

What Dividends Reveal About Risk: Evidence from Option Prices

Pat Akey* Arash Dayani[†] Brandon Julio[‡]

September 2026

Abstract

We use option prices to examine how dividend changes convey information about firm risk. Because options price the full distribution of future stock prices, we can decompose the dividend signal into changes in general price risk and changes in downside tail risk. We find that dividend changes carry substantial risk information, and that this information is asymmetric. For dividend omissions, implied volatility rises sharply and the implied volatility slope steepens, indicating large increases in both general price risk and tail risk. The risk signal is large for bad dividend news and small for good dividend news, consistent with the asymmetry observed in stock returns. This risk information is largely distinct from the price reaction, suggesting that options reveal a dimension of the dividend signal that stock returns do not capture.

*Associate Professor of Finance at ESSEC Business School; akey@essec.edu

[†]Assistant Professor of Finance at Powers College of Business, Clemson University; adayani@clemson.edu

[‡]Professor of Finance at Lundquist College of Business, University of Oregon; bjulio@uoregon.edu

1 Introduction

What information do dividend changes convey in financial markets? The classic answer is that they signal information about future cash flows, but decades of evidence for that view have proven mixed. A more recent answer, which we pursue here, is that dividends signal information about firm risk. We test this idea using the information embedded in option prices. Because they price the full distribution of future stock prices, options allow us to measure the risk content of a dividend change directly and to separate it into distinct components. We find that dividend changes carry substantial information about risk, and that this information is asymmetric. Dividend omissions are followed by a large increase in implied volatility and a steep increase in implied tail risk, while dividend initiations produce essentially no change in either measure. This asymmetry in the risk signal runs parallel to the asymmetric price reaction that returns data have documented for nearly four decades ([Healy and Palepu, 1988](#); [Michaely et al., 1995](#)), yet we show that the two are largely distinct. The option market reveals a dimension of the dividend signal that the price reaction does not capture.

The idea that dividends carry information originates in the signaling models of the late 1970s and early 1980s, which share a premise but differ in mechanism. In [Bhattacharya \(1979\)](#), dividends are a costly signal, dissipative because cash dividends are taxed more heavily than capital gains, so that only firms confident in their future cash flows will bear the cost of paying them. [Miller and Rock \(1985\)](#) derive the signal from the firm's sources-and-uses identity, in which an unexpectedly high dividend reveals higher current earnings and leads the market to revise its beliefs about the firm's cash flows. In [John and Williams \(1985\)](#), dividends are credible because firms pay them while simultaneously raising outside equity. Bearing the tax penalty on a dividend rather than simply retaining cash is costly, and only firms whose managers

hold favorable private information find it worthwhile, so the taxed dividend separates undervalued firms from the rest. What unites these models is the prediction that a dividend increase forecasts higher future cash flows, and it is this common prediction that the subsequent empirical literature set out to test.

The evidence for that prediction is mixed. Dividend initiations and increases are not reliably followed by higher earnings growth ([Benartzi et al., 1997](#); [Grullon et al., 2005](#)), which is the central empirical prediction of the cash-flow-signaling view. Confronted with this, the literature moved toward interpretations of dividends that do not rest on cash-flow forecasting. [Grullon et al. \(2002\)](#) propose a maturity hypothesis in which a dividend increase marks a firm's transition to a lower-growth, lower-risk stage of its life cycle. They document that firms increasing dividends experience a subsequent decline in systematic risk, and that the market's reaction to the increase is related to that decline in risk rather than to higher future cash flows. This was a pivotal move, because it relocated the information in dividends away from the first moment of the cash-flow distribution and toward the firm's risk.

A second, older thread points in a related direction. Beginning with [Lintner \(1956\)](#), evidence accumulated that firms manage dividends toward a stable target and are reluctant to cut, so that a dividend change is informative less about the level of future earnings than about their durability. Survey evidence confirms that managers themselves treat maintaining the dividend as a priority on par with investment and are strongly averse to cutting, changing dividends only when confident the change can be sustained ([Brav et al., 2005a](#)). The implication is that a dividend change is a statement about the firm's confidence in the persistence of its earnings, which is a statement about risk. This stability thread is the closest antecedent to our approach within the classic literature. [Michaely et al. \(2021\)](#) make the reframing explicit. Rather than communicating the level of expected cash flows, dividends may convey information about their safety. Using realized volatility and analyst forecast

dispersion, they document that dividend-paying firms experience subsequently lower realized volatility, consistent with a risk-based interpretation. We build on this insight in two ways. First, we measure the information content of dividend changes directly from option prices at the moment of announcement, which captures forward-looking expectations rather than realized outcomes that materialize only over subsequent quarters. Second, option prices let us decompose the risk signal into distinct dimensions, including average price variability and downside tail risk.

We measure the information content of dividend announcements through changes in option-implied risk around the announcement date. The first measure is the change in at-the-money implied volatility, which captures the market’s forward-looking expectation of overall future price variability over the life of the option (Carr and Wu, 2009). The second is the change in the slope of implied volatility as a function of moneyness, estimated across out-of-the-money put options. A steeper slope indicates that deep out-of-the-money puts are more expensive relative to near-the-money puts, which reflects investor demand for protection against large negative price movements. Tail risk is priced separately from diffusive variance and carries a substantial premium in cross-sectional asset pricing tests (Bollerslev and Todorov, 2011; Kelly and Jiang, 2014; Bali et al., 2011). The third is the change in the variance risk premium, defined as the difference between option-implied variance and realized variance over the same window. Variance risk itself carries a substantial premium, with options consistently more expensive than realized volatility would justify (Coval and Shumway, 2001), and the variance risk premium predicts equity returns at short horizons (Bollerslev et al., 2009) and varies with disaster risk and uncertainty about future cash flows (Drechsler and Yaron, 2011). Because each of these dimensions of risk is priced in equity markets, changes around dividend announcements capture shifts in quantities that investors price.

We find that dividend omissions and initiations move firm risk by significantly

different amounts. Omissions are followed by a large and strongly significant increase in implied volatility and a steepening of the implied volatility slope, while initiations produce no detectable change in either. The bad-news signal moves every measure of risk we examine, while the good-news signal moves almost none of them. This pattern holds across the full sample and sharpens in the cleanest subsample, which we describe next. The dividend signal is distinct from concurrent earnings news. Roughly 43 percent of dividend announcements in our sample occur within three days of an earnings announcement, raising the concern that the risk response reflects earnings rather than dividends. When we restrict attention to dividend announcements that are not accompanied by earnings news, the results do not weaken. They strengthen. The omission effect on implied volatility grows substantially relative to the full sample, and the slope effect grows in parallel. The dividend signal is at its clearest precisely when it is not bundled with other information, which is difficult to reconcile with the view that the response is an artifact of earnings.

The risk content of dividend omissions also varies with the firm’s financial condition. Omissions by firms with lower cash holdings, lower cash flows, and higher leverage carry significantly stronger risk signals. This pattern is consistent with the view that an omission conveys information about uncertainty and future risk: the signal is stronger when the firm has fewer financial resources to absorb adverse shocks. The signal also varies with market conditions. A dividend cut can reveal private information about future cash-flow risk ([Michaely et al., 2021](#)), but the information it conveys may depend on the broader uncertainty facing the firm. The COVID-19 pandemic provides a setting in which to examine this dependence. Firms faced a severe aggregate shock whose effects varied considerably across firms ([Ding et al., 2021](#); [Cejnek et al., 2021](#)). We find that omissions during the pandemic are followed by the largest increase in implied volatility and the sharpest steepening of the implied volatility slope. The risk signal is strongest in this period, both in overall price

variability and in downside tail risk.

Our paper makes three contributions. First, we advance the literature on the information content of dividends. The classic signaling framework and its empirical tests focused on whether dividends predict future cash-flow levels, with mixed results, and later work relocated the signal toward the firm’s risk and maturity ([Grullon et al., 2002](#); [Michaely et al., 2021](#)). By measuring the risk content of dividend changes directly from option prices, we provide forward-looking evidence that dividends carry information about the second moment of the firm’s prospects rather than the first, and we show that the signal is multidimensional. Dividends speak to overall price variability, to downside tail risk, and to the premium investors demand for bearing variance risk. Second, we contribute to a growing literature that uses option prices to recover information not observable in stock returns alone. Option-implied measures forecast returns and capture priced uncertainty around corporate and macroeconomic events, including the volatility spread between calls and puts ([Cremers and Weinbaum, 2010](#); [Bali and Hovakimian, 2009](#)), innovations in option-implied volatility ([An et al., 2014](#)), political uncertainty surrounding elections and summits ([Kelly et al., 2016](#)), and the information embedded in merger announcements ([Barracclough et al., 2013](#)). A common thread in this work is that options separate a component of an event that stock prices alone cannot isolate. We bring this approach to dividend announcements and show that options uncover a risk signal in dividend changes that is not recoverable from the price reaction alone. Third, we document that the risk content of dividend changes is sharply asymmetric and that this asymmetry is distinct from the asymmetry in returns. Negative dividend surprises move every measure of risk we examine, while positive surprises move almost none, a pattern that parallels the long-documented tendency of bad dividend news to move prices more than good news. The two are not the same, however. At the level of individual announcements, the size of the price reaction is largely unrelated to the change in option-implied

risk, and the price reaction adds little to explaining the risk response once the type of dividend event is known. Omissions create far more uncertainty about the firm's risk profile than initiations resolve, and the option market registers this asymmetry directly, separately from whatever the price reaction reflects.

The remainder of the paper proceeds as follows. Section 2 develops our hypotheses about how dividend changes should affect option-implied measures of firm risk. Section 3 describes the construction of our three risk measures from option prices. Section 4 describes the sample of dividend events and the matched option data. Section 5 presents the results, including the central asymmetry between omissions and initiations and the robustness of the dividend signal to concurrent earnings news. Section 6 concludes.

2 Hypothesis Development

Our hypotheses follow from a single premise. If a dividend change conveys information about the firm's future risk, then it should move the prices of claims whose value depends on that risk. Options are precisely such claims. We formalize this idea in a structural setting and use it to derive predictions for two option-implied measures of risk.

2.1 A Structural Benchmark

Consider the standard structural model of Merton (1974). A firm has assets with market value V that evolve as a geometric Brownian motion with volatility σ_V , and a single zero-coupon debt claim with face value D maturing at T . Equity is a call

option on the firm's assets,

$$E = V \Phi(d_1) - D e^{-rT} \Phi(d_2), \quad d_1 = \frac{\ln(V/D) + (r + \frac{1}{2}\sigma_V^2)T}{\sigma_V\sqrt{T}}, \quad d_2 = d_1 - \sigma_V\sqrt{T}, \quad (1)$$

where $\Phi(\cdot)$ is the standard normal distribution function and r is the risk-free rate.

By Itô's lemma, the instantaneous volatility of equity is

$$\sigma_E = \frac{V}{E} \Phi(d_1) \sigma_V. \quad (2)$$

We model a dividend change as a signal about the volatility of the firm's underlying assets. A dividend is a commitment that the firm can sustain only if it expects its cash flows to remain stable, so a credible dividend increase or initiation conveys a downward revision in σ_V , while a cut or omission conveys an upward revision. The information content of the announcement therefore enters the model through σ_V , and its consequences for option prices follow from how equity-implied volatility and its moneyness profile depend on σ_V .

2.2 Implied Volatility

Equity-implied volatility is increasing in asset volatility. For a levered firm, the equity volatility in Equation 2 is increasing in σ_V , so a downward revision in σ_V lowers the at-the-money implied volatility of equity options and an upward revision raises it. A dividend increase or initiation should therefore be followed by a decline in at-the-money implied volatility, and a cut or omission by an increase.

Hypothesis 1. *Dividend increases and initiations are followed by a decrease in implied volatility. Dividend cuts and omissions are followed by an increase.*

2.3 Implied Volatility Slope

Because equity is a call on assets, the equity return distribution is negatively skewed, and this skewness is reflected in a downward-sloping relationship between implied volatility and moneyness. Out-of-the-money put options carry higher implied volatilities than at-the-money options, and the gap widens as the firm’s asset volatility rises. A higher σ_V places more risk-neutral probability on large declines in equity value, which raises the price of deep out-of-the-money puts relative to near-the-money puts and steepens the implied volatility slope. We confirm this relationship numerically within the model. A dividend increase or initiation, by signaling lower σ_V , should flatten the slope, while a cut or omission should steepen it.

Hypothesis 2. *Dividend increases and initiations are followed by a flatter implied volatility slope. Dividend cuts and omissions are followed by a steeper slope.*

3 Empirical Design

We use option prices to measure changes in implied volatility and implied volatility slope around dividend announcements to capture price risk and tail risk associated with dividend policy changes. These measures represent differences between values that are computed from eligible options treated by the dividend announcement and comparable eligible options not treated by the dividend announcement. In this section, we describe the eligibility criteria to select the options used to compute implied volatility and implied volatility slope, their measurement procedure, and our estimation strategy.

3.1 Option Selection

For each dividend announcement event at date t , we define the pre-announcement window as a 60-calendar day period between $t - 61$ and $t - 1$ and define the post-announcement window as a 60-calendar day period between $t + 1$ and $t + 61$. For each announcement, we measure implied volatility as an average of all daily values from eligible observations. Averaging over a window rather than using a single date smooths the noisy day-to-day fluctuations in option prices. Figure 1 outlines the timing of the selected options around a representative dividend announcement. For the pre-announcement window, we use daily implied volatilities based on options that expire prior to the announcement and have more than five days until their expirations. For the post-announcement window, we use daily implied volatilities based on options that expire in less than 60 days after the announcement and have more than five days until their expirations. By excluding options with few than five days until expiration, we avoid ultra-short-maturity options, whose implied volatilities are sensitive to price nonsynchronicity and other measurement errors.

Finally, since the information about the dividend announcement could leak to the market before the announcement date and contaminate the risk measures computed in the pre-announcement period, our estimated treatment effect is a conservative estimate. In section 3.6, we discuss alternative empirical designs that may address this concern and our motivation for choosing our main empirical design.

3.2 Implied Volatility

We measure overall price risk using at-the-money (ATM) options, defined as options whose Black-Scholes delta satisfies $0.4 \leq |\delta| \leq 0.6$, drawn from both calls and puts with positive open interest and a positive best bid. For the post-announcement window, we define IV_2 as the average daily implied volatility of eligible ATM options

over the observation window,

$$IV_2 = \text{Mean}\{IV_{j,\tau} : \tau \in [t + 1, t + 61]\}, \quad (3)$$

where $IV_{j,\tau}$ is the implied volatility of eligible option j at observation date τ , as computed by OptionMetrics. We require at least three daily observations in the window. The pre-announcement measure, IV_1 is defined analogously using implied volatility observations from window $\tau \in [t - 61, t - 1]$.

3.3 Implied Volatility Slope

The implied volatility slope measures the steepness of the relationship between implied volatility and moneyness, as captured by the option's Black-Scholes delta. We estimate it from out-of-the-money (OTM) put options with delta satisfying $-0.4 \leq \delta \leq -0.1$ and positive open interest. We avoid the deepest OTM put options because their implied volatilities are extremely sensitive to small measurement errors in option prices.

For each event dividend announcement event, we regress the implied volatilities of eligible OTM puts on their deltas across all observations in the window,

$$IV_{j,\tau} = \alpha + \beta \delta_{j,\tau} + \varepsilon, \quad (4)$$

and take the estimated slope coefficient. We require at least ten observations to estimate each slope. OTM puts are more numerous than ATM options at any point in time, which lets us impose a higher observation threshold without sacrificing many events. We estimate Equation 4 for the pre- and post-announcement periods separately and define $Slope_1$ and $Slope_2$ as the slope estimates from the pre- and post-announcement windows.

Because put deltas are negative, a positive slope means deep OTM puts are more

expensive relative to near-the-money puts, reflecting greater demand for protection against large downward moves. An increase in *Slope* therefore indicates an increase in implied tail risk, suggesting that investors are willing to pay more for protection against the downside tail risk after the dividend announcement.

3.4 Market Implied Volatility Control

Firm-level implied volatility moves with aggregate market conditions, so a change in firm IV around an announcement could in part reflect a contemporaneous move in market-wide volatility rather than firm-specific information. To control for this, we compute the implied volatilities for the S&P 500 index over the same windows identified for each firm-event. We identify SPX options in OptionMetrics by their security identifier and apply the same ATM criterion and averaging window as for the firm-level measure. Because it uses the same calendar windows as IV_i , it captures the change in aggregate market uncertainty over exactly the period spanned by the firm-level measure, providing a direct control for market-driven movements in implied volatility.

3.5 Estimation Strategy

We employ a difference-in-differences framework to estimate the changes in risk around dividend announcements. Each dividend announcement, including omissions, decreases, increases, and initiations, is a single treatment.¹ For each treatment in our sample, the firm announcing the dividend policy is the treated observation. We use the implied volatility from similar options of the S&P 500 index as the control observation. Furthermore, we collapse the time series information into a pre- and post-announcement period for each dividend announcement to reduce noise. There-

¹We use the word “treatment” in the sense that the dividend announcement is a shock to the firm’s information environment. We do not imply that the firm is treated by an exogenous treatment.

fore, each dividend announcement yields four observations in a canonical difference-in-differences setting. We stack all observations for all dividend announcements together and estimate a joint treatment effect.

To estimate the effect of a dividend announcement on firm risk, we estimate the following specification model:

$$IV_{i,t} = \alpha \times Treated_{i,t} + \gamma \times Post_{i,t} + \beta \times Treated_{i,t} \times Post_{i,t} + \lambda_i + \phi_j + \varepsilon_{i,t}. \quad (5)$$

The dependent variable, $IV_{i,t}$, is the implied volatility from firm or S&P 500 options for event i during time period t , which can be pre- and post-announcement windows. $Treated$ is equal to 1 for firms that announce a dividend change and zero for S&P 500 index. $Post$ is equal to 1 for the period after the announcement for both the firm and the index and zero for the period before the announcement. λ_i is dividend announcement event fixed effects and ϕ_j is industry fixed effects. We do not include year fixed effects in our models as event fixed defects are an stricter arrangement.

To estimate the effect of a dividend announcement on tail risk, we estimate the following specification model:

$$Slope_{i,t} = \alpha \times Treated_{i,t} + \gamma \times Post_{i,t} + \beta \times Treated_{i,t} \times Post_{i,t} + \lambda_i + \phi_j + \varepsilon_{i,t}. \quad (6)$$

The dependent variable, $Slope_{i,t}$, is the implied volatility slope. Other variables are the same as in Equation 5.

3.6 Alternative Designs

Our selection criterion for options to be included in calculation of implied volatility emphasizes capturing two windows that are very close to the dividend announcement. We average all implied volatilities observed for all options in a 60-day window *im-*

mediately before or after the announcement. To address the confounding effect of varying time to maturities and thus the term structure of implied volatility, we limit the options to those with less than 60 days to maturity. This approach results in immediate capture of the announcement information while ensuring the options pre- and post-announcements have approximately similar time to expiration.

One alternative approach to measure implied volatility changes around the dividend announcement is to pick options that expire at a certain date. [Kelly et al. \(2016\)](#) use this approach to measure the uncertainty around political events such as elections. For all of our analysis, we follow their approach and document the robustness of our findings. Specifically, we report equivalents of our main results in the Online Appendix, following this approach.

US equity options expire on a regular monthly grid. For each dividend announcement event at date t , we select two groups of options from this grid with expiration dates τ_1 and τ_2 such that $\tau_1 < t < \tau_2$. We choose τ_1 and τ_2 as the nearest monthly expirations to the announcement that satisfy the condition that neither expiration falls within one month of the announcement. Operationally, we require that τ_1 and τ_2 each lie between 26 and 58 calendar days from the announcement, which approximates a 20- to 40-trading-day window on each side. Options expiring at τ_1 are used to measure the implied volatility for the pre-announcement window, and options expiring at τ_2 are used to measure the post-announcement implied volatility. Figure [A.1](#) in the Online Appendix outlines the timing of the selected options around a representative dividend announcement, following this approach.

For each expiration, we measure implied volatility as an average over a 20-trading-day observation window that ends five trading days before expiration. In calendar terms we use the window

$$\mathcal{M}_k = \{m : \tau_k - 35 \leq m \leq \tau_k - 7\}, \quad k \in \{1, 2\}, \quad (7)$$

where the calendar bounds of 35 and 7 days approximate 25 and 5 trading days, respectively.

This approach fully addresses the term structure concern as both option groups have identical time until their expiration dates. However, it comes with two disadvantages. First, limiting the options pool to only one expiration date significantly reduces the number of observations within each announcement window, introducing noise to the measurement and excluding more dividend events that do not satisfy the requirements. While this limitation is not important in [Kelly et al. \(2016\)](#) as they focus on fairly liquid market indices, it is a significant limitation in our setting in that firm options are significantly less liquid. Second, this approach does not necessarily capture the implied volatilities immediately around the dividend announcements. In contrast, our main approach discussed earlier reduces noise by measuring the period average with more observations, increases the number of events in our sample by allowing more options, and captures the implied volatilities immediately around the dividend announcement event. As discussed earlier, the disadvantage of our approach is that the time to expirations for the pre- and post-announcement options groups are not *identical*. However, by limiting the maximum time-to-expiration to 60 days, we match the term structure sufficiently in our analysis. In our sample, the average difference between time-to-expiration for the pre- and post-announcement options is 1 day.

There are a few other empirical designs that we could use. One alternative approach is analyzing the time series evolution of implied volatilities around the dividend announcements. In other words, one could pick an option group that expires at $\tau_2 > t$ and compare its implied volatility at two times, once before and once after the dividend announcement. Specifically, we could use implied volatilities of our treated options prior to the dividend announcement, t , to compute IV_1 . This is problematic in three ways. First, since stock prices move substantially following a dividend

announcement, options that are ATM prior to the announcement are not necessary ATM after the announcement. Second, implied volatilities are directly affected by the changes in dividend yield, which is an input for the Black-Scholes model. Therefore, following implied volatilities of a certain group of options through the dividend event captures both the change in uncertainty and the price response to the dividend policy change. By computing *IVs* from two distinct groups of options that are ATM at different times, we essentially compare implied volatilities derived from comparable options. Third, time to expiration of the options changes as time passes around the announcement; therefore, our results may be confounded by the term structure of implied volatility. In our design, the term structure of volatility plays no role because our treatment group options have the same maturities as the control group options.

Another alternative is to compare implied volatilities of the two option groups that expire at τ_1 and τ_2 , at given times of $m < t$. This type of design is used for scheduled events such as earnings announcements (Patell and Wolfson, 1979, 1981; Dubinsky et al., 2019). However, this design is not suitable for our purpose for two reasons. First, this design only applies to events that are scheduled in advance (earnings calls, election, etc.), where the uncertainty regarding the event is known in advance but affects the two option groups differently. Since dividend announcements are not scheduled, there is no reason to believe that investors can properly price the uncertainty in advance. Second, time to expiration of the options are different by at least a month; as a result, making the term structure of implied volatility a confounding problem.

4 Sample Construction

The data in our study are from multiple sources. We obtain dividend information from CRSP Monthly. Option prices, moneyness, and implied volatilities are from Option

Metrics. Firm fundamentals are from Compustat Annual. Using CRSP monthly data from 1995 to 2025, we start from monthly, quarterly, semi-annual, and annual regular cash dividends paid by U.S. firms listed on NYSE, Amex, and Nasdaq.² We define four dividend events: (1) Initiations, (2) Increases, (3) Cuts, and (4) Omissions.

We define a dividend *“Initiation”* as the date on which a firm announces payment of a regular cash dividend after not paying any dividend, including stock and special dividends, for at least two years. We define a dividend *“Increase”* as the date on which a firm announces that it increases its regular dividend by at least 12.5% while maintaining the same frequency. For example, we exclude cases where a firm doubles the cash dividend amount while changing its frequency from quarterly to semi-quarterly. Similarly, we define a dividend *“Cut”* as the date on which a firm announces that it decreases its regular dividend by at least 12.5% while maintaining the same frequency. Lastly, we define a dividend *“Omission”* in two steps. First, we identify the fiscal quarter in which a firm stops paying a regular cash dividend after paying regular cash dividend for at least two years. The candidate fiscal quarters are then excluded if the firm pays cash, stock, or special dividends during the next two regular periods (i.e., two months for monthly dividends, two quarters for quarterly dividends, etc.). Second, for each remaining fiscal quarter, we manually collect the announcement date from various sources. We start by locating press releases in Factiva to identify the date on which the firm announces the dividend omission. If a date is not found on Factiva, we manually search the internet for a press release.³ Lastly, we read the firm’s closest 10-Q and/or 10-K to the fiscal quarter and search for the dividend suspension date.

We identify 1,197 dividend initiations, 2,040 dividend increases, 1,577 dividend cuts, and 671 dividend omissions for which we record a reliable press release. Firms

²We exclude financial (SIC 6000-6999) and utility firms (SIC 4900-4999).

³Specifically, we search for the firm name, the event year, and phrases such as “suspends dividends”, “dividend suspension”, etc.

often announce their dividend news in conjunction with their earnings releases. We collect the earnings release dates from Compustat and IBES, and identify “*Standalone*” dividend events as dividend announcements that are at more than 3 days apart from the firm’s earnings release. In our sample, 63% of dividend omissions and cuts, and 54% of dividend initiations and increases are standalone dividend announcements that don’t coincide with earnings news. In our analysis, we report our findings for all dividend events as our main results and but always report our findings’ robustness for standalone dividends.

We match each dividend announcement to OptionMetrics using ticker and/or permno and collect all eligible options, as described in Section 3 to measure *IV* and *Slope*. The derivatives market is large and liquid for larger firms and thus the sample of events for which we have sufficient options observations is smaller and skews towards larger firms. Table A.1 in the Online Appendix shows the attrition rate of our events as we impose option-related requirements. At the end, we have 1,863 dividend events with sufficient options to measure *IV* and 1,148 dividend events for which we measure *Slope*. Table A.2 in the Online Appendix reports comparison of means of firm characteristics for dividend events that are included in the sample and events that are excluded due to insufficient options observations. In-sample firms, on average, have more assets and market capitalization; they are older and more levered; they have higher free cash flow but their cash holdings are similar to the excluded events.

Figure 2 shows the number of dividend events in each year of our sample with sufficient eligible options to measure *IV* and *Slope*. The number of events varies throughout the sample from 27 in 2002 to 165 events in 2020. There are two notable years. First, the number of dividend initiations and increases substantially jumps in 2003 and 2004 following the passage of the Job and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003. We later study this event as a shock to the tax cost of

dividends. Second, dividend omissions and cuts significantly increase in 2020 during the Covid-19 pandemic.

For each dividend event, we use data from Compustat Annual to calculate fundamental variables. Specifically, we use the latest fiscal year information to compute total assets, market capitalization, cash ratio, market-to-book ratio, leverage, free cash flow, and age. All variables that are bound at zero (such as cash ratio) are winsorized at 99%. All other variables are winsorized at 99% and 1%. Detailed variable definition are provided in [Appendix A](#).

Table 1 reports descriptive statistics for the dividend events. Panel A includes the sample of dividend omissions and cuts. Firms that cut their dividends have \$13 billion in assets and \$13.9 billion in market cap at the fiscal year-end before the announcement. They are 34 years old. Their cash holding is, on average, 10% of their assets and free cash flow is 8% of assets. Lastly, book leverage is 0.29. Panel B includes the sample of dividend increases and initiations. These firms have \$10.5 billion in assets and \$11.3 billion in market cap at the fiscal year-end before the announcement. They are 24 years old. Their cash holding is, on average, 15% of their assets and free cash flow is 10% of assets. Comparing the values in Panels A and B, Firms that initiate/increase dividends are in better financial health with higher cash holdings and free cash flows and lower leverage.

5 Empirical Results

In this section, we report our empirical results. We first show that, on average, changes in dividends lead to changes in both price risk and tail risk in the opposite direction. Then, we show that this effect is stronger among firms with worse observable financial health and firms with longer and more stable dividend history. We separately study the dividend suspensions following the Covid-19 pandemic in 2020. Lastly, we study

dividend initiations/increases following the passage of the Job and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003. Given JGTRRA was a shock to the tax cost of dividends, as opposed to risk, we show little changes in risk following these plausibly tax-motivated dividend increases.

5.1 Implied Volatility

We start by testing whether implied volatilities react to dividend announcement and price in the change in firm risk, as predicted by our framework. We estimate Equation 5 where the dependent variable is implied volatility (IV) and report the results in Table 2. Panel A includes the full sample of dividend events. In column 1, we use the sample of omissions and cuts and find that IV increases by 5.11 percentage points following the dividend announcements. The economic magnitude of this effect is very large, representing a 10% increase in IV , given that the average IV in our sample is 50.1.

Our hypothesis suggests that the effect of dividend omissions on implied volatility should be higher for dividend omissions than dividend cuts. We examine omissions in column 2 and find that IV increases by 13.48 percentage points, representing a 27% increase in IV following the announcements. In column 3, we examine dividend cuts and document 1.7 percentage point increase in IV after the announcement.

In columns 4-6, we examine the effect of dividend initiations and increases on implied volatility. The coefficient on $Treated \times Post$ is negative in all columns, suggesting that implied volatility declines following the announcement of dividend initiations or increases. Although, the magnitude of the effect is smaller. For example, for the sample of both initiations and increases (column 4), implied volatility declines by 0.83 percentage points, representing a 2.2% decrease in IV , given that the average IV in our sample is 38.6.

As mentioned earlier in Section 4, 37% of dividend omissions/cuts and 46% of

dividend initiations/increases coincide with an earnings announcement. Therefore, it is possible that the change in implied volatility may be driven by the earnings news. In, Panel B of Table 2, we use the sample of standalone dividend events – dividend announcements with no earnings news from 5 days prior to 5 days after them. Our results are similar to the full sample (Panel A) and often stronger in economic magnitude for standalone events. For example, we report in column 1 that IV increases by 6.50 percentage points following the dividend announcements. The economic magnitude of this effect is very large, representing a 13.1% increase in IV, given that the average IV in the standalone sample is 49.5. Similarly in column 4, we find that implied volatility declines by 0.92 percentage points, representing a 2.3% decrease in IV, given that the average IV in our sample is 39.3.

Our results reported in Table 2 are robust to the approach to construct implied volatilities. Following the alternative approach discussed in Section 3.6, we report event stronger results A.3 in the Online Appendix. In column 1, we use the sample of omissions and cuts and find that IV increases by 6.28 percentage points. We examine omissions in column 2 and find that IV increases by 14.90 percentage points. In column 3, we examine dividend cuts and document 2.68 percentage point increase in IV after the announcement. In column 4-6, we examine the effect of dividend initiations and increases on implied volatility and that implied volatility declines following the announcement of dividend initiations or increases.

5.2 Implied Volatility Slope

We now turn to estimating the effect of dividend announcements on the slope of implied volatilities. The implied volatility slope measures the steepness of the relationship between implied volatility and moneyness. A steeper slope means deep OTM puts are more expensive relative to near-the-money puts, reflecting greater demand for protection against large downward moves. An increase (decrease) in *Slope*, there-

fore, indicates an increase (decrease) in implied tail risk around the announcement.

We estimate Equation 6 where the dependent variable is *Slope* and report the results in Table 3. We report the results for all dividend events in Panel A and standalone dividend events in Panel B. In column 1, we find that *Slope* increases by 5.36 percentage points following the dividend announcements. The economic magnitude of this effect is very large, representing a 17.5% increase in implied volatility slope, given that the average *Slope* in our sample is 30.6. We examine omissions in column 2 and find that *Slope* increases by 19.52 percentage points, representing a 64% increase in the slope following the announcements. In column 3, we examine dividend cuts and find statistically insignificant results.

In columns 4-6, we examine the effect of dividend initiations and increases on implied volatility slope. The coefficient on $Treated \times Post$ is negative in all columns, suggesting that tail risk declines following the announcement of dividend initiations or increases. Although, these effects are not statistically significant.

In, Panel B of Table 3, we use the sample of standalone dividend events. Our results are stronger in economic magnitude relative to the full sample (Panel A). In column 1, we report that *Slope* increases by 9.63 percentage points following the announcements of dividend omissions/cuts, representing a 37.4% increase in the tail risk, given that the average slope in the standalone sample is 25.7. In column 2 for the sample of dividend omissions, tail risk increases by 124% ($100 \times 31.91 / 25.73$) following the announcements. These results show that investors take the suspension of dividends as a very strong signal of future downward tail risk. In column 4-6, we find that implied volatility slope declines following dividend increase/initiation announcements. However, similar to Panel A, these effects are not statistically significant.

We show in Table A.4 in the Online Appendix that our findings are robust to the method with which implied volatility slopes are estimated. Similarly, the magnitude of our results are even stronger under the alternative approach. Specifically, the slope

increases by 33.26 percentage points following a dividend omission (Panel A, column 2). More importantly, the slope increases by 41.38 percentage points following a standalone dividend omission (Panel B, column 2). The results of our findings in Table A.4 in the Online Appendix are very similar to our findings in Table 3.

5.3 Firm Characteristics & Cross-sectional Variation

So far, we have shown that dividend changes are associated with changes in implied volatility and tail risk. We now turn to exploring heterogeneity in this association. If dividend changes provide the outside investors with signals regarding the firm's future risk, then this signal may be stronger for firms with observable financial distress. In contrast, the dividend cut by the firm with better observable financials likely carries a weaker signal about the firm's future volatility.

We define three measures of financial health relevant to dividends. First, we examine cash holdings. Dividend payouts involve large sums of money and thus firms with higher cash holdings are more likely to continue their payouts. Therefore, a dividend cut may be due to other considerations and carry weaker signals about future risk. In contrast, when a firm with lower cash cuts its dividend, the announcement may complement the observable cash holding and thus convey a larger signal about future volatility. Our second measure is free cash flows. When free cash flow is abundant, a dividend can be financed without materially reducing investment or requiring external financing. Therefore, a cut in dividends may convey less information about management's private assessment of future risk. Lastly, the signal should be stronger for highly levered firms because debt creates substantial fixed obligations and induces risk. Among levered firms, dividend cuts are likely the result of financial distress and more informative of future risk.

To test our hypotheses, we identify dividend events with above the median values corresponding to each measure. Specifically, we define *High Cash* as an indicator

variable equal to 1 if the firm's cash to asset ratio is above the sample median. We define *High FCF* and *High Leverage* for free cash flows and leverage respectively. Then, we estimate a triple difference estimation of Equation 5, allowing us to compare the effect of dividend changes on future volatility across firms with high and low values.

Table 4 reports the results for dividend omissions and cuts in columns 1-3 and for initiations and increases in columns 4-6. In column 1, we include *High Cash* and find a smaller increase in implied volatility following dividend cuts for firms with high cash holdings. Specifically, while dividend cut announcements increase implied volatility by 6.72 percentage points for firms with low cash holdings, these announcements increase implied volatility by 3.51 ($6.72 - 3.21$) percentage points for firms with high cash holdings, representing a 48% decline in the magnitude of the effect. In column 2, we include *High FCF* and find similar results. Dividend cut announcements by firms with low free cash flows increase implied volatility by 7.34 percentage points. Whereas, such announcements by firms with high cash flows increase implied volatility only by 2.82 ($7.34 - 4.52$) percentage points for firms with high cash holdings, representing a 62% decline in the magnitude of the effect. Our results in column 3, where we include *High Leverage*, are also consistent with our hypothesis. Dividend cut announcements by firms with low leverage increase implied volatility by 2.73 percentage points. In contrast, such announcements by firms with high leverage increase implied volatility by 7.51 ($2.73 + 4.78$) percentage points for firms with high leverage. We do not find significant evidence consistent with our hypotheses among dividend increases (columns 4-6). Although the coefficient signs on the triple interaction term are consistent with our hypotheses, the estimates are not statistically significant.

We repeat our analysis for the sample of standalone dividend announcements and report our results in Table A.5 in the Online Appendix. Our results are stronger

across all specifications. Specifically, the increase in implied volatility following dividend cut announcements is 43% lower for high-cash firms (column 1) and 64% lower for high-FCF firms (column 2). Similarly, we find in column 3 that dividend cut announcements by high-leverage firms increase implied volatility by more than twice as much as such announcements by low-leverage firms. More importantly, we find statistically significant results among dividend increases by high-leverage firms. In column 6, we report that while dividend increase announcements by low-leverage firms reduce implied volatility by 1.58 percentage points, this effect is 84% ($1.32/1.58$) smaller for dividend increases by high-leverage firms.

We next investigate the heterogeneity of the effect of dividend announcements on the slope of implied volatility. Our logic is the same. If the dividend cut signals an increase in tail risk, then this signal is expected to be stronger for firms with lower cash holdings, lower free cash flows, and higher leverage. We estimate a triple difference estimation of Equation 5 where the dependent variable is *Slope* and report our results in Table 5. We focus on the sample of dividend omissions and cuts in columns 1-3, and dividend initiations and increases in column 4-6. In column 1, we find that the increase in tail risk following dividend cuts is smaller for firms with high cash holdings. Although this effect is economically meaningful, it is not statistically significant. In columns 2 and 6, we find similar results: the coefficient estimates have the expected sign but lack statistical significance.

In sharper tests, we repeat our analysis for the sample of standalone dividend announcements that are not confounded by earnings announcements and report our results in Table A.6 in the Online Appendix. Our results are consistent with our hypothesis that the signal about tail risk conveyed by the dividend cuts is weaker for firms with high cash holdings, high free cash flows, and low leverage. However, this effect is only statistically significant for leverage. Dividend cut announcements by firms with low leverage increase the slope of implied volatility by 2.83 percent-

age points. Whereas, such announcements by firms with high leverage increase the slope by 15.50 ($2.83 + 12.67$) percentage points. We do not find significant evidence consistent with our hypotheses among dividend increases (columns 4-6).

Overall, our results suggest an important source of heterogeneity in the signaling power of dividend cut announcements. When firms with low cash holdings, low free cash flows, and high leverage announce dividend cuts, the dividend changes convey stronger signals about the increase in future risk – both price and tail risk. However, our results are not strong enough to draw similar conclusions about the heterogeneity in the signaling power of dividend increases on future risk reductions.

5.4 Dividend History

If dividend changes convey information about subsequent changes in volatility, such announcements after a long history of stable dividends should convey larger signals about subsequent changes in volatility in the opposite direction. Firms that have maintained uninterrupted dividends for a long period establish a stronger implicit commitment to preserve their payout (DeAngelo and DeAngelo, 1990; Brav et al., 2005b), making a subsequent cut more unexpected and thus more informative to investors. Consequently, investors interpret a dividend cut by such a firm as stronger evidence of deterioration in future cash-flow prospects and higher future risk.

We split the sample of dividend omissions and cuts into two groups of announcements following long and short streams of dividend payments. Specifically, we define *Long Stream* as an indicator variable equal to 1 if the preceding stream of uninterrupted dividend payments is longer than the sample median. Then, we estimate a triple difference estimation of Equation 5 by including the interactions of *Long Stream*.

Table 6 reports the estimation results for implied volatility in columns 1-3 and for implied volatility slope in columns 4-6. In line with our hypothesis that announcements preceded by a long history of dividend payouts carrying a larger signal about

future risk, all coefficient estimates on the triple interaction are positive and statistically significant. The results are particularly strong for dividend omissions. In column 2, we report that implied volatility increases by 9.01 percentage points after a dividend omission by firms with short payout histories. However, implied volatility increases by 17.26 ($9.01 + 8.25$) percentage points following omissions by firms with long dividend histories. Therefore, the risk signal embedded in the dividend omission announcement is 92% larger for firms with a longer history of dividend payouts. dividend

The effect of dividend history on the signaling power of the dividend omission announcements is even stronger when we examine tail risk. In column 2, we report that the slope of implied volatility increases by 5.13 percentage points after a dividend omission by firms with short payout histories. whereas, the slope increases by 30.11 ($5.13 + 24.98$) percentage points following omissions by firms with long dividend histories. Therefore, the risk signal embedded in the dividend omission announcement is five times larger for firms with a longer history of dividend payouts.

The main results in Table 6 may be affected by the earnings news that often accompanies the dividend news. In sharper tests, we repeat our analysis for the sample of standalone dividend announcements that are not confounded by earnings announcements and report our results in Table A.7 in the Online Appendix. The results for the standalone dividend announcements are consistent with our hypothesis that the information content of the dividend omissions is stronger for firms with long payout histories. The results for dividend cuts in columns 3 and 6 show no difference in signal strength for firms with long and short dividend histories. This finding is consistent with evidence that managers are particularly reluctant to omit dividends when firms have long dividend histories [DeAngelo and DeAngelo \(1990\)](#).

Overall, our results demonstrate that a dividend omission announcement conveys a stronger signal of increased future risk when it follows a long history of uninterrupted

payouts and therefore provides more negative information about the firm’s future prospects.

5.5 Dividend Omissions & The COVID-19 Pandemic

So far, we showed that dividend cuts convey information about increases in future firm risk. The COVID-19 pandemic provides an important setting in which to examine whether the risk-signaling content of dividend cuts varies with market conditions. In normal times, a dividend cut can reveal private information about an increase in future cash-flow risk ([Michaely et al., 2021](#)). During the pandemic, however, firms were simultaneously exposed to a severe aggregate shock whose effects varied considerably across firms ([Ding et al., 2021](#); [Cejnek et al., 2021](#)). Therefore, whether the pandemic weakens or strengthens the information content of dividend cuts is an empirical question.

On the one hand, pandemic-era dividend cuts may have been less informative than cuts announced during normal times. Because COVID-19 represented a highly visible shock to revenues, liquidity, and economic activity, investors could attribute a dividend cut to the common crisis rather than to private information about firm-specific deterioration. In fact, over 800 US publicly-traded companies announced either cuts or omissions of dividend payments during 2020. [Cejnek et al. \(2021\)](#) document that dividend futures reflected anticipated declines in near-term dividends during the onset of the pandemic. Moreover, the pandemic may also have reduced the reputational cost of cutting dividends because investors understood that even otherwise viable firms faced extraordinary cash-flow pressures. Under these conditions, a dividend cut could be interpreted as a prudent effort to preserve liquidity rather than as evidence of higher future risk.

On the other hand, the extraordinary uncertainty created by the pandemic may have made dividend cuts more informative. Although investors observed the aggre-

gate shock, they initially had limited information about its severity and its firm-specific consequences. Managers, by contrast, possessed private information about lost revenues, disrupted operations, financing needs, and the firm’s capacity to withstand a prolonged economic downturn. A dividend cut could therefore corroborate investors’ concerns and reveal that management expected the crisis to affect the firm more severely or persistently than the market had previously believed. Consistent with this interpretation, [Pagano et al. \(2023\)](#) show that markets priced meaningful differences in firms’ resilience to the pandemic. Thus, precisely when investors were struggling to distinguish resilient firms from vulnerable ones, a dividend cut could produce an especially large downward revision in their assessment of the firm’s future risk.

This stronger information effect may be particularly pronounced for tail risk. The pandemic increased the baseline probability of extreme cash-flow shortfalls, financial distress, and bankruptcy. Therefore, it made any information about a firm’s proximity to the lower tail of its outcome distribution especially valuable. In this environment, a dividend cut may indicate more than an increase in volatility. It may additionally convey an unusually strong signal about extreme downside outcomes and tail risk.

To compare the risk-signaling power of COVID-era dividend announcements to those during normal times, we define *Covid* as an indicator variable equal to 1 if the dividend announcement is made in 2020.⁴ Then, we estimate a triple difference estimation of Equation 5 by including the interactions of *Covid* in our model.

Table 7 reports the results for implied volatility in columns 1-3 and for implied volatility slope in columns 4-6. Overall, our results are consistent with the hypothesis that the dividend cuts during the pandemic contained stronger signals about future volatility and tail risk. We report in column 1, where we examine both dividend

⁴In untabulated results, we examine the robustness of our conclusion with respect to how we define the pandemic era. Our results are robust to defining *Covid* for parts of 2020 and/or inclusion of parts of 2021.

omissions and cuts, that while dividend announcements in normal times increase implied volatility by 3.17 percentage points, the COVID-era announcements increase implied volatility by 15.10 ($3.17 + 11.93$) percentage points, representing a 376% increase in the magnitude of the effect. Our results in column 2, where we focus on omissions, are similar. Dividend omissions in our sample increase implied volatility by 8.82 percentage points. Whereas, COVID-era omissions increase implied volatility by 19.21 ($8.82 + 10.39$) percentage points.

As robustness, we repeat our analysis for the sample of standalone dividend announcements and report our results in Table A.8 in the Online Appendix. Our results are stronger across all specifications. We find that the standalone dividend announcements during the pandemic increased implied volatility by 24.79 percentage points (column 1). More importantly, standalone dividend omissions during the pandemic increased implied volatility by 27.53 percentage points.

Our findings on the signaling power of dividend cut announcements on the slope of implied volatility are particularly interesting. The coefficient estimates on $Treated \times Post$ are positive, in line with dividend cuts containing signals about increased tail risk. However, these coefficients lack statistical and economic significance. In contrast, the coefficient estimates on $Treated \times Post \times Covid$ are not only positive, but also both economically and statistically significant. Taking the sample of dividend omissions in column 5, we find that omissions outside of the pandemic lead to 5.39 percentage points increase in implied volatility while COVID-era omissions increase implied volatility by 31.56 ($5.39 + 26.17$) percentage points. Our robustness check in Table A.8 shows even stronger tail risk signaling power for COVID-era dividend announcements. Specifically, implied volatility increases by 41.28 percentage points following a standalone dividend announcement during the pandemic (column 4). When we focus only on dividend omissions, we find that implied volatility increases by 50.53 percentage points following a standalone dividend omission during

the pandemic (column 5).

These results are consistent with the notion that dividend suspensions carried unusually strong signals about tail risk during the pandemic where the global economic shock had increased the baseline probability of financial distress and extreme downside outcomes.

5.6 Tax Motivated Dividend Initiations & Increases

The interpretation of dividend changes as signals about future prospects rests on the premise that managers condition payout decisions solely on their private information. However, factors unrelated to private information, such as tax treatment of dividends may affect dividend policy ([Graham and Kumar, 2006](#); [Desai and Jin, 2011](#)). Specifically, when dividends become more favorably taxed, firms have stronger incentives to initiate or increase dividends, even in the absence of new information about their future cash flows or risk.

We use the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003 as an exogenous shock to the tax cost of dividends. Before the reform, dividends received by individuals were generally taxed as ordinary income, with a top marginal federal rate of 38.6% immediately before the Act. JGTRRA, enacted in May 2003, reduced the maximum tax rate on qualified dividends to 15%, placing them under the same preferential rate schedule as long-term capital gains. This reform substantially increased the after-tax value of dividends and therefore created a strong incentive for firms to initiate or increase their payouts. Consistent with this interpretation, [Brown et al. \(2007\)](#) document a sharp increase in dividend activity following the reform and show that executives with greater stock ownership were more likely to increase dividends after the tax cut. Similarly, [Figure 2](#) shows a pronounced increase in dividend initiations and increases following JGTRRA, suggesting that tax considerations

contributed to many of these announcements.⁵

The tax reform has important implications for the risk-signaling content of dividend changes. When an initiation or increase is motivated, at least in part, by a reduction in dividend taxes, it is less likely to reflect management’s private information about the firm’s future prospects. Therefore, the tax-motivated dividend initiations and increases convey weaker information about subsequent firm risk.

To test this prediction, we restrict the analysis to dividend initiations and increases and construct an indicator variable, *Tax Motivated*, that is equal to 1 for dividend changes announced between June 2003 and December 2004. This variable identifies announcements made in the immediate aftermath of JGTRRA, when firms had the strongest incentive to adjust their payout policies in response to the reform. Then, we estimate a triple difference estimation of Equation 5 by including the interactions of *Tax Motivated* in our model.

Table 8 reports the estimation results. Dividend initiations and increases, in general, lead to significant decreases in subsequent implied volatility. In contrast, tax motivated increases are followed by significantly smaller reductions in future risk. For example, column 1 shows that while other dividend initiations and increases are followed by subsequent 0.87 percentage points decline in implied volatility, the tax motivated dividend announcements lead to only 0.46 percentage points decline in implied volatility, representing a 47% decline in the risk-signaling effect of these announcements. Similarly in column 4, we find that tax motivated announcements are followed by 0.61 percentage points decline in the tail risk, representing 45% weaker tail risk information relative to other dividend announcements.⁶ Although these estimates

⁵Beginning in 2013, the American Taxpayer Relief Act of 2012 introduced a 20% qualified-dividend rate for high-income taxpayers, while retaining preferential rates for other taxpayers. Certain high-income taxpayers may also be subject to the 3.8% net investment income tax.

⁶As robustness, we repeat our analysis for the sample of standalone dividend announcements and report our results in Table A.9 in the Online Appendix. Our results are very similar across all specifications.

are economically meaningful, the statistical significance is very weak. Nonetheless, the weaker risk-signaling effect when dividend changes have a salient tax-based motivation lends additional credibility to our principal finding that, when payout decisions are information-driven, dividend changes convey valuable information about future firm risk in the opposite direction.

6 Conclusion

We examine what dividend changes reveal about firm risk. The classic signaling view holds that dividends communicate private information about future cash flows, but empirical support for that prediction has been mixed. We pursue a related interpretation: dividend decisions convey information about the safety of those cash flows. Using option prices around dividend announcements, we find that dividend omissions are followed by substantial increases in implied volatility and downside tail risk, while initiations produce essentially no detectable change in either measure. The risk content of dividend changes is therefore both multidimensional and sharply asymmetric.

Option prices allow us to identify information that the stock-price response alone does not capture. Whereas returns summarize the valuation consequences of an announcement, options reveal changes in the market's assessment of overall price variability, downside tail risk, and the premium investors demand for bearing variance risk. The asymmetry we document parallels the longstanding finding that negative dividend news moves stock prices more than positive news, but the two responses are largely distinct. Across individual announcements, the magnitude of the price reaction is largely unrelated to the change in option-implied risk. The option market thus reveals a separate dimension of the dividend signal.

Several findings reinforce this interpretation. The omission effects strengthen

when we exclude announcements accompanied by earnings news, suggesting that concurrent earnings releases do not explain the risk response. The signal also varies with the firm's financial condition. Omissions by firms with lower cash holdings, lower cash flows, and higher leverage carry significantly stronger risk signals, consistent with greater concern when firms have fewer resources to absorb adverse shocks. Market conditions matter as well. Omissions during the COVID-19 pandemic are followed by the largest increases in implied volatility and the sharpest steepening of the implied volatility slope.

References

- An, Byeong-Je, Andrew Ang, Turan G. Bali, and Nusret Cakici**, “The Joint Cross Section of Stocks and Options,” *Journal of Finance*, 2014, *69* (5), 2279–2337.
- Bali, Turan G. and Armen Hovakimian**, “Volatility Spreads and Expected Stock Returns,” *Management Science*, 2009, *55* (11), 1797–1812.
- , **Nusret Cakici, and Robert F. Whitelaw**, “Maxing Out: Stocks as Lotteries and the Cross-Section of Expected Returns,” *Journal of Financial Economics*, 2011, *99* (2), 427–446.
- Barraclough, Kathryn, David T. Robinson, Tom Smith, and Robert E. Whaley**, “Using Option Prices to Infer Overpayments and Synergies in M&A Transactions,” *Review of Financial Studies*, 2013, *26* (3), 695–722.
- Benartzi, Shlomo, Roni Michaely, and Richard Thaler**, “Do Changes in Dividends Signal the Future or the Past?,” *Journal of Finance*, 1997, *52* (3), 1007–1034.
- Bhattacharya, Sudipto**, “Imperfect Information, Dividend Policy, and “The Bird in the Hand” Fallacy,” *Bell Journal of Economics*, 1979, *10* (1), 259–270.
- Bollerslev, Tim and Viktor Todorov**, “Tails, Fears, and Risk Premia,” *Journal of Finance*, 2011, *66* (6), 2165–2211.
- , **George Tauchen, and Hao Zhou**, “Expected Stock Returns and Variance Risk Premia,” *Review of Financial Studies*, 2009, *22* (11), 4463–4492.
- Brav, Alon, John R. Graham, Campbell R. Harvey, and Roni Michaely**, “Payout Policy in the 21st Century,” *Journal of Financial Economics*, 2005, *77* (3), 483–527.
- , **John R Graham, Campbell R Harvey, and Roni Michaely**, “Payout policy in the 21st century,” *Journal of financial economics*, 2005, *77* (3), 483–527.
- Brown, Jeffrey R, Nellie Liang, and Scott Weisbenner**, “Executive financial incentives and payout policy: Firm responses to the 2003 dividend tax cut,” *The Journal of Finance*, 2007, *62* (4), 1935–1965.
- Carr, Peter and Liuren Wu**, “Variance Risk Premiums,” *Review of Financial Studies*, 2009, *22* (3), 1311–1341.
- Cejnek, Georg, Otto Randl, and Josef Zechner**, “The COVID-19 pandemic and corporate dividend policy,” *Journal of Financial and Quantitative Analysis*, 2021, *56* (7), 2389–2410.
- Coval, Joshua D. and Tyler Shumway**, “Expected Option Returns,” *Journal of Finance*, 2001, *56* (3), 983–1009.

- Cremers, Martijn and David Weinbaum**, “Deviations from Put-Call Parity and Stock Return Predictability,” *Journal of Financial and Quantitative Analysis*, 2010, *45* (2), 335–367.
- DeAngelo, Harry and Linda DeAngelo**, “Dividend policy and financial distress: An empirical investigation of troubled NYSE firms,” *The Journal of finance*, 1990, *45* (5), 1415–1431.
- Desai, Mihir A and Li Jin**, “Institutional tax clienteles and payout policy,” *Journal of financial economics*, 2011, *100* (1), 68–84.
- Ding, Wenzhi, Ross Levine, Chen Lin, and Wensi Xie**, “Corporate immunity to the COVID-19 pandemic,” *Journal of financial economics*, 2021, *141* (2), 802–830.
- Drechsler, Itamar and Amir Yaron**, “What’s Vol Got to Do with It?,” *Review of Financial Studies*, 2011, *24* (1), 1–45.
- Dubinsky, Andrew, Michael Johannes, Andreas Kaeck, and Norman J. Seeger**, “Option Pricing of Earnings Announcement Risks,” *Review of Financial Studies*, 2019, *32* (2), 646–687.
- Graham, John R and Alok Kumar**, “Do dividend clienteles exist? Evidence on dividend preferences of retail investors,” *The journal of finance*, 2006, *61* (3), 1305–1336.
- Grullon, Gustavo, Roni Michaely, and Bhaskaran Swaminathan**, “Are Dividend Changes a Sign of Firm Maturity?,” *Journal of Business*, 2002, *75* (3), 387–424.
- , – , **Shlomo Benartzi, and Richard H. Thaler**, “Dividend Changes Do Not Signal Changes in Future Profitability,” *Journal of Business*, 2005, *78* (5), 1659–1682.
- Healy, Paul M. and Krishna G. Palepu**, “Earnings Information Conveyed by Dividend Initiations and Omissions,” *Journal of Financial Economics*, 1988, *21* (2), 149–175.
- John, Kose and Joseph Williams**, “Dividends, Dilution, and Taxes: A Signalling Equilibrium,” *Journal of Finance*, 1985, *40* (4), 1053–1070.
- Kelly, Bryan and Hao Jiang**, “Tail Risk and Asset Prices,” *Review of Financial Studies*, 2014, *27* (10), 2841–2871.
- , **Ľuboš Pástor, and Pietro Veronesi**, “The Price of Political Uncertainty: Theory and Evidence from the Option Market,” *Journal of Finance*, 2016, *71* (5), 2417–2480.

- Lintner, John**, “Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes,” *American Economic Review*, 1956, *46* (2), 97–113.
- Merton, Robert C.**, “On the Pricing of Corporate Debt: The Risk Structure of Interest Rates,” *Journal of Finance*, 1974, *29* (2), 449–470.
- Michaely, Roni, Richard H. Thaler, and Kent L. Womack**, “Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift?,” *Journal of Finance*, 1995, *50* (2), 573–608.
- , **Stefano Rossi, and Michael Weber**, “Signaling Safety,” *Journal of Financial Economics*, 2021, *139* (2), 405–427.
- Miller, Merton H. and Kevin Rock**, “Dividend Policy under Asymmetric Information,” *Journal of Finance*, 1985, *40* (4), 1031–1051.
- Pagano, Marco, Christian Wagner, and Josef Zechner**, “Disaster resilience and asset prices,” *Journal of Financial Economics*, 2023, *150* (2), 103712.
- Patell, James M. and Mark A. Wolfson**, “Anticipated Information Releases Reflected in Call Option Prices,” *Journal of Accounting and Economics*, 1979, *1* (2), 117–140.
- **and —**, “The Ex Ante and Ex Post Price Effects of Quarterly Earnings Announcements Reflected in Options and Stock Prices,” *Journal of Accounting Research*, 1981, *19* (2), 434–458.

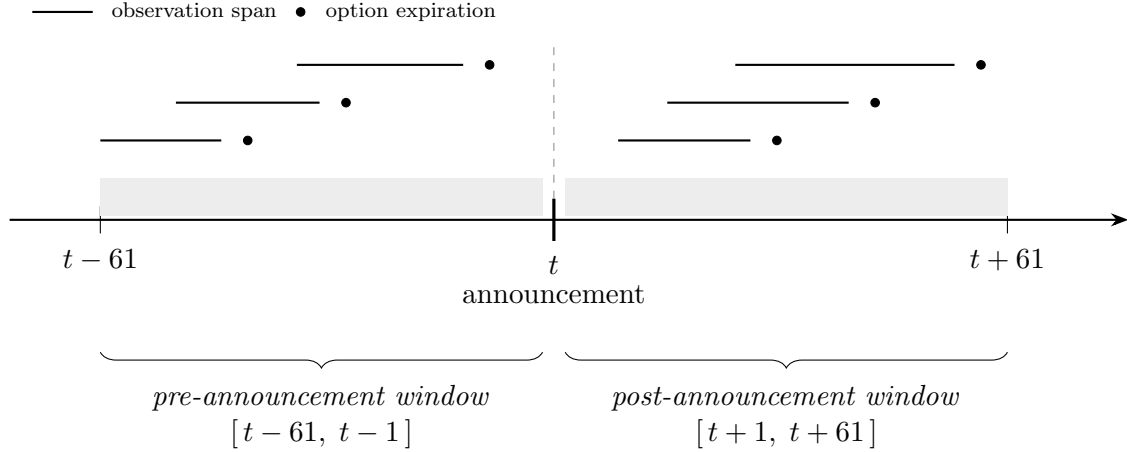


Figure 1: Timing of Selected Options Around a Dividend Announcement

This figure illustrates the fixed-window selection of options around a representative dividend announcement at date t . We pool all eligible options observed in the pre-announcement window $[t - 61, t - 1]$ and the post-announcement window $[t + 1, t + 61]$. pre-announcement-window observations come from options that expire before the announcement, and post-announcement-window observations come from options that expire fewer than 60 calendar days after it, which keeps the two sides at comparable, short maturities. Each option is shown as a horizontal segment spanning the days on which it is observed, ending at its expiration (filled dot). Every daily observation is required to fall at least five trading days before that option's own expiration, so the observation span stops short of the dot. For each side we average the implied volatility, or estimate the implied volatility slope, across all pooled daily observations.

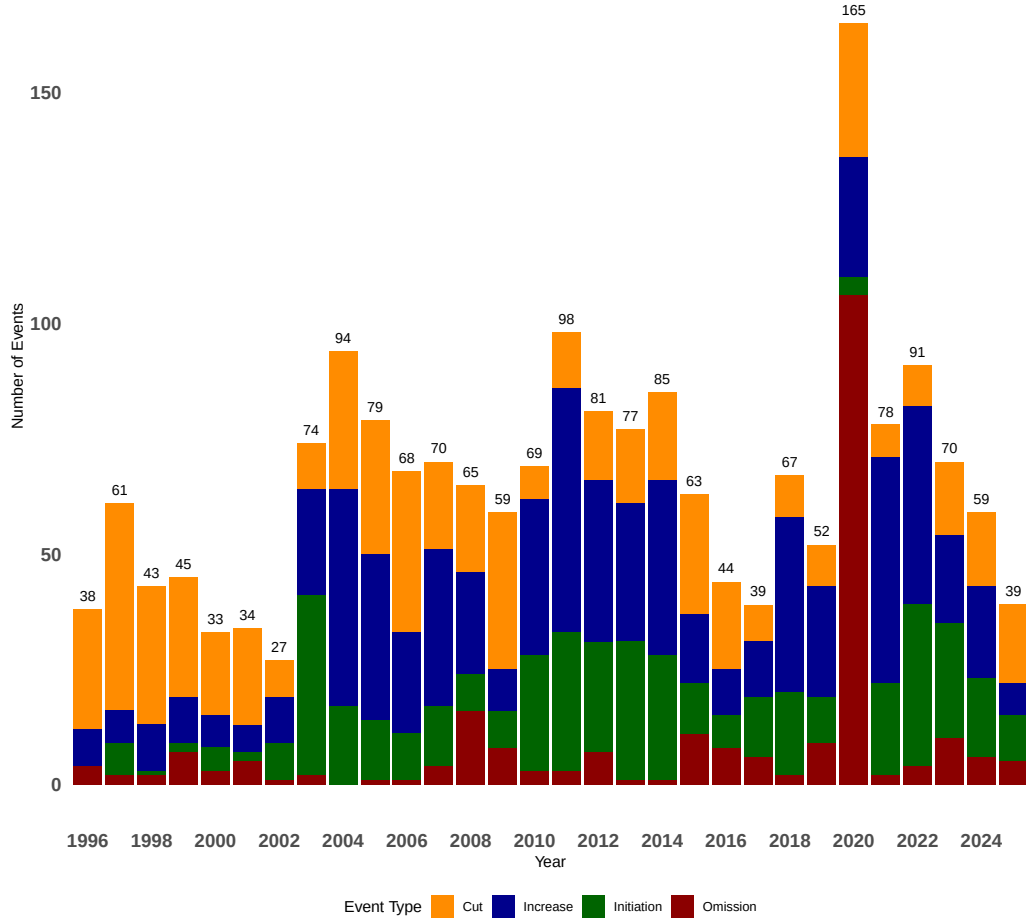


Figure 2: Number of Dividend Events In Each Year

This figure shows the number of dividend events in each year with sufficient information to be included in our sample. Dividend events are classified as *Initiation*, in which the firm announces a dividend after eight quarters of no dividend payments, *Omission*, in which the firm announces suspending its dividend after eight quarters of dividend payments, *Increase*, in which the firm announces a dividend increase of at least 12.5%, *Cut*, in which the firm announces a dividend decrease of at least 12.5%. A dividend event must have at least three at the money options with positive open interest and volume during the event window to be included in the sample.

Table 1: Descriptive Statistics

This table reports the number of events, mean, median, and standard deviation of firm characteristics at the time of dividend announcements for dividend events that are included in the sample and events that are excluded from the sample. Firm characteristics are defined in [Appendix A:](#). Panel A reports firm characteristics for dividend omissions and cuts. *Omission* is defined as events in which the firm announces suspending its dividend after eight quarters of dividend payments. *Cut* is defined as events in which the firm announces a dividend decrease of at least 12.5%. Panel B reports firm characteristics for dividend initiations and increases. *Initiation* is defined as events in which firm announces a dividend after eight quarters of no dividend payments. *Increase* is defined as events in which the firm announces a dividend increase of at least 12.5%.

Panel A: Dividend Omissions and Cuts:				
Variable	Obs.	Mean	Median	Std. Dev.
Total Assets	802	13,053	5,201	20,989
Market Cap.	800	13,930	4,166	23,954
Age (Years)	802	34	28	22
Cash to Asset Ratio	802	0.1	0.06	0.11
Market to Book Ratio	799	2.01	1.6	1.28
Book Leverage	801	0.29	0.27	0.19
Free Cash Flow to Asset Ratio	799	0.08	0.07	0.09
Coincide With Earnings	802	0.37	0	0.48
Panel B: Dividend Initiations and Increases:				
Variable	Obs.	Mean	Median	Std. Dev.
Total Assets	1,100	10,551	3,703	18,754
Market Cap.	1,094	11,292	3,888	20,413
Age (Years)	1,100	24.08	19	19.34
Cash to Asset Ratio	1,100	0.15	0.1	0.15
Market to Book Ratio	1,094	2.05	1.63	1.25
Book Leverage	1,095	0.26	0.23	0.2
Free Cash Flow to Asset Ratio	1,095	0.1	0.1	0.09
Coincide With Earnings	1,100	0.46	0	0.5

Table 2: Implied Volatility Around Dividend Announcements

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) on dividend announcements in Equation 5. IV is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. t -statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

Panel A: All dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	28.170*** (33.677)	43.326*** (22.029)	22.092*** (29.886)	21.831*** (54.991)	23.417*** (33.721)	20.866*** (43.426)
Post	-1.130*** (-3.223)	-2.339** (-2.317)	-0.646** (-2.242)	0.281* (1.747)	0.016 (0.072)	0.442** (1.993)
Treated $\times$ Post	5.112*** (7.402)	13.484*** (6.768)	1.754*** (3.489)	-0.827*** (-3.812)	-0.909** (-2.255)	-0.777*** (-3.088)
Observations	3,172	908	2,264	4,272	1,616	2,656
Unique events	793	227	566	1,068	404	664
Adjusted R ²	0.612	0.604	0.659	0.715	0.712	0.712
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry
Panel B: Standalone dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	27.508*** (26.097)	44.011*** (16.126)	21.707*** (24.107)	22.121*** (40.608)	24.696*** (23.179)	20.800*** (33.602)
Post	-0.326 (-0.757)	-0.167 (-0.121)	-0.382 (-1.115)	0.247 (1.131)	-0.146 (-0.463)	0.448 (1.540)
Treated $\times$ Post	6.501*** (6.999)	18.822*** (6.754)	2.171*** (3.140)	-0.915*** (-2.704)	-0.573 (-0.817)	-1.091*** (-2.923)
Observations	1,984	516	1,468	2,312	784	1,528
Unique events	496	129	367	578	196	382
Adjusted R ²	0.607	0.611	0.648	0.709	0.687	0.717
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 3: Implied Volatility Slope Around Dividend Announcements

This table reports the difference-in-differences estimation from regressions of implied volatility Slope (Slope) on dividend announcements in Equation 6. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t*-statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

Panel A: All dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	12.057*** (6.259)	25.044*** (5.258)	6.475*** (3.545)	2.948*** (3.897)	4.647*** (3.719)	1.990** (2.075)
Post	2.043*** (4.705)	6.716*** (6.376)	0.035 (0.090)	0.448* (1.808)	0.153 (0.376)	0.615* (1.943)
Treated $\times$ Post	5.361** (2.116)	19.522*** (2.977)	-0.725 (-0.316)	-1.288 (-1.564)	-1.855 (-1.373)	-0.968 (-0.921)
Observations	1,996	600	1,396	2,596	936	1,660
Unique events	499	150	349	649	234	415
Adjusted R ²	0.155	0.132	0.145	0.168	0.163	0.149
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry
Panel B: Standalone dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	7.728*** (3.376)	18.011*** (2.694)	3.614* (1.958)	3.171*** (3.051)	5.468*** (2.699)	2.067* (1.700)
Post	2.780*** (4.429)	10.616*** (7.344)	-0.354 (-0.643)	0.371 (1.123)	-0.380 (-0.753)	0.732* (1.703)
Treated $\times$ Post	9.632*** (2.757)	31.907*** (3.345)	0.722 (0.237)	-1.360 (-1.268)	-2.639 (-1.377)	-0.745 (-0.565)
Observations	1,232	352	880	1,404	456	948
Unique events	308	88	220	351	114	237
Adjusted R ²	0.089	0.089	0.078	0.195	0.184	0.165
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 4: Implied Volatility & Firm Characteristics

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) on dividend announcements using a variation of Equation 5 that includes the interactions of firms characteristics. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *High Cash* is an indicator variable equal to 1 if the firm's ratio of cash to assets is above the sample median. *High FCF* is an indicator variable equal to 1 if the firm's ratio of free cash flows to assets is above the sample median. *High Leverage* is an indicator variable equal to 1 if the firm's leverage ratio is above the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	Omissions & Cuts			Initiations & Increases		
	1	2	3	4	5	6
Treated	27.405*** (22.968)	35.846*** (26.602)	23.398*** (25.163)	21.270*** (37.213)	22.391*** (39.042)	22.133*** (40.891)
Post	-1.238*** (-2.627)	-1.618*** (-2.693)	-0.214 (-0.546)	0.263 (1.154)	0.498** (2.097)	0.172 (0.777)
Treated × Post	6.723*** (6.350)	7.344*** (6.251)	2.725*** (3.918)	-0.682** (-2.313)	-0.889*** (-2.771)	-1.112*** (-3.415)
Treated × High Cash	1.524 (0.911)			1.127 (1.420)		
Post × High Cash	0.214 (0.304)			0.035 (0.110)		
Treated × Post × High Cash	-3.210** (-2.329)			-0.291 (-0.670)		
Treated × High FCF		-15.293*** (-9.634)			-1.167 (-1.467)	
Post × High FCF		0.982 (1.396)			-0.429 (-1.333)	
Treated × Post × High FCF		-4.516*** (-3.282)			0.122 (0.279)	
Treated × High Leverage			9.641*** (5.880)			-0.568 (-0.713)
Post × High Leverage			-1.836*** (-2.622)			0.209 (0.648)
Treated × Post × High Leverage			4.783*** (3.479)			0.546 (1.258)
Observations	3,172	3,160	3,168	4,272	4,252	4,256
Unique events	793	790	792	1,068	1,063	1,064
Adjusted R ²	0.612	0.645	0.628	0.715	0.715	0.715
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 5: Implied Volatility Slope & Firm Characteristics

This table reports the difference-in-differences estimation from regressions of implied volatility Slope (Slope) on dividend announcements using a variation of Equation 6 that includes the interactions of firms characteristics. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *High Cash* is an indicator variable equal to 1 if the firm's ratio of cash to assets is above the sample median. *High FCF* is an indicator variable equal to 1 if the firm's ratio of free cash flows to assets is above the sample median. *High Leverage* is an indicator variable equal to 1 if the firm's leverage ratio is above the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t*-statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	Omissions & Cuts			Initiations & Increases		
	1	2	3	4	5	6
Treated	12.617*** (4.494)	21.033*** (6.940)	5.151** (2.159)	2.427** (2.361)	2.699** (2.553)	2.515** (2.281)
Post	1.666** (2.545)	2.730*** (4.097)	1.709*** (3.057)	0.543 (1.593)	0.619* (1.816)	0.459 (1.224)
Treated $\times$ Post	7.312** (1.995)	3.203 (0.801)	1.425 (0.486)	-0.167 (-0.129)	-1.903 (-1.619)	-1.020 (-0.814)
Treated $\times$ High Cash	-1.009 (-0.262)			0.972 (0.647)		
Post $\times$ High Cash	0.680 (0.778)			-0.177 (-0.358)		
Treated $\times$ Post $\times$ High Cash	-3.514 (-0.694)			-2.091 (-1.255)		
Treated $\times$ High FCF		-18.671*** (-5.012)			0.487 (0.320)	
Post $\times$ High FCF		-1.398 (-1.619)			-0.335 (-0.673)	
Treated $\times$ Post $\times$ High FCF		-4.369 (0.868)			1.241 (0.749)	
Treated $\times$ High Leverage			12.955*** (3.450)			0.924 (0.607)
Post $\times$ High Leverage			0.627 (0.731)			0.013 (0.026)
Treated $\times$ Post $\times$ High Leverage			7.384 (1.491)			-0.764 (-0.464)
Observations	1,996	1,984	1,996	2,596	2,580	2,580
Unique events	499	496	499	649	645	645
Adjusted R ²	0.154	0.172	0.175	0.167	0.167	0.168
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 6: Omissions & Cuts After Long Dividend History

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) and implied volatility Slope (Slope) on dividend announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Long stream* is an indicator variable equal to 1 if the firm's stream of uninterrupted dividend payments preceding the dividend cut/omission is longer than the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – *statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Omissions & Cuts	Omissions	Cuts	Omissions & Cuts	Omissions	Cuts
	1	2	3	4	5	6
Treated	27.414*** (23.996)	44.585*** (14.987)	21.361*** (23.135)	12.385*** (4.693)	34.802*** (5.272)	3.188 (1.418)
Post	-0.541 (-1.114)	-1.307 (-0.819)	-0.271 (-0.759)	1.452** (2.378)	4.582*** (3.270)	0.168 (0.268)
Treated $\times$ Post	3.271*** (3.786)	9.012*** (3.030)	1.247** (2.452)	3.128 (0.957)	5.219 (0.543)	2.270 (0.885)
Treated $\times$ Long Stream	1.522 (0.909)	-2.323 (-0.586)	1.527 (1.024)	-0.586 (-0.154)	-17.019* (-1.822)	5.944* (1.674)
Post $\times$ Long Stream	-1.186* (-1.692)	-1.905 (-0.930)	-0.782 (-1.346)	1.057 (1.226)	3.722* (1.817)	-0.241 (-0.301)
Treated $\times$ Post $\times$ Long Stream	3.705*** (2.690)	8.253** (2.075)	1.059 (1.031)	3.995 (0.806)	24.947* (1.917)	-5.416 (-1.226)
Observations	3,172	908	2,264	1,996	600	1,396
Unique events	793	227	566	499	150	349
Adjusted R ²	0.613	0.604	0.660	0.154	0.144	0.146
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 7: Omissions & Cuts During The COVID-19 Pandemic

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) and implied volatility Slope (Slope) on dividend announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Covid* is an indicator variable equal to 1 for dividend cuts/omissions announced in 2020. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – *statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Omissions & Cuts	Omissions	Cuts	Omissions & Cuts	Omissions	Cuts
	1	2	3	4	5	6
Treated	25.035*** (33.157)	44.150*** (19.438)	20.601*** (32.395)	7.479*** (5.717)	26.534*** (5.424)	3.446*** (3.122)
Post	0.020 (0.092)	0.377 (0.566)	-0.063 (-0.283)	0.214 (0.577)	0.763 (0.743)	0.098 (0.246)
Treated $\times$ Post	3.172*** (5.971)	8.818*** (3.948)	1.863*** (4.734)	0.844 (0.442)	5.390 (0.802)	-0.118 (-0.064)
Treated $\times$ Covid	19.277*** (6.263)	-1.835 (-0.450)	31.250*** (4.693)	21.966*** (2.865)	-2.758 (-0.300)	45.963** (2.198)
Post $\times$ Covid	-7.072*** (-4.007)	-6.045*** (-2.809)	-12.220*** (-3.600)	8.776*** (6.378)	11.024*** (6.012)	-0.957 (-0.512)
Treated $\times$ Post $\times$ Covid	11.925*** (3.789)	10.386** (2.548)	-2.278 (-0.324)	21.674** (2.219)	26.171** (2.093)	-9.210 (-0.402)
Observations	3,172	908	2,264	1,996	600	1,396
Unique events	793	227	566	499	150	349
Adjusted R ²	0.651	0.605	0.697	0.228	0.163	0.200
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table 8: Initiations & Increases After the 2003 JGTRRA

This table reports the difference-in-differences estimation from regression of implied volatility (IV) and implied volatility Slope (Slope) on dividend announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Tax Motivated* is an indicator variable equal to 1 for dividend increases/initiations announced between June 2003 and December 200, following the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA). The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – *statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Initiations & Increases	Initiations	Increases	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	22.204*** (51.097)	23.912*** (30.992)	21.197*** (40.625)	2.858*** (3.600)	4.658*** (3.582)	1.889* (1.870)
Post	0.463*** (2.618)	0.174 (0.707)	0.633*** (2.614)	0.532** (2.014)	0.215 (0.482)	0.703** (2.116)
Treated $\times$ Post	-0.873*** (-3.688)	-0.900** (-2.012)	-0.857*** (-3.148)	-1.343 (-1.550)	-2.078 (-1.449)	-0.948 (-0.861)
Treated $\times$ Tax Motivated	-3.349*** (-3.748)	-3.844** (-2.577)	-3.283*** (-2.984)	1.194 (0.466)	-0.106 (-0.023)	1.684 (0.660)
Post $\times$ Tax Motivated	-1.631*** (-4.935)	-1.231** (-2.544)	-1.888*** (-4.186)	-1.107* (-1.780)	-0.606 (-0.708)	-1.455 (-1.573)
Treated $\times$ Post $\times$ Tax Motivated	0.412 (0.770)	-0.072 (-0.078)	0.793 (1.242)	0.736 (0.273)	2.172 (0.504)	-0.334 (-0.099)
Observations	4,272	1,616	2,656	2,596	936	1,660
Unique events	1,068	404	664	649	234	415
Adjusted R ²	0.717	0.714	0.714	0.167	0.160	0.147
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Appendix A: Variable Definitions

IV	Average implied volatility across all daily observations of eligible options in pre- and post-announcements.
Slope	The slope estimate of a regression of implied volatility on delta (δ) across all daily observations of eligible put options in pre- and post-announcements.
Total Assets	Total assets at the last fiscal year end before the dividend announcement.
Market Cap.	The number of shares outstanding times the stock closing price at the last fiscal year end before the dividend announcement.
Age (Years)	The number years since the firm's founding.
Cash	Total cash and marketable securities scaled by total assets at the last fiscal year end before the dividend announcement.
High Cash	An indicator variable equal to 1 if the firm's cash ratio is above the sample median at dividend announcement.
Market to Book Ratio	Market value of equity scaled by book value of equity at the last fiscal year end before the dividend announcement.
Book Leverage	Book leverage ratio at the last fiscal year end before the dividend announcement.
High Leverage	An indicator variable equal to 1 if the firm's book leverage is above the sample median at dividend announcement.
Free Cash Flow	Free cash flows scaled by total assets at the last fiscal year end before the dividend announcement.
High FCF	An indicator variable equal to 1 if the firm's free cash flow is above the sample median at dividend announcement.
Long Stream	An indicator variable equal to 1 if the firm's history of uninterrupted dividend payments is longer than the sample median at dividend announcement.
Covid	An indicator variable equal to 1 for dividend announcement during 2020.
Tax Motivated	An indicator variable equal to 1 for dividend announcement between June 2003 and December 2004.
Coincide With Earnings	An indicator variable taking value of 1 if the dividend announcement is within 3 days of an earnings announcement.

Online Appendix: Additional Analysis

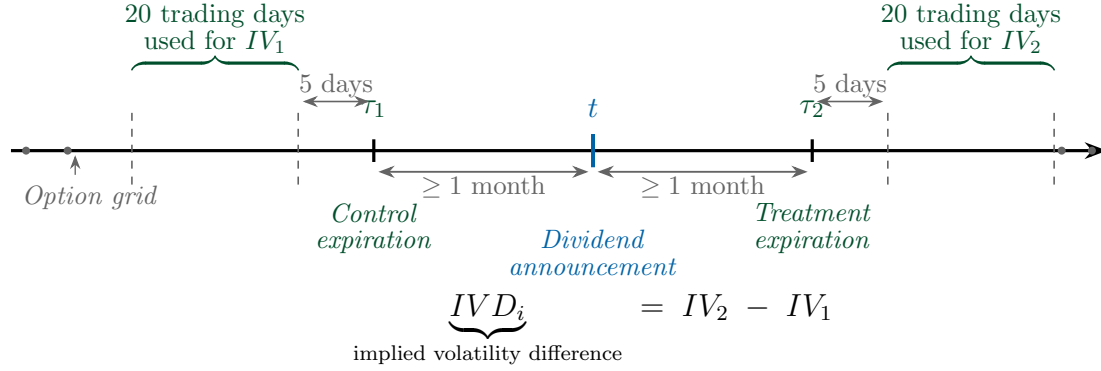


Figure A.1: Timing of Selected Options Around a Dividend Announcement

Timeline of eligible option selection around a dividend announcement at date t . Control options expire at $\tau_1 < t$ and treatment options expire at $\tau_2 > t$, where both τ_1 and τ_2 lie on the regular monthly option expiration grid and neither is within one month of the announcement. IV_1 and IV_2 are computed as the average daily implied volatility over a 20-trading-day window ending five days prior to each respective expiration date.

Table A.1: Number of Events Throughout Sample Construction

This table reports the attrition rate through the construction of the sample of dividend events. The selection criteria for options are defined in Section 3.1. *Omission* is defined as events in which the firm announces suspending its dividend after eight quarters of dividend payments. *Initiation* is defined as events in which firm announces a dividend after eight quarters of no dividend payments. *Increase* is defined as events in which the firm announces a dividend increase of at least 12.5%. *Cut* is defined as events in which the firm announces a dividend decrease of at least 12.5%. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements.

Panel A: All Dividend Events					
	Omission	Initiation	Increase	Cut	Total
Has Compustat Coverage	671	1,197	2,040	1,577	5,485
Has OptionMetrics Coverage	639	1,105	1,602	1,295	4,641
Has Sufficient Data to Measure IVD	227	405	665	566	1,863
Has Sufficient Data to Measure SlopeD	150	234	415	349	1,148
Panel B: Standalone Dividend Events					
	Omission	Initiation	Increase	Cut	Total
Has Compustat Coverage	357	549	926	813	2,645
Has OptionMetrics Coverage	308	500	838	732	2,378
Has Sufficient Data to Measure IVD	129	197	383	367	1,076
Has Sufficient Data to Measure SlopeD	88	114	237	220	659

Table A.2: Comparison of Means Between Dividend Events In and Out of Sample

This table reports the number of events and mean values of firm characteristics at the time of dividend announcements for dividend events that are included in the sample and events that are excluded from the sample. We report in parentheses a t -statistic of the two means being statistically different. Firm characteristics are defined in [Appendix A:](#). Panel A reports firm characteristics for dividend omissions and cuts. Panel B reports firm characteristics for dividend initiations and increases. *Omission* is defined as events in which the firm announces suspending its dividend after eight quarters of dividend payments. *Initiation* is defined as events in which firm announces a dividend after eight quarters of no dividend payments. *Increase* is defined as events in which the firm announces a dividend increase of at least 12.5%. *Cut* is defined as events in which the firm announces a dividend decrease of at least 12.5%.

Panel A: Omission and Cut Dividend Events						
Variable	In Sample		Out Sample		Difference	t -statistic
	Obs.	Mean	Obs.	Mean		
Total Assets	566	13,959	728	2,044	11,915***	(12.719)
Market Cap.	564	16,648	725	1,999	14,649***	(13.130)
Firm Age	566	35.470	729	25.749	9.721***	(8.222)
Market to Book Ratio	563	2.187	724	1.850	0.337***	(4.750)
Book Leverage	565	0.258	727	0.212	0.046***	(4.758)
Cash Ratio	566	0.098	728	0.101	-0.003	(-0.489)
Free Cash Flow Ratio	564	0.095	725	0.081	0.013***	(2.794)
Panel B: Initiations and Increase Dividend Events						
Variable	In Sample		Out Sample		Difference	t -statistic
	Obs.	Mean	Obs.	Mean		
Total Assets	1070	10677.425	1637	1498.086	9179.338***	(15.530)
Market Cap.	1064	11387.550	1625	1335.233	10052.316***	(15.731)
Firm Age	1070	24.142	1637	19.693	4.449***	(6.300)
Market to Book Ratio	1064	2.055	1624	1.727	0.327***	(6.928)
Book Leverage	1066	0.263	1630	0.195	0.068***	(8.493)
Cash Ratio	1070	0.150	1637	0.157	-0.008	(-1.288)
Free Cash Flow Ratio	1065	0.103	1635	0.089	0.014***	(4.140)

Table A.3: Implied Volatility Around Dividend
Announcements - Alternative Approach

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) on dividend announcements, following the approach in [Kelly et al. \(2016\)](#). *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

Panel A: All dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	26.815*** (28.137)	41.255*** (18.267)	20.736*** (25.323)	21.623*** (44.317)	23.834*** (27.821)	20.306*** (34.559)
Post	0.166 (0.319)	1.802 (1.180)	-0.522 (-1.363)	0.272 (1.202)	0.268 (0.796)	0.275 (0.905)
Treated $\times$ Post	6.280*** (7.397)	14.900*** (6.386)	2.678*** (4.044)	-0.576** (-2.013)	-1.011* (-1.855)	-0.317 (-0.972)
Observations	2,356	696	1,660	3,016	1,126	1,890
Unique events	590	174	416	755	282	473
Adjusted R ²	0.560	0.538	0.627	0.687	0.693	0.676
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry
Panel B: Standalone dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	26.437*** (21.960)	43.077*** (14.021)	20.380*** (19.930)	21.410*** (33.434)	24.888*** (20.474)	19.702*** (26.596)
Post	1.665** (2.587)	6.516*** (3.212)	-0.098 (-0.205)	0.253 (0.806)	0.487 (1.002)	0.138 (0.337)
Treated $\times$ Post	7.103*** (6.349)	18.869*** (5.819)	2.850*** (3.166)	-0.529 (-1.271)	-0.273 (-0.297)	-0.656 (-1.497)
Observations	1,518	404	1,114	1,702	562	1,140
Unique events	380	101	279	426	141	285
Adjusted R ²	0.547	0.553	0.598	0.678	0.664	0.678
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.4: Implied Volatility Slope Around Dividend Announcements - Alternative Approach

This table reports the difference-in-differences estimation from regressions of implied volatility Slope (Slope) on dividend announcements, following the approach in [Kelly et al. \(2016\)](#). *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

Panel A: All dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	6.161*** (2.616)	16.015** (2.362)	1.627 (1.022)	3.855*** (4.063)	4.189*** (2.734)	3.658*** (2.979)
Post	4.281*** (6.832)	10.960*** (8.493)	1.227** (1.991)	-0.264 (-0.650)	0.122 (0.184)	-0.488 (-0.935)
Treated $\times$ Post	11.028*** (3.288)	33.263*** (3.526)	0.916 (0.404)	-3.572*** (-2.848)	-2.685* (-1.758)	-4.086** (-2.278)
Observations	1,366	428	938	1,686	620	1,066
Unique events	342	107	235	422	155	267
Adjusted R ²	0.094	0.090	0.077	0.141	0.158	0.105
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry
Panel B: Standalone dividend events						
	Omissions & Cuts	Omissions	Cuts	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	4.542 (1.518)	11.827 (1.343)	1.237 (0.589)	4.510*** (3.863)	5.212** (2.589)	4.185*** (2.855)
Post	4.879*** (5.778)	14.458*** (9.569)	0.607 (0.747)	-0.032 (-0.065)	-0.219 (-0.323)	0.054 (0.081)
Treated $\times$ Post	13.377*** (3.273)	41.384*** (3.819)	1.000 (0.313)	-3.826*** (-2.794)	-3.155 (-1.460)	-4.137** (-2.334)
Observations	858	264	594	972	308	664
Unique events	215	66	149	243	77	166
Adjusted R ²	0.093	0.145	0.063	0.180	0.142	0.145
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.5: Implied Volatility & Firm Characteristics -
Standalone Events

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) on dividend announcements for the sample of standalone dividends. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *High Cash* is an indicator variable equal to 1 if the firm's ratio of cash to assets is above the sample median. *High FCF* is an indicator variable equal to 1 if the firm's ratio of free cash flows to assets is above the sample median. *High Leverage* is an indicator variable equal to 1 if the firm's leverage ratio is above the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* - statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	Omissions & Cuts			Initiations & Increases		
	1	2	3	4	5	6
Treated	25.931*** (18.180)	35.223*** (19.880)	22.236*** (20.265)	21.221*** (29.516)	21.999*** (30.336)	22.513*** (28.435)
Post	-0.541 (-0.953)	-0.431 (-0.555)	0.005 (0.010)	0.159 (0.515)	0.250 (0.791)	0.203 (0.728)
Treated $\times$ Post	8.197*** (6.031)	9.808*** (6.074)	3.035*** (3.448)	-0.589 (-1.339)	-0.704 (-1.500)	-1.581*** (-3.032)
Treated $\times$ High Cash	3.259 (1.545)			1.898* (1.736)		
Post $\times$ High Cash	0.443 (0.512)			0.185 (0.425)		
Treated $\times$ Post $\times$ High Cash	-3.504* (-1.898)			-0.688 (-1.009)		
Treated $\times$ High FCF		-14.454*** (-6.984)			0.191 (0.173)	
Post $\times$ High FCF		0.198 (0.222)			0.010 (0.023)	
Treated $\times$ Post $\times$ High FCF		-6.286*** (-3.321)			-0.450 (-0.659)	
Treated $\times$ High Leverage			10.506*** (5.141)			-0.727 (-0.664)
Post $\times$ High Leverage			-0.649 (-0.755)			0.091 (0.208)
Treated $\times$ Post $\times$ High Leverage			6.836*** (3.750)			1.317* (1.937)
Observations	1,984	1,980	1,980	2,312	2,292	2,300
Unique events	496	495	495	578	573	575
Adjusted R ²	0.607	0.641	0.630	0.710	0.707	0.709
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.6: Implied Volatility Slope Difference And Firm Characteristics - Standalone Events

This table reports the difference-in-differences estimation from regressions of implied volatility Slope (Slope) on dividend announcements for the sample of standalone dividends. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *High Cash* is an indicator variable equal to 1 if the firm's ratio of cash to assets is above the sample median. *High FCF* is an indicator variable equal to 1 if the firm's ratio of free cash flows to assets is above the sample median. *High Leverage* is an indicator variable equal to 1 if the firm's leverage ratio is above the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t-statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	Omissions & Cuts			Initiations & Increases		
	1	2	3	4	5	6
Treated	7.839*** (2.656)	15.383*** (4.570)	0.641 (0.322)	3.298** (2.388)	1.880 (1.524)	2.150 (1.479)
Post	2.142** (2.379)	4.014*** (4.011)	1.553** (2.001)	0.379 (0.854)	0.330 (0.746)	0.577 (1.253)
Treated $\times$ Post	12.517*** (2.723)	8.612 (1.507)	2.833 (0.701)	-1.043 (-0.687)	-1.138 (-0.815)	-0.336 (-0.220)
Treated $\times$ High Cash	-0.205 (-0.045)			-0.248 (-0.119)		
Post $\times$ High Cash	1.177 (0.938)			-0.015 (-0.023)		
Treated $\times$ Post $\times$ High Cash	-5.321 (-0.771)			-0.622 (-0.290)		
Treated $\times$ High FCF		-14.984*** (-3.318)			2.656 (1.257)	
Post $\times$ High FCF		-2.419* (-1.925)			0.091 (0.136)	
Treated $\times$ Post $\times$ High FCF		-1.914 (0.272)			-0.429 (-0.196)	
Treated $\times$ High Leverage			13.228*** (3.053)			2.113 (1.012)
Post $\times$ High Leverage			2.291* (1.864)			-0.338 (-0.511)
Treated $\times$ Post $\times$ High Leverage			12.691* (1.867)			-2.185 (-1.016)
Observations	1,232	1,228	1,232	1,404	1,388	1,396
Unique events	308	307	308	351	347	349
Adjusted R ²	0.087	0.100	0.121	0.193	0.196	0.196
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.7: Omissions & Cuts After Long Dividend History - Standalone Events

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) and implied volatility slope (slope) on dividend announcements for the sample of standalone dividends. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Long stream* is an indicator variable equal to 1 if the firm's stream of uninterrupted dividend payments preceding the dividend cut/omission is longer than the sample median. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – *statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Omissions & Cuts	Omissions	Cuts	Omissions & Cuts	Omissions	Cuts
	1	2	3	4	5	6
Treated	25.915*** (18.299)	44.134*** (9.974)	20.870*** (18.590)	8.152** (2.441)	33.875*** (3.828)	-0.162 (-0.054)
Post	0.423 (0.728)	2.528 (1.129)	-0.159 (-0.369)	1.400 (1.566)	8.080*** (3.716)	-0.759 (-0.874)
Treated $\times$ Post	3.904*** (3.366)	14.177*** (2.978)	1.059* (1.722)	5.602 (1.285)	5.759 (0.397)	5.552 (1.526)
Treated $\times$ Long Stream	3.197 (1.519)	-0.211 (-0.037)	1.785 (0.978)	-0.739 (-0.161)	-24.929* (-1.973)	6.866* (1.826)
Post $\times$ Long Stream	-1.505* (-1.751)	-4.636 (-1.639)	-0.475 (-0.684)	2.401* (1.932)	3.984 (1.385)	0.736 (0.657)
Treated $\times$ Post $\times$ Long Stream	5.216*** (2.826)	7.990 (1.377)	2.372* (1.654)	7.012 (1.039)	41.090** (2.177)	-8.782 (-1.490)
Observations	1,984	516	1,468	1,232	352	880
Unique events	496	129	367	308	88	220
Adjusted R ²	0.611	0.609	0.649	0.090	0.115	0.079
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.8: Omissions & Cuts During The COVID-19 Pandemic - Standalone Events

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) and implied volatility slope (slope) on dividend announcements for the sample of standalone dividends. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Covid* is an indicator variable equal to 1 for dividend cuts/omissions announced in 2020. The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – statistics are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Omissions & Cuts	Omissions	Cuts	Omissions & Cuts	Omissions	Cuts
	1	2	3	4	5	6
Treated	24.768*** (24.880)	48.596*** (13.294)	20.718*** (25.256)	6.783*** (3.951)	35.539*** (5.481)	2.059 (1.395)
Post	0.077 (0.268)	0.882 (0.847)	-0.060 (-0.205)	-0.056 (-0.104)	1.642 (0.891)	-0.334 (-0.606)
Treated $\times$ Post	2.827*** (4.208)	8.774** (2.559)	1.816*** (3.414)	0.836 (0.290)	2.345 (0.194)	0.588 (0.212)
Treated $\times$ Covid	16.370*** (4.468)	-8.573 (-1.594)	25.911*** (2.841)	4.345 (0.500)	-28.564** (-2.426)	26.315 (1.357)
Post $\times$ Covid	-2.410 (-1.123)	-1.961 (-0.742)	-8.454* (-1.796)	13.036*** (7.722)	14.623*** (6.017)	-0.332 (-0.104)
Treated $\times$ Post $\times$ Covid	21.957*** (5.641)	18.785*** (3.578)	9.290 (0.776)	40.435*** (3.424)	48.175*** (2.722)	2.264 (0.085)
Observations	1,984	516	1,468	1,232	352	880
Unique events	496	129	367	308	88	220
Adjusted R ²	0.662	0.617	0.674	0.190	0.157	0.098
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry

Table A.9: Initiations & Increases After the 2003 JGTRRA - Standalone Events

This table reports the difference-in-differences estimation from regressions of implied volatility (IV) and implied volatility slope (slope) on dividend announcements for the sample of standalone dividends. Standalone events are defined as dividend announcements that do not coincide with a three-day window around earnings announcements. *IV* is measured as the average of all daily implied volatilities from eligible options inside the pre- and post-announcement windows. *Slope* is measured as the slope estimate from a regression of all daily implied volatilities from eligible put options on their delta (δ) inside the pre- and post-announcement windows. *Tax Motivated* is an indicator variable equal to 1 for dividend increases/initiations announced between June 2003 and December 200, following the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA). The model is estimated for dividend omissions, decreases, increases, and initiations separately. For each regression, the total number of observations as well as the number of unique dividend events are reported. The data includes all dividend events with sufficient options data in OptionMetrics from 1995 to 2025. *t* – *statistics* are reported in parentheses. The standard errors are clustered by event. The significance of the coefficient estimates is indicated by * for $p < 0.10$, ** for $p < 0.05$, and *** for $p < 0.01$.

	IV Difference			Slope Difference		
	Initiations & Increases	Initiations	Increases	Initiations & Increases	Initiations	Increases
	1	2	3	4	5	6
Treated	22.434*** (37.132)	25.238*** (21.005)	21.053*** (30.839)	2.803** (2.571)	4.971** (2.373)	1.823 (1.409)
Post	0.440* (1.803)	0.057 (0.164)	0.628* (1.937)	0.427 (1.198)	-0.398 (-0.708)	0.801* (1.753)
Treated $\times$ Post	-1.009*** (-2.692)	-0.502 (-0.632)	-1.259*** (-3.072)	-1.515 (-1.346)	-2.957 (-1.493)	-0.863 (-0.619)
Treated $\times$ jobsact	-2.414* (-1.955)	-3.538 (-1.506)	-2.153 (-1.562)	3.917 (1.090)	3.775 (0.528)	3.209 (0.997)
Post $\times$ jobsact	-1.484*** (-3.355)	-1.326* (-1.722)	-1.523*** (-2.858)	-0.602 (-0.737)	0.142 (0.124)	-0.907 (-0.767)
Treated $\times$ Post $\times$ jobsact	0.722 (0.911)	-0.465 (-0.300)	1.426 (1.628)	1.649 (0.443)	2.416 (0.354)	1.559 (0.383)
Observations	2,312	784	1,528	1,404	456	948
Unique events	578	196	382	351	114	237
Adjusted R ²	0.710	0.687	0.717	0.197	0.183	0.164
Fixed Effects:	Event	Event	Event	Event	Event	Event
	Industry	Industry	Industry	Industry	Industry	Industry