Dissecting Macroeconomic News*

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Abstract

How do macroeconomic events affect the term structure of equity returns? We document that the term structure of equity excess returns is upward sloping on federal fund rate announcement days but not on non-announcement days. The dividend strips respond significantly to macroeconomic news and the strength of the announcement response declines with the maturity of the dividend asset. Our analysis reveals that nonfarm payrolls surprises have the largest impact on the term structure of dividend strips. The cash flow and discount rate channels both contribute to the response of the dividend asset to macroeconomic news.

JEL classification: E43, G10, G14

Keywords: Announcements, Cash Flow, Discount Rates, Options, Dividend Strips

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*We are very grateful to the editor and the referees for very thoughtful and constructive comments that helped improve the paper. We thank James Johnson (MFA Discussant), Alessandro Beber, Michael Brennan, Chris Brooks, Tom Conlon, John Cotter, Dominique Demougin, Wayne Ferson, Gianluigi Giorgioni, Andrey Golubov, Fabian Hollstein, Andy Kim (FMA Discussant), Kenneth Kuttner, Marcel Prokopczuk, Robert Ready (NFA Discussant), Andrew Vivian, Masahiro Watanabe, Mungo Wilson, seminar participants at the 2016 Northern Finance Association (NFA), the 2017 Midwest Finance Association (MFA), the 2017 Financial Management Association (FMA), the University of East Anglia, the University of Reading, and Swansea University for helpful comments and suggestions. We are especially grateful to Ogonna Nneji for his very detailed feedback on the early versions of this project.

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I Introduction

We develop a framework that enables us to address novel questions about the importance of macroeconomic news for equity investors. For example, how do macroeconomic announcements affect equity investors' outlook for the short and long term? Does fundamental news cause market participants to mainly revise their expectations of cash flows or discount rates? Analyzing the extent to which economic news causes investors to revise their expectations for different maturities provides valuable information about the short- and long-run impact of various economic events. Relatedly, investigating the cash flow and the discount rate channels is important in understanding how agents interpret new information. To illustrate this point, consider the news of an unexpected increase in initial jobless claims. This news could signal a decline in future economic activity and thus (i) lower expected cash flows and/or (ii) higher expected discount rates. Evidently, separately analyzing each of these channels is important for the design of effective and timely policy responses.

The usual approach in the event study literature consists in studying the stock market response to specific events (Bernanke and Kuttner, 2005). As such, existing studies do not analyze the impact of fundamental news on the valuations of cash flows expected over shorter horizons. We propose a framework that exploits the information embedded in the term structure of dividend strips. These are financial assets that entitle the holder to the dividends paid by the underlying asset throughout the life of the strip (van Binsbergen et al., 2012). Dividend strips are particularly useful for our study because they are informative about (i) the cash flows and (ii) the discount rates expected over different horizons. Thus, by studying the reaction of dividend strips of different maturities, we are able to recover the term structure of announcement responses.

We make three contributions to the literature. First, we study the term structure of excess returns on announcement and non-announcement days. On non-announcement days, the mean excess return of the dividend asset is significantly positive whereas that of the S&P 500 index is insignificant. This finding indicates a downward sloping term structure of excess returns. Relatedly, the performance of the dividend strips observed on non-announcement days cannot be rationalized by the Capital Asset Pricing Model (CAPM). These findings change on announcement days. For instance, on days when the federal fund rate is announced, the term structure of excess returns slopes upwards and the CAPM is able to explain the performance of the dividend strips. It is therefore apparent that the dynamics of the dividend strips are different on announcement and non-announcement days.

Second, we examine the impact of macroeconomic announcement surprises on the intraday returns of the dividend strips. Our results reveal that macroeconomic news has a significant impact on the dividend assets. In particular, news about the construction spending, the consumer price index, the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, the unemployment rate, and the wholesale inventories significantly moves the dividend assets. The evidence reveals that nonfarm payrolls announcement surprises have the strongest impact on the dividend asset. The strength of the announcement response, measured as the magnitude of the significant slope parameters, declines with the maturity of the dividend strip. We also analyze the response of the S&P 500 index to macroeconomic news and find that, for our sample period, it is not as strong as that of dividend strips. This result indicates that analyzing the term structure of dividend strips can provide additional insights into the implication of fundamental news for equity traders with different investment horizons.

Third, we investigate the economic channels through which fundamental news moves each dividend strip. We present a decomposition that links the change in the dividend strip to revisions in (i) the expected cash flows and (ii) the expected discount rates. This decomposition provides a framework to precisely pin down the main catalyst of the reaction of dividend strips to fundamental news. Regressing each of the two channels on the very same announcement surprises, we find that both the cash flow and discount rate channels contribute to the announcement effect.

Our paper relates to the burgeoning literature on dividend strips summarized in van Binsbergen and Koijen (2017). van Binsbergen et al. (2012) document a downward sloping term structure of dividend strip returns. Goncalves (2018), Gormsen (2018), Aït-Sahalia et al. (2019), Bansal et al. (2019), and Hasler et al. (2019) further study the time variations in the slope of the term structure of dividend strip returns and reach contrasting conclusions. van Binsbergen et al. (2013), Belo et al. (2015), Croce et al. (2015), Hasler and Marfè (2016), Marfè (2016), Marfè (2017), and Ai et al. (2018), among others, study the dynamics of dividend strips and their connections with macro-finance general equilibrium models. Kragt et al. (2018) and Tunaru (2018) model the dynamics of the dividend asset in a reduced form setting. None of these papers empirically study the link between macroeconomic announcements and the dividend strips, the goal of this paper.

We also add to the literature that analyzes the properties of equity returns. Savor and Wilson (2013) and Ai and Bansal (2018) show that U.S. equity investors earn a large component of the market excess returns on macroeconomic announcement days. Lucca and Moench (2015) document that the S&P 500 index exhibits a significantly positive return in the short period leading up to announcements of the U.S. federal fund rate. Brusa et al. (2019) report significantly positive excess returns on international stock markets on days of U.S. federal fund rate announcements. Savor and Wilson (2014) document that, for various U.S. test assets, the CAPM is more accurate on announcement days than on non-announcement days. We complement these studies by focusing on the properties of the term structure of equity returns on announcement and non-announcement days. To the best of our knowledge, we are the first to show that the downward-sloping term structure of equity returns documented in van Binsbergen et al. (2012) arises from non-announcement days of the federal fund rate. This new and important result deepens the puzzle regarding the federal fund rate announcement days and why they are special.

Furthermore, our study contributes to the macro-finance literature. Pearce and Roley (1985), McQueen and Roley (1993), Bernanke and Kuttner (2005), and Boyd et al. (2005), among others, examine the connection between macroeconomic news and the returns on the stock market index. We complement these interesting works by being the first to use the dividend strips to study the impact of macroeconomic announcements on equity assets of shorter maturity. This allows us to investigate whether investors with heterogeneous horizons react to the same news in a similar fashion. Moreover, we present a decomposition of the change in the dividend strips into revisions in (i) the expected cash flows and (ii) the expected discount rates. This decomposition allows us to investigate the mechanism through which economic news moves the dividend strips.

The remainder of this paper proceeds as follows. Section II introduces our data and methodology. Section III presents our main results. Finally, Section IV concludes.

II Data and Methodology

This section starts by presenting the dataset used for our empirical analysis. It then explains how to recover the term structure of dividend strips from index option prices.

A. Data

We obtain intraday option data on the S&P 500 index from the Chicago Board of Option Exchange (CBOE). This dataset starts in 2004 and contains option quotes available in granularity down to one minute bars. Our sample period extends from

January 01, 2004 to April 29, 2016.[1] S&P 500 index options are of the European type and constitute one of the most active equity options market. The dataset includes both standard option contracts and long term equity anticipation securities (LEAPS). Standard option contracts have maturity up to 1 year whereas LEAPS have a longer time to maturity. At each point in time, we have information regarding several variables such as the best bid and ask option prices, the expiry date, the strike price, and the underlying price.

As is standard in the option pricing literature, we process the dataset as follows. First, we expunge quotes with missing bid and/or ask option prices. Relatedly, we also discard entries associated with a quoted bid or ask size equal to zero. Second, we filter out observations where the bid price is higher than the ask price. Third, we discard all entries where the mid-quote option price is lower than five times the minimum tick size of 0.05 index points, as defined by the exchange, to avoid stale option prices.[2]

[1] One may wonder whether it might be preferable to use the end-of-day dataset that is available from OptionMetrics for the time period from 1996 onwards. By taking this step, it would be possible to extend the sample period by 8 years. In an earlier version of the paper, we followed this approach. However, the interpolated dividend strips were noisy. The noise may be due to the wildcard feature of the derivatives market. To be more specific, the derivatives market closes 15 minutes after the underlying market closes, introducing thus asynchronous observation biases in the end-of-day dataset of OptionMetrics. Because the estimation of the dividend strip relies on no-arbitrage relationships, it is important to ensure that all relevant quantities are contemporaneously observed. If the dividend strip prices are noisy and this noise is correlated with macroeconomic surprises, the results may be biased. To avoid this issue, we use intraday data to obtain synchronous quotes of the option price and its underlying price. We thank an anonymous reviewer for this valuable suggestion.

[2] We follow the common practice in the derivatives pricing literature to take the mid-quote price, i.e. the mean of the best bid and ask prices, as representative of the option price. See Bakshi et al. (1997, 2000) and Driessen et al. (2009) for example.

B. Methodology

Our approach broadly mirrors that of van Binsbergen et al. (2012) who build on the Put–Call parity (Stoll, 1969). This no-arbitrage relationship posits that a portfolio combining a long European Call option and a short European Put option of the same strike price and maturity is equivalent to a portfolio that includes a long position in the underlying stock, a short position in the dividend strip of corresponding maturity and a short position in the zero-coupon bond paying the strike price at maturity. Notationally, we can express the Put–Call parity as follows:

$$C^{(\tau)}(K_i) - P^{(\tau)}(K_i) = S - STRIP_i^{(\tau)} - K_i \times e^{-rf^{(\tau)} \times \tau} \qquad (1)$$

where $C^{(\tau)}(K_i)$ denotes the current price of the European Call option with exercise price K_i and time to maturity τ days. $P^{(\tau)}(K_i)$ is the current market price of the European Put option with exercise price K_i and time to maturity τ. S denotes the current market price of the underlying security, i.e. the spot price. $STRIP_i^{(\tau)}$ represents the price of the dividend strip of time to maturity τ days implied by the options with strike price K_i. $rf^{(\tau)}$ is the continuously compounded τ-period interest rate expressed on a per day, rather than per annum, basis. Similar to Hollstein and Prokopczuk (2016), among others, we use the term structure of interest rates provided by OptionMetrics (Ivy curve).

Re-arranging Equation (1), we solve for the dividend strip price ($STRIP_i^{(\tau)}$)

implied by the pair of Put and Call options of strike K_i and time to maturity τ:

$$STRIP_i^{(\tau)} = S - C^{(\tau)}(K_i) + P^{(\tau)}(K_i) - K_i \times e^{-rf^{(\tau)} \times \tau} \tag{2}$$

At each point in time, we find the unique expiration dates of the option contracts. For each of these maturities, we identify all pairs of Put and Call options that share the same strike price. Using the option data, the spot index and the interest rate of corresponding maturity, we solve for the dividend strip as described by Equation (2). We do this for each strike price and compute the median price of all the dividend strips associated with the same expiration date (van Binsbergen et al., 2012).[3] Following the steps above for each maturity observed at a given point in time, we obtain the term structure of dividend strips. We then implement a linear interpolation (across maturities) to obtain the price of the dividend strips expiring in 180, 360, 540, and 720 days.[4] In the data, we notice that there are very few options of maturity higher than 720 days before the year 2006. As a result, we are not able to interpolate the dividend strip of maturity 720 days, making our panel of dividend strips unbalanced. To remedy this problem, we discard the first 2 years of data and focus our analysis on the sample period from January 02, 2006 until April

[3]We use a delta-based threshold in order to check whether our results are sensitive to the inclusion of deep out-of-the-money or deep in-the-money options. Section III.*D.1* shows that the main results are robust to the choice of the moneyness range. We thank an anonymous reviewer for suggesting this robustness check.

[4]A concern may be that the method of interpolation introduces noise in the price of the dividend strips. In order to alleviate this concern, we also construct tradeable (as opposed to interpolated) dividend strips. For instance, suppose we are interested in computing the price of the dividend strip expiring in 180 days. The tradeable approach consists in using the price of the dividend strip with time to maturity that is closest to 180 days. We use the tradable dividend strip price series and repeat our main analyses. We report these results in Section III.*D.2*. Our main conclusions are qualitatively similar, irrespective of whether we use interpolated strips or tradeable strips. We thank an anonymous reviewer for this suggestion.

29, 2016.[5]

Figure 1 depicts the daily time series of the dividend strips of constant time to maturity 180, 360, 540, and 720 days.[6] It updates and extends (to the daily frequency) Figure 1 in van Binsbergen et al. (2012). Overall, we can see that the dividend strips have realistic dynamics. They rise during good economic times and fall during recessions. Furthermore, the dividend strips exhibit a strong factor structure as evidenced by the comovement of the dividend assets of different maturities.

III Empirical Results

This section presents our main empirical results. We first compare the properties of the term structure of excess returns observed on (1) announcement and (2) non-announcement days. Next, we analyze the response of the term structure of dividend strip returns to announcement surprises. Then, we decompose the announcement responses in terms of the cash flow and the discount rate channels. Finally, we conduct several robustness checks.

[5]An alternative approach would be to extrapolate the dividend strip of maturity 720 days. We do not pursue this method in order to guard ourselves against the criticism that our results may be driven by the noise arising from the extrapolation.

[6]We sample the daily option prices at 4:00 PM Eastern Time (ET). By taking this step, we avoid the problem of asynchronous observations since we are recording the option prices exactly at the time when the underlying market closes.

A. Announcement Days and the Term Structure of Risk Premia

We start by investigating whether the summary statistics of the term structure of excess returns differ between announcement and non-announcement days. Announcement days are days when important U.S. macroeconomic news is released to the public. Table 1 lists the 15 U.S. economic series that we examine and source from Bloomberg. These macroeconomic variables have been analyzed in previous works (Flannery and Protopapadakis, 2002; Bernanke and Kuttner, 2005).

We compute the excess return (er) on an asset as the difference between the asset's total return and the short-term interest rate (rf). In particular, we compute the (daily) excess return on the S&P 500 index (m) as follows:

$$er_t^{(m)} = 100 \times \left(\left(\frac{S_t + D_t}{S_{t-1}} \right) - 1 - rf_t \right) \tag{3}$$

where $er_t^{(m)}$ denotes the excess return, on day t, of the S&P 500 index. S_t and S_{t-1} are the S&P 500 index prices on days t and $t-1$, respectively. D_t is the dividend paid by the S&P 500 index on day t. rf_t is the short-term interest rate at time t, expressed on a per day basis. The dividend and stock index price data come from Bloomberg. The daily time series of the interest rate comes from Kenneth French's website. To be more precise, we use the data relating to the 1-month interest rate to proxy for the short rate. We multiply both the total return and the interest rate by 100 in order to express the excess return in percentage points.

To compute the daily excess return on the dividend strip of time to maturity τ days, we consider the strategy that buys the τ-days dividend strip at time $t-1$, holds it for 1 day, collects the dividend paid on day t by the S&P 500 index, and sells the dividend strip as an asset expiring in $\tau - 1$ days. More formally, we use the following formula:

$$er_t^{(\tau-1)} = 100 \times \left(\left(\frac{STRIP_t^{(\tau-1)} + D_t}{STRIP_{t-1}^{(\tau)}} \right) - 1 - rf_t \right) \tag{4}$$

where $er_t^{(\tau-1)}$ denotes the excess return, on day t, on the dividend strip of time to maturity $\tau - 1$ days. Note that τ relates to one of the following: 180, 360, 540, or 720 days. $STRIP_t^{(\tau-1)}$ is the price at time t of the dividend strip expiring in $\tau - 1$ days.

A.1 The Excess Return on the S&P 500 Index

Table 2 characterizes the properties of the daily excess returns on the S&P 500 index calculated separately on (1) all days ("All"), (2) announcement days only ("Ann") and (3) non-announcement days ("Other") for each of the economic variables we consider. The first panel of the table shows that the mean market excess return, computed across all days, is positive (0.04 %). However, the White (1980)-corrected test statistic associated with this mean suggests that the estimate is not significantly different from 0 at the 10 % significance level.

Comparing announcement and non-announcement days, we note that the mean market excess return is positive (0.47 %) and statistically significant on federal fund rate announcement days. In contrast, this average is small (0.02 %) and insignificant on federal fund rate non-announcement days. The second panel of Table 2 shows that the standard deviation of excess returns is similar for both federal fund rate announcement days and non-announcement days. We formally test the null hypothesis of equal variance with an F-test and fail to reject the null hypothesis. We do not tabulate these results for brevity. Combining the mean and standard deviation estimates of Table 2, one can see that the Sharpe ratio (SR) associated with federal fund rate announcement days (0.34) is an order of magnitude higher than that of non-announcement days (0.02). This result is mainly due to the high average market excess return on federal fund rate announcement days. Overall, these findings are consistent with the study of Lucca and Moench (2015) who document that, between 1994 and 2011, the daily excess return on the S&P 500 index is on average equal to 0.34 % ($SR = 0.30$) on federal fund rate announcement days. They also show that the mean excess return on other days is much lower with an average of 0.01 % ($SR = 0.01$).

Looking at the other economic variables, it is apparent that the mean market excess return is significantly positive on days with housing market index news (0.39 %), whereas it is insignificant on days that do not contain announcements of the housing market index. Additionally, the mean excess return on the market index is significantly negative on existing home sales announcement days (−0.26 %) whereas it is significantly positive on days that do not contain announcements of existing home sales (0.06 %).

As an additional analysis, we pool together all days including announcements of existing homes sales, the federal fund rate, and the housing market index. We compute the summary statistics for these announcements days and for all other days. Our untabulated results point to an average excess return of 0.16 % (0.03 %) on announcement (non-announcement) days. The mean market excess return is highly significant on announcement days, whereas it is not significant on non-announcement days. Furthermore, the Sharpe ratio on these announcement days (0.13) is 3 times larger than on non-announcement days (0.04).

Taken together, our results are consistent with the works of Savor and Wilson (2013), Lucca and Moench (2015), and Ai and Bansal (2018), who document that a large component of the market excess return can be imputed to macroeconomic announcement days.

A.2 The Excess Returns on Dividend Strips

Summary Statistics The entries in Table 3 show that the mean daily excess return on dividend strips, computed using all sample information, is positive and highly significant. Focusing on the dividend strip of initial time to maturity equal to 360 days, we observe a positive and statistically significant mean daily excess return of 0.20 %.[7] Thus, the average daily excess return on this dividend asset

[7] These summary statistics are not directly comparable with those presented in Table 1 of van Binsbergen et al. (2012). This is because we study excess returns at the daily (instead of monthly) horizon. As an additional check, we compute the monthly returns on our dividend strips. Focusing on the dividend strip expiring in 360 days, we obtain an average return of 1.02 % and a standard deviation of 5.16 % per month. For the same period, the return on the market index averages 0.67 % per month. These returns exhibit a standard deviation of 4.33 % per month. The Sharpe ratio of the dividend strip is equal to 0.19, whereas that of the market is equal to 0.15. Overall, the mean and standard deviation of the returns are similar to those presented in van Binsbergen et al. (2012). It is, however, interesting to note that we find a smaller difference between the Sharpe ratio of the dividend strip and that of the market index than the authors. This difference is primarily driven by the fact that, during our sample period, interest rates are very low. These results are not tabulated for brevity.

is economically larger than that of the S&P 500 index (0.04 %) presented in the first panel of Table 2. We implement a two-sample t-test to formally test the null hypothesis that the unconditional mean excess return on that dividend strip is equal to the unconditional mean daily excess return on the market index. We obtain a significantly positive test statistic (t-stat = 2.50), leading us to the conclusion that the term structure of excess returns slopes downwards. This finding is consistent with the work of van Binsbergen et al. (2012).

On announcement days, the average daily excess return on the dividend asset is generally insignificant. Furthermore, we find very little differences between the standard deviation of dividend strip returns observed on announcement days and that of non-announcement days (see Table 4). This finding holds for nearly all economic series and all maturities of the dividend strip. Generally, the two-sample t-test testing the null of equal average excess returns for both the dividend strip and the market index on announcement days reveals that we cannot reject the null hypothesis. In other words, the term structure of excess returns is generally flat on announcement days.

An interesting exception to this pattern occurs on federal fund rate announcement days. On those days, the average excess return on dividend strips is insignificant, whereas the average market excess return is significantly positive. Relatedly, the Sharpe ratio associated with the market index is larger than that of dividend strips on federal fund rate announcement days. This set of empirical facts is consistent with the habit (Campbell and Cochrane, 1999) and long-run risk (Bansal and Yaron, 2004) models. In these models, (1) the average excess return on short term dividend strips is close to zero while it is high for the market index and (2) the term structure of Sharpe ratios slopes upwards. We thus conclude that the downward-sloping term structure of equity excess returns presented in van Binsbergen et al. (2012) arises from non-FOMC days. The finding is completely reversed on federal fund rate announcement days.

CAPM We investigate the extent to which the excess returns of the dividend assets are consistent with the CAPM. To achieve this goal, we use the complete time series of daily excess returns on each dividend strip and separately estimate the following regression:

$$er_t^{(\tau-1)} = \alpha + \beta \times er_t^{(m)} + \epsilon_t \tag{5}$$

where α denotes the intercept. β denotes the slope parameter. ϵ_t is the residual at time t. All other variables are as previously defined.

Using the estimated slope parameter and re-arranging Equation (5), we compute the time series of the abnormal excess returns. To be more specific, the abnormal daily excess returns are the difference between (1) the time series of the daily excess returns on the dividend strip and (2) the product of the slope estimate with the time series of the contemporaneous daily excess returns on the market. If the performance of the dividend strip is consistent with the CAPM, we expect the average abnormal excess return to be statistically insignificant. Table 5 shows that the average abnormal excess return on the dividend asset is significantly positive when we analyze all days. We thus conclude that the CAPM cannot explain the performance of dividend strips. This result is consistent with the finding of van Binsbergen et al. (2012).

Interestingly, the average abnormal excess return is generally insignificant on announcement days, whereas it is significant on non-announcement days. Thus, the empirical evidence suggests that, on announcement days, the performance of dividend strips is consistent with the CAPM. This result emerges for most economic series. It echoes the finding of Savor and Wilson (2014) who document that the CAPM performs better on macroeconomic announcement days compared to other days. Taken as a whole, the results may imply that the negative slope on non-announcement days recover some "short-run" risk, which is behind the CAPM failure concerning dividend strips observed on those days.[8]

B. Do Excess Returns Respond to Macroeconomic News?

Surprise Variable The preceding analysis compares the properties of daily excess returns on announcement and non-announcement days. However, it does not take into account the information content of the announcements, i.e. the announcement surprises. For each announcement of a macroeconomic series, the Bloomberg database includes (1) the actual announcement figure as well as (2) the expectations of professional forecasters surveyed by Bloomberg prior to the announcement.

To build the announcement surprises, we follow an approach that is conceptually similar to that of Balduzzi et al. (2001). We compute the shock associated with the

[8]We are very grateful to a referee for this insight.

announcement of the economic variable i made on day t as the difference between the announced and expected values:[9]

$$E_{i,t} = A_{i,t} - F_{i,t} \tag{6}$$

where $E_{i,t}$ is the shock associated with the announcement of the economic variable i made on day t. $A_{i,t}$ and $F_{i,t}$ denote the actual and expected data for the announcement of the economic variable i made on day t, respectively. The expected data for a given macroeconomic announcement is the cross-sectional average of all professional forecasts surveyed by Bloomberg for that specific announcement.[10] We do this for all economic variables with the exception of the federal fund rate announcements. For these announcements, we compute the expectation using the federal fund futures contracts as in Kuttner (2001) and Bernanke and Kuttner (2005).

Because the units of measurement differ across macroeconomic news, comparing the shocks associated with these economic variables is challenging. We thus follow the literature, e.g. Beber and Brandt (2006), and compute the standardized announcement surprise:

$$SURPRISE_{i,t} = \frac{E_{i,t}}{\sigma_i} \tag{7}$$

where $SURPRISE_{i,t}$ is the standardized announcement surprise related to the

[9]A positive (negative) shock indicates that the announced data is higher (lower) than what the market expected. Note that a positive announcement shock does not necessarily correspond to good economic news. For example, a positive shock of initial jobless claims indicates a higher than expected number of jobless claims. Clearly, this is not good news for the economy.

[10]As a further robustness check, we analyze the median (rather than the average) of all professional forecasts and obtain very similar results. We do not tabulate these results for brevity.

announcement of the economic variable i made on day t. σ_i is the standard deviation of the time series of the shocks (as defined in Equation (6)) corresponding to economic variable i. Note that this standard deviation is constant because it is estimated using all sample information related to the announcements of the economic variable i. Thus, the standardization does not affect our statistical inferences.

Regression Model Equipped with the proxy for announcement surprises (see Equation (7)), we then investigate the response of dividend strips to macroeconomic news at the intraday level. We compute the intraday dividend strip return observed at the end of the trading interval j of day t as follows:

$$r_{t,j}^{(\tau-\frac{j}{N})} = 100 \times \left(\frac{STRIP_{t,j}^{(\tau-\frac{j}{N})}}{STRIP_{t,j-1}^{(\tau-\frac{j-1}{N})}} - 1 \right) \tag{8}$$

where N denotes the total number of intraday trading intervals in a given day. In our empirical analysis, we calculate each intraday return over a 3-minute window.

We regress the time series of intraday dividend strip returns observed at the announcement times on a constant and the contemporaneously observed announcement surprises:[11]

$$r = \alpha + \sum_{i=1}^{15} \beta_{r,i} \times SURPRISE_i + \epsilon \tag{9}$$

where r is the vector containing the intraday dividend strip returns. These intraday

[11] Table 1 presents the announcement time of all macroeconomic series. For the federal fund rate, the announcement times can vary from meeting to meeting. Table A.1 of the online appendix shows the list of announcement dates and times of the federal fund rate.

returns are computed only at macroeconomic announcement times.[12] α is the regression intercept. $\beta_{r,i}$ shows the response of the dividend strip return to a unit change in the standardized announcement surprise of the economic variable i.[13] $SURPRISE_i$ denotes the vector of standardized announcement surprises (see Equation (7)) linked to the economic variable i. ϵ is the vector that contains the time series of the regression error term.

Two points are worth highlighting before discussing the regression results. First, we perform the analysis using intraday returns rather than daily returns. This choice is motivated by Table 1 of Law et al. (2018) which clearly shows that, in order to see the impact of macroeconomic news on asset prices, it is important to carry out the analysis at the intraday level.[14] Second, the regression specification is of the multivariate type, i.e. it pools together information from all 15 macroeconomic announcements. Pooling together all announcements has the benefit of (i) bringing more data into the estimation (Swanson and Williams, 2014) and (ii) accounting for contemporaneous announcements.

We estimate the multivariate regression above for each maturity of the dividend strip separately. Table 6 presents the regression results. As before, we use the White (1980)-corrected standard errors for our statistical inferences. If economic news significantly affects returns, we should observe statistically significant slope

[12] We also investigated the setting where we use all intraday returns, rather than focusing only on announcement returns. This alternative specification led to very similar results. These findings are consistent with the work of Swanson and Williams (2014) and Law et al. (2018).

[13] As a robustness check, we also consider a model with time-varying slope parameters. In particular, we explored the possibility that the slope parameters change during expansion and recession periods as identified by the NBER recession dummy. Generally, the main conclusions are similar to those based on the model with constant slope parameters. We do not tabulate these findings for brevity.

[14] We thank the reviewer for drawing our attention to this paper.

estimates. We highlight the significant slope estimates in bold.

Results We can see that surprises of the construction spending, the consumer price index, the U.S. federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, the unemployment rate, and the wholesale inventories are associated with statistically significant slope estimates. It is worth noting that most of the aforementioned announcements significantly affect all the maturities of the dividend strip. The strength of the announcement effect, proxied by the absolute value of the slope parameter, generally declines with the dividend strip maturity. Additionally, the announcement surprises of nonfarm payrolls are associated with the highest slope parameter, indicating that this economic variable is the "king" of announcements as described by market participants and Law et al. (2018). Taken together, the results lead us to conclude that there is a significant relationship between macroeconomic surprises and dividend strip returns.[15] The relationship is economically intuitive too. For example, higher than expected initial jobless claims result in significantly lower dividend strip returns, conforming to

[15]Some macroeconomic announcements, e.g. federal fund rate, may require more time to be processed by investors. As a result, we analyze wider event windows, e.g. over 5-, 10-, 15-, and 30-minute. Generally, we find that the same economic series have a significant effect on the term structure of dividend strips, indicating that the actual choice of the window length does not impact our main findings. Because it is not practically feasible to report the findings for all possible specifications of the event window, we plot the cumulative returns (and the corresponding confidence intervals) of the dividend strips over a window from -30 to $+30$ minutes around the announcement times. In carrying out this analysis, we focus specifically on the macroeconomic announcements that have a significant impact on all maturities of the dividend asset as well as the S&P 500 index (see Table 6). These announcements are: the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, and the unemployment rate. Figure 2 presents the findings. The top row shows the plot based on all announcements, irrespective of whether they are good news or bad news. The middle and bottom rows focus on the announcements associated with good and bad news, respectively. Overall, this analysis confirms the robustness of the empirical results: the impact of macroeconomic announcements on dividend strip returns is noticeable for wider event windows. We thank a reviewer for suggesting this analysis.

the intuition that asset prices fall with bad economic news. The documented announcement response could arise because investors interpret a positive surprise of initial jobless claims as a signal of lower future cash flows and/or higher future discount rates.

Analyzing the response of the intraday S&P 500 returns to macroeconomic news, we observe that the slope estimate associated with the consumer confidence, the existing home sales, the federal fund rate, the housing market index, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, and the unemployment rate are statistically significant.[16] The significant estimates associated with news about consumer confidence, initial jobless claims and nonfarm payrolls are consistent with those of Law et al. (2018). We notice that the slope estimates linked with the S&P 500 index are generally of a lower magnitude than those of the dividend strips. This finding is consistent with the declining pattern of announcement responses observed for dividend strips.

C. What Explains the Response of Dividend Strips?

Up to this point, our analysis is silent on the channels through which fundamental news moves the dividend asset. This is an interesting question because asset pricing theory implies that, if the price of the dividend asset changes, it must be that

[16]We calculate the intraday return on the S&P 500 index as follows:

$$r_{t,j}^{(m)} = 100 \times \left(\frac{S_{t,j}}{S_{t,j-1}} - 1 \right) \tag{10}$$

where $r_{t,j}^{(m)}$ denotes the intraday return on the market index at time j of day t. $S_{t,j}$ and $S_{t,j-1}$ are the stock index at times j and $j-1$ of day t, respectively.

investors have revised their views on the expected future cash flows and/or the expected discount rates.

To see this, recall that one can price the dividend strip as if agents are risk-neutral, i.e. using the martingale valuation approach (Harrison and Pliska, 1981):

$$STRIP_t^{(\tau)} = E_t^Q\left(\sum_{k=1}^{\tau} e^{-rf\times k} D_{t+k}\right) \tag{11}$$

$$STRIP_t^{(\tau)} = \underbrace{E_t^P\left(\sum_{k=1}^{\tau} e^{-rf\times k} D_{t+k}\right)}_{\text{Cash Flow } (cf_t^{(\tau)})} - \underbrace{\left(E_t^P\left(\sum_{k=1}^{\tau} e^{-rf\times k} D_{t+k}\right) - E_t^Q\left(\sum_{k=1}^{\tau} e^{-rf\times k} D_{t+k}\right)\right)}_{\text{Discount Rate } (dr_t^{(\tau)})}$$

$$STRIP_t^{(\tau)} = cf_t^{(\tau)} - dr_t^{(\tau)} \tag{12}$$

where $cf_t^{(\tau)}$ denotes the cash flow at time t expected over the next τ days. $dr_t^{(\tau)}$ is the expectation at time t of the discount rate on the dividend asset over the following τ days.

Taking the change in the dividend strip price, we obtain:

$$\underbrace{STRIP_{t+1}^{(\tau-1)} - STRIP_t^{(\tau)}}_{\Delta STRIP_{t+1}^{(\tau-1)}} = \underbrace{cf_{t+1}^{(\tau-1)} - cf_t^{(\tau)}}_{\Delta cf_{t+1}^{(\tau-1)}} - \underbrace{\left(dr_{t+1}^{(\tau-1)} - dr_t^{(\tau)}\right)}_{\Delta dr_{t+1}^{(\tau-1)}} \tag{13}$$

$$\Delta STRIP_{t+1}^{(\tau-1)} = \Delta cf_{t+1}^{(\tau-1)} - \Delta dr_{t+1}^{(\tau-1)} \tag{14}$$

where $\Delta STRIP_{t+1}^{(\tau-1)}$ is the change at time $t+1$ of the dividend strip of time to maturity $\tau-1$ days. $\Delta cf_{t+1}^{(\tau-1)}$ denotes the innovation, at time $t+1$, in the expected cash flows of time to maturity $\tau-1$ days. $\Delta dr_{t+1}^{(\tau-1)}$ is the change, at time $t+1$, in the expected discount rate of the dividend strip of time to maturity $\tau-1$ days.

Equation (14) provides a natural framework to identify the driving force(s) of the change in the dividend strip at time $t+1$. We can decompose the change in the dividend strip price into two components. The first component ($\Delta cf_{t+1}^{(\tau-1)}$), which we shall refer to as the cash flow channel, relates to the revision about expected future cash flows. The second component ($\Delta dr_{t+1}^{(\tau-1)}$), termed the discount rate channel, captures the news about expected future discount rates. An implication of this decomposition is that, if macroeconomic news has an impact on the dividend strip, it must be that investors have done at least one of the following: (i) they have updated their expectations of future cash flows, (ii) they have changed their views on future discount rates.[17] The expression in Equation (14) is also informative about the direction of the effect. The cash flow channel is positively associated with changes in the dividend strip price. Conversely, increases in the discount rate correspond to a negative change in the price of the dividend asset.

Despite its intuitive appeal, Equation (14) is an accounting identity that is of limited practical use. This is because it involves conditional *expectations* which are not directly observable. Thus, we require a model to generate the conditional expectations. Note that, if the dividend asset is fairly priced, we only need to directly model one of the two channels. The other channel can be recovered by re-arranging the identity shown in Equation (14). In this paper, we model the cash flow channel. We then back out the discount rate channel by rearranging the identity.

Model We use a parsimonious model for cash flows which assumes that the future dividends can be predicted by the following variables: the lagged dividend strip

[17] It is also worth pointing out that the absence of an announcement effect on the dividend strip does not necessarily imply that the two components are unresponsive. This is because the movements in the channels could cancel each other out (see Equation (14)).

($STRIP$), the lagged implied variance (IV), and the lagged implied skewness (IS). Our interest in the dividend strip as a forecasting variable is motivated by Equation (12) which shows that the dividend strip price is positively related to the future cash flows of the same maturity as the dividend strip. We augment this model with the lagged implied variance and skewness. These latter forecasting variables are common in the literature on the predictability of returns.

As discussed in Campbell and Shiller (1988) and Bernanke and Kuttner (2005), one concern is that dividends are non-stationary, making it challenging to directly model their dynamics. We address this issue by modeling the ratio of future cash flows over the average historical payoff of the dividend asset computed using a trailing window of 2 years.[18] In a similar vein, we do not directly use the dividend strip price as a forecasting variable. Instead, we scale the dividend strip price by the 2-year average historical payoff of the dividend asset.

Implementation For each maturity of the dividend asset and each trading day, we use the complete time series of daily dividends to compute the realized payoffs of the dividend asset. Next, we use all relevant daily data to estimate the following forecasting regression:[19]

$$\frac{\sum_{k=1}^{\tau} e^{-rf\times k} D_{t+k}}{\bar{p}_t^{(\tau)}} = \beta_0 + \beta_1 \times \frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}} + \beta_2 \times IV_t^{(\tau)} + \beta_3 \times IS_t^{(\tau)} + \epsilon_{t+\tau} \quad (15)$$

[18] We are very grateful to a referee for this thoughtful comment.

[19] We also consider a richer model that includes dummy variables to capture potential seasonality effects. We find that the inclusion of these dummy variables does not materially affect our empirical results. Consequently, we only tabulate the results based on the more parsimonious model.

where $\bar{p}_t^{(\tau)}$ is the average payoff of the τ-day dividend strip. We compute this quantity using the historical payoffs observed during the past 2 years up to time t. β_0, β_1, β_2 and β_3 are the parameters to estimate. $IV_t^{(\tau)}$ and $IS_t^{(\tau)}$ denote the time-t Bakshi et al. (2003) risk-neutral implied variance and skewness of time to maturity τ, respectively. In order to compute these risk-neutral moments, we follow the methodology of Hollstein and Prokopczuk (2016). $\epsilon_{t+\tau}$ is the residual at time $t+\tau$. Note that, because we estimate cash flow forecasting regressions, we lose as much as the last 2 years of data when analyzing the dividend strip expiring in 720 days. As a result, the sample period used for the variance decomposition is 2 years shorter than in the benchmark scenario.

The model in Equation (15) implies that the change in the expected future cash flows can be expressed as:[20]

$$\begin{aligned}\Delta cf_{t+1}^{(\tau-1)} \approx\ & \beta_1 \times \left(STRIP_{t+1}^{(\tau-1)} - STRIP_t^{(\tau)}\right) + \beta_2 \times \bar{p}_t^{(\tau)} \times \left(IV_{t+1}^{(\tau-1)} - IV_t^{(\tau)}\right) \\ & +\beta_3 \times \bar{p}_t^{(\tau)} \times \left(IS_{t+1}^{(\tau-1)} - IS_t^{(\tau)}\right) \qquad (16)\end{aligned}$$

Using Equations (14) and (16), we can then recover the innovation to the

[20]Implicit in this calculation are two assumptions. First, we assume that the historical average payoff of the dividend strip expiring in τ days ($\bar{p}_t^{(\tau)}$) is similar to that of the dividend strip expiring in $\tau-1$ days ($\bar{p}_t^{(\tau-1)}$). Given the small difference in time to maturity between these two assets, this assumption is innocuous. Second, we assume that we obtain the same parameter estimates when forecasting the payoffs of maturities τ and $\tau-1$. One could implement a bias correction mechanism. However, because the difference in maturities is very small, the impact of such a correction will be negligible. We thank an anonymous reviewer for drawing our attention to this point.

expected discount rates:

$$\Delta dr_{t+1}^{(\tau-1)} = \Delta cf_{t+1}^{(\tau-1)} - \Delta STRIP_{t+1}^{(\tau-1)} \tag{17}$$

Equation (16) reveals that the estimation of the cash flow channel depends on the availability of the dividend strip, the implied variance, and the implied skewness. Since these quantities can be observed at the intraday frequency, we are also able to compute the shocks to the expected cash flows and expected discount rates at the intraday level. This set-up enables us to study the intraday effect of macroeconomic news on the two channels. It is worth mentioning that, if we had considered predictive variables available only at the daily frequency, these predictors would not have contributed to the intraday revision of the expected cash flows and of the expected discount rates, making them unsuitable for our analysis.[21]

C.1 Estimation Results

Table 7 summarizes the estimation results of the model presented in Equation (15). Each panel focuses on a specific maturity of the dividend asset. We note that the multivariate forecasting model delivers a high explanatory power that ranges from 68.41 % at the 180-day horizon to 84.38 % at the 540-day horizon. Looking at the slope associated with the scaled dividend strip price, we can see that it is

[21] Ideally, the forecasting model of the future cash flows should be based on structural models such as those presented in Belo et al. (2015), Lopez et al. (2015), and Marfè (2016). Unfortunately, this approach is not well-suited for our study because we need to compute the cash flow channel at the intraday frequency. As a result, our empirical analysis requires all forecasting variables to be available at the intraday level. This requirement rules out the aggregate leverage ratio and the labor-share factor proposed in the aforementioned studies since these variables are observed at a much lower frequency.

significantly positive. The positive slope estimate is consistent with the finding of the literature, e.g. van Binsbergen et al. (2013) and Belo et al. (2015), that the dividend asset is informative about future dividends. Turning our attention to the risk-neutral implied moments, we find that they are negatively related to future dividends and that the loading associated with the option implied skewness is statistically significant in the multivariate specification.

Equipped with the estimated slope parameters, we use Equations (16) and (17) to recover the innovations to the expected future cash flows and to the expected discount rates, respectively. Although the statistical evidence suggests that the cash flow forecasting model provides an adequate fit to the data, we caution that the decomposition analysis is model dependent. Thus, the empirical results should be interpreted carefully.

Channel Contributions Next, we evaluate the contribution of each channel to the total variance of the dividend strip return:

$$\begin{aligned}
Var\left(\frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right) &= Cov\left(\frac{\Delta cf_{t+1}^{(\tau-1)} - \Delta dr_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}, \frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right) \\
1 &= \underbrace{\frac{Cov\left(\frac{\Delta cf_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}, \frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right)}{Var\left(\frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right)}}_{\eta_{\Delta cf}} - \underbrace{\frac{Cov\left(\frac{\Delta dr_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}, \frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right)}{Var\left(\frac{\Delta STRIP_{t+1}^{(\tau-1)}}{STRIP_t^{(\tau)}}\right)}}_{\eta_{\Delta dr}} \\
1 &= \eta_{\Delta cf} - \eta_{\Delta dr} \qquad (18)
\end{aligned}$$

where $\eta_{\Delta cf}$ and $\eta_{\Delta dr}$ indicate the contribution of the cash flow and discount rate channels to the variance of the dividend strip returns, respectively.

The preceding derivation reveals that the contribution of each channel can be thought of as the slope of a simple regression of the time series of the channel on a constant and the time series of the dividend strip returns. Table 8 summarizes the variance decomposition results obtained after estimating the cash flow regression in Equation (15) separately using (1) all days, (2) announcement days, and (3) non-announcement days.[22] Generally, we observe very little differences across the three subsamples.[23] Consistent with intuition (see Equation (18)), the cash flow channel makes a positive contribution to the total variance of dividend strip returns. The importance of the cash flow channel increases with the maturity, indicating a smaller role for the discount rate channel. This result is puzzling since Cochrane (2011) shows that the discount rate channel dominates for the index return (the longest horizon).[24]

C.2 The Impact of Announcement Surprises on the...

C.2.1 Dividend Strip Returns

We now update our analysis of the impact of macroeconomic news on the dividend strips by focusing on our sample period which is 2 years shorter than that of Table 6.

Table A.2 of the online appendix shows that the dividend strips respond to

[22]Since the cash flow and discount rate channels add up to 100%, we only report the variance decomposition results linked with the cash flow channel.

[23]There are, however, a few exceptions occurring on federal fund rate and nonfarm payrolls announcement days. Nonfarm payrolls are essentially informative about cash flows. As such, we would expect the cash flow channel to become more important on these announcement days. Conversely, the federal fund rate is primarily more informative about discount rates. Hence, we would expect the cash flow channel to be less important on federal fund rate announcement days. The empirical results are consistent with these expectations.

[24]This puzzling result represents an interesting avenue for future research.

macroeconomic news about the construction spending, the consumer price index, the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, and the unemployment rate. We also note the declining magnitude of the slope parameters as the maturity of the dividend asset increases. These results are aligned with our benchmark findings (see Table 6).

C.2.2 Cash Flow Channel

Next, we regress the time series of intraday changes in the expected future cash flow observed on announcement days on a constant and the contemporaneous time series of announcement surprises:

$$\Delta cf = \alpha + \sum_{i=1}^{15} \beta_{cf,i} \times SURPRISE_i + \epsilon \tag{19}$$

where $\beta_{cf,i}$ denotes the response of the cash flow channel to the announcement surprise of the economic variable i. If the cash flow channel is the main conduit through which macroeconomic news moves the dividend asset, we expect the regression model in Equation (19) to yield significant slope estimates that are similar, both in terms of sign and magnitude, to those obtained when analyzing the announcement response of dividend strip returns (see Table A.2).

Table 9 shows that macroeconomic news causes investors to revise their expectations of cash flows. The sign of the slope estimates is consistent with our intuition. For instance, a unit increase in the (standardized) announcement surprise of initial jobless claims has a significantly negative impact of $-1.04\,\%$, $-0.69\,\%$,

$-0.52\,\%$ and $-0.42\,\%$ on the cash flow channel of the dividend strip expiring in 180, 360, 540, and 720 days, respectively.

C.2.3 Discount Rate Channel

We now focus on the impact of macroeconomic news on intraday changes in the expected discount rates:

$$\Delta dr = \alpha + \sum_{i=1}^{15} \beta_{dr,i} \times SURPRISE_i + \epsilon \tag{20}$$

where $\beta_{dr,i}$ denotes the response of the discount rate channel to the announcement surprise of the economic variable i.

Table 10 reveals that macroeconomic announcements have a significant impact on the discount rate channel of dividend strips. This conclusion is borne out by the significant slope estimates associated with the surprise variables of the consumer price index, the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, and the unemployment rate. Moreover, the sign of the relationship between announcement surprises and the discount rate channel is intuitive. For example, a unit shock to the (standardized) initial jobless claims announcement surprise raises the discount rate channel of dividend strips expiring in 180 and 360 days by $0.46\,\%$ and $0.12\,\%$, respectively. A higher than expected count of initial jobless claims can be interpreted as a bad signal about the economy. As a result, agents revise upwards their expectations of future discount rates. It is also interesting to note that the magnitude of the slope estimates corresponds, in absolute value, to close to a third of the entries in Table A.2 for the 180-day horizon.[25] We thus conclude that the discount rate channel contributes to the response of dividend strips to macroeconomic news.

Summarizing, our analysis establishes a link between economic news and dividend strip returns. We present a framework to understand why dividend strips respond to macroeconomic news as they do. We decompose the strip returns into the cash flow and the discount rate channels and show that both channels contribute to the announcement effect.

D. Further Analyses

D.1 Different Moneyness Ranges

In computing the dividend strip, we use the median of the prices implied by options of all moneyness ranges, including those options that are deep in-the-money or deep out-of-the-money. One may be concerned that these options with extreme moneyness ranges could bias our results. To shed light on this, we repeat our computation of the dividend strip after discarding options with extreme moneyness levels. To be more precise, we focus only on Call options with a Black-Scholes delta that is between 0.375 and 0.625. Similarly, we only consider Put options with Black-Scholes delta ranging from -0.625 to -0.375. Thus, the new dividend strips

[25] It is possible that the contribution of the discount rate channel is overstated. To understand why, it is useful to recall that the forecasting model for the cash flows yields a lower explanatory power at the 180-day horizon than at the 720-day horizon (see Table 7). Because the discount channel is backed out using Equation (17), the forecast errors associated with the cash flows could be potentially important for the discount rate channel. Thus, we could be attributing too much of the variations in the dividend strip returns to the discount rate channel at shorter maturities.

are based on options that are near the at-the-money range and are presumably more liquid.

Tables A.3 through A.9 of the online appendix present results that are similar to our benchmark findings. We also considered alternative restrictions on the moneyness range and obtained similar conclusions. We do not tabulate these results for brevity.

D.2 Tradable Dividend Strips

Since our analysis focuses on dividend strips that are linearly interpolated, it could be criticized on the grounds that the interpolation technique may be a source of noise. We thus repeat our analysis without implementing any interpolation.

In order to compute the dividend strip expiring in τ days, we simply use the data related to the options of time to maturity closest to τ days. Following this procedure, we find that, on average, the options that underpin the dividend strips of 180, 360, 540, and 720 days expire in 179, 344, 539, and 679 trading days, respectively.

Using the new time series of dividend strips, we repeat our main analyses and report the findings in Tables A.10 through A.17 of the online appendix. Table A.13 of the online appendix reports the results of the cash flow forecasting model based on the non-interpolated dividend strips. It is clear that the model performs better on the interpolated series (see Table 7) than on the non-interpolated series. Furthermore, there is a noticeable difference in the slope parameters presented in Tables 7 and A.13. The differences in (i) the sensitivities to the forecasting variables and (ii) the goodness of fit result in different time series of the cash flow channel that ultimately affect the quantitative estimates of the variance decomposition shown in Tables 8 and A.14. Nonetheless, Tables A.15 through A.17 of the online appendix report results that are qualitatively similar to our baseline findings.

Comparing Table 8 which is based on the interpolated dividend strips and Table A.14 of the online appendix which builds on the non-interpolated dividend strips, we notice a meaningful difference in the contribution of the cash flow channel to the variance decomposition. This difference can be explained by the results of the cash flow forecasting regression (see Equation (15)).

IV Conclusion

This paper studies the impact of economic news on equity investors' pricing of cash flows paid over different maturities. To do so, we recover the dividend strips implied by option prices and analyze their response to macroeconomic events. News about the construction spending, the consumer price index, the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, the unemployment rate, and the wholesale inventories moves the dividend strips.

To better understand the channels through which economic news affects the dividend strips, we decompose the returns on the dividend strips into components representing revisions in (i) the expected cash flows and (ii) the expected discount rates. Our analysis reveals that both the cash flow and discount rate channels contribute to the announcement response.

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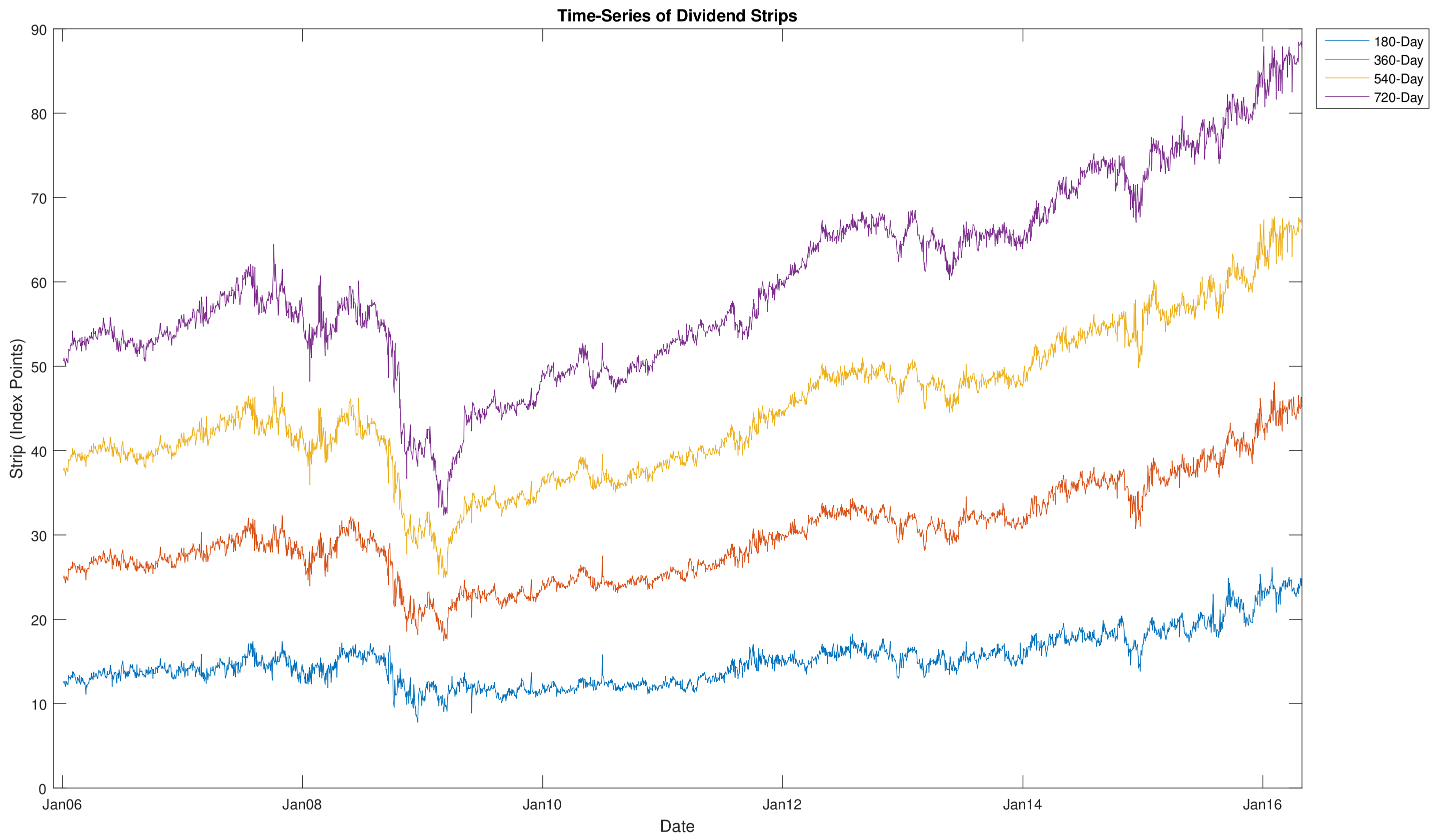

Figure 1: **Time Series of Dividend Strips**

This figure displays the time series of dividend strips of constant time to maturity 180, 360, 540, and 720 days. The vertical axis shows the strip prices in index points. The horizontal axis indicates the date. The sample period extends from the beginning of January 2006 to the end of April 2016.

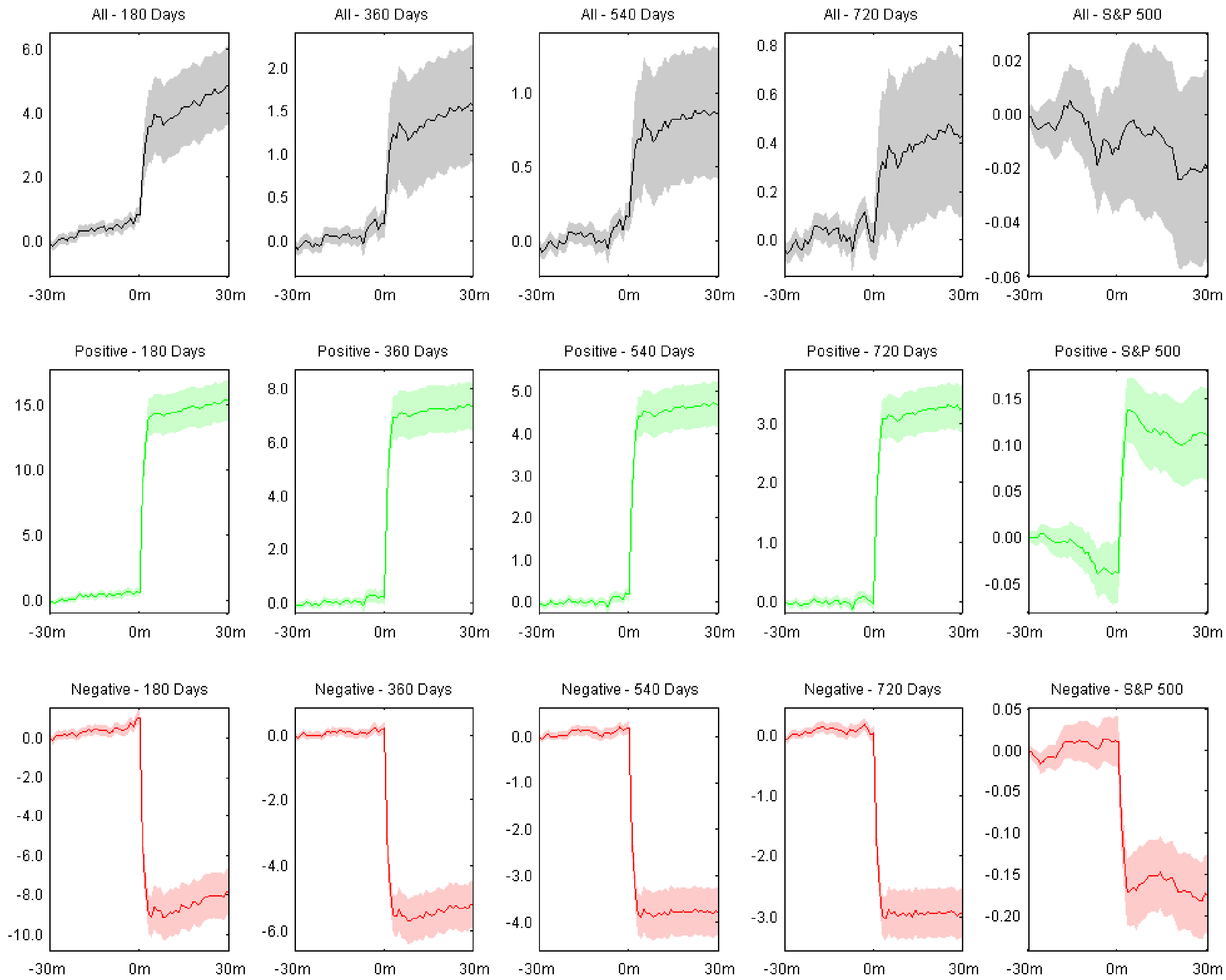

Figure 2: **Cumulative Returns Around the Announcements**

The solid line of this figure shows the cumulative returns (vertical axis) from 30 minutes before to 30 minutes after (horizontal axis) the announcements of the federal fund rate, the housing starts, the initial jobless claims, the nonfarm payrolls, the trade balance, and the unemployment rate. We compute these cumulative returns separately for each maturity of the dividend strip as well as for the S&P 500 index. The shaded areas indicate the 95 % confidence interval associated with the cumulative returns. The top row focuses on all announcement returns, whereas the middle and bottom rows relate to announcements associated with positive and negative news, respectively. The sample period extends from the beginning of January 2006 to the end of April 2016.

Table 1: **Announcement Dataset**

This table summarizes our announcement dataset. The first column lists the economic variables covered in this study. The second column shows the frequency of individual announcements (M for monthly series, W for weekly and 8/Y for 8 times per year). The third column shows the announcement time. The fourth column presents the source of the data. BEA, BLS, CB, DL, FED, NAHB, NAR, and USCB denote the Bureau of Economic Analysis, the Bureau of Labour Statistics, the Conference Board, the Department of Labour, the Federal Reserve, the National Association of Home Builders, the National Association of Realtors, and the U.S. Census Bureau, respectively. The fifth and sixth columns show the first and last observation dates of individual economic series, respectively. Finally, the last column reports the number of announcements of the economic variable [name in row] observed during our sample period.

Economic Variable	**Freq**	**Time**	**Source**	**First Observation**	**Last Observation**	**Nobs**
Construction Spending	M	10:00	USCB	January 03, 2006	April 01, 2016	123
Consumer Confidence	M	10:00	CB	January 31, 2006	April 26, 2016	124
Consumer Credit	M	15:00	FED	January 09, 2006	April 07, 2016	124
Consumer Price Index	M	8:30	BLS	January 18, 2006	April 14, 2016	124
Federal Fund Rate	8/Y	Varies	FED	January 31, 2006	April 27, 2016	83
Housing Market Index	M	13:00	NAHB	January 18, 2006	April 18, 2016	124
Housing Starts	M	8:30	USCB	January 19, 2006	April 19, 2016	124
Existing Home Sales	M	10:00	NAR	January 25, 2006	April 20, 2016	124
Initial Jobless Claims	W	8:30	DL	January 05, 2006	April 28, 2016	539
Nonfarm Payroll	M	8:30	BLS	January 06, 2006	April 01, 2016	124
Personal Consumer Expenditure	M	8:30	BEA	January 30, 2016	April 29, 2016	124
Producer Price Index	M	8:30	BLS	January 13, 2006	April 13, 2016	124
Trade Balance	M	8:30	USCB	January 12, 2006	April 05, 2016	124
Unemployment Rate	M	8:30	BLS	January 06, 2006	April 01, 2016	124
Wholesale Inventories	M	10:00	USCB	January 10, 2006	April 08, 2016	124

Table 2: **Summary Statistics of S&P 500 Excess Returns**

*This table reports the mean and standard deviation associated with the daily excess returns (expressed in percentage points) of the S&P 500 index. In order to calculate the mean and standard deviation of daily excess returns, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics.*

Economic Variable	**All**	**Ann**	**Other**
		Mean	
Construction Spending	0.04	0.21	0.04
Consumer Confidence	0.04	0.09	0.04
Consumer Credit	0.04	-0.18	0.05*
Consumer Price Index	0.04	0.11	0.04
Existing Homes Sales	0.04	-0.26**	0.06**
Federal Fund Rate	0.04	0.47***	0.02
Housing Market Index	0.04	0.39***	0.03
Housing Starts	0.04	0.16	0.03
Initial Jobless Claims	0.04	0.04	0.04
Nonfarm Payrolls	0.04	0.01	0.04
Personal Consumer Expenditure	0.04	-0.11	0.05*
Producer Price Index	0.04	-0.00	0.04
Trade Balance	0.04	0.17	0.03
Unemployment Rate	0.04	0.01	0.04
Wholesale Inventories	0.04	-0.18	0.06**
		Standard Deviation	
Construction Spending	1.25	1.31	1.25
Consumer Confidence	1.25	1.39	1.24
Consumer Credit	1.25	1.28	1.25
Consumer Price Index	1.25	1.32	1.24
Existing Homes Sales	1.25	1.28	1.25
Federal Fund Rate	1.25	1.37	1.24
Housing Market Index	1.25	1.19	1.25
Housing Starts	1.25	1.33	1.24
Initial Jobless Claims	1.25	1.34	1.22
Nonfarm Payrolls	1.25	1.20	1.25
Personal Consumer Expenditure	1.25	1.15	1.25
Producer Price Index	1.25	1.34	1.24
Trade Balance	1.25	1.27	1.25
Unemployment Rate	1.25	1.20	1.25
Wholesale Inventories	1.25	1.57	1.23

Table 3: **Mean of Dividend Strip Excess Returns**

*This table reports the mean daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. In order to calculate the mean daily excess return, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the mean separately for dividend strips of initial time to maturity 180, 360, 540, and 720 days. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics. We highlight in bold all instances where we reject the null hypothesis that the mean excess return calculated across days [name in column] is significantly different (at the 10 % significance level) from the mean excess return on the S&P 500 index calculated on the same days.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	**0.36*** **	-0.30	**0.38*** **	**0.20*** **	0.16	**0.20*** **
Consumer Confidence	**0.36*** **	0.36	**0.36*** **	**0.20*** **	0.27	**0.20*** **
Consumer Credit	**0.36*** **	**1.24*** **	**0.32*** **	**0.20*** **	**0.71** **	**0.18*** **
Consumer Price Index	**0.36*** **	0.44	**0.36*** **	**0.20*** **	0.40*	**0.19*** **
Existing Homes Sales	**0.36*** **	**0.91* **	**0.33*** **	**0.20*** **	**0.50* **	**0.19*** **
Federal Fund Rate	**0.36*** **	-0.23	**0.39*** **	**0.20*** **	**-0.23**	**0.22*** **
Housing Market Index	**0.36*** **	0.47	**0.36*** **	**0.20*** **	0.16	**0.20*** **
Housing Starts	**0.36*** **	0.02	**0.38*** **	**0.20*** **	0.12	**0.21*** **
Initial Jobless Claims	**0.36*** **	0.02	**0.48*** **	**0.20*** **	0.18	**0.21*** **
Nonfarm Payrolls	**0.36*** **	0.39	**0.36*** **	**0.20*** **	0.16	**0.20*** **
Personal Consumer Expenditure	**0.36*** **	0.27	**0.37*** **	**0.20*** **	0.03	**0.21*** **
Producer Price Index	**0.36*** **	0.25	**0.37*** **	**0.20*** **	0.19	**0.20*** **
Trade Balance	**0.36*** **	-0.42	**0.41*** **	**0.20*** **	-0.17	**0.23*** **
Unemployment Rate	**0.36*** **	0.39	**0.36*** **	**0.20*** **	0.16	**0.20*** **
Wholesale Inventories	**0.36*** **	-0.48	**0.41*** **	**0.20*** **	-0.13	**0.22*** **
		540 Days			**720 Days**	
Construction Spending	**0.17*** **	0.17	**0.17*** **	**0.13*** **	0.29	**0.13*** **
Consumer Confidence	**0.17*** **	0.02	**0.18*** **	**0.13*** **	-0.01	**0.14*** **
Consumer Credit	**0.17*** **	**0.61** **	**0.15*** **	**0.13*** **	**0.47** **	0.11***
Consumer Price Index	**0.17*** **	0.41**	**0.15*** **	**0.13*** **	0.27*	**0.12*** **
Existing Homes Sales	**0.17*** **	**0.40* **	**0.16*** **	**0.13*** **	**0.37** **	0.12***
Federal Fund Rate	**0.17*** **	**-0.00**	**0.18*** **	**0.13*** **	**-0.05**	**0.14*** **
Housing Market Index	**0.17*** **	0.28	**0.16*** **	**0.13*** **	0.08	**0.13*** **
Housing Starts	**0.17*** **	-0.06	**0.18*** **	**0.13*** **	0.10	**0.13*** **
Initial Jobless Claims	**0.17*** **	0.15*	**0.17*** **	**0.13*** **	0.17**	0.12***
Nonfarm Payrolls	**0.17*** **	0.19	**0.17*** **	**0.13*** **	0.05	**0.14*** **
Personal Consumer Expenditure	**0.17*** **	-0.07	**0.18*** **	**0.13*** **	0.12	**0.13*** **
Producer Price Index	**0.17*** **	0.01	**0.18*** **	**0.13*** **	0.06	**0.14*** **
Trade Balance	**0.17*** **	-0.03	**0.18*** **	**0.13*** **	-0.12	**0.15*** **
Unemployment Rate	**0.17*** **	0.19	**0.17*** **	**0.13*** **	0.05	**0.14*** **
Wholesale Inventories	**0.17*** **	-0.07	**0.18*** **	**0.13*** **	-0.11	**0.15*** **

Table 4: **Standard Deviation of Dividend Strip Excess Returns**

This table reports the standard deviation of the daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. In order to calculate the standard deviation of daily excess returns, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the standard deviation separately for dividend strips of initial time to maturity 180, 360, 540, and 720 days. We highlight in bold all instances where we reject the null hypothesis that the standard deviation of the excess returns calculated across days [name in column] is significantly different (at the 10 % significance level) from the standard deviation of the excess returns on the S&P 500 index calculated on the same days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	**4.48**	**5.36**	**4.45**	**2.60**	**3.17**	**2.58**
Consumer Confidence	**4.48**	**5.41**	**4.42**	**2.60**	**2.86**	**2.59**
Consumer Credit	**4.48**	**4.45**	**4.48**	**2.60**	**2.90**	**2.58**
Consumer Price Index	**4.48**	**4.44**	**4.48**	**2.60**	**2.44**	**2.61**
Existing Homes Sales	**4.48**	**4.78**	**4.46**	**2.60**	**2.95**	**2.58**
Federal Fund Rate	**4.48**	**4.34**	**4.48**	**2.60**	**2.57**	**2.60**
Housing Market Index	**4.48**	**4.20**	**4.49**	**2.60**	**2.71**	**2.60**
Housing Starts	**4.48**	**4.49**	**4.48**	**2.60**	**2.59**	**2.60**
Initial Jobless Claims	**4.48**	**4.29**	**4.54**	**2.60**	**2.52**	**2.63**
Nonfarm Payrolls	**4.48**	**5.32**	**4.42**	**2.60**	**3.09**	**2.57**
Personal Consumer Expenditure	**4.48**	**4.71**	**4.47**	**2.60**	**2.76**	**2.59**
Producer Price Index	**4.48**	**4.66**	**4.47**	**2.60**	**2.98**	**2.57**
Trade Balance	**4.48**	**4.06**	**4.50**	**2.60**	**2.75**	**2.59**
Unemployment Rate	**4.48**	**5.32**	**4.42**	**2.60**	**3.09**	**2.57**
Wholesale Inventories	**4.48**	**3.92**	**4.51**	**2.60**	**2.07**	**2.63**
		540 Days			**720 Days**	
Construction Spending	**2.01**	**2.33**	**2.00**	**1.72**	**1.91**	**1.72**
Consumer Confidence	**2.01**	**2.25**	**2.00**	**1.72**	**1.99**	**1.70**
Consumer Credit	**2.01**	**2.45**	**1.99**	**1.72**	**2.07**	**1.70**
Consumer Price Index	**2.01**	**1.91**	**2.02**	**1.72**	**1.77**	**1.72**
Existing Homes Sales	**2.01**	**2.21**	**2.00**	**1.72**	**1.81**	**1.72**
Federal Fund Rate	**2.01**	**1.67**	**2.03**	**1.72**	**1.64**	**1.72**
Housing Market Index	**2.01**	**1.72**	**2.02**	**1.72**	**1.43**	**1.73**
Housing Starts	**2.01**	**2.13**	**2.01**	**1.72**	**1.77**	**1.72**
Initial Jobless Claims	**2.01**	**2.03**	**2.01**	**1.72**	**1.70**	**1.73**
Nonfarm Payrolls	**2.01**	**2.38**	**1.99**	**1.72**	**1.87**	**1.71**
Personal Consumer Expenditure	**2.01**	**1.91**	**2.02**	**1.72**	**1.68**	**1.72**
Producer Price Index	**2.01**	**2.30**	**1.99**	**1.72**	**2.12**	**1.69**
Trade Balance	**2.01**	**2.10**	**2.01**	**1.72**	**1.73**	**1.72**
Unemployment Rate	**2.01**	**2.38**	**1.99**	**1.72**	**1.87**	**1.71**
Wholesale Inventories	**2.01**	1.53	**2.04**	**1.72**	1.35	**1.74**

Table 5: **Strip Returns: CAPM** α

*This table reports the mean abnormal daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. We use the full sample to regress the excess return of the dividend asset on a constant and the contemporaneous excess return on the S&P 500 index. We then compute the abnormal excess return as the difference between the excess return of the strip and the product of the slope estimate and the contemporaneous S&P 500 excess return. We separately calculate the mean abnormal daily excess return on (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We implement the methodology above for each maturity of the dividend asset separately. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	0.37***	-0.24	0.39***	0.20***	0.17	0.20***
Consumer Confidence	0.37***	0.39	0.37***	0.20***	0.27	0.20***
Consumer Credit	0.37***	1.19***	0.33***	0.20***	0.70**	0.18***
Consumer Price Index	0.37***	0.46	0.37***	0.20***	0.40*	0.19***
Existing Homes Sales	0.37***	0.84*	0.35***	0.20***	0.49	0.19***
Federal Fund Rate	0.37***	-0.11	0.39***	0.20***	-0.22	0.22***
Housing Market Index	0.37***	0.57	0.37***	0.20***	0.17	0.20***
Housing Starts	0.37***	0.06	0.39***	0.20***	0.12	0.21***
Initial Jobless Claims	0.37***	0.03	0.49***	0.20***	0.18*	0.21***
Nonfarm Payrolls	0.37***	0.40	0.37***	0.20***	0.16	0.21***
Personal Consumer Expenditure	0.37***	0.24	0.38***	0.20***	0.02	0.21***
Producer Price Index	0.37***	0.25	0.38***	0.20***	0.19	0.20***
Trade Balance	0.37***	-0.37	0.42***	0.20***	-0.16	0.23***
Unemployment Rate	0.37***	0.40	0.37***	0.20***	0.16	0.21***
Wholesale Inventories	0.37***	-0.52	0.43***	0.20***	-0.13	0.22***
		540 Days			**720 Days**	
Construction Spending	0.17***	0.17	0.17***	0.13***	0.28	0.12***
Consumer Confidence	0.17***	0.02	0.18***	0.13***	-0.01	0.14***
Consumer Credit	0.17***	0.61**	0.15***	0.13***	0.48**	0.11***
Consumer Price Index	0.17***	0.41**	0.15***	0.13***	0.26*	0.12***
Existing Homes Sales	0.17***	0.40*	0.16***	0.13***	0.39**	0.12***
Federal Fund Rate	0.17***	-0.00	0.18***	0.13***	-0.08	0.14***
Housing Market Index	0.17***	0.28	0.16***	0.13***	0.06	0.13***
Housing Starts	0.17***	-0.06	0.18***	0.13***	0.09	0.13***
Initial Jobless Claims	0.17***	0.15*	0.17***	0.13***	0.17**	0.12***
Nonfarm Payrolls	0.17***	0.19	0.17***	0.13***	0.05	0.13***
Personal Consumer Expenditure	0.17***	-0.07	0.18***	0.13***	0.13	0.13***
Producer Price Index	0.17***	0.01	0.18***	0.13***	0.06	0.13***
Trade Balance	0.17***	-0.03	0.18***	0.13***	-0.13	0.15***
Unemployment Rate	0.17***	0.19	0.17***	0.13***	0.05	0.13***
Wholesale Inventories	0.17***	-0.08	0.18***	0.13***	-0.10	0.14***

Table 6: **Economic News and The Term Structure of Returns**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the intraday returns of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. The returns can relate to the dividend strip (of initial time to maturity 180, 360, 540, or 720 days) or the S&P 500 index. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**				**S&P 500**
		180 Days	**360 Days**	**540 Days**	**720 Days**	
Construction Spending	β	0.05	-0.01	**-0.05***	-0.02	-0.00
	t-stat	(0.69)	(-0.21)	(-1.90)	(-1.22)	(-0.04)
Consumer Confidence	β	0.05	0.02	-0.01	0.00	**0.03*****
	t-stat	(0.53)	(0.51)	(-0.26)	(0.02)	(7.23)
Consumer Credit	β	0.07	0.05	0.05	0.03	0.00
	t-stat	(0.72)	(1.02)	(1.50)	(1.16)	(0.93)
Consumer Price Index	β	-0.61	**-0.41****	-0.24	-0.15	-0.01
	t-stat	(-1.41)	(-1.96)	(-1.58)	(-1.26)	(-0.98)
Existing Homes Sales	β	0.07	0.05	0.01	0.02	**0.03*****
	t-stat	(0.61)	(0.82)	(0.21)	(0.51)	(4.95)
Federal Fund Rate	β	**-0.95****	**-0.55*****	**-0.30*****	**-0.18****	**-0.03*****
	t-stat	(-2.48)	(-4.07)	(-4.46)	(-1.96)	(-2.88)
Housing Market Index	β	0.10	0.02	-0.00	-0.00	**0.00***
	t-stat	(1.27)	(0.71)	(-0.11)	(-0.12)	(1.92)
Housing Starts	β	**0.75****	**0.38*****	**0.27*****	**0.20*****	**0.01*****
	t-stat	(2.57)	(2.88)	(2.97)	(2.95)	(2.58)
Initial Jobless Claims	β	**-1.18****	**-0.64*****	**-0.43*****	**-0.34*****	**-0.02*****
	t-stat	(-2.44)	(-2.90)	(-3.01)	(-3.14)	(-2.66)
Nonfarm Payrolls	β	**2.62*****	**1.24*****	**0.83*****	**0.63*****	**0.03*****
	t-stat	(5.24)	(5.55)	(5.59)	(5.81)	(4.05)
Personal Consumer Expenditure	β	0.35	0.08	0.03	0.02	0.00
	t-stat	(0.57)	(0.29)	(0.15)	(0.17)	(0.08)
Producer Price Index	β	-0.32	-0.20	-0.15	-0.11	-0.00
	t-stat	(-0.86)	(-1.17)	(-1.22)	(-1.13)	(-0.60)
Trade Balance	β	**-0.94****	**-0.44****	**-0.27****	**-0.19****	**-0.01****
	t-stat	(-2.09)	(-2.29)	(-2.18)	(-2.10)	(-2.46)
Unemployment Rate	β	**-1.08*****	**-0.48*****	**-0.33*****	**-0.23*****	**-0.01****
	t-stat	(-2.62)	(-2.74)	(-2.85)	(-2.72)	(-2.45)
Wholesale Inventories	β	**-0.15***	-0.01	-0.01	-0.01	-0.00
	t-stat	(-1.83)	(-0.40)	(-0.44)	(-0.49)	(-0.60)
	$\bar{R}^2$	3.42%	4.95%	4.71%	4.51%	6.56%
	Obs	1,823	1,823	1,823	1,823	1,823

Table 7: **Cash Flow Model**

*This table reports the parameter estimates of the cash flow forecasting model (see Equation (15)). $\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$ is the ratio of the time-t dividend strip expiring in τ days over the 2-year trailing average payoff of that dividend asset. $IV_t^{(\tau)}$ and $IS_t^{(\tau)}$ are the time-t implied variance and skewness of time to maturity τ, respectively. We estimate the models and present the results separately for dividend strips of initial time to maturity 180 (Panel A), 360 (Panel B), 540 (Panel C), and 720 (Panel D) days. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are corrected following Newey and West (1987) with $\tau + 1$ lags, where τ is expressed in days (i.e. 180, 360, 540, and 720) according to the maturity of the dividend strip.*

Panel A: 180 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.78*****			**0.69*****
	t-stat	(6.55)			(5.10)
$IV_t^{(\tau)}$	β		**-1.35*****		**-0.55***
	t-stat		(-3.60)		(-1.67)
$IS_t^{(\tau)}$	β			-0.07	**-0.08*****
	t-stat			(-1.62)	(-3.17)
	$\bar{R}^2$	57.28%	23.99%	7.88%	68.41%

Panel B: 360 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.96*****			**0.85*****
	t-stat	(12.31)			(6.63)
$IV_t^{(\tau)}$	β		**-1.75*****		-0.56
	t-stat		(-2.83)		(-1.12)
$IS_t^{(\tau)}$	β			-0.09	**-0.09*****
	t-stat			(-1.45)	(-3.31)
	$\bar{R}^2$	71.68%	22.77%	12.18%	82.90%

Panel C: 540 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**1.01*****			**0.94*****
	t-stat	(11.50)			(8.91)
$IV_t^{(\tau)}$	β		**-1.64****		-0.37
	t-stat		(-2.15)		(-0.65)
$IS_t^{(\tau)}$	β			-0.09	**-0.09*****
	t-stat			(-1.39)	(-3.47)
	$\bar{R}^2$	72.47%	17.02%	12.23%	84.38%

Panel D: 720 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.96*****			**0.94*****
	t-stat	(7.01)			(10.06)
$IV_t^{(\tau)}$	β		**-1.49****		-0.20
	t-stat		(-2.16)		(-0.32)
$IS_t^{(\tau)}$	β			-0.10	**-0.11*****
	t-stat			(-1.44)	(-3.48)
	$\bar{R}^2$	66.00%	12.46%	14.31%	82.39%

Table 8: **Cash Flow Channel**

This table presents the contribution of the cash flow channel to the variance of the daily return of the dividend strip of different maturities. We use the parameters of the cash flow forecasting model (see Equation (15)), estimated using the full sample, to compute the cash flow channel. We then regress the time series of the cash flow channel on a constant and the time series of the returns on the dividend asset. The slope estimate of this regression is informative about the contribution of the cash flow channel to the total variation of dividend strip returns. The entries reported under "All" present this slope estimate. In order to obtain the figures linked to the announcement days ("Ann"), we regress the observations of the cash flow channel on announcement days on a constant and the contemporaneously observed dividend strip returns. Finally, we obtain the results for non-announcement days ("Other") by regressing the cash flow channel observed on non-announcement days on a constant and the dividend strip returns recorded on non-announcement days. We implement the steps above separately for the dividend strips of initial time to maturity 180, 360, 540, and 720 days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	67.49%	66.71%	67.63%	84.08%	78.78%	84.77%
Consumer Confidence	67.49%	69.97%	67.29%	84.08%	82.10%	84.23%
Consumer Credit	67.49%	67.92%	67.47%	84.08%	86.92%	83.87%
Consumer Price Index	67.49%	72.39%	67.31%	84.08%	87.63%	83.96%
Existing Homes Sales	67.49%	64.86%	67.62%	84.08%	83.40%	84.07%
Federal Fund Rate	67.49%	59.91%	67.66%	84.08%	69.82%	84.45%
Housing Market Index	67.49%	69.34%	67.43%	84.08%	91.71%	83.81%
Housing Starts	67.49%	71.50%	67.32%	84.08%	89.26%	83.88%
Initial Jobless Claims	67.49%	67.81%	67.45%	84.08%	83.67%	84.15%
Nonfarm Payrolls	67.49%	68.40%	67.43%	84.08%	85.20%	83.97%
Personal Consumer Expenditure	67.49%	65.54%	67.62%	84.08%	88.46%	83.86%
Producer Price Index	67.49%	68.39%	67.45%	84.08%	85.48%	83.99%
Trade Balance	67.49%	70.91%	67.41%	84.08%	86.33%	84.02%
Unemployment Rate	67.49%	68.40%	67.43%	84.08%	85.20%	83.97%
Wholesale Inventories	67.49%	63.83%	67.58%	84.08%	78.96%	84.19%
		540 Days			**720 Days**	
Construction Spending	91.56%	93.76%	91.41%	92.65%	91.25%	92.78%
Consumer Confidence	91.56%	88.48%	91.79%	92.65%	96.98%	92.40%
Consumer Credit	91.56%	90.37%	91.64%	92.65%	88.51%	92.92%
Consumer Price Index	91.56%	96.48%	91.42%	92.65%	94.05%	92.57%
Existing Homes Sales	91.56%	97.21%	91.29%	92.65%	97.15%	92.45%
Federal Fund Rate	91.56%	82.97%	91.71%	92.65%	96.26%	92.58%
Housing Market Index	91.56%	98.14%	91.34%	92.65%	97.87%	92.53%
Housing Starts	91.56%	96.29%	91.33%	92.65%	98.48%	92.36%
Initial Jobless Claims	91.56%	95.87%	90.63%	92.65%	94.53%	92.26%
Nonfarm Payrolls	91.56%	98.74%	91.02%	92.65%	97.46%	92.30%
Personal Consumer Expenditure	91.56%	98.06%	91.28%	92.65%	94.67%	92.60%
Producer Price Index	91.56%	96.81%	91.24%	92.65%	94.79%	92.49%
Trade Balance	91.56%	92.31%	91.52%	92.65%	89.73%	92.78%
Unemployment Rate	91.56%	98.74%	91.02%	92.65%	97.46%	92.30%
Wholesale Inventories	91.56%	82.66%	91.77%	92.65%	88.61%	92.76%

Table 9: **Economic News and the Cash Flow Channel**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected cash flows of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**			
		180 Days	**360 Days**	**540 Days**	**720 Days**
Construction Spending	β	0.00	-0.02	**-0.07****	-0.04
	t-stat	(0.05)	(-0.62)	(-2.07)	(-1.41)
Consumer Confidence	β	0.08	-0.00	0.04	0.07
	t-stat	(1.02)	(-0.00)	(0.74)	(1.16)
Consumer Credit	β	0.05	0.05	**0.07***	0.04
	t-stat	(0.60)	(0.94)	(1.80)	(1.30)
Consumer Price Index	β	-0.49	**-0.42****	**-0.27***	-0.15
	t-stat	(-1.43)	(-2.05)	(-1.65)	(-1.17)
Existing Homes Sales	β	0.12	0.07	0.02	0.03
	t-stat	(1.26)	(1.17)	(0.43)	(0.64)
Federal Fund Rate	β	**-0.73****	**-0.55*****	**-0.31*****	**-0.19***
	t-stat	(-2.42)	(-4.53)	(-4.31)	(-1.92)
Housing Market Index	β	0.05	-0.00	-0.00	0.01
	t-stat	(0.84)	(-0.03)	(-0.09)	(0.40)
Housing Starts	β	**0.53****	**0.33****	**0.24****	**0.17****
	t-stat	(2.21)	(2.50)	(2.46)	(2.41)
Initial Jobless Claims	β	**-1.04*****	**-0.69*****	**-0.52*****	**-0.42*****
	t-stat	(-2.77)	(-3.19)	(-3.43)	(-3.61)
Nonfarm Payrolls	β	**2.05*****	**1.22*****	**0.89*****	**0.71*****
	t-stat	(5.18)	(5.44)	(5.58)	(6.27)
Personal Consumer Expenditure	β	0.45	0.23	0.10	0.08
	t-stat	(0.97)	(0.78)	(0.53)	(0.55)
Producer Price Index	β	-0.30	-0.24	-0.20	-0.15
	t-stat	(-0.89)	(-1.23)	(-1.35)	(-1.27)
Trade Balance	β	-0.45	**-0.30***	-0.16	-0.10
	t-stat	(-1.31)	(-1.66)	(-1.32)	(-1.00)
Unemployment Rate	β	**-0.90*****	**-0.54*****	**-0.38*****	**-0.24*****
	t-stat	(-2.84)	(-3.12)	(-3.15)	(-2.75)
Wholesale Inventories	β	-0.10	-0.02	-0.01	-0.01
	t-stat	(-1.62)	(-0.67)	(-0.39)	(-0.84)
	$\bar{R}^2$	4.25%	6.17%	5.61%	5.49%

Table 10: **Economic News and the Discount Rate Channel**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected discount rates of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS** 180 Days	360 Days	540 Days	720 Days
Construction Spending	β	0.01	-0.02	-0.02	-0.01
	t-stat	(0.16)	(-1.47)	(-1.01)	(-0.71)
Consumer Confidence	β	0.04	-0.00	0.03	0.07
	t-stat	(0.86)	(-0.05)	(1.18)	(1.24)
Consumer Credit	β	-0.03	-0.01	0.02	0.02
	t-stat	(-0.73)	(-1.06)	(1.23)	(0.97)
Consumer Price Index	β	0.21	0.05	0.01	**0.02****
	t-stat	(1.33)	(1.53)	(0.72)	(2.37)
Existing Homes Sales	β	0.03	0.01	-0.00	-0.01
	t-stat	(0.52)	(0.24)	(-0.05)	(-0.32)
Federal Fund Rate	β	**0.32****	0.05	**0.01***	0.00
	t-stat	(2.29)	(1.00)	(1.70)	(0.67)
Housing Market Index	β	-0.01	-0.01	-0.00	0.01
	t-stat	(-0.49)	(-0.73)	(-0.19)	(0.73)
Housing Starts	β	**-0.22****	**-0.05***	**-0.02****	**-0.01****
	t-stat	(-2.08)	(-1.71)	(-2.08)	(-2.09)
Initial Jobless Claims	β	**0.46*****	**0.12*****	0.02	0.00
	t-stat	(2.67)	(3.34)	(1.23)	(0.38)
Nonfarm Payrolls	β	**-0.91*****	**-0.18*****	**-0.05*****	0.00
	t-stat	(-4.92)	(-4.15)	(-3.17)	(0.15)
Personal Consumer Expenditure	β	-0.23	0.00	-0.01	-0.00
	t-stat	(-1.11)	(0.11)	(-0.49)	(-0.15)
Producer Price Index	β	0.13	0.04	0.01	0.01
	t-stat	(0.89)	(1.22)	(1.12)	(1.04)
Trade Balance	β	0.23	0.03	0.02	**0.03****
	t-stat	(1.53)	(1.18)	(1.50)	(1.96)
Unemployment Rate	β	**0.40*****	0.05	0.02	**0.04***
	t-stat	(2.77)	(1.50)	(1.57)	(1.84)
Wholesale Inventories	β	0.04	-0.01	-0.00	-0.00
	t-stat	(1.26)	(-0.75)	(-0.10)	(-0.12)
	$\bar{R}^2$	4.13%	3.29%	0.09%	0.40%

Appendix to

"Dissecting Macroeconomic News"

Not Intended for Publication!

Will be Provided as Online Appendix

Table A.1: **Federal Fund Rate: Announcement Dates**

This table contains the list of the announcement dates and times of the federal fund rate during our sample period.

Date	**Time**	**Date**	**Time**	**Date**	**Time**
January 31, 2006	14:14	August 12, 2009	14:15	January 30, 2013	14:15
March 28, 2006	14:15	September 23, 2009	14:15	March 20, 2013	14:00
May 10, 2006	14:15	November 04, 2009	14:15	May 01, 2013	14:00
June 29, 2006	14:15	December 16, 2009	14:15	June 19, 2013	14:00
August 08, 2006	14:15	January 27, 2010	14:15	July 31, 2013	14:00
September 20, 2006	14:15	March 16, 2010	14:15	September 18, 2013	14:00
October 25, 2006	14:15	April 28, 2010	14:15	October 30, 2013	14:00
December 12, 2006	14:15	June 23, 2010	14:15	December 18, 2013	14:00
January 31, 2007	14:15	August 10, 2010	14:15	January 29, 2014	14:00
March 21, 2007	14:15	September 21, 2010	14:15	March 19, 2014	14:00
May 09, 2007	14:15	November 03, 2010	14:15	April 30, 2014	14:00
June 28, 2007	14:15	December 14, 2010	14:15	June 18, 2014	14:00
August 07, 2007	14:15	January 26, 2011	14:15	July 30, 2014	14:00
September 18, 2007	14:15	March 15, 2011	14:15	September 17, 2014	14:00
October 31, 2007	14:15	April 27, 2011	12:30	October 29, 2014	14:00
December 11, 2007	14:15	June 22, 2011	12:30	December 17, 2014	14:00
January 30, 2008	14:15	August 09, 2011	14:15	January 28, 2015	14:00
March 18, 2008	14:15	September 21, 2011	14:15	March 18, 2015	14:00
April 30, 2008	14:15	November 02, 2011	12:30	April 29, 2015	14:00
June 25, 2008	14:15	December 13, 2011	14:15	June 17, 2015	14:00
August 05, 2008	14:15	January 25, 2012	12:30	July 29, 2015	14:00
September 16, 2008	14:15	March 13, 2012	14:15	September 17, 2015	14:00
October 29, 2008	14:17	April 25, 2012	12:30	October 28, 2015	14:00
December 16, 2008	14:15	June 20, 2012	12:30	December 16, 2015	14:00
January 28, 2009	14:15	August 01, 2012	14:15	January 27, 2016	14:00
March 18, 2009	14:15	September 13, 2012	12:30	March 16, 2016	14:00
April 29, 2009	14:15	October 24, 2012	14:15	April 27, 2016	14:00
June 24, 2009	14:15	December 12, 2012	12:30		

Table A.2: **Economic News and The Term Structure of Returns (Reduced Sample)**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the intraday returns of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. The returns can relate to the dividend strip (of initial time to maturity 180, 360, 540, or 720 days) or the S&P 500 index. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS** 180 Days	360 Days	540 Days	720 Days	**S&P 500**
Construction Spending	β	-0.00	-0.00	**-0.05***	-0.02	-0.00
	t-stat	(-0.04)	(-0.08)	(-1.91)	(-1.11)	(-0.28)
Consumer Confidence	β	0.04	0.00	0.00	0.00	**0.04*****
	t-stat	(0.40)	(0.02)	(0.09)	(0.06)	(7.42)
Consumer Credit	β	0.08	0.06	0.05	0.02	0.00
	t-stat	(0.64)	(0.96)	(1.25)	(0.80)	(0.40)
Consumer Price Index	β	-0.70	**-0.47****	-0.28	-0.17	-0.01
	t-stat	(-1.40)	(-1.99)	(-1.62)	(-1.28)	(-0.90)
Existing Homes Sales	β	0.09	0.06	0.02	0.04	**0.03*****
	t-stat	(0.69)	(0.97)	(0.50)	(1.00)	(4.97)
Federal Fund Rate	β	**-1.05****	**-0.59*****	**-0.32*****	**-0.19***	**-0.03*****
	t-stat	(-2.38)	(-3.77)	(-4.24)	(-1.86)	(-2.88)
Housing Market Index	β	0.06	0.01	0.00	0.00	0.00
	t-stat	(0.74)	(0.26)	(0.00)	(0.15)	(1.39)
Housing Starts	β	**0.75****	**0.37****	**0.26****	**0.19****	**0.01****
	t-stat	(2.18)	(2.46)	(2.58)	(2.47)	(2.51)
Initial Jobless Claims	β	**-1.50*****	**-0.80*****	**-0.54*****	**-0.42*****	**-0.02*****
	t-stat	(-2.74)	(-3.22)	(-3.29)	(-3.44)	(-2.78)
Nonfarm Payrolls	β	**2.96*****	**1.40*****	**0.93*****	**0.70*****	**0.03*****
	t-stat	(5.10)	(5.48)	(5.52)	(5.66)	(3.64)
Personal Consumer Expenditure	β	0.68	0.23	0.10	0.08	0.00
	t-stat	(1.01)	(0.71)	(0.52)	(0.53)	(0.24)
Producer Price Index	β	-0.43	-0.28	-0.22	-0.16	-0.01
	t-stat	(-0.89)	(-1.23)	(-1.35)	(-1.29)	(-0.87)
Trade Balance	β	-0.68	-0.33	-0.18	-0.13	**-0.01****
	t-stat	(-1.38)	(-1.60)	(-1.37)	(-1.30)	(-2.22)
Unemployment Rate	β	**-1.30*****	**-0.59*****	**-0.40*****	**-0.28*****	**-0.01****
	t-stat	(-2.83)	(-3.00)	(-3.12)	(-2.98)	(-2.56)
Wholesale Inventories	β	-0.14	-0.01	-0.01	-0.01	-0.00
	t-stat	(-1.52)	(-0.25)	(-0.32)	(-0.86)	(-0.71)
	$\bar{R}^2$	4.23%	5.94%	5.55%	5.30%	7.57%
	Obs	1,476	1,476	1,476	1,476	1,476

Table A.3: **Mean: Moneyness Restriction**

This table reports the mean daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from -0.625 *and* -0.375*. In order to calculate the mean daily excess return, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the mean separately for dividend strips of initial time to maturity 180, 360, 540, and 720 days. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics. We highlight in bold all instances where we reject the null hypothesis that the mean excess return calculated across days [name in column] is significantly different (at the 10 % significance level) from the mean excess return on the S&P 500 index calculated on the same days.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	**0.34*****	-0.22	**0.36*****	**0.19*****	0.08	**0.19*****
Consumer Confidence	**0.34*****	0.18	**0.35*****	**0.19*****	0.14	**0.19*****
Consumer Credit	**0.34*****	**1.10****	**0.30*****	**0.19*****	**0.86*****	0.16**
Consumer Price Index	**0.34*****	0.48	**0.33*****	**0.19*****	0.30	**0.18*****
Existing Homes Sales	**0.34*****	**0.77**	**0.32*****	**0.19*****	0.19	**0.19*****
Federal Fund Rate	**0.34*****	-0.05	**0.36*****	**0.19*****	-0.05	**0.20*****
Housing Market Index	**0.34*****	-0.11	**0.35*****	**0.19*****	-0.01	**0.19*****
Housing Starts	**0.34*****	0.04	**0.36*****	**0.19*****	0.09	**0.20*****
Initial Jobless Claims	**0.34*****	0.19	**0.39*****	**0.19*****	0.15	**0.20*****
Nonfarm Payrolls	**0.34*****	-0.29	**0.38*****	**0.19*****	0.01	**0.20*****
Personal Consumer Expenditure	**0.34*****	0.11	**0.35*****	**0.19*****	0.00	**0.20*****
Producer Price Index	**0.34*****	0.41	**0.33*****	**0.19*****	0.24	**0.19*****
Trade Balance	**0.34*****	-0.37	**0.39*****	**0.19*****	-0.10	**0.21*****
Unemployment Rate	**0.34*****	-0.29	**0.38*****	**0.19*****	0.01	**0.20*****
Wholesale Inventories	**0.34*****	0.01	**0.36*****	**0.19*****	0.13	**0.19*****
		540 Days			**720 Days**	
Construction Spending	**0.17*****	0.29	**0.17*****	**0.13*****	0.31	**0.13*****
Consumer Confidence	**0.17*****	-0.09	**0.19*****	**0.13*****	-0.15	**0.15*****
Consumer Credit	**0.17*****	**0.61****	**0.15*****	**0.13*****	**0.58*****	0.11**
Consumer Price Index	**0.17*****	0.32	**0.16*****	**0.13*****	0.33*	0.12***
Existing Homes Sales	**0.17*****	**0.36**	**0.16*****	**0.13*****	**0.29**	0.13***
Federal Fund Rate	**0.17*****	0.09	**0.18*****	**0.13*****	**-0.03**	**0.14*****
Housing Market Index	**0.17*****	0.15	**0.17*****	**0.13*****	0.08	**0.14*****
Housing Starts	**0.17*****	0.06	**0.18*****	**0.13*****	0.13	**0.13*****
Initial Jobless Claims	**0.17*****	0.13	**0.19*****	**0.13*****	0.18**	0.12**
Nonfarm Payrolls	**0.17*****	0.17	**0.17*****	**0.13*****	0.07	**0.14*****
Personal Consumer Expenditure	**0.17*****	0.13	**0.17*****	**0.13*****	0.22	0.13***
Producer Price Index	**0.17*****	0.10	**0.18*****	**0.13*****	0.07	**0.14*****
Trade Balance	**0.17*****	0.07	**0.18*****	**0.13*****	-0.11	**0.15*****
Unemployment Rate	**0.17*****	0.17	**0.17*****	**0.13*****	0.07	**0.14*****
Wholesale Inventories	**0.17*****	0.13	**0.17*****	**0.13*****	-0.04	**0.14*****

Table A.4: **Standard Deviation: Moneyness Restriction**

This table reports the standard deviation of the daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from −0.625 and −0.375. In order to calculate the standard deviation of daily excess returns, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the standard deviation separately for dividend strips of initial time to maturity 180, 360, 540, and 720 days. We highlight in bold all instances where we reject the null hypothesis that the standard deviation of the excess returns calculated across days [name in column] is significantly different (at the 10 % significance level) from the standard deviation of the excess returns on the S&P 500 index calculated on the same days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
	180 Days			**360 Days**		
Construction Spending	**4.84**	**5.17**	**4.83**	**2.70**	**3.06**	**2.69**
Consumer Confidence	**4.84**	**4.76**	**4.84**	**2.70**	**2.95**	**2.69**
Consumer Credit	**4.84**	**5.00**	**4.83**	**2.70**	**3.21**	**2.67**
Consumer Price Index	**4.84**	**4.65**	**4.85**	**2.70**	**2.48**	**2.72**
Existing Homes Sales	**4.84**	**4.74**	**4.84**	**2.70**	**3.08**	**2.68**
Federal Fund Rate	**4.84**	**4.39**	**4.86**	**2.70**	**2.72**	**2.70**
Housing Market Index	**4.84**	**4.87**	**4.84**	**2.70**	**2.59**	**2.71**
Housing Starts	**4.84**	**4.70**	**4.85**	**2.70**	**2.61**	**2.71**
Initial Jobless Claims	**4.84**	**4.99**	**4.78**	**2.70**	**2.65**	**2.72**
Nonfarm Payrolls	**4.84**	**7.06**	**4.67**	**2.70**	**3.15**	**2.67**
Personal Consumer Expenditure	**4.84**	**5.05**	**4.83**	**2.70**	**2.71**	**2.70**
Producer Price Index	**4.84**	**4.87**	**4.84**	**2.70**	**3.02**	**2.68**
Trade Balance	**4.84**	**4.64**	**4.85**	**2.70**	**2.80**	**2.70**
Unemployment Rate	**4.84**	**7.06**	**4.67**	**2.70**	**3.15**	**2.67**
Wholesale Inventories	**4.84**	**3.98**	**4.89**	**2.70**	**2.29**	**2.73**
	540 Days			**720 Days**		
Construction Spending	**2.29**	**2.29**	**2.29**	**1.99**	**1.99**	**1.99**
Consumer Confidence	**2.29**	**2.38**	**2.29**	**1.99**	**2.31**	**1.97**
Consumer Credit	**2.29**	**2.69**	**2.27**	**1.99**	**2.18**	**1.98**
Consumer Price Index	**2.29**	**2.22**	**2.30**	**1.99**	**2.03**	**1.99**
Existing Homes Sales	**2.29**	**2.45**	**2.28**	**1.99**	**2.13**	**1.98**
Federal Fund Rate	**2.29**	**2.03**	**2.30**	**1.99**	**1.93**	**1.99**
Housing Market Index	**2.29**	**2.10**	**2.30**	**1.99**	**1.66**	**2.00**
Housing Starts	**2.29**	**2.33**	**2.29**	**1.99**	**1.92**	**1.99**
Initial Jobless Claims	**2.29**	**2.22**	**2.32**	**1.99**	**1.94**	**2.01**
Nonfarm Payrolls	**2.29**	**2.41**	**2.28**	**1.99**	**2.01**	**1.99**
Personal Consumer Expenditure	**2.29**	**2.05**	**2.30**	**1.99**	**1.79**	**2.00**
Producer Price Index	**2.29**	**2.37**	**2.29**	**1.99**	**2.26**	**1.97**
Trade Balance	**2.29**	**2.15**	**2.30**	**1.99**	**1.89**	**2.00**
Unemployment Rate	**2.29**	**2.41**	**2.28**	**1.99**	**2.01**	**1.99**
Wholesale Inventories	**2.29**	**2.80**	**2.26**	**1.99**	**1.90**	**1.99**

Table A.5: **CAPM α: Moneyness Restriction**

*This table reports the mean abnormal daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from -0.625 and -0.375. We use the full sample to regress the excess return of the dividend asset on a constant and the contemporaneous excess return on the S&P 500 index. We then compute the abnormal excess return as the difference between the excess return of the strip and the product of the slope estimate and the contemporaneous S&P 500 excess return. We separately calculate the mean abnormal daily excess return on (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We implement the methodology above for each maturity of the dividend asset separately. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
	180 Days			**360 Days**		
Construction Spending	0.35***	-0.15	0.37***	0.19***	0.09	0.19***
Consumer Confidence	0.35***	0.21	0.36***	0.19***	0.15	0.19***
Consumer Credit	0.35***	1.05**	0.32***	0.19***	0.85***	0.16***
Consumer Price Index	0.35***	0.51	0.34***	0.19***	0.31	0.18***
Existing Homes Sales	0.35***	0.69	0.34***	0.19***	0.18	0.19***
Federal Fund Rate	0.35***	0.10	0.36***	0.19***	-0.02	0.20***
Housing Market Index	0.35***	0.01	0.36***	0.19***	0.01	0.20***
Housing Starts	0.35***	0.09	0.37***	0.19***	0.10	0.20***
Initial Jobless Claims	0.35***	0.21	0.41***	0.19***	0.15	0.20***
Nonfarm Payrolls	0.35***	-0.29	0.39***	0.19***	0.01	0.20***
Personal Consumer Expenditure	0.35***	0.07	0.36***	0.19***	-0.00	0.20***
Producer Price Index	0.35***	0.41	0.35***	0.19***	0.24	0.19***
Trade Balance	0.35***	-0.31	0.40***	0.19***	-0.09	0.21***
Unemployment Rate	0.35***	-0.29	0.39***	0.19***	0.01	0.20***
Wholesale Inventories	0.35***	-0.05	0.38***	0.19***	0.12	0.20***
	540 Days			**720 Days**		
Construction Spending	0.17***	0.29	0.17***	0.13***	0.30	0.13***
Consumer Confidence	0.17***	-0.10	0.19***	0.13***	-0.16	0.15***
Consumer Credit	0.17***	0.61**	0.15***	0.13***	0.59***	0.11**
Consumer Price Index	0.17***	0.32	0.16***	0.13***	0.33*	0.12***
Existing Homes Sales	0.17***	0.36	0.16***	0.13***	0.30	0.12***
Federal Fund Rate	0.17***	0.08	0.18***	0.13***	-0.06	0.14***
Housing Market Index	0.17***	0.15	0.17***	0.13***	0.05	0.13***
Housing Starts	0.17***	0.06	0.18***	0.13***	0.12	0.13***
Initial Jobless Claims	0.17***	0.13	0.19***	0.13***	0.18**	0.11**
Nonfarm Payrolls	0.17***	0.17	0.17***	0.13***	0.07	0.14***
Personal Consumer Expenditure	0.17***	0.13	0.17***	0.13***	0.22	0.13***
Producer Price Index	0.17***	0.10	0.18***	0.13***	0.07	0.14***
Trade Balance	0.17***	0.07	0.18***	0.13***	-0.12	0.15***
Unemployment Rate	0.17***	0.17	0.17***	0.13***	0.07	0.14***
Wholesale Inventories	0.17***	0.13	0.17***	0.13***	-0.03	0.14***

Table A.6: **Cash Flow Channel: Moneyness Restriction**

This table presents the contribution of the cash flow channel to the variance of the daily return of the dividend strip of different maturities. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from −0.625 and −0.375. We use the parameters of the cash flow forecasting model (see Equation (15)), estimated using the full sample, to compute the cash flow channel. We then regress the time series of the cash flow channel on a constant and the time series of the returns on the dividend asset. The slope estimate of this regression is informative about the contribution of the cash flow channel to the total variation of dividend strip returns. The entries reported under "All" present this slope estimate. In order to obtain the figures linked to the announcement days ("Ann"), we regress the observations of the cash flow channel on announcement days on a constant and the contemporaneously observed dividend strip returns. Finally, we obtain the results for non-announcement days ("Other") by regressing the cash flow channel observed on non-announcement days on a constant and the dividend strip returns recorded on non-announcement days. We implement the steps above separately for the dividend strips of initial time to maturity 180, 360, 540, and 720 days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	63.55%	62.75%	63.70%	80.85%	76.49%	81.39%
Consumer Confidence	63.55%	64.41%	63.50%	80.85%	78.72%	81.00%
Consumer Credit	63.55%	64.17%	63.52%	80.85%	84.35%	80.55%
Consumer Price Index	63.55%	67.89%	63.41%	80.85%	85.30%	80.70%
Existing Homes Sales	63.55%	60.46%	63.70%	80.85%	80.16%	80.85%
Federal Fund Rate	63.55%	58.45%	63.66%	80.85%	63.90%	81.24%
Housing Market Index	63.55%	66.66%	63.47%	80.85%	91.05%	80.53%
Housing Starts	63.55%	66.93%	63.42%	80.85%	87.95%	80.58%
Initial Jobless Claims	63.55%	64.48%	63.32%	80.85%	81.69%	80.70%
Nonfarm Payrolls	63.55%	66.02%	63.36%	80.85%	83.24%	80.62%
Personal Consumer Expenditure	63.55%	61.76%	63.66%	80.85%	85.56%	80.63%
Producer Price Index	63.55%	63.51%	63.55%	80.85%	81.12%	80.83%
Trade Balance	63.55%	65.66%	63.51%	80.85%	82.21%	80.82%
Unemployment Rate	63.55%	66.02%	63.36%	80.85%	83.24%	80.62%
Wholesale Inventories	63.55%	60.48%	63.63%	80.85%	73.62%	81.07%
		540 Days			**720 Days**	
Construction Spending	87.83%	91.87%	87.59%	90.69%	93.35%	90.54%
Consumer Confidence	87.83%	89.23%	87.75%	90.69%	93.24%	90.58%
Consumer Credit	87.83%	87.44%	87.84%	90.69%	88.30%	90.81%
Consumer Price Index	87.83%	94.92%	87.60%	90.69%	92.29%	90.60%
Existing Homes Sales	87.83%	87.96%	87.82%	90.69%	95.57%	90.44%
Federal Fund Rate	87.83%	88.23%	87.83%	90.69%	98.21%	90.54%
Housing Market Index	87.83%	97.85%	87.53%	90.69%	96.61%	90.54%
Housing Starts	87.83%	96.27%	87.43%	90.69%	98.03%	90.34%
Initial Jobless Claims	87.83%	91.75%	87.03%	90.69%	91.07%	90.63%
Nonfarm Payrolls	87.83%	99.51%	87.04%	90.69%	99.12%	90.07%
Personal Consumer Expenditure	87.83%	98.31%	87.47%	90.69%	93.81%	90.60%
Producer Price Index	87.83%	92.68%	87.58%	90.69%	93.18%	90.52%
Trade Balance	87.83%	92.11%	87.66%	90.69%	90.35%	90.71%
Unemployment Rate	87.83%	99.51%	87.04%	90.69%	99.12%	90.07%
Wholesale Inventories	87.83%	78.17%	88.69%	90.69%	82.64%	91.07%

Table A.7: **Economic News and Dividend Strip Returns: Moneyness Restriction**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the intraday returns of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from -0.625 and -0.375. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**			
		180 Days	**360 Days**	**540 Days**	**720 Days**
Construction Spending	β	-0.04	0.02	-0.04	-0.01
	t-stat	(-0.45)	(0.48)	(-1.40)	(-0.44)
Consumer Confidence	β	0.02	-0.00	-0.00	-0.01
	t-stat	(0.20)	(-0.01)	(-0.11)	(-0.25)
Consumer Credit	β	0.14	0.09	0.07	0.03
	t-stat	(0.93)	(1.14)	(1.55)	(1.06)
Consumer Price Index	β	-0.79	**-0.46***	-0.27	-0.17
	t-stat	(-1.63)	(-1.95)	(-1.58)	(-1.27)
Existing Homes Sales	β	0.09	0.07	0.06	0.05
	t-stat	(0.63)	(1.00)	(1.15)	(1.06)
Federal Fund Rate	β	**-0.41***	**-0.37*****	**-0.30*****	**-0.27*****
	t-stat	(-1.74)	(-2.90)	(-3.38)	(-3.56)
Housing Market Index	β	0.08	0.01	0.00	0.01
	t-stat	(0.90)	(0.24)	(0.09)	(0.35)
Housing Starts	β	**0.79****	**0.39*****	**0.27*****	**0.18****
	t-stat	(2.30)	(2.58)	(2.72)	(2.45)
Initial Jobless Claims	β	**-1.41****	**-0.79*****	**-0.54*****	**-0.43*****
	t-stat	(-2.48)	(-3.14)	(-3.25)	(-3.45)
Nonfarm Payrolls	β	**2.87*****	**1.41*****	**0.92*****	**0.72*****
	t-stat	(4.92)	(5.55)	(5.43)	(5.74)
Personal Consumer Expenditure	β	0.64	0.23	0.13	0.07
	t-stat	(0.94)	(0.73)	(0.63)	(0.51)
Producer Price Index	β	-0.49	-0.28	-0.22	-0.17
	t-stat	(-1.01)	(-1.25)	(-1.40)	(-1.36)
Trade Balance	β	-0.66	**-0.37***	-0.19	-0.12
	t-stat	(-1.35)	(-1.78)	(-1.36)	(-1.18)
Unemployment Rate	β	**-1.36*****	**-0.59*****	**-0.39*****	**-0.27*****
	t-stat	(-2.93)	(-3.00)	(-3.01)	(-2.79)
Wholesale Inventories	β	-0.16	-0.01	-0.02	-0.00
	t-stat	(-1.50)	(-0.12)	(-0.92)	(-0.17)
	$\bar{R}^2$	3.82%	5.59%	5.34%	5.55%

Table A.8: **Economic News and the Cash Flow Channel: Moneyness Restriction**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected cash flows of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from -0.625 and -0.375. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS** 180 Days	360 Days	540 Days	720 Days
Construction Spending	β	-0.02	-0.00	**-0.06***	-0.03
	t-stat	(-0.31)	(-0.05)	(-1.75)	(-0.91)
Consumer Confidence	β	0.07	-0.00	0.03	0.07
	t-stat	(0.85)	(-0.02)	(0.58)	(1.02)
Consumer Credit	β	0.09	0.07	**0.09****	0.05
	t-stat	(0.89)	(1.12)	(2.20)	(1.62)
Consumer Price Index	β	**-0.52***	**-0.40****	-0.25	-0.15
	t-stat	(-1.67)	(-2.03)	(-1.61)	(-1.15)
Existing Homes Sales	β	0.12	0.07	0.05	0.04
	t-stat	(1.22)	(1.17)	(0.94)	(0.80)
Federal Fund Rate	β	**-0.27***	**-0.36*****	**-0.29*****	**-0.25*****
	t-stat	(-1.78)	(-3.29)	(-3.52)	(-3.58)
Housing Market Index	β	0.06	0.00	-0.00	0.01
	t-stat	(1.00)	(0.01)	(-0.00)	(0.57)
Housing Starts	β	**0.52****	**0.33*****	**0.24*****	**0.17****
	t-stat	(2.33)	(2.60)	(2.60)	(2.38)
Initial Jobless Claims	β	**-0.92****	**-0.65*****	**-0.51*****	**-0.42*****
	t-stat	(-2.51)	(-3.11)	(-3.41)	(-3.63)
Nonfarm Payrolls	β	**1.88*****	**1.19*****	**0.86*****	**0.71*****
	t-stat	(5.00)	(5.51)	(5.50)	(6.37)
Personal Consumer Expenditure	β	0.40	0.23	0.12	0.07
	t-stat	(0.89)	(0.79)	(0.63)	(0.54)
Producer Price Index	β	-0.32	-0.23	-0.21	-0.16
	t-stat	(-1.01)	(-1.25)	(-1.40)	(-1.33)
Trade Balance	β	-0.41	**-0.32***	-0.17	-0.08
	t-stat	(-1.27)	(-1.84)	(-1.31)	(-0.88)
Unemployment Rate	β	**-0.89*****	**-0.52*****	**-0.37*****	**-0.23****
	t-stat	(-2.93)	(-3.13)	(-3.05)	(-2.56)
Wholesale Inventories	β	-0.11	-0.02	-0.02	-0.01
	t-stat	(-1.54)	(-0.44)	(-0.99)	(-0.27)
	$\bar{R}^2$	3.83%	5.82%	5.42%	5.76%

Table A.9: **Economic News and the Discount Rate Channel: Moneyness Restriction**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected discount rates of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. In computing the dividend strips, we impose restrictions on the moneyness of the option contracts. In particular, we use Call options with a Black-Scholes delta that is between 0.375 and 0.625. Relatedly, we only include Put option contracts with a Black-Scholes delta ranging from -0.625 and -0.375. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**			
		180 Days	**360 Days**	**540 Days**	**720 Days**
Construction Spending	β	0.02	-0.02	-0.02	-0.01
	t-stat	(0.42)	(-1.63)	(-1.01)	(-0.73)
Consumer Confidence	β	0.05	-0.00	0.03	0.07
	t-stat	(0.86)	(-0.02)	(1.23)	(1.25)
Consumer Credit	β	-0.05	-0.02	0.02	0.02
	t-stat	(-1.00)	(-1.21)	(1.00)	(0.87)
Consumer Price Index	β	0.26	0.06	0.01	**0.02****
	t-stat	(1.57)	(1.55)	(0.81)	(2.34)
Existing Homes Sales	β	0.03	0.00	-0.01	-0.01
	t-stat	(0.44)	(0.18)	(-0.40)	(-0.33)
Federal Fund Rate	β	0.14	0.01	0.01	**0.01*****
	t-stat	(1.64)	(0.34)	(1.52)	(2.61)
Housing Market Index	β	-0.02	-0.01	-0.00	0.01
	t-stat	(-0.69)	(-0.68)	(-0.21)	(0.66)
Housing Starts	β	**-0.26****	**-0.06***	**-0.03****	**-0.02****
	t-stat	(-2.22)	(-1.95)	(-2.33)	(-2.26)
Initial Jobless Claims	β	**0.49****	**0.14*****	0.03	0.01
	t-stat	(2.42)	(3.24)	(1.59)	(0.77)
Nonfarm Payrolls	β	**-0.99*****	**-0.22*****	**-0.06*****	-0.01
	t-stat	(-4.76)	(-4.50)	(-3.62)	(-0.18)
Personal Consumer Expenditure	β	-0.24	-0.00	-0.01	-0.00
	t-stat	(-1.03)	(-0.06)	(-0.59)	(-0.18)
Producer Price Index	β	0.17	0.05	0.02	0.01
	t-stat	(1.01)	(1.24)	(1.26)	(1.18)
Trade Balance	β	0.25	0.05	0.02	**0.03***
	t-stat	(1.49)	(1.43)	(1.56)	(1.94)
Unemployment Rate	β	**0.47*****	**0.07***	**0.03***	**0.04***
	t-stat	(2.88)	(1.76)	(1.88)	(1.93)
Wholesale Inventories	β	0.05	-0.01	-0.00	-0.00
	t-stat	(1.38)	(-0.80)	(-0.01)	(-0.22)
	$\bar{R}^2$	3.73%	3.56%	0.55%	0.47%

Table A.10: **Mean: No Interpolation**

*This table reports the mean daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. In order to calculate the mean daily excess return, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the mean separately for dividend strips of time to maturity closest to 180, 360, 540, and 720 days. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics. We highlight in bold all instances where we reject the null hypothesis that the mean excess return calculated across days [name in column] is significantly different (at the 10 % significance level) from the mean excess return on the S&P 500 index calculated on the same days.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	**0.38*** **	-0.38	**0.41*** **	**0.23*** **	0.22	**0.23*** **
Consumer Confidence	**0.38*** **	0.49	**0.38*** **	**0.23*** **	0.34	**0.22*** **
Consumer Credit	**0.38*** **	**1.23** **	**0.34*** **	**0.23*** **	**0.80*** **	**0.20*** **
Consumer Price Index	**0.38*** **	0.58	**0.37*** **	**0.23*** **	0.42*	**0.22*** **
Existing Homes Sales	**0.38*** **	**0.84* **	**0.36*** **	**0.23*** **	**0.59* **	**0.21*** **
Federal Fund Rate	**0.38*** **	-0.14	**0.40*** **	**0.23*** **	**-0.31**	**0.25*** **
Housing Market Index	**0.38*** **	0.23	**0.39*** **	**0.23*** **	0.17	**0.23*** **
Housing Starts	**0.38*** **	0.13	**0.40*** **	**0.23*** **	0.21	**0.23*** **
Initial Jobless Claims	**0.38*** **	0.04	**0.51*** **	**0.23*** **	0.20*	**0.24*** **
Nonfarm Payrolls	**0.38*** **	0.41	**0.38*** **	**0.23*** **	0.20	**0.23*** **
Personal Consumer Expenditure	**0.38*** **	0.18	**0.39*** **	**0.23*** **	0.11	**0.24*** **
Producer Price Index	**0.38*** **	0.17	**0.40*** **	**0.23*** **	0.23	**0.23*** **
Trade Balance	**0.38*** **	-0.40	**0.43*** **	**0.23*** **	-0.18	**0.26*** **
Unemployment Rate	**0.38*** **	0.41	**0.38*** **	**0.23*** **	0.20	**0.23*** **
Wholesale Inventories	**0.38*** **	-0.50	**0.44*** **	**0.23*** **	-0.18	**0.26*** **
		540 Days			**720 Days**	
Construction Spending	**0.18*** **	0.26	**0.18*** **	**0.14*** **	0.31	**0.14*** **
Consumer Confidence	**0.18*** **	-0.00	**0.19*** **	**0.14*** **	-0.00	**0.15*** **
Consumer Credit	**0.18*** **	**0.56** **	**0.16*** **	**0.14*** **	**0.49** **	0.13***
Consumer Price Index	**0.18*** **	0.43***	**0.16*** **	**0.14*** **	0.25	**0.14*** **
Existing Homes Sales	**0.18*** **	**0.39**	**0.17*** **	**0.14*** **	**0.37* **	0.13***
Federal Fund Rate	**0.18*** **	**-0.06**	**0.19*** **	**0.14*** **	**0.02**	**0.15*** **
Housing Market Index	**0.18*** **	0.28	**0.18*** **	**0.14*** **	0.09	**0.15*** **
Housing Starts	**0.18*** **	-0.12	**0.20*** **	**0.14*** **	0.11	**0.15*** **
Initial Jobless Claims	**0.18*** **	0.13	**0.20*** **	**0.14*** **	**0.21*** **	0.12**
Nonfarm Payrolls	**0.18*** **	0.22	**0.18*** **	**0.14*** **	0.05	**0.15*** **
Personal Consumer Expenditure	**0.18*** **	-0.11	**0.19*** **	**0.14*** **	0.05	**0.15*** **
Producer Price Index	**0.18*** **	0.04	**0.19*** **	**0.14*** **	0.02	**0.15*** **
Trade Balance	**0.18*** **	-0.03	**0.19*** **	**0.14*** **	-0.12	**0.16*** **
Unemployment Rate	**0.18*** **	0.22	**0.18*** **	**0.14*** **	0.05	**0.15*** **
Wholesale Inventories	**0.18*** **	-0.02	**0.19*** **	**0.14*** **	-0.10	**0.16*** **

Table A.11: **Standard Deviation: No Interpolation**

This table reports the standard deviation of the daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. In order to calculate the standard deviation of daily excess returns, we separately use information about (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We compute the standard deviation separately for dividend strips of time to maturity closest to 180, 360, 540, and 720 days. We highlight in bold all instances where we reject the null hypothesis that the standard deviation of the excess returns calculated across days [name in column] is significantly different (at the 10 % significance level) from the standard deviation of the excess returns on the S&P 500 index calculated on the same days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	**4.62**	**5.29**	**4.60**	**2.78**	**3.30**	**2.76**
Consumer Confidence	**4.62**	**5.71**	**4.55**	**2.78**	**3.01**	**2.77**
Consumer Credit	**4.62**	**4.81**	**4.61**	**2.78**	**2.99**	**2.77**
Consumer Price Index	**4.62**	**4.35**	**4.64**	**2.78**	**2.57**	**2.79**
Existing Homes Sales	**4.62**	**4.88**	**4.61**	**2.78**	**3.11**	**2.76**
Federal Fund Rate	**4.62**	**4.83**	**4.62**	**2.78**	**2.96**	**2.77**
Housing Market Index	**4.62**	**4.25**	**4.64**	**2.78**	**2.78**	**2.78**
Housing Starts	**4.62**	**4.50**	**4.63**	**2.78**	**2.81**	**2.78**
Initial Jobless Claims	**4.62**	**4.44**	**4.69**	**2.78**	**2.66**	**2.83**
Nonfarm Payrolls	**4.62**	**5.50**	**4.57**	**2.78**	**3.25**	**2.75**
Personal Consumer Expenditure	**4.62**	**4.81**	**4.62**	**2.78**	**2.93**	**2.78**
Producer Price Index	**4.62**	**4.82**	**4.61**	**2.78**	**3.25**	**2.75**
Trade Balance	**4.62**	**4.26**	**4.64**	**2.78**	**3.01**	**2.76**
Unemployment Rate	**4.62**	**5.50**	**4.57**	**2.78**	**3.25**	**2.75**
Wholesale Inventories	**4.62**	**4.20**	**4.65**	**2.78**	**2.29**	**2.81**
		540 Days			**720 Days**	
Construction Spending	**2.10**	**2.44**	**2.09**	**1.83**	**2.07**	**1.83**
Consumer Confidence	**2.10**	**2.32**	**2.09**	**1.83**	**2.06**	**1.82**
Consumer Credit	**2.10**	**2.57**	**2.08**	**1.83**	**2.13**	**1.82**
Consumer Price Index	**2.10**	**1.88**	**2.12**	**1.83**	**1.94**	**1.83**
Existing Homes Sales	**2.10**	**2.29**	**2.09**	**1.83**	**1.89**	**1.83**
Federal Fund Rate	**2.10**	**1.83**	**2.11**	**1.83**	**1.67**	**1.84**
Housing Market Index	**2.10**	**1.63**	**2.12**	**1.83**	**1.55**	**1.84**
Housing Starts	**2.10**	**2.23**	**2.09**	**1.83**	**1.86**	**1.83**
Initial Jobless Claims	**2.10**	**2.13**	**2.09**	**1.83**	**1.83**	**1.84**
Nonfarm Payrolls	**2.10**	**2.43**	**2.08**	**1.83**	**1.97**	**1.83**
Personal Consumer Expenditure	**2.10**	**1.96**	**2.11**	**1.83**	**1.86**	**1.83**
Producer Price Index	**2.10**	**2.34**	**2.09**	**1.83**	**2.22**	**1.81**
Trade Balance	**2.10**	**2.25**	**2.09**	**1.83**	**1.85**	**1.83**
Unemployment Rate	**2.10**	**2.43**	**2.08**	**1.83**	**1.97**	**1.83**
Wholesale Inventories	**2.10**	1.70	**2.12**	**1.83**	1.41	**1.86**

Table A.12: **CAPM α: No Interpolation**

*This table reports the mean abnormal daily excess returns (expressed in percentage points) of dividend strips of distinct maturities. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. We use the full sample to regress the excess return of the dividend asset on a constant and the contemporaneous excess return on the S&P 500 index. We then compute the abnormal excess return as the difference between the excess return of the strip and the product of the slope estimate and the contemporaneous S&P 500 excess return. We separately calculate the mean abnormal daily excess return on (1) all trading days ("All"), (2) trading days when there is an announcement of the economic variable [name in row] ("Ann") and (3) trading days when there is no announcement of the economic variable [name in row] ("Other"). We implement the methodology above for each maturity of the dividend asset separately. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. White (1980) standard errors are used in order to compute the relevant test statistics.*

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
	180 Days			**360 Days**		
Construction Spending	0.39***	-0.32	0.42***	0.23***	0.23	0.23***
Consumer Confidence	0.39***	0.51	0.39***	0.23***	0.35	0.23***
Consumer Credit	0.39***	1.19**	0.35***	0.23***	0.79**	0.21***
Consumer Price Index	0.39***	0.61	0.38***	0.23***	0.42*	0.22***
Existing Homes Sales	0.39***	0.77	0.38***	0.23***	0.57*	0.22***
Federal Fund Rate	0.39***	-0.02	0.41***	0.23***	-0.28	0.26***
Housing Market Index	0.39***	0.33	0.40***	0.23***	0.19	0.23***
Housing Starts	0.39***	0.18	0.41***	0.23***	0.22	0.23***
Initial Jobless Claims	0.39***	0.05	0.52***	0.23***	0.20*	0.24***
Nonfarm Payrolls	0.39***	0.41	0.39***	0.23***	0.20	0.24***
Personal Consumer Expenditure	0.39***	0.15	0.40***	0.23***	0.10	0.24***
Producer Price Index	0.39***	0.17	0.41***	0.23***	0.23	0.23***
Trade Balance	0.39***	-0.35	0.44***	0.23***	-0.17	0.26***
Unemployment Rate	0.39***	0.41	0.39***	0.23***	0.20	0.24***
Wholesale Inventories	0.39***	-0.55	0.45***	0.23***	-0.19	0.26***
	540 Days			**720 Days**		
Construction Spending	0.18***	0.26	0.18***	0.14***	0.30	0.14***
Consumer Confidence	0.18***	-0.00	0.19***	0.14***	-0.01	0.15***
Consumer Credit	0.18***	0.55**	0.16***	0.14***	0.49**	0.12***
Consumer Price Index	0.18***	0.43***	0.16***	0.14***	0.25	0.13***
Existing Homes Sales	0.18***	0.38	0.17***	0.14***	0.38*	0.13***
Federal Fund Rate	0.18***	-0.05	0.19***	0.14***	-0.00	0.15***
Housing Market Index	0.18***	0.28	0.18***	0.14***	0.07	0.14***
Housing Starts	0.18***	-0.12	0.20***	0.14***	0.10	0.14***
Initial Jobless Claims	0.18***	0.13	0.20***	0.14***	0.21***	0.12**
Nonfarm Payrolls	0.18***	0.22	0.18***	0.14***	0.05	0.15***
Personal Consumer Expenditure	0.18***	-0.12	0.19***	0.14***	0.05	0.15***
Producer Price Index	0.18***	0.04	0.19***	0.14***	0.02	0.15***
Trade Balance	0.18***	-0.03	0.19***	0.14***	-0.13	0.16***
Unemployment Rate	0.18***	0.22	0.18***	0.14***	0.05	0.15***
Wholesale Inventories	0.18***	-0.02	0.19***	0.14***	-0.09	0.16***

Table A.13: **Cash Flow Model: No Interpolation**

*This table reports the parameter estimates of the cash flow forecasting model (see Equation (15)). $\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$ is the ratio of the time-t dividend strip expiring in τ days over the 2-year trailing average payoff of that dividend asset. $IV_t^{(\tau)}$ and $IS_t^{(\tau)}$ are the time-t implied variance and skewness of time to maturity τ, respectively. We compute the dividend strips, implied variance and implied skewness by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. We estimate the models and present the results separately for dividend strips of initial time to maturity 180 (Panel A), 360 (Panel B), 540 (Panel C), and 720 (Panel D) days. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are corrected following Newey and West (1987) with $\tau + 1$ lags, where τ is expressed in days (i.e. 180, 360, 540, and 720) according to the maturity of the dividend strip.*

Panel A: 180 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.47*****			**0.38*****
	t-stat	(3.59)			(3.57)
$IV_t^{(\tau)}$	β		**-1.35*****		**-0.97*****
	t-stat		(-3.60)		(-3.34)
$IS_t^{(\tau)}$	β			-0.07	**-0.08*****
	t-stat			(-1.62)	(-2.90)
	$\bar{R}^2$	33.22%	23.99%	7.88%	52.27%

Panel B: 360 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.77*****			**0.61*****
	t-stat	(5.95)			(4.91)
$IV_t^{(\tau)}$	β		**-1.75*****		**-1.13*****
	t-stat		(-2.83)		(-2.97)
$IS_t^{(\tau)}$	β			-0.09	**-0.09*****
	t-stat			(-1.45)	(-3.71)
	$\bar{R}^2$	55.66%	22.77%	12.18%	71.54%

Panel C: 540 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.72*****			**0.58*****
	t-stat	(6.09)			(4.80)
$IV_t^{(\tau)}$	β		**-1.64****		**-1.18****
	t-stat		(-2.15)		(-2.42)
$IS_t^{(\tau)}$	β			-0.09	**-0.11*****
	t-stat			(-1.39)	(-4.21)
	$\bar{R}^2$	51.71%	17.02%	12.23%	69.04%

Panel D: 720 Days

$\frac{STRIP_t^{(\tau)}}{\bar{p}_t^{(\tau)}}$	β	**0.76*****			**0.62*****
	t-stat	(7.46)			(4.60)
$IV_t^{(\tau)}$	β		**-1.49****		**-1.16****
	t-stat		(-2.16)		(-2.07)
$IS_t^{(\tau)}$	β			-0.10	**-0.12*****
	t-stat			(-1.44)	(-3.79)
	$\bar{R}^2$	50.98%	12.46%	14.31%	69.50%

Table A.14: **Cash Flow Channel: No Interpolation**

This table presents the contribution of the cash flow channel to the variance of the daily return of the dividend strip of different maturities. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. We use the parameters of the cash flow forecasting model (see Equation (15)), estimated using the full sample, to compute the cash flow channel. We then regress the time series of the cash flow channel on a constant and the time series of the returns on the dividend asset. The slope estimate of this regression is informative about the contribution of the cash flow channel to the total variation of dividend strip returns. The entries reported under "All" present this slope estimate. In order to obtain the figures linked to the announcement days ("Ann"), we regress the observations of the cash flow channel on announcement days on a constant and the contemporaneously observed dividend strip returns. Finally, we obtain the results for non-announcement days ("Other") by regressing the cash flow channel observed on non-announcement days on a constant and the dividend strip returns recorded on non-announcement days. We implement the steps above separately for the dividend strips of initial time to maturity 180, 360, 540, and 720 days.

Economic Variable	**All**	**Ann**	**Other**	**All**	**Ann**	**Other**
		180 Days			**360 Days**	
Construction Spending	37.01%	35.19%	37.09%	59.23%	50.43%	59.75%
Consumer Confidence	37.01%	38.84%	36.95%	59.23%	57.64%	59.33%
Consumer Credit	37.01%	41.97%	36.79%	59.23%	60.45%	59.19%
Consumer Price Index	37.01%	40.40%	36.90%	59.23%	65.33%	58.74%
Existing Homes Sales	37.01%	32.29%	37.09%	59.23%	61.12%	59.09%
Federal Fund Rate	37.01%	24.15%	37.14%	59.23%	36.03%	59.58%
Housing Market Index	37.01%	38.80%	37.00%	59.23%	62.79%	58.59%
Housing Starts	37.01%	40.36%	36.96%	59.23%	64.41%	58.69%
Initial Jobless Claims	37.01%	38.03%	36.73%	59.23%	61.52%	58.95%
Nonfarm Payrolls	37.01%	39.03%	36.76%	59.23%	60.03%	59.20%
Personal Consumer Expenditure	37.01%	33.54%	37.07%	59.23%	58.59%	59.25%
Producer Price Index	37.01%	35.64%	37.09%	59.23%	61.39%	59.11%
Trade Balance	37.01%	39.48%	36.66%	59.23%	61.12%	59.23%
Unemployment Rate	37.01%	39.03%	36.76%	59.23%	60.03%	59.20%
Wholesale Inventories	37.01%	37.66%	36.97%	59.23%	56.25%	59.31%
		540 Days			**720 Days**	
Construction Spending	57.05%	57.48%	57.04%	61.51%	59.55%	61.83%
Consumer Confidence	57.05%	56.50%	57.10%	61.51%	63.73%	61.51%
Consumer Credit	57.05%	53.08%	57.14%	61.51%	64.74%	61.38%
Consumer Price Index	57.05%	68.27%	56.96%	61.51%	68.99%	61.39%
Existing Homes Sales	57.05%	52.33%	57.11%	61.51%	58.49%	61.67%
Federal Fund Rate	57.05%	55.10%	57.15%	61.51%	44.23%	61.62%
Housing Market Index	57.05%	70.18%	56.92%	61.51%	68.31%	61.17%
Housing Starts	57.05%	63.06%	56.98%	61.51%	71.60%	61.35%
Initial Jobless Claims	57.05%	59.72%	56.91%	61.51%	59.69%	62.13%
Nonfarm Payrolls	57.05%	61.76%	56.95%	61.51%	69.49%	61.35%
Personal Consumer Expenditure	57.05%	57.67%	56.88%	61.51%	57.01%	61.72%
Producer Price Index	57.05%	62.02%	56.72%	61.51%	65.17%	61.41%
Trade Balance	57.05%	56.05%	57.06%	61.51%	57.37%	61.58%
Unemployment Rate	57.05%	61.76%	56.95%	61.51%	69.49%	61.35%
Wholesale Inventories	57.05%	43.47%	57.15%	61.51%	42.72%	61.67%

Table A.15: **Economic News and Dividend Strip Returns: No Interpolation**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the intraday returns of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**			
		180 Days	**360 Days**	**540 Days**	**720 Days**
Construction Spending	β	-0.02	0.01	**-0.06***	-0.03
	t-stat	(-0.22)	(0.12)	(-2.30)	(-1.38)
Consumer Confidence	β	0.04	-0.00	0.01	0.00
	t-stat	(0.33)	(-0.06)	(0.15)	(0.03)
Consumer Credit	β	0.08	0.04	0.06	0.02
	t-stat	(0.60)	(0.66)	(1.26)	(0.65)
Consumer Price Index	β	-0.58	**-0.50***	-0.28	-0.20
	t-stat	(-1.18)	(-1.89)	(-1.54)	(-1.34)
Existing Homes Sales	β	0.08	0.06	0.01	0.04
	t-stat	(0.65)	(0.89)	(0.30)	(0.85)
Federal Fund Rate	β	**-1.04***	**-0.68***	**-0.49***	-0.15
	t-stat	(-2.33)	(-3.37)	(-4.07)	(-0.99)
Housing Market Index	β	0.09	0.03	-0.00	0.00
	t-stat	(0.95)	(0.76)	(-0.13)	(0.04)
Housing Starts	β	**0.67***	**0.47***	**0.29***	**0.21***
	t-stat	(1.95)	(2.79)	(2.74)	(2.63)
Initial Jobless Claims	β	**-1.69***	**-0.87***	**-0.55***	**-0.45***
	t-stat	(-2.80)	(-3.26)	(-3.14)	(-3.46)
Nonfarm Payrolls	β	**3.19***	**1.46***	**0.93***	**0.77***
	t-stat	(4.82)	(5.44)	(5.49)	(5.63)
Personal Consumer Expenditure	β	0.59	0.63	0.08	0.07
	t-stat	(0.91)	(0.98)	(0.37)	(0.48)
Producer Price Index	β	-0.41	-0.30	-0.21	-0.16
	t-stat	(-0.94)	(-1.16)	(-1.24)	(-1.27)
Trade Balance	β	-2.10	**-0.52***	**-0.28***	-0.20
	t-stat	(-1.39)	(-1.91)	(-1.72)	(-1.58)
Unemployment Rate	β	**-1.39***	**-0.61***	**-0.40***	**-0.29***
	t-stat	(-2.76)	(-2.93)	(-3.17)	(-2.90)
Wholesale Inventories	β	-0.17	-0.01	-0.00	-0.02
	t-stat	(-1.53)	(-0.17)	(-0.21)	(-1.32)
	$\bar{R}^2$	3.07%	5.82%	5.73%	5.12%

Table A.16: **Economic News and the Cash Flow Channel: No Interpolation**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected cash flows of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS**			
		180 Days	**360 Days**	**540 Days**	**720 Days**
Construction Spending	β	-0.00	-0.02	**-0.07****	-0.03
	t-stat	(-0.09)	(-0.61)	(-2.30)	(-1.45)
Consumer Confidence	β	0.07	0.00	0.04	0.11
	t-stat	(1.32)	(0.01)	(1.01)	(1.20)
Consumer Credit	β	0.03	0.02	**0.06***	0.03
	t-stat	(0.52)	(0.63)	(1.90)	(1.25)
Consumer Price Index	β	-0.23	**-0.33****	**-0.19***	-0.11
	t-stat	(-1.22)	(-1.98)	(-1.65)	(-1.13)
Existing Homes Sales	β	**0.09***	0.06	-0.04	0.03
	t-stat	(1.75)	(1.26)	(-0.79)	(0.81)
Federal Fund Rate	β	**-0.40****	**-0.47*****	**-0.30*****	-0.10
	t-stat	(-2.42)	(-4.44)	(-4.49)	(-1.10)
Housing Market Index	β	0.04	0.01	-0.00	0.01
	t-stat	(1.11)	(0.41)	(-0.22)	(0.27)
Housing Starts	β	**0.26****	**0.30*****	**0.16****	**0.13****
	t-stat	(1.98)	(2.80)	(2.52)	(2.48)
Initial Jobless Claims	β	**-0.65*****	**-0.54*****	**-0.34*****	**-0.30*****
	t-stat	(-2.85)	(-3.21)	(-3.39)	(-3.66)
Nonfarm Payrolls	β	**1.23*****	**0.91*****	**0.56*****	**0.53*****
	t-stat	(4.89)	(5.38)	(5.59)	(6.44)
Personal Consumer Expenditure	β	0.21	0.44	0.05	0.05
	t-stat	(0.84)	(1.00)	(0.41)	(0.52)
Producer Price Index	β	-0.15	-0.18	-0.12	-0.10
	t-stat	(-0.93)	(-1.16)	(-1.24)	(-1.21)
Trade Balance	β	-0.80	**-0.34****	-0.15	-0.11
	t-stat	(-1.35)	(-1.97)	(-1.60)	(-1.30)
Unemployment Rate	β	**-0.53*****	**-0.40*****	**-0.24*****	**-0.16*****
	t-stat	(-2.75)	(-3.05)	(-3.17)	(-2.58)
Wholesale Inventories	β	-0.07	-0.02	-0.01	-0.01
	t-stat	(-1.62)	(-0.65)	(-0.44)	(-1.08)
	$\bar{R}^2$	2.99%	6.05%	5.62%	5.04%

Table A.17: **Economic News and the Discount Rate Channel: No Interpolation**

*This table reports the slope estimates, the corresponding t-statistic, and the adjusted R^2 of regressions of the revision in the expected discount rates of the asset [name in column] on a constant and the standardized announcement surprises associated with the economic variables [names in row]. We compute the dividend strips by using the option contracts of time to maturity closest to our target time to maturity, i.e. 180, 360, 540, and 720 days. Thus, there is no interpolation as in our benchmark case. We estimate the multivariate regression model separately for each asset. Although all regressions are estimated with an intercept, we only report the slope estimates. We highlight in bold all statistically significant coefficients at the 10 % level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. All standard errors are adjusted following White (1980).*

Economic Variable		**STRIPS** 180 Days	360 Days	540 Days	720 Days
Construction Spending	β	0.02	-0.02	-0.01	-0.00
	t-stat	(0.25)	(-0.99)	(-0.22)	(-0.14)
Consumer Confidence	β	0.03	0.00	0.03	0.11
	t-stat	(0.39)	(0.11)	(1.05)	(1.22)
Consumer Credit	β	-0.05	-0.02	-0.00	0.02
	t-stat	(-0.65)	(-0.69)	(-0.15)	(0.66)
Consumer Price Index	β	0.35	**0.17***	0.09	**0.09***
	t-stat	(1.15)	(1.71)	(1.24)	(1.70)
Existing Homes Sales	β	0.01	0.00	-0.05	-0.01
	t-stat	(0.17)	(0.02)	(-1.22)	(-0.40)
Federal Fund Rate	β	**0.64****	**0.21****	**0.19*****	0.04
	t-stat	(2.28)	(1.98)	(3.51)	(0.80)
Housing Market Index	β	-0.05	-0.02	-0.00	0.00
	t-stat	(-0.83)	(-0.91)	(-0.08)	(0.33)
Housing Starts	β	**-0.41***	**-0.17*****	**-0.13*****	**-0.08*****
	t-stat	(-1.92)	(-2.62)	(-2.90)	(-2.81)
Initial Jobless Claims	β	**1.04*****	**0.33*****	**0.21*****	**0.15*****
	t-stat	(2.76)	(3.31)	(2.77)	(3.01)
Nonfarm Payrolls	β	**-1.96*****	**-0.54*****	**-0.38*****	**-0.24*****
	t-stat	(-4.77)	(-5.32)	(-5.22)	(-3.78)
Personal Consumer Expenditure	β	-0.38	-0.19	-0.03	-0.02
	t-stat	(-0.96)	(-0.95)	(-0.33)	(-0.41)
Producer Price Index	β	0.25	0.11	0.08	0.06
	t-stat	(0.94)	(1.17)	(1.23)	(1.33)
Trade Balance	β	1.30	**0.18***	**0.12***	**0.09***
	t-stat	(1.42)	(1.79)	(1.84)	(1.91)
Unemployment Rate	β	**0.86*****	**0.21*****	**0.16*****	**0.13*****
	t-stat	(2.75)	(2.61)	(3.06)	(2.95)
Wholesale Inventories	β	0.10	-0.01	-0.00	0.01
	t-stat	(1.45)	(-0.47)	(-0.14)	(0.79)
	$\bar{R}^2$	3.11%	5.15%	4.81%	3.17%