \gamma_2\ VOLAT + \gamma_3\ LEV + \gamma_4\ SIZE$$

$$+\ \gamma_5\ BM + \gamma_6\ GROWTH + \gamma_7\ YIELD + \delta\ AF(t)/P + \lambda\ DIV\_DEC + \varepsilon \qquad (5)$$

To test whether dividend decreases provide new information about current (t = 0) and future (t = 1, …,5) earnings, I estimate equation (5) for a sample of dividend paying firms which includes dividend increases, dividend decreases, and no-change observations. Thus, the coefficient on the *DIV_DEC* indicator variable reflects the incremental earnings associated with dividend decreases. I focus on dividend paying firms because the magnitudes of bias and error in the

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[6] I use the yield rather than the payout because earnings are negative or close to zero for many dividend decrease firms. Moreover, to the extent that price is a proxy for "permanent earnings," the yield is likely to be a better proxy for expected future payout than the actual payout due to the stability of dividend payments.

proxies for expected earnings may be different for these firms compared to firms that do not pay dividends.[7]

While it is impossible to remove all error and bias from the proxies for expected earnings, it is important to note that the *ECR(t)* variables (equation (3)) not only improve the precision of the price-based proxy for expected earnings, but also mitigate potential biases due to inefficiencies in analysts' forecasts. For example, prior research documents that the bias in analysts' forecasts decreases as the earnings announcement date approaches. Thus, the inclusion of $\alpha_{distance}$ in the regression (fixed effect for the number of months until the end of the fiscal year) mitigates potential bias due to systematic variation in the relative frequency of dividend decreases during the fiscal year.

Most firms pay dividends on a quarterly basis, so the same annual earnings may be associated with up to four observations. The resulting overlap in observations has little effect on the *DIV_DEC* coefficient because very few firms have more than one dividend reduction in any given year (results are not sensitive to the exclusion of these observations). Also, even for overlapping observations, the values of the dependent variable are not identical because price (the deflator) is measured at different points in time (reflecting all information up to the particular dividend announcement). In any case, to mitigate the effect of autocorrelation in the residual due to overlapping information, I report Newey and West (1987) *t*-statistics with three lags.

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[7] Firms that do not pay dividends are typically small with low profitability and strong growth opportunities (see Fama and French (2001)).

IV. Data

The initial sample includes all dividend events in the CRSP files that satisfy the following criteria: (1) the company paid an ordinary cash dividend (U.S. dollars) in the current quarter and in the previous quarter, (2) no other distributions were announced between the declaration of the previous dividend and three days after the declaration of the current dividend, (3) there were no ex-distribution dates between the ex-distribution dates of the previous and current dividends, and (4) the indicated annual dividend yield prior to the dividend announcement is at least 0.5%. Criteria (2) and (3) help ensure that only "clean" dividend changes that avoid confounding effects from other distributions are identified. Criterion (4) is set to restrict the sample to firms that pay significant dividends.

For each of the dividend events, I extract from CRSP the monthly stock returns in the prior sixty months and calculate the *BETA* and *VOLAT* measures discussed above (at least 30 return observations are required). Next, I match the dividend event sample with forecast and reported data extracted from the IBES Detail, Summary and Actual files. The Detail file contains analyst-by-analyst estimates, while the Summary file contains the consensus (mean and median) analysts' forecasts in each month. According to IBES, the Detail file is a reconstruction of archived data and may therefore contain errors and omissions. Individual analyst forecasts may also be less precise than the consensus estimates. I therefore use the consensus (mean) forecasts in the primary analysis, but check the sensitivity of the results to the use of individual forecasts. Specifically, I rerun all analyses using the most recent EPS and growth forecasts available at time of the dividend change and report the results of these tests in a robustness section below.

The Summary IBES file consists of chronological snapshots of consensus earnings forecasts taken on the Thursday before the third Friday of every month. According to IBES, the consensus forecasts are made available in the following week. I therefore match dividend

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announcements occurring after the fourth Sunday of each month and before the fourth Monday of the following month with the consensus forecasts for that month. I require that the following variables be available from IBES: mean analysts' EPS forecast for the current ($AF(0)$) and next year ($AF(1)$), as well as mean long-term earnings growth forecast ($GROWTH$).[8] According to IBES, the long-term earnings growth forecast generally refers to a period of up to five years ahead. I therefore generate forecasts for earnings in future years 2 through 5 by applying the mean long-term growth forecast to the mean forecast for the prior year in the horizon; i.e., $AF(t+s) = AF(t+s-1) \times (1 + GROWTH)$, for s = 2, 3, 4, 5.

The resulting sample is then matched with the COMPUSTAT files by assigning each dividend event to the earliest fiscal year for which earnings have not yet been disclosed. That year is designated as year 0. Dividends are often announced simultaneously with quarterly earnings, with a positive correlation between the two disclosures (e.g., firms are likely to increase dividends following earnings increases; see, e.g., Benartzi et al. (1997)). To assure that the dividend events reflect only dividend information, I exclude observations for which the dividend announcement occurs within three calendar days before or after a quarterly earnings announcement.[9] I next extract the required financial statements information from COMPUSTAT and delete observations with missing values for current earnings or for any of the explanatory variables of equation (5) (observations with missing values for future earnings are retained, to avoid survivorship bias). Finally, to mitigate the effect of influential observations, the variables are winsorized at the 1th and 99th percentiles of their empirical distributions.[10]

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[8] To prevent duplication, I do not include forecasts with "secondary" flag. I adjust all per share numbers for stock splits and stock dividends using the IBES adjustment factor. If the firm is followed on a diluted basis, I use the IBES dilution factor to convert per share variables to a primary basis.

[9] Earnings announcement dates are extracted from the quarterly COMPUSTAT files.

Table 1 presents descriptive statistics for the final sample. As reported, there are 282 dividend decreases, 5,576 dividend increases, and 35,769 no-change announcements that satisfy all the above criteria. These dividend declarations occurred during the years 1982 through 2003 (IBES data are available since the early 1980s). While dividend reductions are much less common than dividend increases, they are considerably larger in magnitude—the mean percentage change in dividends per share is –45.6% for dividend decreases and 12.9% for dividend increases. Dividend decrease firms are relatively small and have large book-to-market ratios, financial leverage and residual volatility, suggesting that they are more risky than other dividend paying firms. However, the average beta of dividend decrease firms is smaller than that of other dividend paying firms. In addition, dividend decrease firms have substantially smaller analysts' long-term growth forecasts and higher dividend yields.

V. Empirical Findings

A. Time-series Behavior of Earnings and Special Items

Past levels of earnings provide natural benchmarks for current and future earnings. I thus examine summary statistics from cross sectional distributions of EPS in the years surrounding dividend decreases, and in particular test the significance of changes in these statistics subsequent to the dividend cut.[11] Figure 1 plots the distribution of EPS in each of the eleven years surrounding the dividend decrease, scaled by closing price two days prior to the dividend announcement (all per share data are adjusted for stock splits and stock dividends). The statistics plotted are the 25th, 50th and 75th percentiles, and the mean. Panel A of Table 2 presents the mean

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[10] Qualitatively similar results are obtained without winsorizing, with trimming instead of winsorizing, and with alternative percentile cuts.

[11] EPS is measured as COMPUSTAT's data item #58 (basic earnings per share before extraordinary items and discontinued operations and adjusted for preferred dividends).

and median of earnings in the seven years surrounding the dividend decrease, as well as changes in these quantities and the significance of the changes.[12] As shown, current earnings (i.e., earnings in year 0) are considerably smaller than in the surrounding years, although the decrease in earnings starts in year –1 (in years –5 through –2 earnings are relatively stable). Mean earnings drops from 0.109 to 0.068 in year –1 (t-statistic for the change equals –7.5), and from 0.068 to –0.023 in year 0 (t-statistic for the change equals –10.7). From year 1 on, earnings increase monotonically but at a slower pace than the rate of decline in year 0. Similar results are obtained for median earnings, indicating that these trends are not due to outlier observations.

Consistent with the conjecture that firms are more likely to report negative special items in dividend decrease years, the left tail of the earnings distribution flattens in year 0 (e.g., the difference between the 50th and 25th percentiles in Figure 1 becomes substantially larger). The flattening of the left tail is also reflected in the relationship between the mean and the median: Mean earnings is similar to the median in years –5 through –1, but in year 0 the mean is considerably smaller than the median. To verify the inference that firms report abnormal levels of negative transitory items in dividend decrease years, I next examine the distribution of special items.[13]

Figure 2 plots the cross-sectional distributions of special items per share in the years surrounding the dividend cut, and Panel B of Table 2 presents summary and test statistics (mean, frequency of negative values, changes in these statistics, and t-statistics for the changes). To hold size constant, special items are scaled by closing price two days prior to the announcement of the

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[12] The change statistics are slightly different from the corresponding differences between the consecutive levels because they are calculated using observations with non-missing values for both years.

[13] Special items are measured as COMPUSTAT's data item #17. This item includes different types of revenues and expenses from continuing operations which are classified by firms as transitory (e.g., write-offs, impairments and restructuring charges). Special items are much more common and larger in magnitude than extraordinary items, which are rarely reported by companies. For a detailed discussion of special items, see Burgstahler et al. (2002).

dividend cut. Mean special items decreases from –0.013 in year –1 to –0.043 in year 0 (*t*-statistic

for the change equals –5.2) and increases back to –0.017 in year 1 (*t*-statistic equals 3.8). This

"V" shape pattern is especially apparent for the 10th percentile of the distribution (see Figure 2).

In addition, the frequency of negative special items increases from 31.3 percent in year –1 to

50.2 percent in year 0 (*t*-statistic for the change equals 4.2), and decreases back to 35.0 percent in

year 1 (*t*-statistic equals –3.4). After year 1, the frequency of negative special items remains

relatively stable.

To summarize, firms that cut their dividends report very low earnings in the year of the

dividend change, in large part due to the recognition of negative special items. Consistent with

the low persistence of special items (Burgstahler et al. (2002)), these firms report substantial EPS

increases in subsequent years. Yet, earnings reach their pre-dividend cut level only three years

after the dividend decrease. Although these results suggest that dividend decreases predict lower

current and future earnings, they do not indicate whether this information is revealed by the

dividend announcement rather than by prior disclosures such as interim earnings reports. I next

use market-based information to construct measures of expected earnings immediately prior to

the dividend change, which allow me to test whether dividend cut announcements convey new

earnings information.

B. Dividend Decreases and Unexpected Earnings

I start by examining the association between analysts' forecast errors and dividend

changes. To the extent that analysts' EPS forecasts reflect the market expectation of current and

future EPS, the average value of the forecast errors (i.e., the average difference between realized

and forecasted EPS) for dividend decrease firms should indicate whether dividend cuts convey

new earnings information to the market. Specifically, if the average value of analysts' forecast

errors for dividend decrease firms is negative and significant, the inference would be that dividend reductions convey negative earnings news.

This approach for testing the information content of dividends is straightforward (analysts' forecasts provide a direct measure of expected earnings) and simple to implement. However, it has important shortcomings: Analysts' forecasts are on average biased upward and they do not reflect all available information (for a review of the literature documenting these results, see Kothari 2001). I therefore compare the forecast errors of dividend cut firms with those of other dividend paying firms rather than assume that the unconditional mean of the forecast error is zero. In addition, I conduct multivariate analyses that mitigate the effect of measurement error in the proxy for expected earnings by incorporating information from stock prices and other variables in addition to analysts' forecasts.

The results of the univariate analysis are reported in Table 3. This table presents the mean and median analysts' EPS forecast errors for dividend decrease firms and for all other dividend paying firms. Analysts' forecast errors (labeled "unexpected IBES EPS") are measured as the difference between the IBES measure of actual EPS and the consensus EPS forecast available at the time of the dividend announcement. Actual EPS as measured by IBES is equal to reported EPS minus items classified by analysts as non-recurring ("IBES special items"). The total difference between reported and forecasted EPS ("unexpected reported EPS") is equal to the sum of "unexpected IBES EPS" and "IBES special items."

Analysts' forecast errors are negative for both dividend decrease firms and other dividend paying firms, and are larger in magnitude in year 1 compared to year 0. Both results are consistent with prior research, which demonstrates that analysts' forecasts are biased upward with the bias increasing in the forecast horizon. However, unexpected earnings are substantially and significantly smaller for dividend decrease firms compared to other dividend paying firms.

Specifically, unexpected IBES earnings for dividend decrease firms are on average –4.83% of price for year 0 and –5.89% for year 1, while the corresponding numbers for other dividend paying firms are –0.75% and –1.93% respectively. These results are not due to outliers, as the differences in median are also highly significant.

The magnitude of negative special items (middle two columns in Table 3) is substantially larger for dividend decrease firms than for other dividend paying firms, especially in year 0 (–2.53% of price for dividend decrease firms compared to –0.30% for other dividend paying firms). These results are consistent with the statistics in Panel B of Table 2, which demonstrate that firms report more negative special items in dividend decrease years than in other years. Because special items are less persistent than other earnings items (e.g., Burgstahler et al. (2002)), these findings imply that dividend decrease firms should experience earnings increases in future years. Indeed, the results of prior research (e.g., Benartzi et al. (1997)) and this study (Panel A of Table 2) indicate that dividend cuts are followed by earnings increases in subsequent years. However, current earnings, the starting point of this earnings growth, are substantially smaller than expected at the time of the dividend cut. Therefore, the *level* of future earnings may still be lower than expected at the time of the dividend cut, in spite of the future earnings increases. The statistics in Table 3 suggest that unexpected earnings in year $t = 1$ of dividend decrease firms are indeed negative.

Thus far I have used analysts' EPS forecasts to measure the market expectations of current and future earnings. As discussed above, however, analysts' forecasts contain error and bias, which may be correlated with the characteristics of dividend decrease firms (e.g., small size, low expected growth). Moreover, analysts' forecasts may be stale, especially for dividend decrease firms (given their small size and other less attractive characteristics). To mitigate these effects, I next estimate regression model (5) which incorporates information from market prices

and other variables in addition to analysts' forecasts. I start by replicating the results of prior studies (e.g., Benartzi et al. (1997), Nissim and Ziv (2001)), which find that dividend reductions are not associated with negative future earnings after controlling for current earnings. To this end, I include in equation (5) the ratio of current earnings to price as an additional explanatory variable.

Table 4 presents the regression results. As shown, the coefficient of the dividend decrease indicator variable (*DIV_DEC*) is non-negative in each of the five regressions (t = 1, 2, …, 5), confirming that dividend decreases do not imply lower future earnings after controlling for current earnings. But should one control for current earnings? As discussed above, if realized current earnings of dividend decrease firms are smaller than expected at the time of the dividend change, including them in the regression will bias the results against finding information content in dividend decreases. The results in Tables 2 and 3 suggest that realized current earnings are indeed smaller than expected at the time of the dividend change. Moreover, the high significance of current earnings in explaining future earnings (Table 4), even after controlling for analysts' forecasts, price and other earnings predictors, suggests that current earnings reflect information about future earnings which is not available at the time of the dividend change.

Miller and Rock (1985) predict the results of Table 4. They argue that dividend changes convey information about future earnings indirectly by changing the market's estimate of current earnings, which in turn contributes to the estimate of future earnings. Thus, when current earnings are included in the regression, the coefficient of the dividend change should be insignificant, as I indeed find. In contrast, when the earnings expectation model reflects only information which is available at the time of the dividend change, the coefficient of the dividend change should be significant. I next examine this hypothesis by estimating equation (5), which excludes current earnings. The estimates in Table 5 demonstrate that dividend decreases imply

lower current (t = 0) and next year (t = 1) earnings, but have no implications for earnings in later years.

Assuming a discount rate between 10 to 20 percent, the dividend coefficients in Table 5 imply that dividend cut announcements should trigger negative stock returns between –7.8% (= $-0.0570/1.1^{.5} + -0.0274/1.1^{1.5}$) and –7.3% (= $-0.0570/1.2^{.5} + -0.0274/1.2^{1.5}$). These estimates, however, overstate the price impact of dividend cut announcements for two reasons. First, the consensus analysts' EPS forecast, which is the primary control variable, reflects analysts' expectations of recurring earnings, while the dependent variable measures realized total earnings. Thus, if dividend decrease firms are expected to report more negative special items than other firms, the dividend decrease coefficient will be biased downward (it will capture expected special items in addition to unexpected earnings and so overstate the negative implications of dividend decreases). Second, negative special items which reduce reported earnings often reflect "paper losses" with little cash flow consequences (e.g., impairment of goodwill). To address these concerns, I next rerun equation (5) using *CORE_EPS* (EPS minus special items per share) instead of reported EPS. The estimates in Table 6 suggest a substantially smaller value effect, between –3.6% (= $-0.0176/1.1^{.5} + -0.0219/1.1^{1.5}$) and –3.3% (= $-0.0176/1.2^{.5} + -0.0219/1.2^{1.5}$), assuming discount rate between 10 to 20 percent. Yet, similar to the results in Table 5, the dividend coefficient is highly significant in both the t = 0 and t = 1 regressions.

C. Market Reaction to Dividend Cut Announcement

The estimates from the previous section suggest that dividend decrease announcements should trigger an average stock decline of at least 3 percent, due to their negative earnings implications. I next compare this estimate with the actual market response. I use the Fama and French (FF, 1993) three-factor model to estimate the average abnormal stock return in each of

the 201 trading days centered at the dividend cut announcement. Specifically, for each relative trading day (–100 through +100), I regress the following model using all firms that cut their dividends in day 0:

$$ER = \gamma_1 + \gamma_2 RMRF + \gamma_3 SMB + \gamma_4 HML + e_t, \tag{6}$$

where *ER* is the daily excess stock return (raw return minus the risk-free return), *RMRF* is the daily excess market return (market return minus the risk-free return), *SMB* is the daily return on a portfolio long in small stocks and short in large stocks, and *HML* is the daily return on a portfolio long in value stocks and short in growth stock.[14] Under this approach, the intercept (γ_1) of each relative day regression measures the average abnormal stock return in that day for firms that announce a dividend cut in day 0.

Figure 3 plots the cumulative average abnormal return for dividend decrease firms (i.e., the cumulative sum of the regression intercepts). Firms that cut their dividends in trading day 0 experience negative stock returns in the prior 100 trading days which sum up to a CAR of –14% by the end of day –2. The three days announcement return (–1, 0, and 1) is equal to –3.2%, and it is followed by a very slight drift in the following weeks. The overall market response is approximately –3.5%, consistent with the estimates of the present value of unexpected earnings reported in the previous subsection.[15]

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[14] Factor returns are obtained from WRDS.

[15] The abnormal returns are slightly smaller than in prior studies (e.g., Aharony and Swary (1980)) due primarily to the requirement of availability of analysts' forecasts (more recent sample period, larger firms). The small magnitude of the post announcement drift is consistent with the evidence in Grullon et al. (2002).

D. Dividend Decreases and Equity Risk

Grullon et al. (2002) find that dividend changes are associated with changes in equity risk. In particular, they compare the FF factor loadings of dividend decrease firms in the three years subsequent to the dividend change with the corresponding coefficients in the three prior years and report significant increases in each of the three coefficients. They further estimate that the annual risk premium increases by about 2% and argue that "changes in risk premium of this magnitude are sufficient to generate the observed announcement-day price reactions" (page 388). Indeed, changes of this magnitude should trigger very large negative returns if they are indicated by the dividend announcement. In this section I examine the timeliness of the change in equity risk.

I use the following procedure to examine changes over time in the risk premium of dividend decrease firms. First, I calculate the average annualized return associated with each of the three FF factors during the period July 1, 1963 through October 31, 2003.[16] Second, I estimate equation (6) for each of the relative trading days –1,250 through 1,250 for the sample of dividend decrease firms. Third, I calculate the annualized risk premium associated with each relative day using the factor loadings of equation (6) for that day and the average annualized factor returns:

$$\text{Annualized Risk Premium} = \gamma_2 AAR(RMRF) + \gamma_3 AAR(SMB) + \gamma_4 AAR(HML) \qquad (7)$$

where *AAR(f)* is the *A*verage *A*nnualized daily *R*eturn on factor *f* during 1963-2003, and γ_2, γ_3 and γ_4 are the estimated factor loadings for the particular trading day. Finally, I calculate the mean

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[16] The average annualized return on factor f is calculated as follows: AAR(f) = exp{252×mean[ln(1+f)]} – 1, where 252 is the average number of trading days per year and the mean is calculated over all daily observations during the period July 1, 1963 through October 31, 2003.

value of the annualized risk premium for groups of 50 consecutive trading days: (–1,250, –1,201), (–1,200, –1,151), …, (–50, –1), (0, 49), …, (1,200, 1,249).

Panel A of Figure 4 plots the estimates. The x-axis displays the relative trading day while the y-axis presents the mean value of the risk premium for each group of 50 consecutive trading days. Consistent with Grullon et al. (2002), the average risk premium in the three years subsequent to the dividend cut (trading days 0 through 750) is substantially larger than in the prior three years. Specifically, the average risk premium in the three prior years is 7.4% compared to 9.0% after the dividend cut (t-statistic for the difference equals 4.7). However, as is evident from the figure, the increase in risk occurs gradually during the year preceding the announcement of the dividend cut, and little if any additional increases occur after day –1. In particular, during the intervals (–100, –51) and (–50, –1), the risk premium gradually increases from less than 8% to more than 10%. It remains at this level for the next two years, and then declines gradually to about 7%. This evidence suggests that dividend decreases follow rather than signal increases in equity risk.

To examine the robustness of this result, I next use alternative approaches for calculating the risk premium. First, I report the medians of the relative day risk premiums instead of the means. The median estimates, plotted in Panel B of Figure 4, are very similar to the means (Panel A). Second, instead of calculating means or medians for groups of consecutive trading days, I fit a spline function with 49 knots (corresponding to 50 intervals) for the whole sample of 2,500 relative day risk premiums (days –1,250 through 1,249). Panel C of Figure 4 presents the fitted value of the spline function. It is evident that all of the increase in the risk premium occurs during the year preceding the announcement of the dividend cut.

The risk premium estimates in Panels A through C of Figure 4 are calculated by running FF regressions for each relative trading day. Each regression includes all dividend decrease firms

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with available stock returns for the particular relative day, and the estimates are based on the assumption that all firms have the same factor loadings. The primary advantages of this approach are that it allows the factor loadings to vary over relative time, and the factor loadings are estimated using relatively large samples (up to 282 dividend decrease firms). Yet, dividend decrease firms are not identical and may therefore have different factor loadings. To address this concern, I rerun the analysis using time-series FF regressions. Specifically, for each firm, I estimate time-series FF regressions for groups of 50 consecutive trading days ((−1,250, −1,201), (−1,200, −1,151), …, (−50, −1), (0, 49), …, (1,200, 1,249)). I then calculate the firm/interval-specific risk premium using the estimated factor loadings and the average annualized daily factor returns over the period 1963-2003. Finally, for each interval, I calculate the mean and median values of the risk premium across all firms. The resulting estimates are plotted in Panels D (means) and E (medians) of Figure 4.[17]

Consistent with the small number of observations per regression, the estimates in Panels D and E of Figure 4 are more volatile than those in Panels A and B. Yet, in both Panels C and D, the risk premium clearly increases prior to the dividend announcement and its average value in the 150 trading days prior to the dividend change (the three points to the left of the y-axis) is similar to the post-change values. Thus, the finding that dividend cut announcements follow rather than signal an increase in risk is robust to the use of alternative approaches for measuring risk premium.

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[17] To mitigate the impact of non-synchronous trading, I include in the FF regressions the one-day lag and lead values of each of the three factors and use the Scholes and Williams (1977) approach to adjust the estimated factor loadings.

E. Robustness Checks

I next conduct two robustness checks for the earnings analysis. First, I rerun all tests involving analysts' forecasts using the most recent analysts' EPS and growth forecasts instead of the respective consensus forecasts. I obtain qualitatively similar results to those reported above. In particular, when regressing equation (5) with *CORE_EP*S as the dependent variable, I find that the coefficient of the dividend decrease variable is –0.021 (*t*-statistic of –3.6) for year t = 0, –0.029 (*t*-statistic of –4.4) for t = 1, and insignificant for t = 2, 3, 4, and 5. These estimates are slightly larger in magnitude than those obtained with the consensus forecasts, suggesting that the consensus forecasts are more precise than the most recent forecasts. The inference, however, remains unchanged: Dividend cut announcements signal lower current and next year earnings.

Second, to evaluate the methodology, I estimate the regressions for large dividend increases (greater than or equal to 20 percent) instead of dividend decreases.[18] I find that the dividend increase coefficient when explaining *CORE_EPS* is positive and significant for each of the six years (t = 0, 1, …, 5), but its magnitude is relatively small (ranging between 0.007 and 0.013 with *t*-statistics ranging between 2.1 and 5.5). Thus, while both dividend decreases and increases predict subsequent earnings, the information in dividend decreases relates primarily to the near future while that in dividend increases is more permanent. This difference could be due to accounting conservatism which requires that losses be recognized when anticipated while profits should be recognized only when earned. Alternatively, the short duration of the negative earnings implications of dividend cuts could be due to real options, such as the abandonment option, which allow dividend decrease firms to improve or discontinue unsuccessful operations.

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[18] I focus on large dividend increases because, as shown in Table I, dividend decreases are substantially larger in magnitude than dividend increases.

VI. Conclusion

Extant research establishes that dividend decreases: (1) trigger negative stock returns, (2) are unrelated to future earnings after controlling for current earnings, and (3) are associated with an increase in firm risk. This evidence has been interpreted as suggesting that dividend cut announcements signal an increase in risk, which in turn triggers a negative market response (e.g., Grullon et al. (2002)). I reexamine the information content of dividend decreases and find that realized current earnings of dividend decrease firms contain negative special items and are substantially smaller than expected at the time of the dividend change. These results imply that controlling for current earnings in explaining future earnings biases the dividend coefficient against finding information in dividend decreases.

I thus estimate an alternative model for expected earnings which extracts information from analysts' forecasts, price and other variables, but excludes current earnings. Using this model, I find that dividend cut announcements are associated with negative unexpected earnings in the subsequent year. I further show that the present value of unexpected earnings in the current and next year is approximately equal to the dividend cut announcement return. Finally, I demonstrate that the increase in the riskiness of dividend cut firms, which has been documented by previous studies, occurs primarily in the year prior to the dividend announcement. I therefore conclude that dividend decrease announcements convey earnings rather than risk information.

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Table 1
Descriptive Statistics

	Dividend Decrease (N = 282)			No change (N = 35,769)			Dividend Increase (N = 5,576)		
	Mean	Med.	StD	Mean	Med.	StD	Mean	Med.	StD
RΔDIV	-0.456	-0.500	0.239	0.000	0.000	0.000	0.129	0.098	0.203
BETA	0.830	0.815	0.458	0.915	0.915	0.440	0.868	0.874	0.434
VOLAT	0.081	0.078	0.025	0.076	0.073	0.025	0.071	0.067	0.023
LEV	0.561	0.595	0.248	0.501	0.496	0.249	0.521	0.510	0.275
SIZE	6.431	6.510	1.631	6.781	6.715	1.585	6.985	6.921	1.548
BM	0.829	0.752	0.420	0.623	0.580	0.321	0.568	0.548	0.274
GROWTH	0.095	0.090	0.048	0.117	0.116	0.044	0.114	0.115	0.042
YIELD	0.064	0.064	0.028	0.031	0.026	0.020	0.030	0.025	0.019

RΔDIV is the rate of change in quarterly dividend per share. *BETA* is the slope coefficient from a regression of monthly stock returns on the CRSP value-weighted returns during the five years that end in the month prior to the dividend announcement. *VOLAT* is the root-mean-squared error from the *BETA* regression. *LEV* is the ratio of total liabilities to the sum of total liabilities and the market value of equity at the end of the fiscal year prior to the dividend announcement. *SIZE* is the log of the market value of common equity two days prior to the dividend announcement. *BM* is the book-to-market ratio at the end of the fiscal year prior to the dividend announcement. *GROWTH* is the consensus (mean) analysts' long-term earnings growth forecast available at the time of the dividend announcement. *YIELD* is the indicated annual dividend yield two days prior to the dividend announcement.

Table 2
EPS and Special Items during the Seven Years Surrounding the Dividend Decrease

Panel A: EPS scaled by price prior to the dividend cut announcement

	-3	-2	-1	0	1	2	3
Mean	0.113	0.109	0.068	-0.023	0.021	0.046	0.071
Mean(Δ)*	-0.001	-0.004	-0.042	-0.091	0.039	0.025	0.016
t-statistic for Mean(Δ)	-0.2	-0.8	-7.5	-10.7	4.8	3.1	2.1
Median	0.110	0.101	0.072	0.014	0.053	0.064	0.073
Median(Δ)	0.003	0.001	-0.020	-0.055	0.018	0.009	0.012
p-value for Median(Δ)	0.163	0.533	0.000	0.000	0.000	0.000	0.000

Panel B: Special items per share scaled by price prior to the dividend cut announcement

	-3	-2	-1	0	1	2	3
Mean	-0.010	-0.008	-0.013	-0.043	-0.017	-0.022	-0.015
Mean(Δ)*	-0.002	0.003	-0.007	-0.028	0.025	-0.003	0.005
t-statistic for Mean(Δ)	-0.6	0.8	-1.9	-5.2	3.8	-0.5	0.8
Frequency(-)	0.307	0.232	0.313	0.502	0.350	0.366	0.327
Change in Frequency(-)*	0.057	-0.087	0.092	0.164	-0.150	0.017	-0.020
t-statistic for ΔFrequency(-)	1.5	-2.3	2.3	4.2	-3.4	0.4	-0.4

The dividend decrease year is designated as year 0. All per share data are adjusted for stock splits and stock dividends. Price is measured two days prior to the announcement of the dividend cut. "Frequency(-)" denotes the relative frequency of negative values.

* These statistics are slightly different from the corresponding differences in levels because they are calculated using observations with non-missing values for both years.

Table 3
Analysts' Forecast Errors and Special Items:
Dividend Decrease Firms versus all other Dividend Paying Firms

	Unexpected IBES EPS		IBES Special Items		Unexpected Reported EPS	
	t = 0	t = 1	t = 0	t = 1	t = 0	t = 1
Mean for dividend cut firms	-0.0483	-0.0589	-0.0253	-0.0119	-0.0736	-0.0708
Mean for other firms	-0.0075	-0.0193	-0.0030	-0.0035	-0.0106	-0.0228
Difference in mean	-0.0408	-0.0396	-0.0223	-0.0084	-0.0631	-0.0481
t-statistic for diff. in mean	-10.9	-6.6	-5.9	-2.4	-11.7	-6.5
Median for dividend cut firms	-0.0215	-0.0303	-0.0013	0.0000	-0.0424	-0.0363
Median for other firms	-0.0009	-0.0063	0.0000	0.0000	-0.0012	-0.0069
Difference in median	-0.0207	-0.0239	-0.0013	0.0000	-0.0411	-0.0294
z-statistic for diff. in median	-7.8	-6.2	-5.2	-1.9	-8.6	-6.1

All variables are scaled by closing price two days prior to the dividend announcement. "Unexpected IBES EPS" is the difference between actual EPS as measured by IBES (i.e., reported EPS minus items classified by analysts as non-recurring) and the consensus EPS forecast available at the time of the dividend announcement. "IBES special items" is measured as the difference between reported EPS (from COMPUSTAT) and the IBES measure of actual EPS. "Unexpected reported EPS" is the difference between reported EPS (from COMPUSTAT) and the consensus EPS forecast; it is equal to the sum of "Unexpected IBES EPS" and "IBES special items." All per share data are adjusted for stock splits and stock dividends.

TABLE 4
Regressions of Realized Future EPS on Proxies for Expected EPS, a Dividend Decrease Indicator, and Current EPS

$$EPS(t)/P = \gamma_{year} + \gamma_{industry} + \gamma_{distance} + \gamma_1\,BETA + \gamma_2\,VOLAT + \gamma_3\,LEV + \gamma_4\,SIZE$$
$$+ \gamma_5\,BM + \gamma_6\,GROWTH + \gamma_7\,YIELD + \delta\,AF(t)/P + \lambda\,DIV\_DEC + \rho\,EPS(0)/P + \varepsilon$$

	BETA	VOLAT	LEV	SIZE	BM	GROWTH	YIELD	AF(t)/P	DIV_DEC	EPS(0)/P	R^2	N
t = 1	-0.0074	-0.1722	-0.0047	-0.0009	-0.0019	-0.0454	-0.2361	0.1443	0.0012	0.4517	0.1615	38,279
	-4.9	-4.9	-1.1	-2.2	-0.6	-2.5	-4.4	4.5	0.2	24.0		
t = 2	-0.0075	-0.2226	-0.0076	-0.0019	-0.0001	-0.0710	-0.1557	0.1841	0.0100	0.3252	0.0768	35,255
	-3.6	-4.7	-1.4	-3.4	0.0	-3.1	-2.4	5.6	1.2	15.2		
t = 3	-0.0058	-0.2434	-0.0040	-0.0021	0.0087	-0.0696	-0.0623	0.2013	0.0150	0.2183	0.0415	32,613
	-2.3	-4.6	-0.6	-3.3	1.8	-2.6	-0.8	6.4	1.6	9.9		
t = 4	0.0007	-0.2461	-0.0068	-0.0022	0.0139	-0.1087	0.0357	0.1988	0.0116	0.1810	0.0319	29,812
	0.2	-4.1	-0.9	-2.8	2.5	-3.5	0.4	6.3	1.2	7.3		
t = 5	0.0022	-0.2492	-0.0136	-0.0030	0.0232	-0.1799	-0.0571	0.1544	0.0194	0.2197	0.0342	27,210
	0.6	-3.4	-1.6	-3.3	3.7	-4.8	-0.6	4.9	1.8	8.3		

Newey and West (1987) *t*-statistics with three lags are reported below the coefficient estimates. *EPS(t)* is realized earnings per share in year t relative to the dividend announcement in year 0, adjusted for stock splits and stock dividends. *P* is the closing price per share two days prior to the dividend announcement. *BETA* is the slope coefficient from a regression of monthly stock returns on the CRSP value-weighted returns during the five years that end in the month prior to the dividend announcement. *VOLAT* is the root-mean-squared error from the *BETA* regression. *LEV* is the ratio of total liabilities to the sum of total liabilities and the market value of equity at the end of the fiscal year prior to the dividend announcement. *SIZE* is the log of the market value of common equity two days prior to the dividend announcement. *BM* is the book-to-market ratio at the end of the fiscal year prior to the dividend announcement. *GROWTH* is the consensus (mean) analysts' long-term earnings growth forecast available at the time of the dividend announcement. *YIELD* is the indicated annual dividend yield two days prior to the dividend announcement. *AF(t)* is consensus (mean) analysts' forecasts of *EPS(t)* available at the time of the dividend announcement. *DIV_DEC* is a dividend decrease indicator variable.

TABLE 5
Regressions of Realized Current and Future EPS on Proxies for Expected EPS and a Dividend Decrease Indicator

$$EPS(t)/P = \gamma_{year} + \gamma_{industry} + \gamma_{distance} + \gamma_1 \ BETA + \gamma_2 \ VOLAT + \gamma_3 \ LEV + \gamma_4 \ SIZE$$
$$+ \ \gamma_5 \ BM + \gamma_6 \ GROWTH + \gamma_7 \ YIELD + \delta \ AF(t)/P + \lambda \ DIV\_DEC + \varepsilon$$

	BETA	VOLAT	LEV	SIZE	BM	GROWTH	YIELD	AF(t)	DIV_DEC	R^2	N
t = 0	-0.0074	-0.2030	-0.0174	-0.0011	-0.0248	-0.0713	-0.5081	1.0521	-0.0570	0.2671	41,627
	-6.5	-8.3	-5.2	-3.4	-9.7	-5.0	-12.7	52.1	-8.7		
t = 1	-0.0112	-0.2701	-0.0155	-0.0012	-0.0157	-0.1001	-0.4281	0.5047	-0.0274	0.0443	38,279
	-6.4	-6.8	-3.1	-2.6	-4.2	-4.9	-7.2	16.1	-3.5		
t = 2	-0.0104	-0.2895	-0.0149	-0.0021	-0.0100	-0.1298	-0.2860	0.4100	-0.0113	0.0298	35,255
	-4.7	-5.9	-2.5	-3.5	-2.2	-5.5	-4.3	13.3	-1.3		
t = 3	-0.0075	-0.2885	-0.0083	-0.0023	0.0021	-0.1205	-0.1443	0.3373	0.0013	0.0236	32,613
	-3.0	-5.4	-1.3	-3.4	0.4	-4.5	-1.9	11.2	0.1		
t = 4	-0.0008	-0.2795	-0.0099	-0.0023	0.0082	-0.1628	-0.0277	0.2961	-0.0010	0.0215	29,812
	-0.3	-4.6	-1.3	-2.9	1.5	-5.4	-0.3	10.0	-0.1		
t = 5	0.0004	-0.2866	-0.0169	-0.0031	0.0160	-0.2587	-0.1276	0.2587	0.0043	0.0215	27,210
	0.1	-4.0	-1.9	-3.4	2.6	-6.9	-1.3	8.6	0.4		

Newey and West (1987) *t*-statistics with three lags are reported below the coefficient estimates. *EPS(t)* is realized earnings per share in year t relative to the dividend announcement in year 0, adjusted for stock splits and stock dividends. *P* is the closing price per share two days prior to the dividend announcement. *BETA* is the slope coefficient from a regression of monthly stock returns on the CRSP value-weighted returns during the five years that end in the month prior to the dividend announcement. *VOLAT* is the root-mean-squared error from the *BETA* regression. *LEV* is the ratio of total liabilities to the sum of total liabilities and the market value of equity at the end of the fiscal year prior to the dividend announcement. *SIZE* is the log of the market value of common equity two days prior to the dividend announcement. *BM* is the book-to-market ratio at the end of the fiscal year prior to the dividend announcement. *GROWTH* is the consensus (mean) analysts' long-term earnings growth forecast available at the time of the dividend announcement. *YIELD* is the indicated annual dividend yield two days prior to the dividend announcement. *AF(t)* is consensus (mean) analysts' forecasts of *EPS(t)* available at the time of the dividend announcement. *DIV_DEC* is a dividend decrease indicator variable.

TABLE 6
Regressions of Realized Current and Future EPS before Special Items
on Proxies for Expected EPS and a Dividend Decrease Indicator

$$CORE\_EPS(t)/P = \gamma_{year} + \gamma_{industry} + \gamma_{distance} + \gamma_1\ BETA + \gamma_2\ VOLAT + \gamma_3\ LEV + \gamma_4\ SIZE$$
$$+ \gamma_5\ BM + \gamma_6\ GROWTH + \gamma_7\ YIELD + \delta\ AF(t)/P + \lambda\ DIV\_DEC + \varepsilon$$

|	BETA	VOLAT	LEV	SIZE	BM	GROWTH	YIELD	AF(t)/P	DIV_DEC	R^2	N
t = 0	-0.0032	-0.0773	-0.0082	0.0004	-0.0013	-0.0480	-0.2191	0.9882	-0.0176	0.3551	36,474
	-3.5	-4.2	-3.1	1.6	-0.6	-4.3	-7.7	62.1	-3.4		
t = 1	-0.0087	-0.1419	-0.0052	0.0005	0.0003	-0.0812	-0.1989	0.5862	-0.0219	0.0872	31,639
	-5.9	-4.3	-1.2	1.2	0.1	-4.7	-4.3	22.8	-3.4		
t = 2	-0.0088	-0.1442	-0.0035	-0.0001	0.0009	-0.1014	-0.1160	0.4516	-0.0040	0.0505	28,712
	-4.6	-3.3	-0.7	-0.2	0.2	-4.8	-2.0	15.8	-0.5		
t = 3	-0.0070	-0.1746	0.0018	-0.0004	0.0177	-0.0824	-0.0398	0.3409	0.0032	0.0432	26,314
	-3.0	-3.6	0.3	-0.6	3.8	-3.5	-0.6	12.0	0.3		
t = 4	-0.0045	-0.1094	0.0023	0.0001	0.0272	-0.1009	0.0129	0.2880	-0.0067	0.0382	23,851
	-1.7	-1.9	0.3	0.1	5.1	-3.4	0.2	9.7	-0.7		
t = 5	-0.0019	-0.1000	-0.0015	-0.0003	0.0330	-0.1359	0.0081	0.2357	-0.0082	0.0310	21,621
	-0.6	-1.4	-0.2	-0.3	5.3	-3.6	0.1	7.8	-0.8		

Newey and West (1987) *t*-statistics with three lags are reported below the coefficient estimates. *CORE_EPS(t)* is realized earnings per share before special items in year t relative to the dividend announcement in year 0, adjusted for stock splits and stock dividends. *P* is the closing price per share two days prior to the dividend announcement. *BETA* is the slope coefficient from a regression of monthly stock returns on the CRSP value-weighted returns during the five years that end in the month prior to the dividend announcement. *VOLAT* is the root-mean-squared error from the *BETA* regression. *LEV* is the ratio of total liabilities to the sum of total liabilities and the market value of equity at the end of the fiscal year prior to the dividend announcement. *SIZE* is the log of the market value of common equity two days prior to the dividend announcement. *BM* is the book-to-market ratio at the end of the fiscal year prior to the dividend announcement. *GROWTH* is the consensus (mean) analysts' long-term earnings growth forecast available at the time of the dividend announcement. *YIELD* is the indicated annual dividend yield two days prior to the dividend announcement. *AF(t)* is consensus (mean) analysts' forecasts of *EPS(t)* available at the time of the dividend announcement. *DIV_DEC* is a dividend decrease indicator variable.

Figure 1
**Distribution of EPS in the Years Surrounding Dividend Decreases**
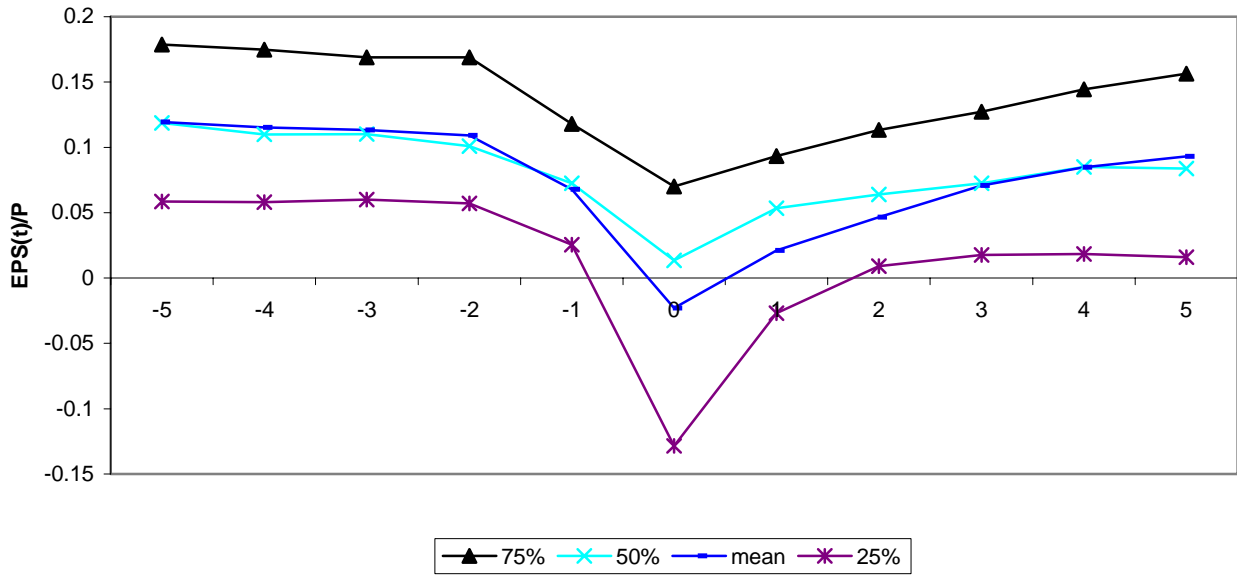
The dividend decrease year is designated as year 0. The figure presents the distribution of EPS in the years surrounding the dividend decrease. EPS is adjusted for stock splits and stock dividends and scaled by closing price two days prior to the announcement of the dividend cut.

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Figure 2
Distribution of Special Items in the Years Surrounding Dividend Decreases
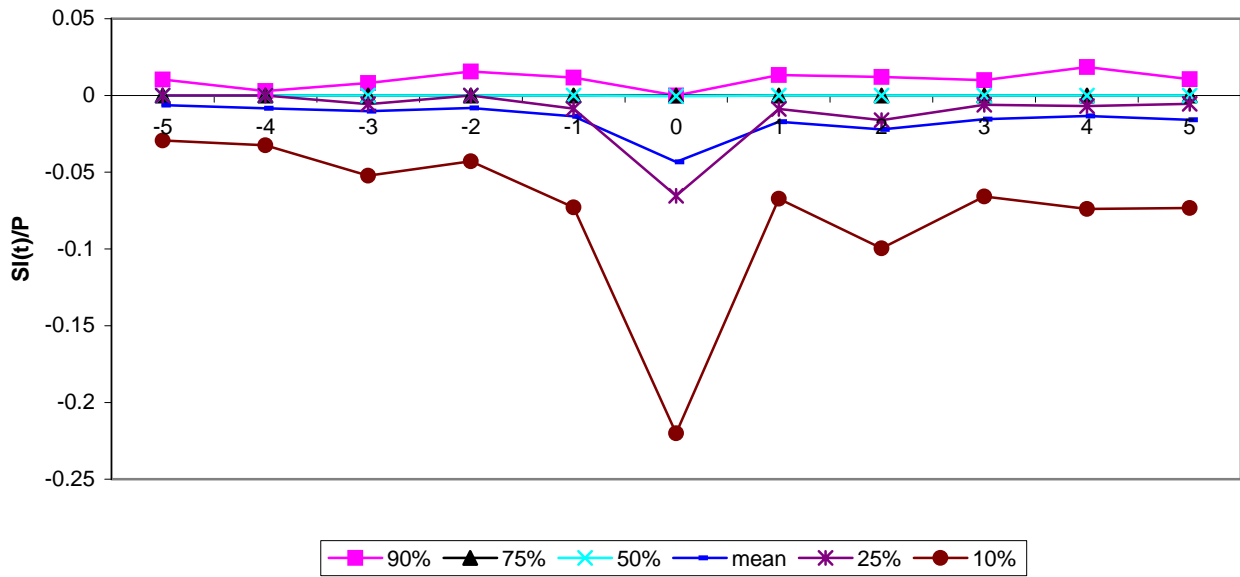
The dividend decrease year is designated as year 0. The figure presents the distribution of special items in the years surrounding the dividend decrease. Special items are calculated on a per share basis (adjusted for stock splits and stock dividends) and scaled by closing price two days prior to the announcement of the dividend cut.

Figure 3
CAR in the Days Surrounding Dividend Cut Announcements
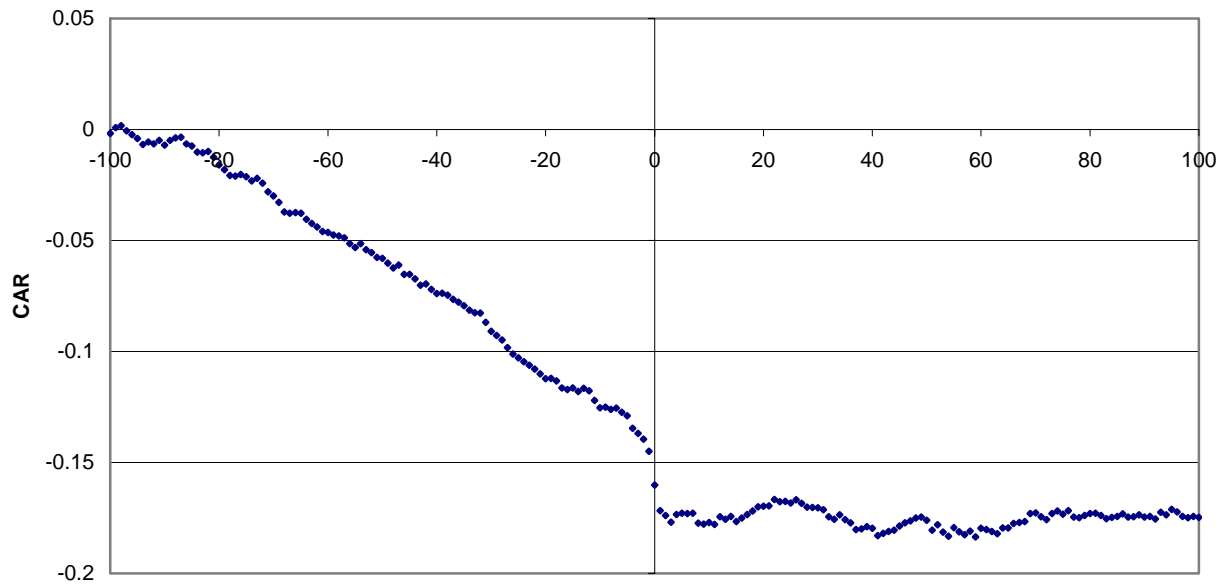
This figure presents the average cumulative abnormal stock returns in the 201 trading days surrounding dividend cut announcements in day 0. Daily abnormal stock returns are calculated using the three factors Fama and French (1993) model.

Figure 4
Risk Premium of Dividend Decrease Firms

Panel A: Mean risk premiums based on relative day Fama and French (FF, 1993) regressions
FF regressions are estimated for each relative day using all dividend decrease firms. Then, for each relative day, the regression coefficients and the historical factor premiums (during the period July 1, 1963 through October 31, 2003) are used to estimate the risk premium. The figure presents the mean risk premiums calculated for intervals of 50 consecutive trading days ((−1,250, −1,201), (−1,200, −1,151), …, (−50, −1), (0, 49), …, (1,200, 1,249)).
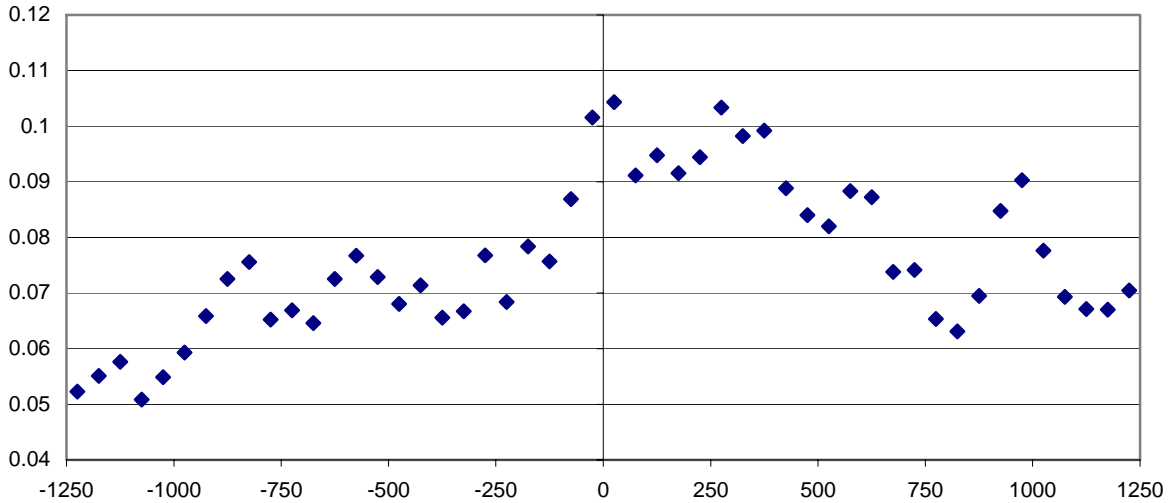

Panel B: Median risk premiums based on relative day FF regressions
FF regressions are estimated for each relative day using all dividend decrease firms. Then, for each relative day, the regression coefficients and the historical factor premiums are used to estimate the risk premium. The figure presents the median risk premiums calculated for intervals of 50 consecutive trading days ((−1,250, −1,201), (−1,200, −1,151), …, (−50, −1), (0, 49), …, (1200, 1,249)).
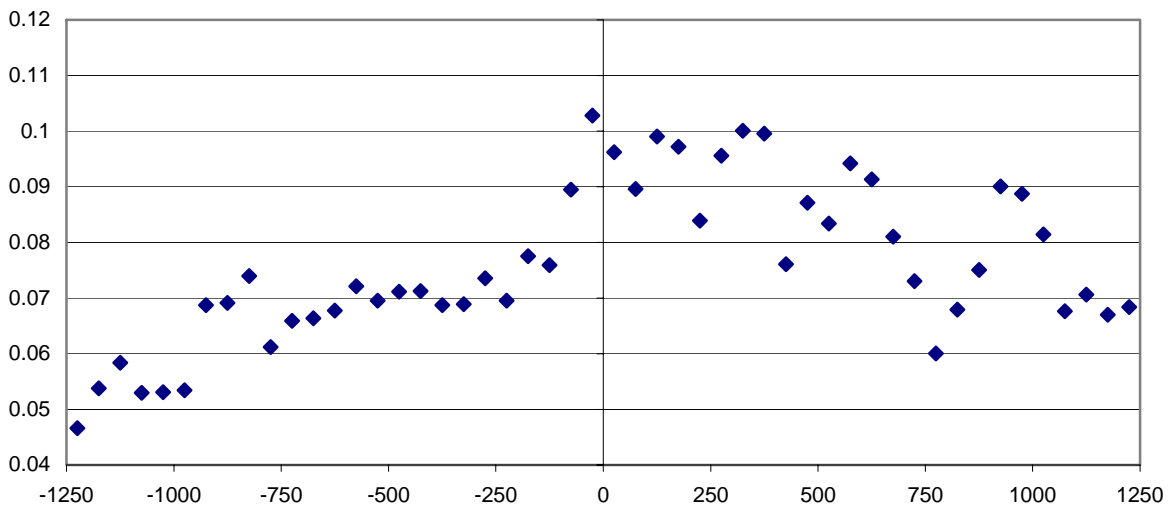
Panel C: Fitted risk premiums based on relative day FF regressions
FF regressions are estimated for each relative day using all dividend decrease firms. Then, for each relative day, the regression coefficients and the historical factor premiums are used to estimate the risk premium. The figure presents the fitted value from spline regression (49 knots) estimated using the relative day risk premiums (2,500 observations, days –1,250 through 1,249)
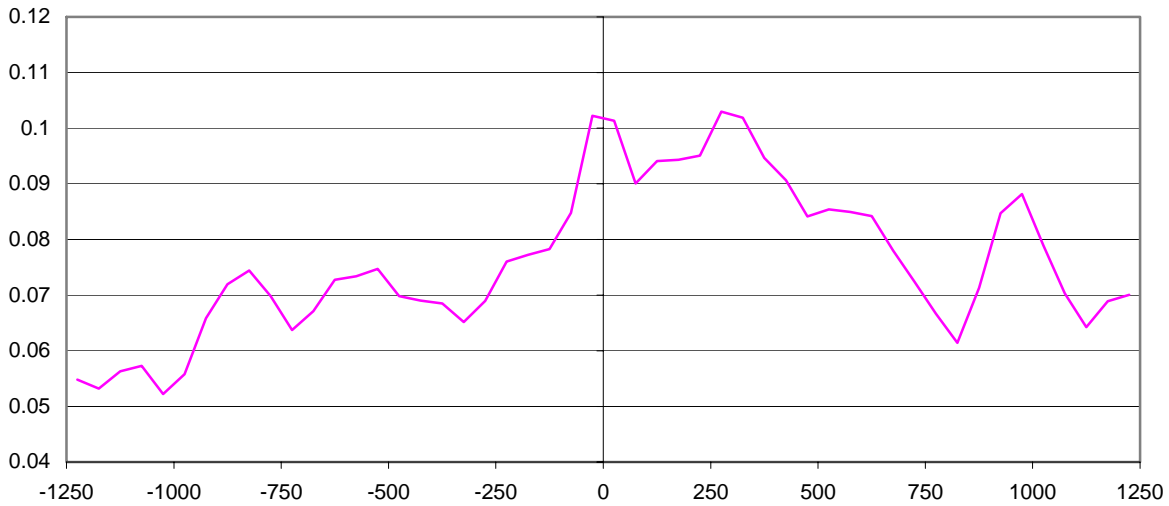
Panel D: Mean risk premium based on time-series FF regressions
Firm-specific FF regressions are estimated for groups of 50 consecutive trading days ((–1,250, –1,201), (–1,200, –1,151), …, (–50, –1), (0, 49), …, (1,200, 1,249)). Then, for each firm/interval, the regression coefficients and the historical factor premiums are used to estimate the risk premium. The figure presents the mean risk premium for each interval, calculated across all dividend-decrease firms.
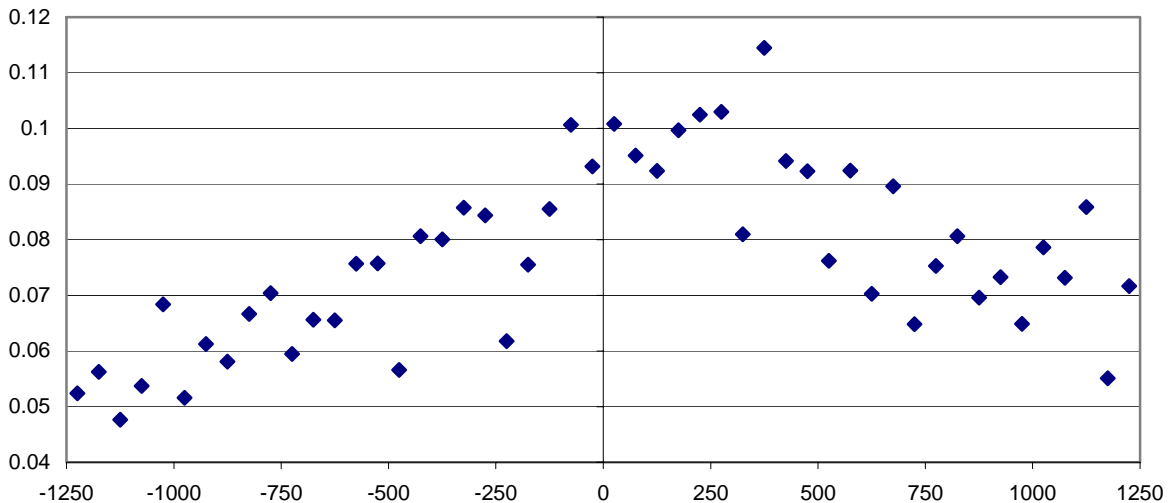
Panel E: Median risk premiums based on time-series FF regressions
Firm-specific FF regressions are estimated for groups of 50 consecutive trading days ((–1,250, –1,201), (–1,200, –1,151), …, (–50, –1), (0, 49), …, (1,200, 1,249)). Then, for each firm/interval, the regression coefficients and the historical factor premiums are used to estimate the risk premium. The figure presents the median risk premium for each interval, calculated across all dividend-decrease firms.