The Dividend Month Premium

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Abstract: We document that companies have positive abnormal returns in months when they are expected to pay dividends. Abnormal returns in predicted dividend months are high both relative to all other companies (by 53 basis points per month), and relative to dividend-paying companies in months without a predicted dividend (by 37 basis points per month). These results are consistent with time-series effects of dividend clienteles – investors who desire dividends bid up the price before the ex-dividend day. Consistent with this, daily returns increase as the ex-dividend day approaches, and are negative afterwards. Returns are also larger in periods of economic uncertainty, when demand for dividends may be higher.

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Behavioral finance has identified a number of asset pricing anomalies where predictable events generate abnormally large stock returns relative to their apparent risk. From an economic perspective, it is odd that large, liquid markets should seem to leave money on the table. However, there is a long literature in psychology documenting that individuals learn how to optimally respond to events through salient feedback and reinforcement. If a given event happens rarely to each set of investors it is perhaps less surprising that the market does not always set prices correctly. Markets should have the *best* chance of correctly pricing securities when the opportunities for learning are greatest: for events that are predictable, that are repeated frequently for each set of investors, and that provide feedback via returns over a short horizon. Predictable price responses in these events are some of the most challenging for notions of market efficiency.

In this paper we study the reaction of stock prices to expected dividend payment. Dividends are a highly predictable corporate event: they typically occur every 3 months, and companies with a history of paying dividends are reluctant to omit paying them (John and Williams (1985), Bernheim (1991)). We examine whether markets correctly price the likely existence of dividends in a given month. Rather than condition on the actual payment of dividends, we forecast a 'predicted dividend' if the company paid a quarterly dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. This yields tradable portfolios and does not condition on ex-post information about whether a dividend was actually paid.

We find evidence of mispricing of stocks whereby companies have significantly higher returns in months when they are expected to pay a dividend. We term this the 'dividend month premium'. A portfolio that buys all stocks expected to pay a dividend this month earns abnormal returns of 41 basis points. Other specifications produce even higher returns – a portfolio of companies that paid a semi-annual dividend six months ago has a four-factor alpha of 115 basis points per month.

Companies that are predicted to pay a dividend have large abnormal returns relative to all other companies, and also relative to dividend-paying stocks in months where they are not expected to pay a dividend. A portfolio that is long expected dividend payers and short all other companies ('between companies') earns abnormal returns of 53 basis points relative to a 4 factor model. Meanwhile, a portfolio that is long companies with predicted dividend and short companies without a predicted dividend that have paid a dividend in the last year ('within companies') earns abnormal returns of 37 basis points.

This pattern in returns is difficult to explain by loadings on systematic risk. The 'within companies' difference portfolio is long each company with quarterly dividends for 4 months of the year and short the same companies for 8 months of the year. Hence, any fixed loadings on risk factors will tend to cancel out. Any explanation relating to risk-loadings would need to rely on time-varying risk loadings, with companies being systematically riskier in months of expected dividend payment.

We hypothesize that the dividend month premium may be due to price pressure from dividend-seeking investors. One of the proposed explanations for why companies pay dividends is the existence of dividend clienteles, certain groups of investors who desire dividend payments for various reasons such as different tax treatment, a need for income streams etc.[1] We examine the possibility that investors who desire to receive dividends may be more likely to buy (or reluctant to sell) stocks before the ex-dividend day, and more likely to sell (or less likely to buy)

[1] Dividend clienteles have been examined by Black and Scholes (1974), Elton and Gruber (1970), Allen, Bernardo and Welch (2000), Graham and Kumar (2006), Becker, Ivkovic and Weisbenner (2009), and many others.

afterwards. If these investors have price pressure, they will bid up prices before dividend payment, causing high returns in the lead-up to the ex-dividend day. Alternatively, the high monthly return may be driven only by the return on the ex-dividend day (Elton and Gruber (1970)), where stock prices drop by less than the full value of the dividend due to tax-related effects. Another possibility is that investors could be underestimating the chances of the firm maintaining its dividend, and thus may be positively surprised on average at the announcement.

To distinguish these explanations, we examine the daily returns surrounding dividend payment. We find that there are abnormal returns on the actual declaration day (12 basis points per day), the predicted declaration day (4 basis points per day) and on the ex-day (30 basis points per day). In addition, we find abnormal returns in the period between the declaration and ex-dividend days, with the returns being larger shortly after the declaration and increasing again as the ex-dividend day approaches. The existence of abnormal returns between the declaration and ex-dividend day is consistent with price pressure from dividend clienteles, but is more difficult to reconcile with alternative explanations. During this time there is no news being released about the dividend, and an investor who sells before the ex-day does not pay additional dividend-related taxes, as they do not receive the dividend.

The clientele explanation further predicts an increase in selling after dividend payment. Consistent with this, we find evidence of negative returns immediately after the ex-dividend day, particularly on a value-weighted basis. Daily abnormal returns are significantly negative over the 5 days after the ex-dividend day (by around -2 basis points per day), and the month after the dividend has a four-factor alpha of -18 basis points on a value-weighted basis.

If the dividend month premium is driven by price pressure from dividend-seeking investors, then the effects ought to be larger in instances where dividend demand is greater. Consistent with this, we find that the effect is larger among less liquid securities (where price pressure may have a larger effect), and among companies with higher dividend yields (where investors are likely to have greater demand for the larger dividends). In addition, we examine how the dividend month premium varies with the level of economic uncertainty. We hypothesize that demand for dividends may be partly due to a perception that dividends represent a safe, guaranteed source of revenue. In such a case, demand for dividends may be higher during periods of economic uncertainty, when risk aversion is higher and the availability of alternative safe assets is reduced. Consistent with this, the dividend month premium is 17 basis points higher during recessions, and is also higher following greater market volatility.

We also present evidence that the dividend month premium is driven by dividends specifically, rather than other events that coincide with dividend payment. The dividend month premium does not appear to be driven by the earnings announcement premium (Beaver (1968), Frazzini and Lamont (2008)), changes in duration due to timing of dividend payments (Ferson and Harvey (1999)), calendar months of the year, or seasonality of returns (Heston and Sadka (2008)). We show that the dividend month premium is not driven by news about the size of the dividend. By contrast, when companies omit dividend payments the effect is not present, as expected if this is driven by the dividend itself and not other events during the month.

As an asset pricing anomaly, the dividend month premium is notable in several respects. It is not limited to small or illiquid stocks. Dividend-paying companies tend to be larger and more visible, and the patterns in returns hold on a value-weighted basis as well as an equal-weighted basis (and in some cases are stronger when value-weighted)[2]. Additionally, most of the abnormal returns are from the long side of the difference portfolio, rather than the short side (where costs of implementing the strategy are higher). Due to dividend payments being highly persistent, significant alphas can be obtained using dividend information lagged up to 20 years.

Our paper contributes to the literature on asset pricing anomalies. While returns surrounding dividends have received significant study from a corporate finance perspective (which we discuss more in Section 2), we consider the asset-pricing implications of the predictable component of dividend announcements. Our findings contribute to the literature on return predictability, such as the earnings announcement premium (Beaver (1968), Frazzini and Lamont (2008)), the January effect (Keim (1983)), return seasonality (Heston and Sadka (2008)), one month reversals (Jegadeesh (1990)), momentum (Jegadeesh and Titman (1993)), and 3-5 year reversals (DeBondt and Thaler (1985)). Our results are most similar to the earnings announcement premium, in that the returns are based around the predictable corporate events that generate high returns on average (without conditioning on the content of the news).

The remainder of the paper is structured as follows. Section 2 describes the hypotheses. Section 3 discusses the data. Section 4 presents the main results of the paper, section 5 examines alternative explanations for our findings, and section 6 concludes.

2. Hypotheses

Market efficiency is the null hypothesis (Fama (1970)). While the news component of dividend announcements ought to affect prices, any predictable aspect of dividend announcements or payments should not result in abnormal risk-adjusted returns. Dividend

[2] Many anomalies tend to be concentrated in smaller stocks, including post-earnings announcement drift (Chordia et al (2008)), momentum (Hong, Lim and Stein (2000), and others.

payments tend to be quite stable over time (in the sample, 88% of firms who paid a dividend 12 months ago pay a dividend in the current month). Market efficiency posits that using past information in dividend payments should not be able to generate risk-adjusted returns.

Our main alternative hypothesis relates to time-series effects of dividend clienteles. The concept of dividend clienteles is that some companies pay dividends in order to appeal to certain groups of investors who desire them, such as for different tax treatments, a need for income streams etc.[3] However a desire to receive dividends may not translate into a constant willingness to hold the stock throughout the dividend cycle. In particular, dividend-seeking investors may be more likely to purchase dividend-paying stocks immediately before the dividend is paid, rather than afterwards. In addition, investors who already hold the stock and are contemplating selling it may delay their sale until after they are eligible to receive the dividend.

This hypothesis predicts more buying pressure in the stock after dividends are announced. At this point, investors receive confirmation that a dividend is coming, and those who may have held off buying the stock are more likely to act as the information is now certain. In addition, excess buying is also predicted during the lead-up to the ex-dividend day. If investors only wish to receive the dividend, they may not want to hold the stock for longer than necessary as it would expose them to price fluctuations. As the period before receiving the dividend becomes shorter, these investors are more likely to purchase.

[3] There are of course numerous other theories of why firms pay dividends - for an overview of the literature, see Allen and Michaely (2003)). Theories include catering whereby dividends are paid in response to investor demand for dividends (Baker and Wurgler (2004), Li and Lie (2006)), dividends as a signaling mechanism (John and Williams (1985), Bernheim (1991)), life-cycle theories of the firm (DeAngelo, DeAngelo and Stultz (2006), DeAngelo, DeAngelo (2006), Fama and French (2001), Denis and Osobov(2008)), and behavioral models (Shefrin and Statman (1984)).

An alternative explanation for high returns in dividend months is that investors underreact to the predictable component of dividend announcements. In particular, investors may be overly pessimistic about the prospect that firms will be able to continue to make dividend payments. Given that omitting or cutting a dividend represents bad news that firms will seek to avoid, the announcement of a dividend ought to be a small positive signal (as found in Kalay and Loewenstein (1986)). If investors are overly pessimistic about the likelihood of the firm being able to continue dividend payment, then they should on average experience a positive surprise around the period when announcements are expected, as argued by Eades, Hess and Kim (1985). This hypothesis is supported if the price effects are concentrated around the dividend announcement, and not on days around the dividend payment that contain no news.

Another alternative hypothesis for high returns in dividend months relates to tax effects around the ex-dividend day. As early as Campbell and Beranek (1955), it has been found that the ex-dividend day stock price change is typically less than the full amount of the dividend. This has been argued by Elton and Gruber (1970) to be driven by tax-related consequences for the marginal investor (see Elton, Gruber and Blake (2005), Green and Rydqvist (1999), McDonald (2001), Graham, Michaely and Roberts (2003), Bell and Jenkinson (2002), and numerous others).[4] Under this hypothesis, the taxability of dividends for the marginal investor causes prices on ex-dividend days to be equal to the after-tax value of the dividend to the marginal investor (which will be less than the face value due to taxes on dividends).

While the ex-dividend day effect is consistent with the broad notion of dividend clienteles, it has a different mechanism. Specifically, the ex-dividend day tax argument is an

[4] Other explanations have been proposed for the ex-dividend day effect, including microstructure arguments (Dubofsky (1992), Bali and Hite (1998), Frank and Jagannathan (1998), and other), and dynamic clientele models related to taxation (e.g. Rantapuska (2007), Koski and Scruggs (1998), Graham and Kumar (2006) Felixson and Liljeblom (2008)).

equilibrium pricing effect on a single day due to the tax rate of the marginal investor. The argument about time-series effects of clienteles is instead based on short-term price pressure before the ex-dividend day due to investors desiring to receive the dividend. Dividend taxes only affect investors who receive the dividend, and if the share is sold before the ex-dividend day then the dividend does not accrue to the investor Any abnormal returns before the ex-dividend day are unlikely to be driven by taxes, and instead are more consistent with price pressure.

3. Data and Summary Statistics

The data on daily and monthly stock returns and dividends come from the Center for Research in Security Prices. Monthly returns run from January 1927 until December 2009. Dividend declaration dates and ex-dividend dates are taken from the CRSP daily file. We consider shares listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ exchange. We consider only common shares of US companies (CRSP share code 10 or 11).[5] We also exclude shares with prices less than $5 in the previous month and firms missing a price in the previous month.[6]

For dividend payments, we consider ordinary cash dividends paid in US dollars (CRSP distribution codes starting with '12'). Because we are interested in predicting future dividends, we focus on dividends that are recurring in nature, namely quarterly, semi-annual, and annual dividends (third digits of 3, 4 and 5). We also include unknown and missing frequency dividends (third digits 0 and 1) as being equivalent to a quarterly dividend.[7] Overall, 65.9% of firm/month observations paid some cash dividend in the prior 12 months. 89.07% of all dividend

[5] We thereby exclude ADRs, various ownership units (e.g., limited partnership interests), closed-end funds, REITs, and shares of companies incorporated outside the United States.
[6] When using daily data these restrictions are for the previous day.
[7] Thereby not counting year-end or final, special, interim and non-recurring dividends as dividend observations. The main results are robust to their inclusion, as well as being robust to excluding unknown and missing dividends.

observations are quarterly, 1.49% of dividends are semi-annual, 0.47% are annual, and 8.28% are of unknown or missing frequency. Because we are generally examining dividend vs. non-dividend months for companies, we exclude companies that paid a monthly dividend in the previous 12 months unless otherwise noted (0.7% of dividend observations).[8] Dividend months refer to months with an ex-date unless otherwise noted. Table I presents summary statistics for companies that paid a dividend in the past 12 months and those that did not.

4. Results

4.1 Predicted Dividend Months and Raw Returns

In this section we explore the question of whether dividend-paying stocks have different returns in months of expected dividend payment. The concept of *expected* dividend payment is an important one, as actual dividend payment involves both a news component and a predictable component. Companies tend to pay dividends on a regular schedule and omitting dividends is generally a 'last resort' (John and Williams (1985), Bernheim (1991), Nissim and Ziv (2001)). As a consequence, the *actual* announcement of a dividend is likely to be small positive news indicating that the company is not in sufficiently large financial difficulty to require the omission of a dividend.

Precisely because companies are reluctant to omit dividends, the existence of a dividend payment is quite predictable using the timing of past payments. We forecast using the following rule: a company has a 'predicted dividend' in month t if it paid a quarterly dividend in months t-3, t-6, t-9, or t-12, a semi-annual dividend in months t-6 or t-12, an annual dividend in months t-12, or a dividend of unknown frequency in months t-3, t-6, t-9, or t-12. In Table II, we explore

[8] Results are robust to the inclusion of monthly dividend observations. The results are also very similar if only quarterly dividends are included.

how returns vary based on the timing of past dividends. In Panel A, we consider dividends of all frequencies (monthly, quarterly, semi-annual, annual, unknown and missing). We group stocks according to when the dividend was paid: 1 month ago, 2 months ago etc. up to 12 months ago.

Panel A presents average returns, standard deviation of returns and the frequency of dividend payments in the current month according to past dividend timing. It shows the main patterns of returns documented throughout the paper, namely that the returns are higher in months where dividends are expected to be paid. The four months with the highest average returns are the months where a dividend is expected to be paid, namely 12, 6, 3 and 9 months ago (with returns of 1.45%, 1.45%, 1.43% and 1.42% respectively). Average returns are lowest one month after a dividend is expected to be paid (10, 4, 7 months and 1 month ago, with returns of 1.02%, 1.02%, 1.03%, and 1.05% respectively). In addition, expected dividend months also have the *lowest* standard deviation of returns. The four lowest standard deviations of returns are for dividends 3, 9, 6 and 12 months ago (9.61%, 9.65%, 9.66%, and 9.66% respectively). The four most volatile months, by contrast, are the months immediately before an expected dividend (2, 5, 8 and 11 months ago).

Panel A also documents the persistence of dividend payments. Companies that paid dividends 12 months ago have an 88% chance of paying dividends this month, and for 3, 6 and 9 months ago the percentage of dividends paid is 85%, 85%, and 83% respectively. These numbers are generally slightly higher if only quarterly dividends are considered.

Panel B shows the distribution of monthly returns for portfolios formed using our formal definition of predicted dividends. Months with a predicted dividend have average returns of 1.38%, and a standard deviation of 5.77%. Companies with a dividend in the last 12 months that do not have a predicted dividend this month have average returns of 1.01% and a standard deviation of 5.76%. Companies who did not pay a dividend in the past 12 months have an average return of 1.01%, and a standard deviation of 8.56%. Companies predicted to pay dividends thus have both a higher expected return *and* a lower standard deviation of returns than past payers not predicted to pay dividends this month, and past non-payers. Consequently, predicted dividend payers have the highest Sharpe ratio (0.188) of the three categories. This suggests that predicted dividend payers are not more risky, a question we turn to next.

4.2 Abnormal Returns in Dividend Months

While predicted dividend payers have higher expected returns, the central asset pricing question is whether these higher returns represent compensation for some source of risk that is important to investors. It may be that companies that pay dividends are more exposed to systematic risk, and the high returns reflect this different risk loading. We consider this question in several regards. The first is the level of abnormal returns to predicted dividend payers under standard models of expected returns. The second is to compare predicted dividend payers with other companies – all other companies not predicted to pay a dividend this month ('between companies'), and those that paid dividends in the past year but which are not predicted to pay a dividend in the current month ('within companies').

Systematic risk may be a likely explanation of differences in returns between companies. The short side of the between-companies portfolio will include a large number of companies that never pay dividends, as well as dividend-paying companies in non-dividend months. Dividend-paying and non-paying companies differ in many important economic respects: as Table I indicates, dividend-paying stocks have larger market capitalization, and a higher book-to-market ratio. Dividend payment may well be correlated with economy-wide risks that investors are concerned about, and this may drive differences in returns between dividend-paying and non-dividend-paying stocks.

Systematic risk seems less likely to explain the patterns in returns within companies. By comparing the same set of companies over time, any risk loadings that are constant over time will tend to cancel out. For risk to explain the 'within companies' returns, the systematic risk of the stock must be higher in months of expected dividend payments. It is not clear why dividend payment itself should make the company more risky, so risk-based explanations would need to involve other events during dividend months. The most plausible of these is changes in liquidity, which we examine below (and which loads in the wrong direction to explain the effect).

Table III examines the returns of predicted dividend-paying stocks relative to standard risk factors – the market, size, book-to-market, momentum and liquidity. We form portfolios of stocks based on predicted dividend payment, and regress them on returns of portfolios for excess market returns, SMB, HML, UMD (all from Ken French's website), and in some specifications the Pastor and Stambaugh (2003) liquidity factor:

$$R_{PredDiv,t} - R_f = \alpha + \beta_{Mkt\text{-}Rf} {*} R_{Mkt\text{-}Rf,t} + \beta_{SMB} {*} R_{SMB,t} + \beta_{HML} {*} R_{HML,t} + \beta_{UMD} {*} R_{UMD,t} + \varepsilon_t \qquad (1)$$

Table III Panel A shows the abnormal returns relative to a four factor model (α in the above regression) for predicted dividend payers versus other stocks. In each case, the long portfolio is the average return of all predicted dividend payers, equal-weighted or value-weighted according to the specification. We consider several different short portfolios – all companies that are not expected to pay a dividend this month, companies that paid a dividend in the past year but are not expected to pay this month, and companies one month after they are expected to pay a dividend. The first short portfolio corresponds to the ‘between companies’ question– do expected dividend payers have higher returns than companies not expected to pay a dividend? The other two are ‘within companies’ tests. They consider the same set of companies that paid a dividend in the past 12 months, and take a long position in months where they are expected to pay a dividend and a short position in other months.

Panel A shows that predicted dividend payers have significantly positive abnormal returns. An equal-weighted portfolio of predicted dividend-payers has abnormal returns of 41 basis points per month (with a t-statistic of 8.51), while a value-weighted portfolio of predicted dividend-payers has abnormal returns of 24 basis points per month (with a t-statistic of 6.84).

Predicted dividend payers also have high returns relative to the comparison portfolios. A portfolio that is long predicted dividend payers and short all other companies (‘between companies’) earns abnormal returns of 53 basis points per month on an equal-weighted basis (t-statistic of 12.31) and 32 basis points on a value-weighted basis (t-statistic of 6.72). The portfolio of all companies other than predicted dividend payers has significantly negative returns: -13 basis points for equal weighted portfolios (t-statistic of -3.45) and -8 basis points for value-weighted portfolios (t-statistic of -4.60). Without predicted dividend months, the rest of the market has a negative alpha.

Perhaps more importantly, predicted dividend payers have abnormal returns relative to past dividend payers in other months (‘within companies’). This can be seen in the portfolio that is long predicted dividend payers and short all other companies with a dividend in the last 12 months. The ‘within companies’ difference portfolio earns abnormal returns of 37 basis points on an equal-weighted basis (t-statistic of 15.50) and 29 basis points on a value-weighted basis (t-statistic of 6.77). The effect is larger when shorting companies only in the month immediately after a predicted dividend. In addition, the portfolio that is short companies one month after a predicted dividend earns abnormal returns of -18 basis points per month when value-weighted (t-statistic of -4.47), although the effect is smaller on an equal-weighted basis. This is consistent with dividend-seeking investors creating selling pressure after the dividend has been paid.

Table III Panel B shows that the abnormal returns to an equal weighted portfolio of predicted dividend payers are very similar under different models of expected returns. For the ‘between companies’ difference portfolio, the abnormal returns are 51 basis points per month under a CAPM (t-statistic of 10.21), 52 basis points under the Fama and French (1993) 3 factor model (t-statistic of 12.41), 53 basis points when the momentum factor is added (t-statistic of 12.31) and 52 basis points when the Pastor and Stambaugh (2003) liquidity factor is added (t-statistic of 9.93). For the ‘within companies’ result, the abnormal returns are very similar for the CAPM, 3 factor and 4 factor models, and adding the liquidity factor makes the effect larger, to 44 basis points per month with a t-statistic of 16.92.

Panel B also shows the loadings on excess market returns, SMB, HML, UMD and LIQ (all taken from the 4 factor plus liquidity regression). The ‘within companies’ portfolio has insignificant loadings on excess market returns, SMB, HML and UMD. This is consistent with the earlier argument that this difference portfolio has little exposure to risk factors that are constant over time because it operates within a set of companies. The only slightly significant loading is on the liquidity factor (-0.0156, t-statistic of -2.09). However the loading on liquidity is *negative* –companies have less liquidity risk in months of predicted dividend payment, not more. This explains why the alpha gets larger when adding liquidity to the four factor model.

Overall, Table III provides evidence that the returns to predicted dividend payers are abnormally large at very high significance levels. These returns are not driven by standard factors, and are unlikely to be driven by other factor loadings that remain constant through time. To demonstrate the relative size of the anomaly, Figure 1 plots the cumulative value of the within-companies portfolio starting with an initial investment of $1 on December 31, 1927. For comparison, the cumulative value the SMB and HML portfolios are also shown. The final value in December 2009 is $34.46 for the dividend month premium, versus $6.78 for SMB and $30.52 for HML. In The dividend month premium is larger than the SMB portfolio, and roughly as large as the HML portfolio but less volatile.

4.3 Daily returns within dividend months

To distinguish between different possible causes of the dividend month premium, we examine daily returns within dividend months. This allows for the following testable predictions:

1. If the effect is driven by investors being positively surprised by dividend news, then the returns should only be concentrated around the dividend announcement (when the actual news is revealed, and investors are positively surprised).
2. If the effect is driven merely by tax effects from dividend payment, the effect should be limited to the ex-dividend day itself, when the tax treatment changes.
3. If the effect is driven by price pressure from dividend clienteles, it should be present both on the announcement (as news of the dividend causes trading), and up until ex-dividend day (as investors buy the share to receive the dividend).
4. If the effect is driven by price pressure from dividend clienteles then returns should be negative after the ex-day, as investors' willingness to hold the share decreases.

To evaluate this, we calculate the daily returns to portfolios around dividend declaration days and ex-dividend days for companies that pay quarterly dividends. We regress these returns on a 4-factor model. Ex-dividend days are taken from the CRSP daily file, as are dividend declaration days. A tradable strategy using the declaration date must use the *predicted* declaration days, since the precise actual announcement day will not be known in advance. Predicted dividend days are taken to be 63 trading days after the last dividend declaration day.[9]

We present these results in Table IV. The Table reports the four-factor alphas for the 5 days either side of each of the ex-dividend date, actual declaration date, and predicted declaration date. Columns 1-3 use equal-weighted portfolios, and columns 4-6 use value-weighted portfolios. There are significantly positive returns in the 5 days prior to the ex-day, with the largest returns occurring on the ex-dividend day itself (30 basis points equal weighted with a t-statistic of 45.47, 12 basis points value weighted 12 with a t-statistic of 13.90). For taxable investors, the after-tax return on the ex-dividend day will be less, but tax-free investors such as charitable institutions would be able to receive the full ex-dividend return. [10] The second largest returns are on the day immediately before the ex-dividend day (11 basis points equal-weighted, 9 basis points value-weighted). After the ex-dividend day, abnormal returns are generally negative, between -1 and -2 basis points per day, with the value-weighted results being more significant.

Around the declaration date, there are large and significant returns on the actual announcement day (11 basis points equal-weighted with a t-statistic of 18.09, 8 basis points value-weighted with a t-statistic of 9.03). There are also reasonably large returns in the days after

[9] This is roughly the average number of trading days per year divided by 4. The results are very similar if predicted dividend days are taken as 3 months from the average date of the last 4 dividends, or if predicted dividends are taken by adding in the average gap between the last 4 dividends.
[10] Rantapuska (2007) examines individual trading behavior and finds that tax advantaged traders do in fact engage in overnight trades to take advantage of ex-day effects, earning significant returns.

the declaration date (4-11 basis points equal weighted, 1-6 basis points value weighted), with the returns declining further from the declaration date. Since the declaration date itself is not tradable, the predicted declaration date column is an analogue of this date that can be traded. The predicted declaration date returns are lower but still statistically significant (4 basis points equal weighted with a t-statistic of 7.47, 3 basis points value-weighted with a t-statistic of 4.09).

To illustrate the pattern in daily returns, Figures 2 and 3 plot the daily four-factor alphas around the ex-dividend date and dividend declaration date, respectively, from 25 days beforehand until 65 days afterwards. The longer period results confirm the general trend in the daily results. Around the ex-dividend date the largest alphas are in the period leading up to the ex-dividend date, and then generally become smaller or negative in period between dividends, becoming larger again as the next dividend approaches. The median gap between ex-dividend date and declaration date for quarterly dividends is 35 calendar days, or roughly 25 trading days. Consistent with this, we see increases in average returns around 20-25 days before the ex-dividend date. For dividend declaration dates, there is a large effect on the declaration date and the day after, with significantly positive abnormal returns that decline over the following days.

Overall, these results give support to the explanation of dividend clienteles. There are large effects not only on the ex-dividend date (consistent with tax effects), but also before the ex-dividend date. This is a period without any news about the dividend, and during this time holding the share does not subject the investor to additional tax consequences, as the dividend is not received unless the stock is held until the ex-dividend day. There are returns on the announcement date (consistent both with investors being positively surprised, and dividend clienteles purchasing once they know a dividend is coming). However, returns are also high in days following the announcement, suggesting continued price pressure from clienteles. In the period after the dividend, the returns are negative.

4.4 Liquidity, Dividend Yield and the Dividend Announcement Premium

If the abnormal returns in months of dividend payment are a result of price pressure from dividend-seeking investors, the effect should be larger among less liquid securities. For less liquid stocks, a given increase in dividend-related purchases (or reduction in sales) ought to produce a larger price response, as there are fewer liquidity-providing investors to take the other side of the trade. By contrast, equilibrium pricing arguments such as ex-dividend day tax effects do not predict any difference in returns unless the marginal investors in high and low liquidity stocks have different marginal tax rates. Another prediction of the dividend clienteles hypothesis is that investors' desire for dividends ought to be larger when the dividend is expected to be of a larger size, as the dividend provides a larger income stream for each dollar invested.

To examine these possibilities we examine whether the dividend month premium varies according to the liquidity of the company and the size of the dividend yield. We proxy for liquidity using the turnover of the stock (shares traded in a month, divided by shares outstanding) and the relative bid-ask spread at the end of the month (Ask Price – Bid Price) / ((Ask Price +Bid Price)/2). For each measure we compute the average value over the previous 12 months. For dividend yield, we are interested in the dividend yield an investor would expect in that particular month. We calculate this using the average dividend size across all dividend months in the past year, and divide by the price at the end of the previous month.

In each case, we form double-sorted portfolios based on predicted dividend payers vs. other past payers (i.e. the within companies difference portfolio), and the second variable of interest: turnover, bid-ask spread or dividend yield. For bid-ask spread, turnover and dividend yield we sort based on whether the company was above or below the median value in that month. We form difference portfolios along both dimensions (dividends and the second variable of interest), and the double difference portfolio. We then regress these returns on the excess market return, SMB, HML and UMD portfolios (as in Table III).

Table V presents these results. We find that the dividend month premium is higher among less liquid stocks, and for stocks that have a higher dividend yield. We find that high turnover (more liquid) stocks have a smaller dividend month premium (21.3 basis points per month) than low turnover stocks (46.8 basis points per month). The double difference portfolio has abnormal returns of -25.5 basis points per month, with a t-statistic of -5.22. For bid-ask spread, the results are directionally consistent, but less significant. High bid-ask spread (less liquid) stocks have a dividend month premium of 65.8 basis points, while low bid-ask spread stocks have a dividend month premium of 42.1 basis points. The double difference portfolio has abnormal returns of 18.6 basis points, although these are not significant (t-statistic of 1.52).

For dividend yield, we find that high dividend yield stocks exhibit a larger dividend month premium. Stocks above the median of past dividend yield have a dividend month premium of 44.6 basis points, compared with 30.3 basis points for stocks below the median of past dividend yield. The double difference portfolio has returns of 14.3 basis points per month, with a t-statistic of 3.20. In addition, each individual difference group (high and low turnover, high and low bid-ask spread, high and low dividend yield) shows a positive and significant dividend month premium. This emphasizes the robustness of the main results across these subsets. Overall, these results suggest that the dividend month premium is related to the level of liquidity (consistent with a price pressure story), and to the size of the dividend (consistent with investors having a preference for larger dividends).

4.5. Economic Uncertainty and the Dividend Announcement Premium

Another way of examining whether the premium is related to dividend demand is to examine how it varies in the time-series. In particular, the size of the premium ought to be higher in periods when demand for dividends is higher. In this regard, we consider the effect of economic uncertainty on the dividend month premium. One possible appeal of dividends is that investors may perceive them as a safe, reliable source of returns. Dividends tend to be less volatile than prices (Shiller (1981)). If investors view dividends and capital gains in separate mental accounts (Thaler (1980)), they may perceive dividends to guarantee a certain level of returns in the future. Investors who fail to appreciate the Miller and Modigliani (1961) argument that issuing dividends will reduce the share price, and thus should be irrelevant in the absence of taxes and frictions, may view dividends as being a guaranteed source of returns, while viewing unrealized capital gains as risky.

These possibilities suggest that the demand for dividends will be higher during periods of aggregate economic uncertainty. In such times, risk aversion is higher and the availability of alternative safe assets is reduced, making dividends especially attractive. We examine whether the dividend month premium larger in periods of greater economic uncertainty, as a test of whether the dividend month premium is driven by the underlying desire for dividends.

We consider this question in Table VI using two measures of uncertainty. The first is whether the economy was in a recession in that month, according to the National Bureau of Economic Research. The second is the market volatility during the previous month. The methodology we examine is that of a Fama and Macbeth (1973) regression framework. This also presents an opportunity to test whether the dividend month premium survives controlling for multiple variables at once, as opposed to the double sorts on each variable in Section 5. Each month, we run the cross-sectional regression:

$$Ri_{,t} - R_f = a + b_1{*}PredDiv_{i,t} + b_2{*}\beta_{i,t} + b_3{*}logMktCap_{i,t-1} + b_4{*}logBM_{i,t-1} + b_5{*}Momentum_{i,t}$$
$$+ b_6{*}Retlg1_{i,t} + b_7{*}Earn_{i,t} + b_8{*}Hessad_{i,t} + e_t$$

The main variable is *PredDiv,* a dummy variable that equals one if the stock had a predicted dividend that month, and zero otherwise. Additional controls are β, equal to the CAPM beta coefficient from regressing the previous 60 months of stock returns on the excess market returns[11], *logMktCap* (the log market capitalization of the firm from the previous month), *logBM* (the log of the ratio of book-value of equity to the market value of equity, from the previous fiscal year as in Fama and French (1992)), *Momentum* (the stock's cumulative return from 2 to 12 months ago), *Retlg1* (the stock's return in the previous month), *Earn* (a dummy variable that equals one if the company had an earnings announcement in the current month and zero otherwise), and *Hessad* (the average stock return from 12, 24, 36, 48 and 60 months ago, as in Heston and Sadka (2008)). We take the time series of the estimates of $b_1 - b_8$, and report the average of the b_1 estimates as the mean effect, and the t-statistic associated with the time-series observations of $b_1 - b_8$. This measures whether the dividend effect survives these controls.

With this time-series of cross-sectional coefficients, we consider the effect of recessions and market volatility on the dividend month premium. Both recessions and market volatility are time-series only effects (e.g. a recession dummy is either equal to one for all firms in a given

[11] Beta is calculated each month. We require the stock to have 24 monthly return observations during the previous 60 months, and regress the excess stock returns on the excess returns on the market. The coefficient on excess market returns is taken as the stock's beta for the next month

month, or zero for all firms in a given month). As a result, they are not directly included in the Fama-Macbeth regression. Instead, we take the time-series of coefficients on b_1 (i.e. the monthly coefficients on *PredDiv*), and compare whether the coefficients are significantly higher in recession months than non-recession months, using a *t*-test to compare the means of the two categories with unequal variances. We measure market volatility as the standard deviation of daily value-weighted market returns during the previous month. We then perform the same test for months following market volatility above the 75th percentile versus months following market volatility below the 75th percentile, to create a similar number of months as in the recession tests.

Table VI presents these results. Panel A uses the whole cross-section of firms in each period. In Panel B, we restrict the cross-section of firms to only those that paid a dividend in the past 12 months, analogous to the within-company case. The results show that predicted dividends have significant effects in the cross-section. In Panel A, the univariate coefficient on predicted dividends is 0.387, with a t-statistic of 6.12. With full controls, the effect is 0.312, with a t-statistic of 9.08. In Panel B, where the sample is only past dividend-paying firms, the results are similar, and the statistical significance is slightly stronger.

Panel C examines whether the effect of dividends is different in periods of economic uncertainty. We take the time series of coefficients from Panel B (the within-companies case), and compare how they differ in periods of high and low uncertainty. We find that the coefficient on *PredDiv* is significantly higher in recessions and following high market volatility. For the full specification of within firms (specification 4 in Panel B), the *PredDiv* coefficient averages 0.464 in recessions and 0.295 in other months, with the difference being significant at the 1% level in the univariate case (t-statistic of -3.87) and at the 5% level in the multivariate case (t-statistic of -2.11). The magnitude of this variable implies that the dividend month effect is around 17 basis points higher during recessions. For market volatility, in the full specification the *PredDiv* coefficient averages 0.415 in periods following high volatility and 0.293 in other months, with the difference being significant at the 1% level in the univariate case (t-statistic of -4.00) and at the 10% level in the multivariate case (t-statistic of -1.82). These results indicate that dividend month premium appears to be greater in periods of economic uncertainty, suggesting that the abnormal returns may be driven by demand for dividends.

5. Alternative Explanations

5.1 Potential Alternative Explanations

There are a number of other potential alternative explanations that may be causing the results. One set of explanations is that the events are driven by some other property of dividend-paying months, rather than the dividends themselves. If dividend-paying months coincide with earnings announcement months, the dividend month premium could be picking up the earnings announcement premium (Beaver (1968), Frazzini and Lamont (2008)). Another potential explanation lies in the seasonality in returns identified in Heston and Sadka (2008), where returns in 12 months increments (12 months ago, 24 months ago etc.) predict current month returns. The dividend month effect may be driven by news contained in the dividend announcements, or by calendar-month effects, for instance by being concentrated in certain months of the year such as January (Keim (1983)). Finally, the effect could also be caused by changes in the duration of cash flows due to dividend payments. We investigate all of these possibilities in the following sections.

5.2 Returns Sorted By Dividend Frequency

One possible concern is the returns may be driven by some other event with similar quarterly timing to dividends (as most dividends in the sample are quarterly). To examine whether the patterns in returns are linked to dividends specifically, we examine dividends of different frequencies. If the effects are driven by dividends, then companies that pay dividends on a semi-annual basis should show abnormal returns for dividends 6 months ago and 12 months ago, but not for 3 or 9 months ago. Similarly, annual dividend payers should only show abnormal returns for dividend payments 12 months ago, but not 3, 6 or 9 months ago. We test these predictions in Table VII, which shows the intercepts from a four-factor regression according to the time since payment (1 to 12 months ago) and dividend frequency (all dividends, quarterly, semi-annual, annual, monthly, and unknown).

Table VII shows that the patterns in abnormal returns match the frequency of the dividends, providing support for the proposition that the abnormal returns are a property of dividend-paying months specifically, rather than some other quarterly event. Companies with quarterly dividends have abnormal returns 3, 6, 9 and 12 months after dividend payments (with abnormal returns of 65, 54, 51, and 49 basis points per month respectively, each with t-statistics above 10). Companies with semi-annual dividends have abnormal returns 6 months after dividend payment (115 basis points, t-statistic of 5.63) and 12 months after payment (82 basis points, t-statistic of 4.13), but *not* for dividends paid 3 months ago (-1 basis point, t-statistic of -0.03) or 9 months ago (-12 basis points, t-statistic of -0.60). For annual dividends, the results are somewhat weaker – payment 12 months ago generates abnormal returns of 58 basis points, although the t-statistic is only 1.78, but there are not abnormal returns for 3, 6 or 9 months ago. These weak results may be partly due to the small number of annual dividend observations (only

0.8% of dividend months are annual, and each annual-dividend firm is in the long portfolio only one month per year).

5.3 Earnings Months, Seasonality

If dividend-paying months coincide with earnings announcement months, then the dividend-month effect may be merely proxying for months with earnings announcements. In such a case, the dividend month premium ought to disappear once we control for whether the month had an earnings announcement or not. To investigate this, we split the dividend month sample into those months with an earnings announcement and those without, and compare the within-companies portfolio for each category.

Another possibility is that the dividend month premium is measuring the effects of seasonality, as in Heston and Sadka (2008). This result finds that monthly returns at 12 months intervals tend to predict returns in the current month. They form their portfolios based on the average returns of the stock from 12, 24, 36, 48 and 60 months ago. To test whether this effect is driving our results, we form a two-way sort, based on predicted dividend payers and other companies with a dividend in the past year, and also on whether companies are above or below the median of the Heston and Sadka (2008) variable. We then regress these returns on the excess market return, SMB, HML and UMD portfolios (as in Table V).

We test these predictions in Table VIII, and find that neither earnings months nor seasonality explain the dividend month announcement premium. For earnings, the dividend month premium is 39.2 basis points in months with earnings announcements, versus 37.1 basis points per month for non-earnings months, with the double difference portfolio showing insignificant abnormal returns. For the Heston and Sadka (2008) double sort, the dividend month premium is 7 basis points higher in the high Heston and Sadka (2008) firms, but the difference is not significant (t-statistic of 1.52). In addition, the dividend month premium is positive and significant in all specifications – earnings and non-earnings months, high and low seasonality.

5.4 Dividend News

Another possibility is that the dividend month premium is masking an effect related to news about the dividends. A number of papers have examined whether news in dividends (such as increases, decreases, omissions and initiations) is able to predict future returns (Fama and French (1998), Fama and French (2000), Liu, Szewcyk and Zantout (2008), Fuller and Goldstein (2011)), and future earnings (Bernartzi, Michaely and Thaler (1997), DeAngelo DeAngelo and Skinner (1996), Nissim and Ziv (2001), Grullon, Michaely, Bernartzi and Thaler (2005)).

We examine below whether the results differ in months following past dividend increases, decreases, omissions, and constant dividends. To keep the timing of changes consistent, we restrict the study to quarterly dividends, and examine cases where a given month is predicted to have a dividend and there was also a dividend increase (or decrease or omission, respectively) in the previous 12 months. Companies with a constant dividend are companies without any increase, decrease or omission in dividends in the previous 12 months. We then compare these portfolios to the returns of companies with past dividend increases (decreases, omissions, constant dividends) that are not predicted to pay a dividend this month. As before, we regress these returns on Mkt-Rf, SMB, HML and UMD portfolios.

Table IX presents these results. The dividend month premium is apparent for all categories of past dividend changes where dividends were actually paid: increases, decreases and constant dividends. For dividend increases, the long-short portfolio has a four-factor alpha of

45.3 basis points per month (t-statistic of 4.10), for constant dividends the long-short portfolio alpha is 40.3 basis points (t-statistic of 12.42), and for dividend decreases the long-short portfolio alpha is actually higher, at 66.2 basis points per month (t-statistic of 3.80). This indicates that the positive returns are not simply a proxy for the sign of dividend news. By contrast, there is no dividend premium when the company omitted dividend payment. This is important, as it reinforces the conclusion that the abnormal returns are coming from the dividend payments themselves, and when dividends disappear, so does the anomaly.

Another way to examine whether the main results are proxying for dividend news is to examine how persistent the effects are over time. While dividend predictions from the past 12 months may be associated with value-relevant news about the dividends, this becomes less likely when the conditioning information is taken from previous years. To examine this question, we use earlier time periods to predict current dividend payments. We use the definition of 'predicted dividend in lag year' and 'other companies with dividend in lag year' and lag these values by 12, 24, 36 months etc. For instance, a lag of 60 means that a company has a predicted dividend if it paid a dividend 63, 66, 69 or 72 months ago, while " other companies with dividend in lag year" paid a dividend 61, 62, 64, 65, 67, 68, 70 or 71 months ago. This is analogous to the 'between companies' results. To make sure that the survivorship bias is the same between the long and short portfolios, we restrict the sample to include only firms with data from lag month+12. We examine the returns to the long/short portfolios regressed on a four-factor model as before.

Table X presents these results. Abnormal returns are present using up to 20 year old dividend data for equal-weighted portfolios (11 basis points per month, with a t-statistic of 3.33), and up to16 year old data for the value-weighted portfolio The returns gradually become smaller in both magnitude and significance, as some past dividend payers stop paying dividends and other past non-payers initiate payments. Figure 4 shows the abnormal returns to portfolios formed on a simpler definition of paying any dividend at a given monthly horizon. In these figures, portfolios are formed that are long if a company paid a dividend X months ago and short otherwise. The figures plot the four-factor intercepts for equal-weighted portfolios in Panel A and for the value-weighted portfolios in Panel B. Abnormal returns in predicted dividend months can be found even using very stale information to predict dividend payment. The results are difficult to reconcile with the effect being driven by dividend news, unless the news has persistent effects at a 20 year horizon.

5.5 Calendar and Seasonal Effects, Sub-Periods

Finally, we examine whether the returns are driven by particular calendar month effects. The returns may be concentrated in certain months of the year such as January (Keim (1983)), may hold only in particular sub-periods, or may have been eliminated in recent years.

We investigate these possibilities in Table XI. Panel A presents the standard 'within companies' results using only returns from each calendar month of the year. The results show that the returns are not concentrated in any particular month of the year, and the abnormal returns are significant at a 5% level in 10 out of the 12 calendar months and significant at a 10% level in all months. Panel B examines the returns to the 'within companies' strategy during four sub-periods: 1926-1945, 1946-1965, 1966-1985 and 1986-2009. The equal-weighted portfolio had economically and statistically significant four-factor alphas in all four sub-periods, ranging from 79 basis points per month during 1926-1945 to 21 basis points per month during 1946-1965.

5.6 Additional Robustness Tests

In the Appendix, we examine whether the results may be driven by changes in the duration of cash flows (Lanstein and Sharpe (1978), Ferson and Harvey (1999)). As dividend payment approaches, the average duration of the cash flows to the investor is smaller. If investors are concerned about this, they may bid up prices as the dividend approaches and reduce the price afterwards when the duration increases. To test this, we examine whether the returns to the within-companies difference portfolio are affected by interest rates, which ought to be the case if duration is driving the price changes. We find no evidence that levels of or changes in the risk-free rate affect portfolio returns, suggesting that duration does not explain the main results.

6. Conclusion

In this paper, we document a robust price pattern – companies have predictably higher returns in months when they are expected to pay a dividend. Dividends can be easily forecast based on the timing of past dividend payments and the reluctance of firms to omit payment. The returns in expected dividend months are abnormally high relative to all other companies not expected to pay a dividend, and relative to past dividend-paying companies in non-dividend months. Simple difference portfolios produce abnormal returns of 37 to 53 basis points per month relative to a four-factor model, with some specifications producing abnormal returns as high as 115 basis points per month.

As an asset pricing anomaly, this is a quite striking effect. It is highly statistically significant, holds in a large number of specifications and survives a wide battery of control variables. It holds on both a value-weighted and equal-weighted basis. It is driven mainly by the long side of the portfolio. It is highly persistent, and abnormal returns are available sorting on 20 year old data. Because of its operation within a given set of companies, it appears quite unlikely to be driven by risk. Our results appear at odds with market efficiency, and suggest that prices are not fully incorporating information about the predictable component of dividend payments.

We argue that the effect is consistent with time-series effects of dividend clienteles. Investors who desire to receive dividends may not have a constant willingness to hold the stock over the dividend cycle. Instead, they may prefer to purchase the stock (or refrain from selling it) immediately before dividend payment. Consistent with this view, daily abnormal returns are higher as the ex-dividend day approaches, and are not limited to the announcement day (under a reaction to news explanation) or the ex-dividend day (under a tax explanation). The effect is larger in less liquid firms and among firms that pay larger dividends. In addition, the effect is larger in periods of economic uncertainty, suggesting that the result may be due to the appeal of dividends as a stable source of income. The patterns in returns are consistent with dividend clienteles having price pressure around dividend periods, and raise the question of what other asset pricing effects may be created by dividend clienteles.

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Appendix

A.I – Interest Rates and Dividend Month Premium

Under the duration explanation, stocks have a shorter duration immediately before they pay a dividend and a longer duration afterwards. The within-companies portfolio thus has negative duration, having a long position in short duration assets and a short position in long duration assets. If the duration is driving the returns to this portfolio, then portfolio returns should be sensitive to interest rates. To test this, we regress the within-companies portfolio returns on excess market returns, SMB, HML, UMD and interest rate controls. We examine several interest rate controls – the level of the risk-free rate, the change in the risk-free rate from the previous month to the current month, and three dummy variables for, respectively, whether the risk-free rate was above its median value, above the 75th percentile of its value, or below the 25th percentile of its value.

This regression, while resembling a standard four-factor model, is mainly an explanatory regression analyzing whether movements in the within-companies portfolio are sensitive to movements in interest rates, over and above movements in the factor portfolios. Table A.I presents these results. We find that none of the interest rate controls shows any significant effect even at a 10% level. This provides evidence that the dividend month premium is not a duration effect.

Table A.I - Interest Rates and the Dividend Month Premium

Long	Predicted Dividend	Predicted Dividend	Predicted Dividend	Predicted Dividend
Short	All Other Past Dividend payers	All Other Past Dividend payers	All Other Past Dividend payers	All Other Past Dividend payers
Intercept	0.003 ***	0.004 ***	0.004 ***	0.004 ***
	(9.02)	(15.51)	(12.06)	(11.90)
Risk Free Rate	0.147			
	(1.61)			
Change in Risk Free Rate		-0.560		
		(-1.42)		
Above Median Risk Free Rate			0.000	
			(-0.50)	
Below 25th percentile of Risk Free Rate				0.000
				(-0.65)
Above 75th percentile of Risk Free Rate				-0.001
				(-1.05)
MktRf, SMB, HML UMD	Yes	Yes	Yes	Yes
R2	0.021	0.020	0.018	0.019
N	981	981	981	981

This table examines the effect of interest rates on the returns of stocks that are predicted to pay a dividend. Portfolios of US monthly stock returns are formed based predicted dividend payments, and these are regressed on excess market returns, SMB, HML, and UMD (available from Ken French's website), and various interest rate measures – the level of the risk free rate, the change in the risk-free rate since the previous month, and three dummy variables for, respectively, whether the risk-free rate was above the median value, above the 75th percentile of its value, and below the 25th percentile of its value. The portfolio for the dependent variable is long stocks with a predicted dividend that month, namely a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. The short side of the portfolio is companies that are not in the long portfolio, but have paid at least one dividend in the last 12 months. To be included in these regressions a company needs a non-missing return from 12 months ago. Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January, 1927 to December 2009. A dividend is defined as the first two digits of the CRSP DISTCD variable equal to 12 with the third digit less than 6. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table I - Summary Statistics

Panel A - Firms with a Dividend in the Past Year

	N	Mean	Std. Dev.	25%	Median	75%
Market Cap ($m)	1,329,168	1,602	9,922	32	116	528
Book-to-Market	873,373	0.8948	1.6265	0.4461	0.6987	1.0771
Turnover	1,231,510	0.4853	0.9026	0.1041	0.2373	0.5411
Bid-Ask Spread	533,408	0.0250	0.0387	0.0053	0.0144	0.0313
Dividend Yield	4,296	0.0152	0.0598	0.0036	0.0070	0.0145
Number of Firm Months	1,329,168					
Number of Firms	8,753					

Panel B - Firms with No Dividend in the Past Year

	N	Mean	Std. Dev.	25%	Median	75%
Market Cap	688,149	818	5,995	31	103	391
Book-to-Market	520,645	0.8211	3.0851	0.2928	0.5447	0.9682
Turnover	658,234	1.3328	2.0423	0.2788	0.7083	1.6522
Bid-Ask Spread	484,336	0.0263	0.0435	0.0036	0.0150	0.0339
Number of Firm Months	688,149					
Number of Firms	13,314					

Panel C - Distribution of Dividend Frequencies

Dividend Frequency	Pct of Firm/Months with Dividend in the Last Year	Pct of Dividend Observations
Any Frequency	65.89	
Monthly	0.18	0.70
Quarterly	56.91	89.07
Semi-Annual	2.02	1.49
Annual	1.06	0.47
Unknown Frequency	7.67	8.28

This Table presents summary statistics for companies according to whether they paid a dividend in the past 12 months, using monthly data from January 1927 to December 2009. Panel A presents information for companies that paid a cash dividend in the past 12 months, and Panel B presents information for companies that did not pay a cash dividend in the past 12 months. Panel C presents examines the distribution of dividend frequencies

Table II - Returns and the Probability of Current Dividend Payment, Sorted By Timing of Past Dividends

Panel A - Raw Returns and Dividend Payments

Months Since Dividend Payment	Returns in Current Month Given Dividend Payment N Months Ago		Probability of Dividend in Current Month Given Dividend Payment N Months Ago	
	Mean Return	Std. Deviation	All Dividends	Quarterly Dividends
1	1.05	9.72	0.009	0.001
2	1.18	9.82	0.060	0.053
3	1.43	9.61	0.853	0.879
4	1.02	9.73	0.062	0.054
5	1.20	9.85	0.066	0.057
6	1.45	9.66	0.853	0.862
7	1.03	9.75	0.067	0.058
8	1.19	9.88	0.064	0.056
9	1.42	9.65	0.835	0.854
10	1.02	9.78	0.065	0.057
11	1.17	9.88	0.051	0.040
12	1.45	9.66	0.880	0.878

This Table presents the monthly stock returns of companies according to the timing of the past dividend payments, using monthly data from January 1927 to December 2009. Panel A examines the average returns and probability of dividend payment in the current month based on payment of dividends in previous months. In Panel A, averages are taken over all firm/month combinations. Months lagged indicates a company had a dividend lagged the indicated number of months in the past. 'All Dividends' refers to all regular cash dividends paid in US dollars (distributions with the first two digits of the CRSP DISTCD variable equal to 12 with the third digit less than 6). 'Quarterly Dividends' refers only to quarterly cash dividends. Panel B presents the distribution of returns according to companies predicted to pay a dividend this month, companies who paid a dividend in the past 12 months but are not predicted to pay in the current month, and companies that didn't pay a dividend in the past 12 months. In Panel B, returns are time-series averages for portfolios, formed by aggregating companies into portfolios each month. Dividends are predicted in the current month if a quarterly dividend was paid 3, 6, 9, or 12 months ago, if a semi-annual dividend was paid 6 or 12 months ago, or if an annual dividend was paid 12 months ago. The Sharpe Ratio is equal to average returns minus the risk free rate, divided by the standard deviation of returns. All columns listing percentiles are for monthly returns.

Panel B - Returns Based on Predicted Dividends										
	Mean Return	Std. Deviation	Sharpe Ratio	1%	5%	25%	Median	75%	95%	99%
[1] Predicted Dividend Month	1.38	5.77	0.188	-16.10	-7.25	-1.28	1.67	4.28	8.77	15.97
[2] All Other Companies with a Dividend in the Last 12 Months	1.01	5.76	0.124	-16.49	-8.07	-1.54	1.48	3.91	8.32	15.01
[3] All Other Companies with NO Dividend in the Last 12 Months	1.01	8.56	0.083	-22.92	-12.67	-3.35	1.39	5.41	13.18	22.20
Portfolio Long [1] and Short [2]	0.37	0.71	0.097	-1.26	-0.75	-0.06	0.34	0.76	1.52	2.36
Portfolio Long [1] and Short [3]	0.37	3.84	0.019	-10.82	-5.88	-1.47	0.40	2.31	6.24	9.46

Table III - Abnormal Returns in Predicted Dividend Months

Panel A - Four Factor Alphas For Difference Portfolios Based on Predicted Dividends

	Equal Weighted			Value Weighted		
Long	Predicted Dividend	Predicted Dividend	Predicted Dividend	Predicted Dividend	Predicted Dividend	Predicted Dividend
Short	All Other Companies	All Other Past Dividend payers	Dividend 1, 4, 7, or 10 Months Ago	All Other Companies	All Other Past Dividend payers	Dividend 1, 4, 7, or 10 Months Ago
Long	0.407 ***	0.407 ***	0.407 ***	0.239 ***	0.239 ***	0.239 ***
	(8.51)	(8.51)	(8.51)	(6.84)	(6.84)	(6.84)
Short	-0.128 ***	0.030	-0.051	-0.084 ***	-0.053 *	-0.180 ***
	(-3.45)	(0.65)	(-1.03)	(-4.60)	(-1.88)	(-4.47)
Difference	0.534 ***	0.374 ***	0.456 ***	0.323 ***	0.292 ***	0.420 ***
	(12.31)	(15.50)	(16.30)	(6.72)	(6.77)	(8.12)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns based on predicted dividend payment. Portfolios of stock returns are formed based predicted dividend payments, and these are regressed on excess market returns, SMB, HML, and UMD (available from Ken French's website), and in some cases the Pastor and Stambaugh (2003) liquidity factor. Both equal weighted and value weighted portfolios are formed. To be included in the long portfolio a stock needs to have a predicted dividend. A predicted dividend month has a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. Stocks with monthly dividends in the previous 12 months are excluded from the analysis. For the short portfolios, "All Other Companies" contains all companies not included in the long portfolio, "All Other Companies with a Dividend in the Last 12 Months" contains companies that are not in the long portfolio, but have paid at least one dividend in the last 12 months, and "All other companies with a Dividend in Lag1, Lag 4, Lag7, and/or Lag10 Months" contains companies not in the long portfolio with a dividend in at least one of the months occurring 1,4,7 or 10 months ago. Panel A presents only the intercepts from 4 factor regressions, for the various long and short portfolios as labeled, with 'Difference' being a portfolio long in the predicted dividend portfolio and short the labeled 'short' portfolio. Panel B presents the intercepts for regressions of excess portfolio returns on a CAPM model (excess market returns only), 3 factor regressions (excess market returns, SMB, and HML), 4 factor regressions (excess market returns, SMB, HML and UMD) and 4 factor plus liquidity (excess market returns, SMB, HML UMD and liquidity). To be included in these regressions a company needs a non-missing return from 12 months ago. Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January, 1927 to December 2009. A dividend is defined as the first two digits of the CRSP DISTCD variable equal to 12 with the third digit less than 6. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Panel B - Factor Loadings from Fama French 4 Factor Difference Portfolios

Long Predicted Dividend, Short All Other Companies

Long	Cap-M Alpha	3-Factor Alpha	4-Factor Alpha	4-Factor + Liq. Alpha	MktRf	SMB	HML	UMD	Liquidity
Long	0.475 ***	0.360 ***	0.407 ***	0.421 ***	0.911 ***	0.418 ***	0.457 ***	-0.066 ***	-0.063 ***
	(7.64)	(7.68)	(8.51)	(6.31)	(58.85)	(20.27)	(19.09)	(-4.26)	(-3.30)
Short	-0.039	-0.164 ***	-0.128 ***	-0.100 **	0.990 ***	0.684 ***	0.204 ***	-0.094 ***	-0.040 ***
	(-0.55)	(-4.51)	(-3.45)	(-2.36)	(100.26)	(51.87)	(13.33)	(-9.55)	(-3.33)
Difference	0.513 ***	0.523 ***	0.534 ***	0.521 ***	-0.080 ***	-0.265 ***	0.254 ***	0.029 **	-0.022
	(10.21)	(12.41)	(12.31)	(9.93)	(-6.53)	(-16.32)	(13.45)	(2.34)	(-1.49)

Long Predicted Dividend, Short All Other Companies With Dividend in the Last Year

Long	Cap-M Alpha	3-Factor Alpha	4-Factor Alpha	4-Factor + Liq. Alpha	MktRf	SMB	HML	UMD	Liquidity
Long	0.475 ***	0.360 ***	0.407 ***	0.421 ***	0.911 ***	0.418 ***	0.457 ***	-0.066 ***	-0.063 ***
	(7.64)	(7.68)	(8.51)	(6.31)	(58.85)	(20.27)	(19.09)	(-4.26)	(-3.30)
Short	0.109 *	0.002	0.030	-0.023	0.916 ***	0.413 ***	0.463 ***	-0.071 ***	-0.047 ***
	(1.80)	(0.03)	(0.65)	(-0.35)	(60.65)	(20.52)	(19.82)	(-4.70)	(-2.54)
Difference	0.362 ***	0.356 ***	0.374 ***	0.444 ***	-0.005	0.005	-0.006	0.005	-0.016 **
	(15.39)	(15.09)	(15.50)	(16.92)	(-0.76)	(0.65)	(-0.60)	(0.83)	(-2.09)

Table IV - Daily Abnormal Returns Around Dividend Declaration and Ex-Dividend Date

	Equal Weighted			Value Weighted		
Days Relative to Event Date	Ex-Dividend Date	Actual Declaration Date	Predicted Declaration Date	Ex-Dividend Date	Actual Declaration Date	Predicted Declaration Date
-5	0.059 ***	0.011 *	0.015 ***	0.035 ***	-0.006	0.004
	(8.26)	(1.91)	(2.81)	(3.75)	(-0.79)	(0.52)
-4	0.056 ***	0.014 **	0.021 ***	0.029 ***	-0.004	0.014 *
	(8.17)	(2.40)	(3.71)	(3.28)	(-0.45)	(1.69)
-3	0.052 ***	0.013 **	0.020 ***	0.023 ***	0.022 **	0.017 **
	(7.95)	(1.99)	(3.62)	(2.59)	(2.43)	(2.06)
-2	0.038 ***	0.024 ***	0.020 ***	0.034 ***	0.015 *	0.019 **
	(6.18)	(4.24)	(3.65)	(3.83)	(1.87)	(2.36)
-1	0.107 ***	0.030 ***	0.027 ***	0.091 ***	0.018 **	0.023 ***
	(16.79)	(5.30)	(4.97)	(10.54)	(2.13)	(2.86)
0	0.300 ***	0.115 ***	0.043 ***	0.120 ***	0.079 ***	0.034 ***
	(45.47)	(18.09)	(7.47)	(13.90)	(9.03)	(4.09)
1	0.002	0.115 ***	0.041 ***	-0.021 **	0.065 ***	0.049 ***
	(0.27)	(18.69)	(6.97)	(-2.35)	(7.22)	(5.75)
2	-0.009	0.064 ***	0.038 ***	-0.021 **	0.042 ***	0.008
	(-1.48)	(11.39)	(7.03)	(-2.38)	(5.37)	(1.01)
3	-0.017 ***	0.061 ***	0.042 ***	-0.016 *	0.055 ***	0.033 ***
	(-2.77)	(11.24)	(7.53)	(-1.88)	(7.00)	(4.12)
4	-0.007	0.054 ***	0.028 ***	-0.017 *	0.026 ***	0.012
	(-1.14)	(9.60)	(5.05)	(-1.89)	(3.07)	(1.42)
5	-0.008	0.042 ***	0.044 ***	-0.019 **	0.013 *	0.009
	(-1.23)	(7.48)	(7.36)	(-2.18)	(1.67)	(1.10)

This table presents the results of Fama French 4 Factor regressions of US daily stock returns around dividend declaration and payment. Regressions are run separately for portfolios of stocks on each day surrounding the dividend event indicated in the column heading. Day 0 indicates the returns of all stocks on days that there was an ex-dividend date, a declaration date or a predicted declaration date. A predicted declaration date is 63 trading days after the previous declaration date. Negative numbers indicate stocks *T* days before the event, and positive numbers correspond to *T* days after the event. Results for equal weighted and value weighted portfolios are indicated in the column headings. Each portfolio is regressed on the daily excess market return, SMB, HML and UMD portfolios. The intercept from these regressions is shown in the Table. Regressions are run on daily returns of NYSE, Amex and NASDAQ common shares, from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table V - Abnormal Returns Sorted on Predicted Dividends, Liquidity, and Dividend Yield

	Predicted Dividend	Other Past Dividend Payers	Difference
Above Median Turnover	0.177 ***	-0.036	0.213 ***
	(2.66)	(-0.57)	(5.87)
Below Median Turnover	0.548 ***	0.080	0.468 ***
	(11.12)	(1.62)	(13.95)
Difference	-0.371 ***	-0.116 **	-0.255 ***
	(-5.86)	(-1.97)	(-5.22)
Above Median Spread	0.741 ***	-0.012	0.658 ***
	(5.86)	(-0.10)	(5.91)
Below Median Spread	0.417 ***	-0.043	0.421 ***
	(3.74)	(-0.40)	(5.01)
Difference	0.316 ***	0.014	0.186
	(2.63)	(0.12)	(1.52)
Above Median Dividend Yield	0.574 ***	0.128 **	0.446 ***
	(10.14)	(2.36)	(13.22)
Below Median Dividend Yield	0.238 ***	-0.069	0.303 ***
	(4.35)	(-1.28)	(9.63)
Difference	0.337 ***	0.197 ***	0.143 ***
	(5.94)	(3.76)	(3.20)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns double sorted on predicted dividend payment and other company characteristics, from January 1927 to December 2009. All portfolios are equal-weighted, and monthly stock returns are regressed on monthly excess market returns, SMB, HML and UMD, with the intercept from these regressions being shown. Rows and columns other than 'Difference' show the intercept from four factor regressions that are long in the portfolio indicated in the row or heading. 'Difference' gives the intercept from a four factor regression that is long the portfolio in the top row (or left column) and short the portfolio in the bottom row (or right column). 'Predicted Dividends' is a portfolio of stocks that paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. Stocks with monthly dividends in the previous 12 months are excluded from the analysis. For the short portfolio "Other Past Dividend Payers" contains all companies that paid a dividend in the past 12 months but are not expected to pay a dividend this month under the above definition. Turnover is the average over the previous 12 months of monthly trading volume divided by shares outstanding. Spread is taken as the average over the previous 12 months of the firms relative bid-ask spread: [Ask Price – Bid Price] / [(Ask Price + Bid Price) / 2]. Dividend Yield is calculated as the average monthly dividend amount across all dividend-paying months in the past 12 months, dividend by the previous month's stock price. For all three variables, companies are sorted into portfolios based on whether they are above or below the median value for that particular variable taken across all stocks in that month. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table VI - Fama Macbeth Regressions of Dividend Month Premium

Panel A - All Firms

	[1]	[2]	[3]	[4]
Predicted Dividend	0.387 ***	0.361 ***	0.374 ***	0.312 ***
	(6.12)	(8.22)	(9.76)	(9.08)
Log Market Cap		-0.063 *	-0.059 *	-0.066 **
		(-1.96)	(-1.94)	(-2.27)
Log Book to Market		0.259 ***	0.289 ***	0.285 ***
		(4.74)	(5.31)	(5.17)
Beta		0.088	0.083	0.110
		(0.70)	(0.70)	(0.84)
Return Last Month			-4.220 ***	-4.570 ***
			(-12.68)	(-13.54)
Momentum			0.811 ***	0.699 ***
			(6.42)	(5.26)
Heston-Sadka				3.370 ***
				(7.58)
Earnings Month				0.120 ***
				(4.41)
Observations	2,119,045	1,468,951	1,463,797	1,171,834
Avg. R-squared	0.005	0.046	0.063	0.069
Number of Periods	984	558	558	558

This table presents the results of Fama and Macbeth (1973) cross-sectional regressions of US monthly stock returns on predicted dividend payment and other control variables. In each month, the cross section of stock returns is regressed on a number of variables, and the time series average and t-statistic associated with these cross sectional coefficients is reported. The main independent variable is 'Predicted Dividend', a dummy variable that equals one if the company paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago, and zero otherwise. 'Log Market Cap' is the log of company market capitalization in the previous month, 'Log Book to Market' is the log of the ratio between the company's book value of equity and market value of equity in the previous fiscal year, 'Beta' is the coefficient from a regression of the company's excess stock returns on market excess returns using the previous 5 years of data, 'Return Last Month' is the stock return in the previous month, 'Momentum' is the stock returns between two and 12 months before, 'Heston-Sadka' is the average of the stock's returns 12, 24, 36, 48 and 60 months ago, and 'Earnings Month' is a dummy variable that equals one if the company has a quarterly earnings announcement that month and zero otherwise. Panel A uses the whole cross-section of companies at each time, while Panel B only uses the cross-section of companies that paid a dividend in the previous 12 months. Panel C examines whether the cross-sectional coefficients on *Dividend* are significantly different between months in a recession and other months, and months where the past month's standard deviation of daily market returns is above and below the 25th and 75th percentile respectively. All regressions are run on monthly excess returns of NYSE, Amex and NASDAQ common shares from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Panel B - Only Firms That Paid a Dividend in the Past Year				
	[1]	[2]	[3]	[4]
Predicted Dividend	0.362 ***	0.384 ***	0.377 ***	0.322 ***
	(15.58)	(15.98)	(15.85)	(12.88)
Log Market Cap		-0.091 ***	-0.088 ***	-0.081 ***
		(-3.20)	(-3.25)	(-3.14)
Log Book to Market		0.125 **	0.156 ***	0.191 ***
		(2.28)	(2.84)	(3.34)
Beta		0.143	0.115	0.118
		(1.11)	(0.94)	(0.92)
Return Last Month			-5.840 ***	-6.110 ***
			(-16.89)	(-17.59)
Momentum			0.909 ***	0.788 ***
			(5.90)	(4.90)
Heston-Sadka				4.630 ***
				(8.73)
Earnings Month				0.121 ***
				(4.17)
Observations	1,342,871	897,783	894,585	775,879
Avg. R-squared	0.002	0.045	0.066	0.073
Number of Periods	984	558	558	558

Panel C - Dividend Premium and Economic Uncertainty					
	Dividend in Last Year			Dividend in Last Year	
	[1]	[4]		[1]	[4]
No Recession	0.305 ***	0.295 ***	Below 75th Pctile	0.297 ***	0.293 ***
	(13.30)	(11.40)	Market Volatility	(12.96)	(11.06)
Number of Months	784	468	Number of Months	739	426
Recession	0.585 ***	0.464 ***	Above 75th Pctile	0.558 ***	0.415 ***
	(8.54)	(6.13)	Market Volatility	(9.13)	(6.75)
Number of Months	200	90	Number of Months	245	132
Difference	-0.280 ***	-0.168 **	Difference	-0.261 ***	-0.122 *
	(-3.87)	(-2.11)		(-4.00)	(-1.82)

Table VII - Abnormal Returns by Dividend Frequency

Dividend N Months Ago	All	Quarterly	Semi-Annual	Annual	Monthly	Unknown
1	-0.060	-0.066	0.086	-0.125	0.264	0.086
	(-1.32)	(-1.16)	(0.43)	(-0.40)	(1.51)	(0.52)
2	0.201 ***	0.184 ***	0.279	0.317	0.255	0.332 **
	(4.58)	(3.61)	(1.41)	(0.91)	(1.36)	(2.13)
3	0.554 ***	0.645 ***	-0.006	0.391	0.246	0.416 ***
	(12.75)	(11.23)	(-0.03)	(1.19)	(1.35)	(2.96)
4	-0.077 *	-0.109 **	-0.370 *	-0.315	0.263	-0.011
	(-1.77)	(-2.12)	(-1.80)	(-0.95)	(1.48)	(-0.06)
5	0.151 ***	0.127 ***	0.682 ***	-0.434	0.171	0.032
	(3.52)	(2.61)	(3.83)	(-1.25)	(0.93)	(0.19)
6	0.568 ***	0.544 ***	1.146 ***	0.157	0.366 **	0.787 ***
	(13.85)	(11.52)	(5.63)	(0.52)	(2.01)	(4.18)
7	-0.098 **	-0.118 **	0.177	-0.381	0.232	0.039
	(-2.30)	(-2.44)	(0.80)	(-1.24)	(1.26)	(0.23)
8	0.097 **	0.068	0.277	-0.711 **	0.350 *	0.526 ***
	(2.32)	(1.46)	(1.43)	(-2.16)	(1.83)	(3.22)
9	0.507 ***	0.514 ***	-0.121	0.471	0.440 **	0.248
	(12.66)	(10.90)	(-0.60)	(1.39)	(2.29)	(1.39)
10	-0.116 ***	-0.163 ***	0.341	0.797 **	0.266	-0.116
	(-2.79)	(-3.28)	(1.54)	(2.46)	(1.41)	(-0.68)
11	0.123 ***	0.105 **	0.292	0.276	0.270	0.177
	(2.95)	(2.32)	(1.51)	(0.77)	(1.44)	(0.96)
12	0.502 ***	0.492 ***	0.816 ***	0.583 *	0.489 **	0.586 ***
	(12.06)	(10.16)	(4.13)	(1.75)	(2.52)	(3.58)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns based on the timing of past dividend payments of different frequencies. 'Dividend N Months Ago' means that the portfolio of returns is formed based on companies who paid a dividend of the given type *N* months earlier. Dividend types are from CRSP classifications of the dividend as quarterly, semi-annual, annual, monthly, or unknown, with 'All' including all these categories. Each combination of dividend type and time since the dividend is the output of a separate regression of portfolio returns on a Fama French 4 Factor Model (excess market returns, SMB,HML and UMD portfolios). The dependent variable is the returns of an equal weighted portfolio that is long all companies who paid a dividend of the given type in the given earlier period, and short all companies who did not pay any dividend in that month. Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table VIII - Double-Sorted Portfolios on Predicted Dividends, Earnings Months and Seasonality

	Predicted Dividend	Other Past Dividend Payers	Difference
Earnings Month	0.775 ***	0.383 **	0.392 ***
	(4.00)	(2.37)	(2.73)
Non-Earnings Month	0.379 ***	0.006	0.371 ***
	(8.03)	(0.13)	(15.25)
Difference	0.563 ***	0.569 ***	-0.006
	(3.12)	(3.69)	(-0.04)
Above Median Heston-Sadka (2008) Seasonality	0.584 ***	0.271 ***	0.320 ***
	(10.67)	(5.14)	(10.16)
Below Median Heston-Sadka (2008) Seasonality	0.140 ***	-0.103 **	0.247 ***
	(2.60)	(-1.96)	(6.39)
Difference	0.444 ***	0.374 ***	0.072
	(9.05)	(7.76)	(1.52)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns double sorted on predicted dividend payment and other company characteristics. All portfolios are equal-weighted, and monthly stock returns are regressed on monthly excess market returns, SMB, HML and UMD, with the intercept from these regressions being shown. Rows and columns other than 'Difference' show the intercept from four factor regressions that are long in the portfolio indicated in the row or heading. 'Difference' gives the intercept from a four factor regression that is long the portfolio in the top row (or left column) and short the portfolio in the bottom row (or right column). 'Predicted Dividends' is a portfolio of stocks that paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. Stocks with monthly dividends in the previous 12 months are excluded from the analysis. For the short portfolios, "Other Past Dividend Payers" contains all companies that paid a dividend in the past 12 months but are not expected to pay a dividend this month under the above definition. Earnings months indicate a month that a company reported earnings. The Heston and Sadka (2008) Seasonality variable is taken as the average return for the stock from 12, 24, 36, 48 and 60 months ago. Each month stocks are sorted according to whether they are above or below the median value for this variable in that month, and split into two portfolios accordingly. Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table IX - Dividend News and Abnormal Returns in Predicted Dividend Months

Long	Predicted Dividend, Dividend Increase in Last year	Predicted Dividend, Constant Dividend in Last year	Predicted Dividend, Dividend Decrease in Last year	Predicted Dividend, Dividend Missed in Last year
Short	All Other Companies with Dividend Increase in Last Year	All Other Companies with Constant Dividend in Last Year	All Other Companies with Dividend Decrease in Last Year	All Other Companies with Missed Dividend in Last Year
Long	0.864 ***	0.486 ***	0.397 ***	-0.725 ***
	(7.83)	(8.91)	(2.62)	(-3.20)
Short	0.427 ***	0.061	-0.356 ***	-0.695 ***
	(4.85)	(1.12)	(-2.87)	(-4.09)
Difference	0.453 ***	0.403 ***	0.662 ***	0.085
	(4.10)	(12.42)	(3.80)	(0.34)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns double sorted on predicted dividend payment and recent dividend news. All portfolios are equal-weighted, and monthly stock returns are regressed on monthly excess market returns, SMB, HML and UMD, with the intercept from these regressions being shown. All long portfolios are companies with a predicted dividend in the current month, meaning that the stocks paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. In addition, the stocks must also have experienced a dividend increase (column 1), constant dividends (column 2), a dividend decrease (column 3) or dividend omission (column 4) accordingly some time during the past 12 months. The short portfolio is all stocks who had the same dividend news in the past year (increase, constant, decrease or omission) but are not predicted to pay a dividend in the current month. 'Difference' is the difference portfolio of long minus short. Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table X - Long Term Persistance of Dividend Month Premium

Long	Predicted Dividend in Lag Year	Predicted Dividend in Lag Year	**Long**	Predicted Dividend in Lag Year	Predicted Dividend in Lag Year
Short	Other Companies with Dividend in Lag Year	Other Companies with Dividend in Lag Year	**Short**	Other Companies with Dividend in Lag Year	Other Companies with Dividend in Lag Year
Years Lagged	Equal Weight	Value Weight	**Years Lagged**	Equal Weight	Value Weight
1	0.335 ***	0.253 ***	11	0.131 ***	0.131 ***
	(13.83)	(5.83)		(5.05)	(2.88)
2	0.283 ***	0.265 ***	12	0.146 ***	0.106 **
	(10.60)	(5.99)		(5.82)	(2.28)
3	0.285 ***	0.297 ***	13	0.094 ***	0.096 **
	(11.16)	(6.69)		(3.60)	(1.99)
4	0.266 ***	0.273 ***	14	0.133 ***	0.120 **
	(10.80)	(6.02)		(4.95)	(2.49)
5	0.213 ***	0.245 ***	15	0.125 ***	0.107 **
	(8.57)	(5.55)		(4.45)	(2.16)
6	0.185 ***	0.226 ***	16	0.108 ***	0.114 **
	(7.51)	(5.27)		(3.91)	(2.25)
7	0.190 ***	0.236 ***	17	0.112 ***	0.044
	(7.84)	(5.24)		(3.94)	(0.84)
8	0.155 ***	0.207 ***	18	0.117 ***	0.053
	(6.27)	(4.57)		(3.86)	(0.93)
9	0.160 ***	0.211 ***	19	0.102 ***	0.041
	(6.42)	(4.72)		(3.31)	(0.75)
10	0.154 ***	0.173 ***	20	0.105 ***	0.044
	(6.25)	(3.85)		(3.33)	(0.78)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns sorted on predicted dividend payment at different horizons. Portfolios are equal-weighted or value-weighted as indicated, and monthly stock returns are regressed on monthly excess market returns, SMB, HML and UMD. The intercept from these regressions is shown in the table. The ‘predicted dividend’ variable selects companies that paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. This variable is then lagged in years by adding multiples of 12 months to each of the date requirements – e.g. a lag of one year means a stock that paid a quarterly dividend 15, 18, 21 or 24 months ago (and equivalently for semi-annual and annual), a lag of two years means quarterly dividend payment 27, 30, 33 or 36 months ago, etc. The long portfolio is all stocks with a predicted dividend lagged by that number of years, while the short portfolio includes all companies that paid a dividend in the 12 months of the lagged year that aren’t predicted to pay a dividend (e.g. a lag of 1 year means any dividend payment from 13 to 24 months ago that isn’t predicted to pay a dividend this month). Regressions are run on monthly returns of NYSE, Amex and NASDAQ common shares, from January 1927 to December 2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Table XI - Calendar, Seasonality and Subperiods

Panel A - Dividend Month Premium by Calendar Month

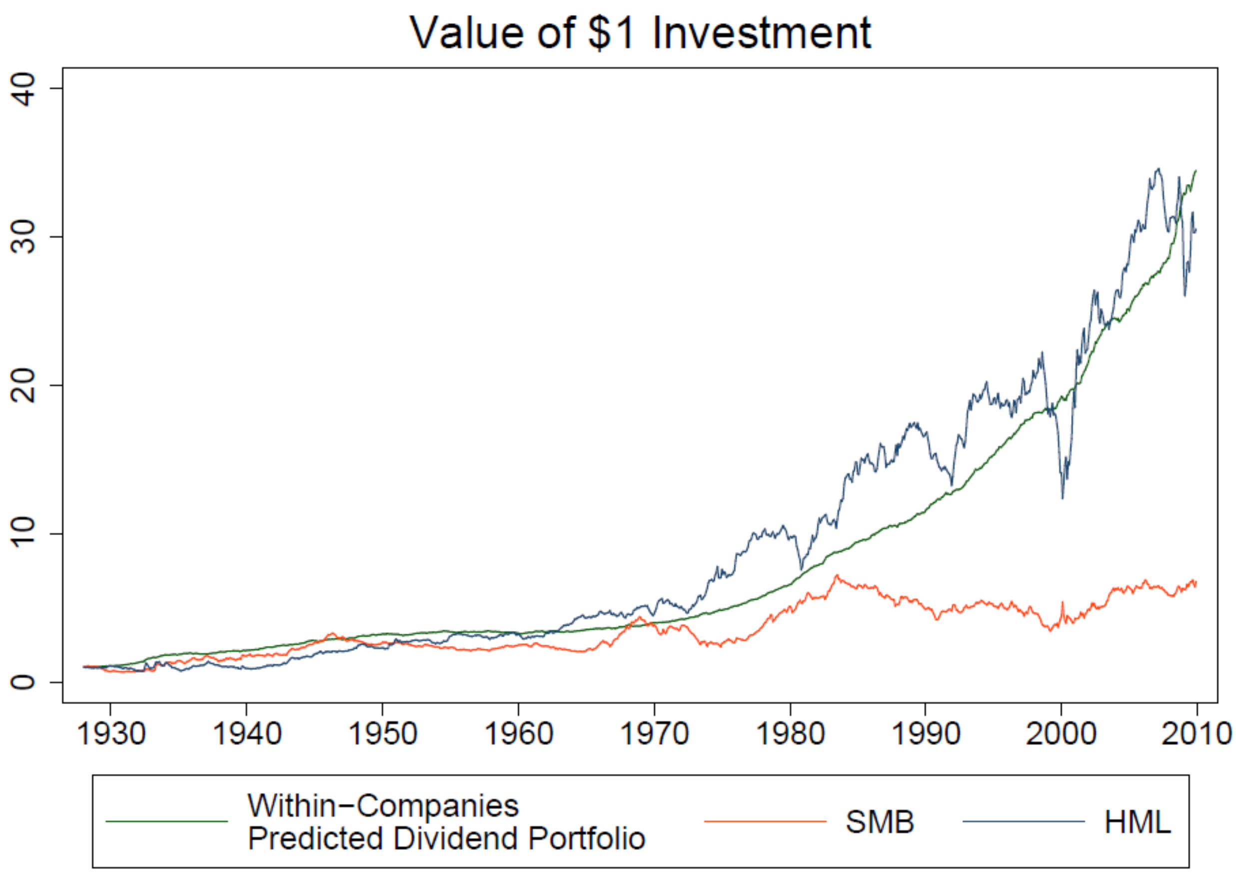
Month	EW, Predicted Dividend - All Other Past Dividend Payers	**Month**	EW, Predicted Dividend - All Other Past Dividend Payers
January	0.365 *	July	0.766 ***
	(1.85)		(4.61)
February	0.551 ***	August	0.567 ***
	(3.61)		(4.92)
March	0.642 ***	September	0.431 ***
	(5.41)		(2.90)
April	0.337 **	October	0.274 *
	(2.39)		(1.87)
May	0.525 ***	November	0.552 ***
	(4.47)		(3.98)
June	0.562 ***	December	0.615 ***
	(3.97)		(3.21)

Panel B - Different Sub-Periods

Period	Equal Weighted	Value Weighted
1926-1945	0.790 ***	0.520 ***
	(6.37)	(4.23)
1946-1965	0.214 ***	0.045
	(4.92)	(0.53)
1966-1985	0.604 ***	0.468 ***
	(11.29)	(5.69)
1985-2009	0.471 ***	0.288 ***
	(7.15)	(3.75)

This table presents the results of Fama French 4 Factor regressions of US monthly stock returns sorted on predicted dividend payment in different calendar months, and in different sub-periods. Monthly stock returns are regressed on monthly excess market returns, SMB, HML and UMD, with the intercept from these regressions being shown. Predicted dividends refers to stocks that paid a quarterly or unknown dividend 3, 6, 9 or 12 months ago, a semi-annual dividend 6 or 12 months ago, or an annual dividend 12 months ago. ‘All Other Past Dividend Payers’ is all companies who paid a dividend in the past 12 months but are not predicted to pay a dividend this month based on the above formula. The dividend month premium is the abnormal returns to the difference portfolio long predicted dividend payers and short all other past dividend payers. Panel A examines the equal-weighted dividend month premium in different calendar months of the year. Panel B examines the dividend month premium in different sub-periods: 1926-1945, 1946-1965, 1966-1985 and 1986-2009. The top number is the coefficient, the lower number in parentheses is the t-statistic, and *, ** and *** indicate statistical significance at the 10%, 5% and 1% level respectively.

Figure 1 – Cumulative Value of the Dividend Month Premium Compared With Size and Book-to-Market Anomalies



This figure presents the cumulative value for the dividend month premium portfolio compared with the size (SMB) and book-to-market (HML) portfolios. In each case, the cumulative value of an initial one dollar investment on December 31, 1927 is plotted on the y-axis, versus the year on the x-axis. The green line is for the 'within-companies' dividend month premium – a portfolio that is long in all companies predicted to pay a dividend this month, and is short in all companies who paid a dividend in the past 12 months but that are not predicted to pay a dividend this month. The orange line is the cumulative value of the SMB portfolio and the blue line is the cumulative value of the HML portfolio, both taken from Ken French's website.

Figure 2 – Equal Weighted Daily Four Factor Alphas Around Ex-Dividend Date

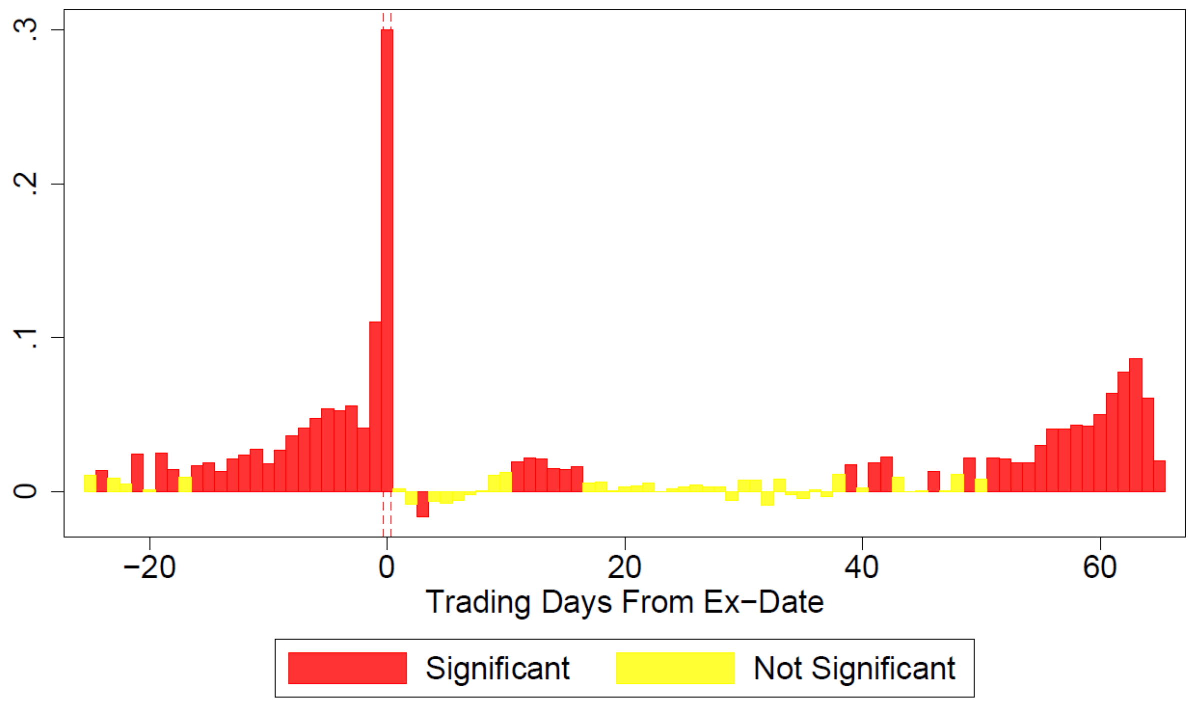
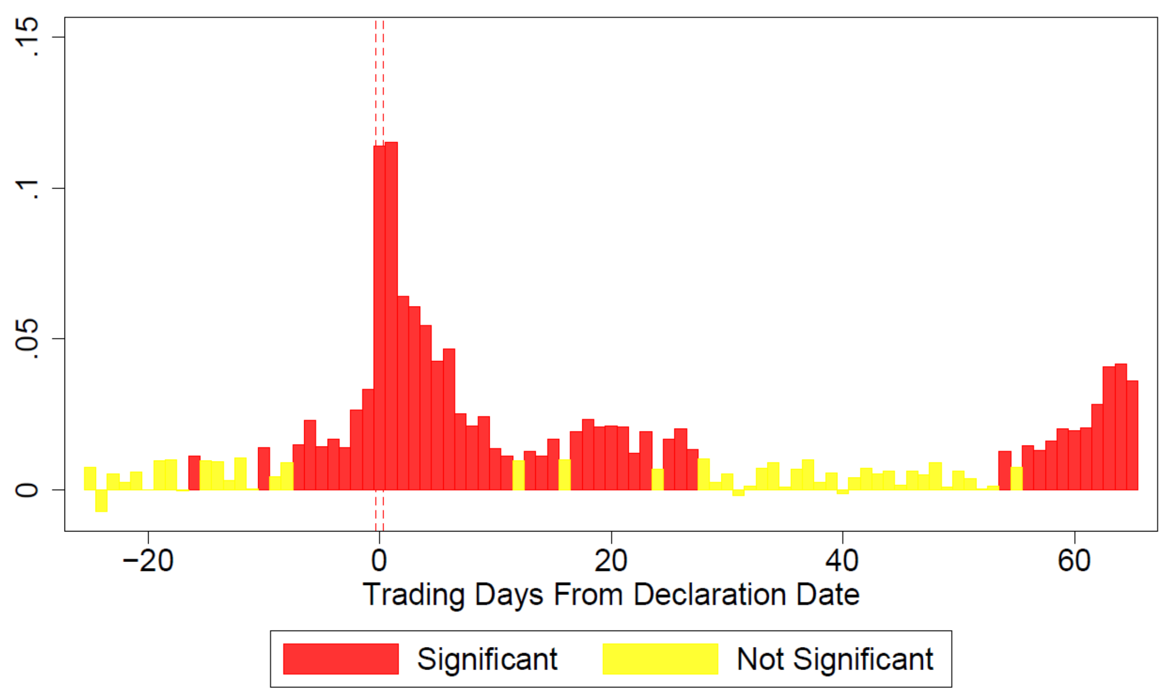


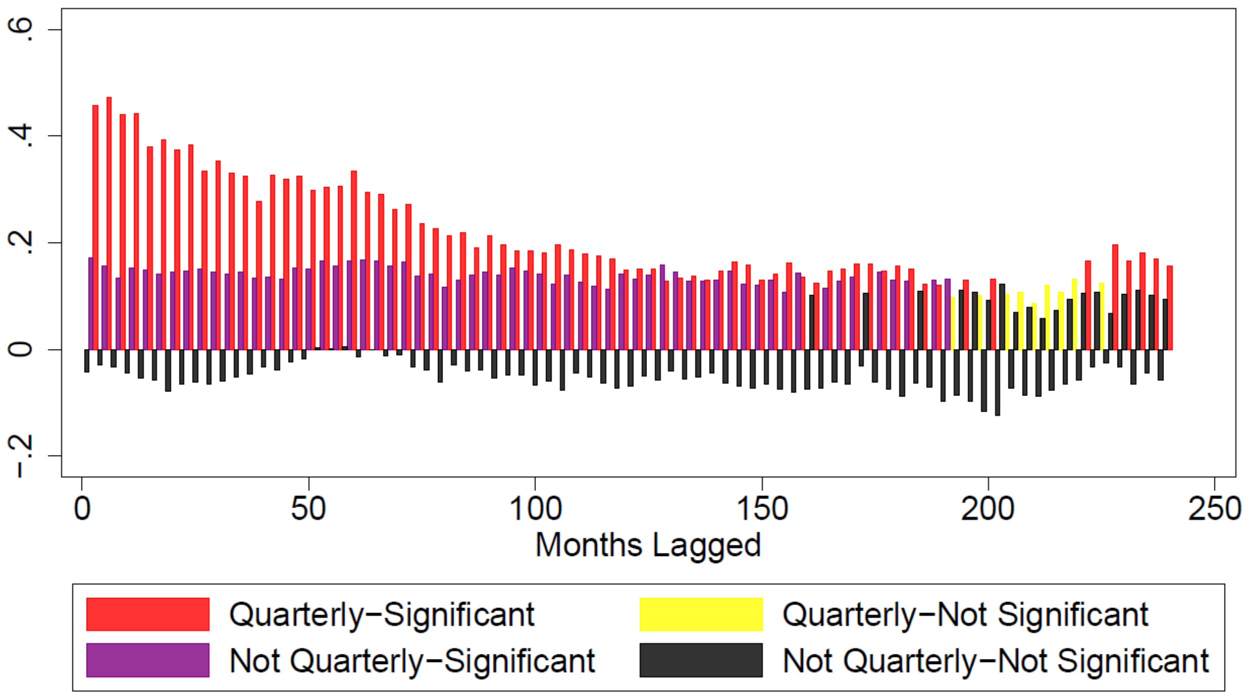
Figure 3 – Equal Weighted Daily Four Factor Alphas Around Declaration Date



These figures present the intercepts from four-factor regressions of daily stock returns around ex-dividend dates (Figure 2) and dividend declaration dates (Figure 3). Each point is from a separate regression of an equal-weighted portfolio of daily stock returns on excess market returns, as well as SMB, HML and UMD portfolios. Portfolios are formed relative to the ex-dividend date (declaration date), with negative dates being before the ex-dividend date (declaration date) and positive dates being afterwards. All returns are in percent (e.g. ‘0.1’ corresponds to 10 basis points). Lines in red have a t-statistic that is significant at the 5% level, and lines in yellow are not significant at a 5% level

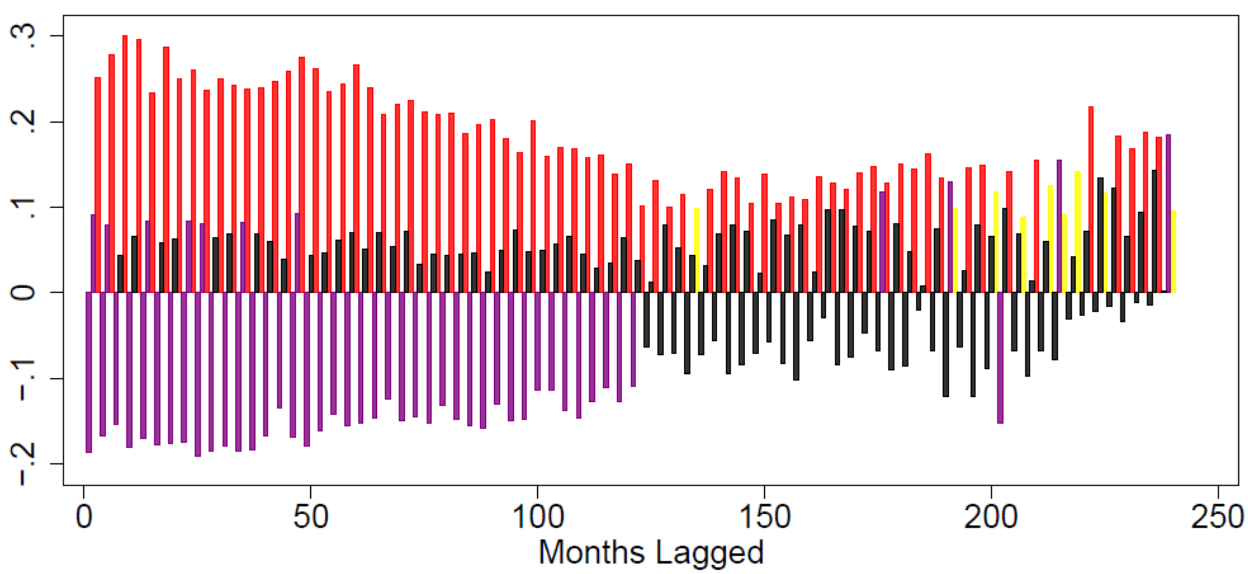
Figure 4 – Abnormal Returns for Portfolios of Past Dividend Payers

Panel A – Equal Weighted



Quarterly means the month lag is a multiple of 3.

Panel B – Value Weighted



This figure presents the intercepts from four-factor regressions of monthly stock returns for companies that paid a dividend in previous months. Each point is from a separate regression of a portfolio of monthly stock returns on excess market returns, as well as SMB, HML and UMD portfolios. The y-axis is monthly abnormal returns, in percent. In Panel A, the results are for equal-weighted portfolios, and in Panel B they are for value-weighted portfolios. Portfolios are formed for all companies that paid a dividend of any kind in the number of months prior indicated. When the month is a multiple of three (i.e. paid a dividend 3 months ago, 6 months ago etc.), the bar is red if the intercept has a t-statistic that is significant at the 5% level, and yellow if the intercept is not significant at the 5% level. When the month is not a multiple of three, the bar is purple if the intercept has a t-statistic that is significant at the 5% level, and black if the intercept is not significant at the 5% level.