# Supplemental Appendix For: Marketwide Predictable Price Pressure

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#### ABSTRACT

This Supplemental Appendix provides additional results to Marketwide Predictable Price Pressure.

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# I. Further discussion of Data and Variable Construction

This section goes into further details of the datasets used and how the variables are constructed. The paper largely uses the CRSP dataset. Observations are included if they represent ordinary common shares (code 10 or 11) trading on the NYSE, Nasdaq or Amex and have a non-missing share price.

The paper focuses on ordinary cash dividends. It does so by focusing on variables with a distribution code (distcd) with the first two digits of disted equal to "12" and the third digit between 0 and 5. For these dividends we largely examine timing based on the payment date. If a payment date occurs on a non-trading date, we shift the payment to the next day with trading. For each payment date we take the sum of all dividends occurring on that day, which we call here  $mkt \, dividend \, paid_t$ . To convert this to a payment yield we scale this by the total value of the stock market the prior day, namely  $mkt \, cap_t$ . Thus in our baseline the dividend payment yield on day t is defined as  $Mkt \, Div \, Pay[t] = \frac{mkt \, dividend \, paid_t}{mkt \, cap_{t-1}}$ . Our main variable of interest is thus defined as  $Mkt \, Div \, Pay[t-1,t] = \frac{mkt \, dividend \, paid_{t-1}}{mkt \, cap_{t-2}} + \frac{mkt \, dividend \, paid_t}{mkt \, cap_{t-1}}$ . Table I shows summary statistics of  $Mkt \, Div \, Pay[t-1,t]$ .

We also examine an abnormal dividend measure. This measures scales by the average daily dividend occurring between day t-20 and t-272, which we call  $avg \ mkt \ div \ paid_{t-20,t-272}$ . Then we can define the abnormal dividend as  $Mkt \ Abnormal \ Pay[t] = \frac{mkt \ dividend \ paid_t}{avg \ mkt \ div \ paid_{t-20,t-272}}$  and our variable of interest as  $Mkt \ Abnormal \ Pay[t-1,t] = \frac{mkt \ dividend \ paid_{t-1}}{avg \ mkt \ div \ paid_{t-21,t-273}} + \frac{mkt \ dividend \ paid_t}{avg \ mkt \ div \ paid_{t-20,t-272}}$ .

# II. Baseline Analysis Additional Robustness

This section explores potential concerns with the baseline results presented in Table 1.

 $<sup>^{1}</sup>$ One might be concerned that lagging market cap by one day isn't sufficient. If instead we lag by 3 days results are quite similar. Our baseline using the t-1 market cap yields a coefficient of 67.07 (t-stat of 3.47) and instead using a market cap from t-3 yields a coefficient of 65.81 (t-stat of 3.40). Table VIII shows further lags also yield similar results. Thus the specific lag to use for the scaling of market price does not have a material impact on the results.

### A. Calendar Effects and Macro Announcements

A potential confounding effect is that returns vary over the week (with the lowest returns on Monday and the highest on Friday), as well as over the month (with the highest returns at the turn-of-the-month, as in Lakonishok and Smidt 1988). If dividend payments are more likely on certain days of the week or periods of the month, payment yield might proxy for such effects.

Table II Panel A examines such effects and finds they are unlikely to account for the results. Columns 1 and 2 include day-of-the-week fixed effects, columns 3 and 4 include turn-of-the-month fixed effects and columns 5 and 6 include both.<sup>2</sup> All of the coefficients are positive and significant, suggesting that these calendar patterns do not account for our result.

Another predictor of daily market returns is macroeconomic announcements. Perhaps the most attention has been given to Federal Open Market Committee (FOMC) announcements, when Lucca and Moench 2015 argue a large fraction of the equity premium is earned. Savor and Wilson 2013 initially documented this FOMC effect, as well as similar positive returns coinciding with other macroeconomic announcements. If dividend payments coincide with FOMC announcements, or macroeconomic announcements more broadly, such an effect could account for the results.

Table II Panel B examines FOMC announcements. Our FOMC announcement data runs from 1988 through 2019, so the first two columns repeat our baseline analysis over this time period, and show stronger results than for the whole sample.<sup>3</sup> Columns 3 and 4 include dummy variables for FOMC announcement days, and finds coefficients that are roughly unchanged. This suggests that the FOMC announcement effect is largely unrelated to the effects we document.

Table II Panel C extends to other macroeconomic announcements including CPI, PPI, Initial Claims, Employment and GDP. This data runs from 1994-2018, so the first two columns repeat our baseline in this period, and show stronger results than using the whole sample. Columns 3 and 4 include dummy variables for these days, while columns five and six also include FOMC announcements. Panel D repeats the analysis from the paper using dummy variables for high

<sup>&</sup>lt;sup>2</sup>Following Lakonishok and Smidt 1988, our turn-of-the-month dummy variable is equal to one for the last trading date of the month and the first three trading dates of the month.

<sup>&</sup>lt;sup>3</sup>Data on all of the macroeconomic announcements are the same as used in Neuhierl and Weber 2019.

dividend days after controlling for macro announcements. The results are similar, which suggests that dividend payments are not proxying for the influence of macroeconomic announcements on returns.

Another potential source of concern could be information from dividend announcements or dividend news which is explored in Table II Panel E. The dividend announcement variable is calculated analogously to Mkt Div Pay[t-1,t], but uses dividends announced these days as the numerator. Dividend announcements are available in CRSP starting in 1962, so the analysis is limited to 1962 and after. Dividend announce news is calculated as the sum of dividends announced on day t and t-1 minus this sum that occurred on the same calendar dates one year prior. This is scaled by the market cap on day t-1.

Table II Panel F explores another potential source of concern, namely the information contained in earnings surprise. Earnings surprise is a variable for the value weighted earnings surprise announced on date t for the top 10% of largest firms based on NYSE breakpoints (as in Hartzmark and Shue 2018). Consistent analyst data begins in 1984, so the analysis is limited to 1984 and after. Panel E adds controls for both. The results suggest that news from earnings or dividend announcements do not account for the results.

#### B. Time between announcement/ex-date and payment

The key assumption underlying our analysis is that the information from the dividend is announced early enough that an efficient market should easily incorporate information from the predictable component of flows prior to the payment. The gap between the announcement and payment averages over 40 days, which should be long enough to incorporate this news. One potential concern is that there could be exceptions that are important in predicting returns where the time is too short for the market to respond before payment. Such instances are rare, as the 1st percentile of the time between announcement and payment is 17 days and the 25th percentile is 29 days.

To show that the effect is driven by standard observations with a significant period of time between the announcement and the payment, we repeat the analysis restricting the sample to observations where the gap is more than 17 days or 29 days.<sup>4</sup> Table III Panel A shows similar results to our baseline with these restrictions.

Another potential concern is that an issue related to the ex-date is contaminating the payment date effect. Time gaps between the days are again fairly long, with a 1st percentile gap of 9 days and a 25th percentile of 17 days.<sup>5</sup> When we include only the days with gaps above these cutoffs, in Table III Panel B, results are again similar to our baseline analysis. These results together with those in Panel A suggest that any information released on the announcement date (or any effects related to the ex-date) should have been incorporated into market prices long before the payment date, and should not be able to predict payment date returns under standard theories.

### C. Trading Strategy: Further Results

Given the results of large returns present on the top 10 days of dividend payments, one potential concern is that the return predictability is driven by these abnormal days. We explore this in Table IV by repeating our trading strategy after dropping these days. Specifically, we begin by taking each day the 252 day's previous observations of our standard [t-1,t] payment yield. We then drop any observation that would have been in the top ten days of the past year's distribution, based on this value. At this point, there are two possible ways to proceed. One is to simply apply the same leverage values computed as before to the remainder of days. The main downside of this approach is that because the highest dividend days are dropped, we are also dropping only days with high leverage, so the average leverage across the remaining days is not equal to one on average, nor is it equally split across quintiles. Instead, we re-do the quintile rankings and leverage amounts based on the past 252 observations among the remaining set of "non-top-10" days. In practice, both methods produce very similar results.

The first thing to note is that the top 10 days represent returns sizable enough that the average excess return on the market drops nearly 15% to 0.024 from 0.028 (even though, recall, we are

<sup>&</sup>lt;sup>4</sup>Announcement date information is only included in CRSP starting during 1962, so this analysis is restricted to 1963 and later when the data is available.

<sup>&</sup>lt;sup>5</sup>Ex-date information is available for the full sample, so this analysis does not restrict by year.

dropping based on extreme abnormal dividends, not extreme market returns directly). With that said, our trading strategy significantly outperforms this baseline among the remaining sample of days, with average excess returns of 0.028 with leverage between 0.5 and 1.5 and excess returns of 0.033 when leverage ranges from 0 to 2. This suggests that while the top 10 days are significant drivers of returns, significant predictability remains outside of those days. The gap between strategy returns and market returns is similar even when the days are excluded (as both the returns on the market alone and on the levered strategies are decreased)

In addition to large dividend days, a potential concern is that our trading effect is confounded by other effects associated with marketwide predictability, such as day of the week effects or FOMC announcement effects. Table V shows stable effects for our results if we drop FOMC announcements, look only at days of the week with relatively low returns (Monday and Tuesday), or days of the week with relatively high returns (all other days of the week).

We also explore the magnitude of day of the week effects and how they have changed over time. Table VI shows the average returns by day of the week. The first column shows the effect over our entire sample while the next two split prior to 1989 and after 1989 to show the difference of the effect post Lakonishok and Smidt (1988). These results show that the day-of-the week patterns have largely disappeared in recent data. As a result, we next turn to the question of combining this trading strategy with another predictor of market returns, the FOMC announcement premium, which is still present in recent data.

FOMC announcements represent large, but rare, daily effects. Thus, in the base strategy for FOMC effects alone, we assign maximum leverage on FOMC announcement days. The other days we take leverage slightly less than 1 to achieve an average leverage of about 1. Similar to the main paper, we explore a strategy with a maximum leverage of 2 and one of 3. The FOMC 2x strategy has a leverage of 2 on FOMC announcement days and 0.97 otherwise. For the FOMC 3x strategy the strategy takes a leverage of 0.93 otherwise.

To combine the strategies, we largely add days of maximum leverage on FOMC announcement days to the dividend strategy. We also decrease the value of the smallest positive dividend related leverage to keep the average at about 1. Thus the Div+FOMC 2x strategy has a leverage of 2 if there is an FOMC announcement and otherwise takes leverage of 2, 1.5, 1, 0.25 or 0 based on the quintile of dividend payment. The Div+FOMC 3x strategy takes a leverage of 3 if there is an FOMC announcement or if the day is in the top quintile of dividends, a leverage of 1.65 for the next quintile and a leverage of 0 otherwise.

The results are generally stronger when the strategies are overlaid. For example, in the 2x strategies, alphas for both dividends and FOMC are around 1.1 bps alone, but around 2.3 bps combined. The alphas for the 3x strategy combined are about 4 bps, higher than the market excess return. The strategy yields an annualized excess return of about 20%.

### D. Market price scaling with further lags

While year-by-month fixed effects remove slow-moving trends in the market price, it is possible that the effects are driven by day-to-day fluctuations in the denominator. To directly check for this, we scale the dividend payment amount not by the prior day market value, but with further lags. Table X repeats the analysis using the prior month's, quarter's and year's market capitalization. All of the regressions yield positive and significant coefficients with t-statistics over 3 and a similar economic magnitude.

#### E. Further lags of illiquidity measures

Table IX repeats the illiquidity analysis from the paper using lagged measures (as indicated by the column headers) of illiquidity. Results are directionally consistent and significant in 4 out of 6 regressions significant.

# F. Limiting to firms with minimal chance of financial distress

Table X repeats the analysis limiting the dividend payment yield to dividends paid by safe firms with minimal chance of short-term financial distress. The first two columns use dividend payments from firms with positive returns over the prior year, the next two columns examine firms with higher

returns than the market over the prior year, the next two columns examine firms that are profitable and the final two drop firms in the bottom decile of Altman's Z-score. Results are generally similar to the baseline.

# III. Mutual Fund Distributions

Figure 1 Panel A graphs the average proportion of fund annual payouts distributed each quarter.<sup>6</sup> Specifically, the sum of mutual fund payouts that quarter is divided by the sum of mutual fund payouts that calendar year and averaged across years. Consistent with the intuition above, the graphs indicate that a significant fraction of mutual fund payouts, nearly two thirds, occur during the fourth quarter. The next panel graphs the payouts by month, and shows that much of this pattern is driven by December payouts, which constitute roughly 60% of the annual payout.

# IV. Dividend Reinvestment Rate Calculations

This section estimates reinvestment rates for various types of investors.

We begin with retail investors. Prior work has documented that retail investors consume dividends at a high rate (e.g., Baker, Nagel, and Wurgler 2006; Di Maggio, Kermani, and Majlesi 2020) meaning they cannot be reinvesting them. Further, these investors typically trade about once a year (e.g. Odean 1998) and are less likely to trade if they hold positions that pay dividends (Hartzmark and Solomon 2019). Both behaviors are associated with lower short-term reinvestment rates.

With that said, it could be there is a subset of retail investors that reinvest dividends. To examine whether this is likely, we look at the propensity of retail investors trading from their own accounts from 1991-1996 (as in Barber and Odean 2000) to buy a position (either open a new position or expand an old position) based on receiving a dividend payment in Table XI Panel A.<sup>7</sup> We regress a dummy variable equal to one if a position is purchased that day on a dummy variable

<sup>&</sup>lt;sup>6</sup>Mutual fund data does not have information on payment dates, so this is based on ex-dates. These payouts include both capital gains and dividends combined, though dividend payments alone display a similar pattern.

<sup>&</sup>lt;sup>7</sup>All days that an investor could have traded are included and the analysis is conducted at the portfolio level. See Hartzmark 2015 for a description of restrictions on this dataset.

for whether a position in the portfolio received a dividend payment on the current or prior day.

The results suggest dividends do not induce a meaningful increase in buying for individual traders. The constant in column 1 shows trading activity is low, as only 0.18% of days include a buy trade. The dividend payment dummy variable is significant, and of a similar magnitude to the constant, suggesting that on days when dividends are received the probability of buying doubles to roughly 0.36%. The magnitude of this coefficient suggests that dividend reinvestment is not common. Further, the odds of receiving a dividend vary with portfolio characteristics and trading behavior. To partially control for this, column 2 adds an account fixed effect which decreases the influence of receiving a dividend payment to 0.03%. While there may be some increase in buying when a dividend is received, the small economic magnitude of the effects, and the prior literature, suggest that most payments are not quickly reinvested. Thus we think a reasonable approximation of the reinvestment rate by retail investors of single name stock holdings is zero.<sup>8</sup>

The remaining 66% of non-retail investors generally represent more professional investors who likely reinvest dividends at higher rates. With that said, it is implausible that reinvestment is 100%. For example, if an asset manager needs to increase his cash buffer or send cash to his clients, he likely would not always reinvest a dividend and may instead use it for these needs. Ultimately we think it is an empirical question as to what this rate is.

While the data is fairly limited to calculate such a number, we use data on mutual funds to estimate their reinvestment rate. Mutual funds represent a large class of professional investors (22% of the US equity market in March 2020) that publicly disclose enough information to estimate a reinvestment rate. While the ideal data set would involve information on daily holdings, dividends received and trades, we do not have access to such a dataset.

Instead, the analysis focuses on monthly holdings data from CRSP which reports the positions a mutual fund holds at the end of the month. To calculate the dividends received we take the

<sup>&</sup>lt;sup>8</sup>We note that this direct evidence is for retail investors in the 1990s, and it is unclear to what extent it holds in other datasets or more recent time periods where internet-based trading and lower trading costs may increase such portfolio reinvestment. We have no direct evidence on these issues, so we leave it to future research. If reinvestment rates are assumed to be higher, it is simple to re-weight the retail trader fraction to have whatever reinvestment rate is hypothesized and thus compute the new multiplier.

positions at the end of a given month (from the CRSP holdings data) and use them to measure dividends received the next month (based on the payment date listed in the CRSP securities file). To calculate the fraction of TNA of a fund accounted for by its listed holdings, we sum a variable (percent\_tna) that lists the proportion of TNA of each position to create  $frac fund tna_t$ . Our focus is on the change in this variable, so our analysis examines the change (in %) which we call  $\Delta frac fund tna_t = (frac fund tna_t - frac fund tna_{t-1}) * 100$ .

When a dividend payment is received, the value of fund TNA increases by the amount of the dividend payment. If that money is used to buy equity securities which are listed in the monthly reports, then the dividend payment will have no impact on the measure of the fund's TNA explained by the holdings data. If the payment is not reinvested, for example if it remains in cash, then the fund's TNA will increase but the value of equity holdings will not. Thus, absent reinvestment, the fund's fraction of TNA measured in listed holdings will decrease by the dividend payment amount.

An additional complexity arises if the ex-dividend date occurs within the same calendar month as the payment. When a stock goes ex-dividend, the price will drop by the dividend amount, absent taxes and frictions (Miller and Modigliani 1961). In this scenario, the TNA in equity holdings drops by the dividend amount on the ex-date, but if the fund engages in full reinvestment, TNA is replenished by the same amount on the payment date, leading to no change in monthly measures if both occur in the same month. Similarly, zero reinvestment would be associated with a decrease by the dividend amount.

A simple example might help to clarify the intuition of this measure. Let's say a mutual fund holds a portfolio of stocks with a value of \$100,000. Further let's assume that they only hold these assets and that they are all listed in the CRSP MF holdings dataset. Thus  $frac fund tna_{t-1}$  is equal to 1 for this fund at this point in time. For this example let's assume the value of the stock is constant (other than mechanical ex-date effects) and that the ex-date price drop exactly equals the level of the dividend (which ignores real world frictions, see discussion below).

<sup>&</sup>lt;sup>9</sup>To ensure that these positions represent actual holdings we limit the sample to holdings with non-missing CUSIP variables. We focus on this variable as it seems the least prone to erroneous entries and data errors. We exclude observations where percent that is less than 0, greater than 50%.

Now assume that the stock pays a dividend of 1%, or \$1,000. On the ex-dividend date, the value of the equity holding decreases by \$1,000. The ex-date is before the payment date, so the fund TNA drops to \$99,000 during this period. On the payment date the fund receives cash so the TNA becomes \$100,000. Thus the dividend payment has not influenced the total value of the fund. If the fund does not reinvest this money and keeps it in cash, then the value of the measured holdings is \$99,000, which means that  $frac fund tna_t = 0.99$  and thus  $\Delta frac fund tna_t = 1$ %. On the other hand, if the fund reinvests in equities that the value of the holdings is \$100,00, which means that  $frac fund tna_t = 1$  and thus  $\Delta frac fund tna_t = 0$ %.

In practice, prices on the ex-day drop by less than the amount of the dividend (Elton and Gruber 1970, Hartzmark and Solomon 2013). Full reinvestment with such positive ex-day returns will lead to position values greater than the original holding. Predictions are much less clear though, because the amount of the price drop (and thus the predicted change in TNA under full reinvestment) varies with a number of factors.<sup>10</sup> This means that our predictions are cleanest for payments where the ex-date occurs during an earlier calendar month. Since these observations also represent about two thirds of such payments, we focus on them for our estimates.<sup>11</sup>

To explore reinvestment behavior, we first graph the change in TNA from the prior month relative to the dividend payments received that month in Figure 2. The figures are a bin-scatter plot splitting the data into 20 bins based on the magnitude of the dividend yield (represented by its location on the x-axis). The y-axis shows the average change in percentage holdings in that month for funds in that bin. The red line is the outcome of a regression of the change in TNA on the dividend payment. The figures are value-weighted by the fund's prior month TNA.

Figure 2 Panel A shows the relation with no controls. The first thing to notice is a strong, positive, roughly linear relation. This is consistent with a general reinvestment of dividend payments that are received. Given that the x-axis and y-axis are on the same scale, perfect reinvestment would

 $<sup>^{10}</sup>$ Differences in ex-day returns are affected by dividend yield, liquidity, recessions, VIX, etc (Hartzmark and Solomon (2013))

 $<sup>^{11}</sup>$ We add a number of additional filters to the mutual fund database to attempt to avoid the noise inherent in this data. We focus on funds with a TNA above \$10 million in the prior month, and funds that report holding at least 10 positions. We focus on funds where the estimate of the fraction of TNA accounted for by holdings is between 50% and 105% in the current and prior month.

be represented by a 45 degree line. The line is substantially flatter than this. Thus the figure suggests that mutual funds reinvest dividends, but do so at a rate significantly below 100%. Such results could be explained by differences over certain time periods, or by heterogeneity across mutual funds. Panel B repeats the analysis but plots the data as the residuals after controlling for fixed effects for each fund and time period. The pattern is similar suggesting some reinvestment, but not 100%.

For more precise estimates of reinvestment, we regress the change in a fund's fraction of holdings on the dividend payment received that month. We value-weight by the prior month TNA to get a better estimate of the dollar-weighted reinvestment amount. With full reinvestment, this regression should yield a coefficient of one. With zero reinvestment this regression should yield a coefficient of zero. With partial reinvestment, that amount should be captured by the regression coefficient.

Table XI Panel B reports the results of these regressions. The first column does not include controls and shows a coefficient of 0.53 with a t-statistic of 4.39, suggesting 53% of dividends received in a given month are reinvested that month. The next 3 columns include year-by-month fixed effects, fund fixed effects and both together. This yields estimates of dividend reinvestment from 45% to 69%.

We take the 53% estimate for our our back-of-the-envelope calculations of multipliers. 12

The remaining investors who are not retail, mutual funds or ETFs includes foreign investors (16%), pensions (11%), business holdings (4%), hedge funds (3%) and other investors (3%). There is clearly variation across these groups, but they largely represent professional investors who also sometimes pay out money to constituents, similar to a mutual fund. Given that we lack the data to estimate the actual reinvestment rate, we think a reasonable approximate assumption of their reinvestment rate is to take the mutual fund rates and apply it to these investors.

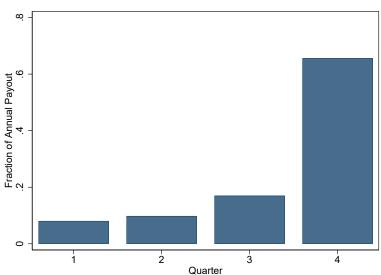
<sup>&</sup>lt;sup>12</sup>Taking this monthly estimate and applying it to our baseline regression coefficient implies that when a dividend is received it is reinvested within two days. While we think it is plausible that mutual funds will reinvest quickly if they are planning to reinvest at all, this is a conjecture the data does not allow an explicit test of. We note that fund managers often are worried underperforming benchmarks (even going as far as to mis-specify benchmarks in order to beat them - see Sensoy (2009)), and thus have an incentive to quickly redeploy capital rather than having an additional performance drag from holding excess cash.

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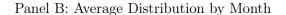
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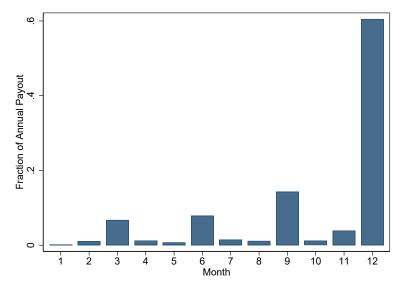
### Figure 1. Mutual Fund Distributions

This graph shows the average fraction of the annual total distribution (including dividends and capital gains) by month and by quarter. In Panel A, the sum of all distributions in a given quarter is divided by the sum of all distributions in that calendar year. This value is averaged across years and graphed for each quarter. Thus each bar is the average fraction of distributions paid in a year that occur in a specific quarter. Panel B repeats the exercise using month instead of quarter.



Panel A: Average Distribution by Quarter

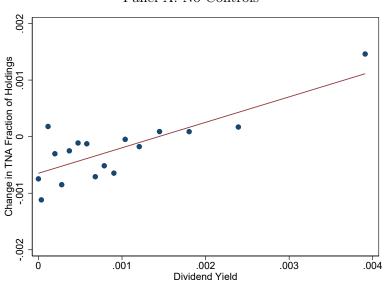




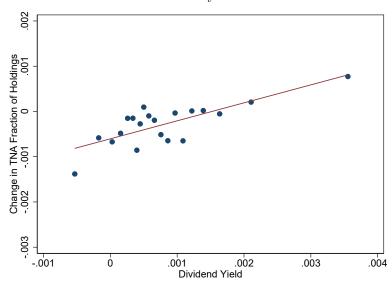
### Figure 2. Mutual Fund Reinvestment

This graph shows a bin scatter plot of the change in fraction of TNA covered by holdings (y-axis) relative to the level of dividends received from those holdings (x-axis). Figures are value-weighted by prior month TNA. Panel A does not include controls. Panel B removes a fixed effect for fund and year-by-month. The analysis includes observations with a prior month TNA above \$10 million, with at least 10 holdings, and where the fraction of TNA covered by holdings is between 50% and 105% in the current and prior month.

Panel A: No Controls



Panel B: Fund and Year-by-Month Fixed Effects



 ${\bf Table~I} \\ {\bf Summary~Statistics~of~Dividend~Payment}$ 

This table shows summary statistics of Mkt Div Pay[t-1,t].

	Mkt Div Pay[t-1,t]
Mean	0.0002537
Std Dev	0.0004711
Min	0
1 <sup>st</sup> Percentile	0
$5^{th}$ Percentile	0
$25^{th}$ Percentile	0.000020
Median	0.000072
75 <sup>th</sup> Percentile	0.000241
95 <sup>th</sup> Percentile	0.0012655
99 <sup>th</sup> Percentile	0.0012655
Max	0.0024172
Observations	24537

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# Table II Market Returns Based on Dividend Payment: Calendar Effects and Macroeconomic Announcements

This table shows how the market return varies with the dividend payment yield controlling for patterns in returns related to calendar events and macroeconomic announcements. The first two columns of Panel A include dummy variables for the day of the week. The next two columns include a turn-of-the-month dummy variable equal to one if it is the last day of the month or the first three days of the month. The final two columns include both dummy variables. Panel B explores FOMC announcements. The announcement data ranges from 1988-2019, so the first two columns show the baseline analysis conducted over this period. The next two columns include dummy variables for days with FOMC announcements. Panel C examines macroeconomic announcements. The announcement dates range from 1994-2019, so the first two columns repeat the baseline analysis for this period. Columns 3 and 4 include dummy variables for CPI, PPI, employment and GDP announcements. Columns 5 and 6 also include dummy variables for FOMC announcements. Panel D examines dummy variables for days with large dividend payments after including controls for macro announcements. Panel E explores the results after controlling for market level dividend announcements in columns 1 to 4 and dividend announcement news in columns 5 and 6. Dividend announcements are calculated the same as Mkt Div Pay[t-1,t] substituting dividends announced as the numerator. Dividend announcement news takes the difference in dividends announced on day t and t-1 from that announced on the same calendar days one year prior scaled by market cap. Panel F examines earnings surprises, which are calculated as the surprise of large firms (above the NYSE 90th percentile of market capitalization) announcing on day t, as in Hartzmark and Shue 2018. Market return is measured in percent as the CRSP value-weighted market index. Market payment yield is the measured as the cumulative payment yield on day t and t-1 (Market Div Pay[t-1,t]). Even-numbered columns contain year-by-month fixed effects in all other than D, Panel D includes the effects throughout. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

Panel A: Day of Week and Turn of Month

	Day or	Day of Week		Month	Both	
	(1)	(2)	(3)	(4)	(5)	(6)
Mkt Div Pay[t-1,t]	74.46***	85.52***	32.01**	35.42**	48.00***	55.71***
	(5.16)	(5.54)	(2.14)	(2.19)	(3.19)	(3.43)
YM FE	No	Yes	No	Yes	No	Yes
R <sup>2</sup>	0.00595	0.0552	0.00234	0.0514	0.00743	0.0565
Observations	24537	24537	24537	24537	24537	24537

Panel B: FOMC Announcements (1988-2019)

	(1)	(2)	(3)	(4)
Mkt Div Pay[t-1,t]	161.7***	174.8***	164.5***	179.8***
	(3.08)	(2.94)	(2.93)	(3.02)
FOMC	No	No	Yes	Yes
YM FE	No	Yes	No	Yes
$\mathbb{R}^2$	0.00106	0.0348	0.00350	0.0370
Observations	7812	7812	7812	7812

Panel C: Macroeconomic Announcements (1994-2019)

	(1)	(2)	(2)	(4)	(E)	(G)
	(1)	(2)	(3)	(4)	(5)	(6)
Mkt Div Pay[t-1,t]	223.5**	251.1***	228.0**	256.4***	230.8***	264.3***
	(2.25)	(2.67)	(2.56)	(2.71)	(2.60)	(2.80)
Macro	No	No	Yes	Yes	Yes	Yes
FOMC	No	No	No	No	Yes	Yes
YM FE	No	Yes	No	Yes	No	Yes
$\mathbb{R}^2$	0.00101	0.0332	160.00140	0.0336	0.00426	0.0364
Observations	6294	6294	6294	6294	6294	6294

**Table II** (Continued) Market Returns Based on Dividend Payment: Calendar Effects and Macroeconomic Announcements

Panel D: Top Days Dividends and Macroeconomic Announcements (1994-2019)

	2 W	eeks	Quarter		Th	Third		Median	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Top Days	0.0761 (0.94)	0.0835 (1.03)	0.116*** (3.35)	0.119*** (3.43)	0.0752** (2.37)	0.0772** (2.41)	0.0498 (1.62)	0.0565* (1.82)	
Macro	No	Yes	No	Yes	No	Yes	No	Yes	
FOMC	No	Yes	No	Yes	No	Yes	No	Yes	
YM FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
$\mathbb{R}^2$	0.0322	0.0353	0.0339	0.0370	0.0330	0.0361	0.0325	0.0357	
Observations	6294	6294	6294	6294	6294	6294	6294	6294	

Panel E: Dividend Announcements and Dividend Announcement News

	I	Market Div Announcement				Announcement
	(1)	(2)	(3)	(4)	(5)	(6)
Mkt Div Pay[t-1,t]	54.48*** (2.86)	64.08*** (2.82)	58.26*** (3.04)	68.47*** (2.99)	65.06*** (2.62)	64.46** (2.35)
Div Announce[t-1,t]	,	,	68.17*** (2.07)	62.34 (1.44)	,	,
Div Announce News			, ,	, ,	-0.586 (-0.01)	-8.819 (-0.17)
YM FE R <sup>2</sup> Observations	No 0.000458 14348	Yes 0.0460 14348	No 0.000713 14347	Yes 0.0461 14347	No 0.000627 10229	Yes 0.0711 10229

Panel F: Earnings Announcements

	Market Earnings Surprise						
	(1)	(2)	(3)	(4)			
Mkt Div Pay[t-1,t]	121.5*** (2.92)	129.1*** (2.61)	122.6*** (2.95)	128.0*** (2.59)			
Earning Surprise	,	, ,	15.77*** (2.17)	$15.35^{***}$ $(3.13)$			
YM FE R <sup>2</sup> Observations	No 0.000869 7817	Yes 0.0376 7817	No 0.00230 7817	Yes 0.0388 7817			

#### Table III

Market Returns Based on Dividend Payment: Restricting to Longer Times Between Payment and Announcement or Ex-Date

This table shows how the market return varies with the dividend payment yield after restricting to dividends with a larger number of days between announcement date and payment date (Panel A) and days between ex-date and payment date (Panel B). Market return is measured in percent as the CRSP value-weighted market index. Dividends are excluded if the number of days between the given date and the payment date is less than the first percentile of the measure (columns 1 and 2) or less than the 25th percentile of the measure (columns 3 and 4). The remaining dividends are used as a measure of the cumulative payment yield on day t and t-1 (Market Div Pay[t-1,t]). Even-numbered columns contain year-by-month fixed effects. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

Panel A: Days between Announcement Date and Payment Date

	1st Pctile	(17 days)	25th Pctil	e (29 days)
	(1)	(2)	(3)	(4)
Mkt Div Pay[t-1,t]	58.43***	66.42***	60.21***	67.45***
	(3.06)	(3.25)	(3.01)	(3.16)
YM FE	No	Yes	No	Yes
R <sup>2</sup>	0.000524	0.0455	0.000505	0.0454
Observations	14096	14096	14096	14096

Panel B: Days between Ex-date and Payment Date

	1st Pctile	e (9 days)	25th Pctile (17 days)		
	(1)	(2)	(3)	(4)	
Mkt Div Pay[t-1,t]	59.61***	67.04***	64.74***	73.44***	
	(3.30)	(3.45)	(3.39)	(3.58)	
YM FE	No	Yes	No	Yes	
R <sup>2</sup>	0.000696	0.0498	0.000666	0.0498	
Observations	24537	24537	24537	24537	

Table IV
Trading Strategy Dropping Large Dividend days

This table shows the performance of portfolios from various trading strategies after dropping any day in the top 2 Weeks (on a backward looking basis), then recomputing distributions and leverage over the remaining days. All strategies take the returns to a strategy long the CRSP VW market and short the risk free, (Market - Rf), combined with leverage, namely Leverage \* (Market - Rf). In Panel A, the first column shows the returns to (Market - Rf) unlevered (a constant leverage of 1). The second column shows our Max 1.5x strategy which uses leverage of (0.5, 0.75, 1, 1.25, 1.5) for each quintile from one to five respectively. Column 3 shows our Max 2x strategy which utilizes leverage of (0, 0.5, 1, 1.5, 2) for each quintile. Column 4 shows our Max 3x strategy which uses leverage of (0, 0, 0, 2, 3) for each quintile. Leverage is based on the rank of the Abnormal dividend payment (the sum of dividends paid on days t and t-1 divided by the average daily dividend payment on days t-20 through t-272) on the given day compared to the prior 252 days. The first row shows the average of each portfolio with the t-statistic for the test that this equals zero underneath in parentheses. The following row shows the annualized version of the first row,  $(1 + return)^{252} - 1$  and the next row shows the standard deviation and the following row shows the Sharpe ratio. The Mkt Adjusted Return [%] row shows the strategy return minus the market excess return with the t-statistic underneath. The  $\alpha$ [%]: CAPM row shows the alpha (in %) from the regression of the strategy on the excess return of the market with the t-statistic underneath. The  $\alpha$ [%]: 3 - Factor row conducts a similar analysis adding the size factor (SMB) and the value factor (HML). The  $\alpha$ [%]: 3-Factor+Momentum adds the momentum factor (UMD). The following row shows the average of leverage, and the next row shows the beta coefficient from regressing the daily strategy return on the market excess return.

	Market-Rf	Leverage 0.5 to 1.5	Leverage 0 to 2	Leverage 0, 1 to 3
	(1)	(2)	(3)	(4)
Mean [% Daily]	0.024***	0.029***	0.035***	0.047***
	(3.42)	(3.94)	(4.08)	(4.31)
Mean [% Annual]	6.194	7.674	9.174	12.683
Std Dev	1.059	1.132	1.296	1.672
Sharpe Ratio	0.023	0.026	0.027	0.028
Mkt Adjusted Return[%]		0.005**	0.011**	0.024***
		(2.42)	(2.42)	(2.70)
$\alpha[\%]:CAPM$		0.005	0.010**	0.024***
		$(2.21)^{**}$	(2.21)	(2.77)
$\alpha[\%]: 3-Factor$		0.005**	0.009**	0.024***
		(2.01)	(2.01)	(2.67)
$\alpha$ [%] : 3 - Factor + Momentum		0.004*	0.008*	0.022***
		(1.80)	(1.80)	(2.44)
Avg Leverage		1.010	1.021	0.998
Market Beta		1.018	1.036	0.964
Observations	23088	23088	23088	23088

 ${\bf Table~V}$  Trading Strategy: Dropping FOMC Days and Splitting by Day of the Week

This table shows excess returns to various trading strategies after dropping FOMC announcements (columns 1, 4 and 7), examining only at Mondays and Tuesdays (columns 2, 5 and 8) and examining other days (columns 3, 6 and 9). The first three columns show the Max 1.5x strategy, the next three the Max 2x strategy and the last three the Max 3x strategy. The  $\alpha[\%]: CAPM$  row shows the alpha (in %) from the regression of the strategy on the excess return of the market with the t-statistic underneath. The  $\alpha[\%]: 3 - Factor$  row conducts a similar analysis adding the size factor (SMB) and the value factor (HML). The  $\alpha[\%]: 3 - Factor + Momentum$  adds the momentum factor (UMD).

	Max 1.5x		Max 2x			Max 3x			
	No FOMC	Mon/Tue	Weds+	No FOMC	Mon/Tue	Weds+	No FOMC	Mon/Tue	Weds+
$\alpha[\%]:CAPM$	0.006*** (2.58)	0.009** (2.56)	0.009*** (3.22)	0.012*** (2.58)	0.018** (2.56)	0.008*** (3.22)	0.027*** (3.05)	0.048*** (3.26)	0.032*** (3.07)
$\alpha[\%]: 3-Factor$	$0.005^{**}$ $(2.33)$	0.008** (2.26)	0.007** (2.48)	0.011** (2.33)	0.016** (2.26)	0.015** (2.48)	0.026*** (2.93)	0.043*** (2.88)	0.025** (2.26)
$\alpha[\%]: 3-Factor+Momentum$	0.005** (2.08)	0.008** (2.11)	0.007** (2.31)	0.010** (2.08)	0.016** (2.11)	0.014** (2.31)	$0.024^{***}$ $(2.70)$	0.041*** (2.66)	0.024** (2.11)
Observations	23741	9067	14948	23741	9067	14948	23741	9067	14948

This table shows the average excess returns (in %) by day of the week. The first column shows all days, the second column shows for years before 1989 and the third column shows the excess returns occurring 1989 and later.

	All	Pre 1989	1989 and After
	(1)	$\overline{(2)}$	$\overline{\qquad \qquad }(3)$
Monday	-0.118***	-0.174***	0.00236
	(-6.80)	(-8.42)	(0.07)
Tuesday	0.0260*	$0.015\overset{\circ}{5}$	$0.0474^{*}$
	(1.71)	(0.86)	(1.69)
Wednesday	$0.0857^{***}$	0.101***	$0.0538^{**}$
v	(5.40)	(5.11)	(2.04)
Thursday	$0.0507^{***}$	$0.0624^{***}$	0.0266
·	(3.39)	(3.55)	(0.95)
Friday	$0.0623^{***}$	0.0804***	0.0249
*	(4.26)	(4.52)	(0.97)
Saturday	0.143***	0.143***	,
v	(5.22)	(5.22)	
$\mathbb{R}^2$	0.00561	0.00981	0.00112
Observations	24391	16832	7559

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# Table VII Trading Strategy: FOMC and Dividend Combined

This table shows excess returns to various trading strategies. The first column shows the market excess return from 1989 and after, the period we examine the FOMC announcements and limit all analysis in this table to. The Div 2X columns shows our dividend Max 2x strategy and the Div 3x shows our Max 3x strategy. FOMC 2x shows a strategy where leverage is equal to 2 when there is an FOMC announcement and 0.97 otherwise, while FOMC 3x utilizes leverage equal to 3 with an FOMC announcement and 0.93 otherwise. DIV+FOMC 2X uses a leverage of 2 if there is an FOMC announcement and otherwise uses leverage of (2, 1.5, 1, 0.25, 0) for each quintile of dividend payments. DIV+FOMC 3X uses a leverage of 3 if there is an FOMC announcement and otherwise uses leverage of (3, 1.65, 0, 0, 0) for each quintile of dividend payments. The first row shows the average of each portfolio with the t-statistic for the test that this equals zero underneath in parentheses. The following rows shows the annualized version,  $(1 + return)^{252} - 1$ , the standard deviation and the Sharpe ratio, respectively. The  $\alpha[\%] : CAPM$  row shows the alpha (in %) from the regression of the strategy on the excess return of the market with the t-statistic underneath. The  $\alpha[\%] : 3 - Factor$  row conducts a similar analysis adding the size factor (SMB) and the value factor (HML). The  $\alpha[\%] : 3 - Factor + Momentum$  adds the momentum factor (UMD). The following row shows the average of leverage, and the next row shows the beta coefficient from regressing the daily strategy return on the market excess return.

	Market-Rf	Div 2x	Div 3x	FOMC 2x	FOMC 3x	${\rm Div}{+}{\rm FOMC}\ 2{\rm x}$	Div+FOMC 3x
	(1)	(2)	$\overline{(3)}$	(4)	$\overline{\qquad \qquad } (5)$	(6)	(7)
Mean [% Daily]	0.032***	0.048***	0.063***	0.042***	0.053***	0.055***	0.072***
	(2.53)	(3.08)	(3.09)	(3.26)	(3.80)	3.470	3.720
Mean [% Annual]	8.264	12.756	17.231	11.166	14.146	14.798	19.786
Std Dev	1.083	1.346	1.777	1.121	1.201	1.373	1.761
Sharpe Ratio	0.029	0.035	0.036	0.037	0.044	0.040	0.041
$\alpha[\%]:CAPM$		0.013***	0.029***	0.010***	0.020***	0.023**	0.039**
		(2.74)	(3.26)	(4.04)	(4.04)	(2.38)	(2.48)
$\alpha[\%]: 3-Factor$		0.011**	0.028***	0.010***	0.020***	0.023**	0.040**
		(2.50)	(3.15)	(4.04)	(4.04)	(2.41)	(2.51)
$\alpha[\%]: 3 - Factor + Momentum$		0.011**	0.026***	0.011***	0.022***	$0.025^{**}$	0.043***
		(2.26)	(2.93)	(4.05)	(4.05)	(2.53)	(2.66)
Avg Leverage		1.021	1.004	1.005	1.009	0.996	1.001
Market Beta		1.023	1.033	1.012	1.025	1.017	1.032
Observations	7559	7559	7559	7559	7559	7559	7559

**Table VIII**Market Returns Based on Dividend Payment using Further Lags

This table shows how the market return varies with the dividend payment yield, but changes the date of the market capitalization used for scaling. The first two columns use market cap from a month (t-20) prior, the next two columns use market cap from a quarter (t-60) prior, while the final two columns use market cap from a year (t-252) prior. All regressions are based on CRSP value weighted market returns. Even-numbered columns contain year-by-month fixed effects. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

	Mont	h Lag	Quart	er Lag	Year Lag		
	(1)	(2)	(3)	(4)	(5)	(6)	
Mkt Div Pay[t-1,t]	59.26***	60.56***	59.49***	62.62***	54.41***	55.16***	
	(3.48)	(3.29)	(3.63)	(3.51)	(3.54)	(3.29)	
YM FE	No	Yes	No	Yes	No	Yes	
R <sup>2</sup>	0.000688	0.0497	0.000706	0.0498	0.000644	0.0497	
Observations	24518	24518	24478	24478	24286	24286	

Table IX

Market Returns Based on Dividend Payment and Lags of Amihud Illiquidity Measures

This table shows how the market return varies with the dividend payment yield interacted with measures of lagged Amihud (2002) Illiquidity. Columns 1 and 2 calculates the dividend payment including only firms with a positive return over the prior year. Columns 3 and 4 calculates the dividend payment including only firms with a return greater than the market over the prior year. Columns 5 and 6 includes only firms that are profitable and columns 7 and 8 exclude firms in the bottom decile of Z-score. Even columns include year-by-month fixed effects. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

	t-2		t-	3	t-4		
	(1)	(2)	(3)	(4)	(5)	(6)	
ILLIQ*Mkt Div Pay	8.712***	5.437	7.536**	4.294	10.68***	8.495**	
	(2.67)	(1.59)	(2.29)	(1.24)	(3.24)	(2.46)	
Mkt Div Pay	26.02	44.86**	30.19	51.40**	19.82	34.88*	
	(1.37)	(2.21)	(1.59)	(2.53)	(1.04)	(1.71)	
YM FE R <sup>2</sup>	No	Yes	No	Yes	No	Yes	
Observations	0.000994	0.0524	0.000930	0.0525	0.00114	0.0506	
N	24536	24536	24535	24535	24534	24534	

 ${\bf Table~X}$  Market Returns Based on Dividend Payment Limiting to Secure Firms

This table shows how the market return varies with the dividend payment yield, when restricting the dividend paid to firms that score well on measures of safety. Columns 1 and 2 use the illiquidity measure from t-2, columns 3 and 4 from t-3 and column 5 and 6 from t-4. Value-weighted market returns are regressed on three separate variables. The illiquidity measure alone (not reported), along with Market Div Pay[t-1,t] and the interaction of the two. Columns 2 and 6 include year-by-month fixed effects and Column 4 includes year fixed effects. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

	Ret>0		Beat Mkt		Pos I	Profit	High Z		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Market DY	70.05***	68.00***	100.3***	108.0***	58.30***	67.53***	72.03***	86.45***	
	(4.05)	(3.67)	(2.89)	(2.88)	(2.91)	(3.16)	(2.90)	(3.21)	
YM FE	No	Yes	No	Yes	No	Yes	No	Yes	
R <sup>2</sup>	0.000478	0.0494	0.000662	0.0497	0.000475	0.0460	0.000451	0.0459	
Observations	24537	24537	24537	24537	14347	14347	14347	14347	

# Table XI Retail and Mutual Fund Dividend Reinvestment

This table examines how often individual investors and mutual funds reinvest dividends in their portfolio. Panel A considers observations of individual investors at the portfolio level on each day they have holdings, from an anonymous discount brokerage between 1991 and 1996. The dependent variable is a dummy equal to one if the investor made a purchase in any security that day. The independent variable is a dummy equal to one if the investor received a dividend that day or the day before. Column 2 adds account fixed effects, and column 3 adds both account and date fixed effects. Panel B examines monthly mutual fund portfolio changes from CRSP. The dependent variable is the monthly change in the fraction of TNA covered by holdings. The independent variable is the dividend yield those holdings received. Columns 2 and 4 include year-by-month fixed effects and column 4 includes fund fixed effects. Regressions are value-weighted by prior month TNA. The analysis includes observations with a prior month TNA above \$10 million, with at least 10 holdings, and where the fraction of TNA covered by holdings is between 50% and 105% in the current and prior month. t-statistics are in parentheses, and are clustered by account and date in Panel A, fund and month in Panel B.

Panel A: Individual Investors

	(1)	(2)	(3)
Div Pay[t-1,t]	0.00168***	0.000420**	0.000458**
	(10.82)	(2.25)	(2.47)
Constant	0.00181***	0.00186***	0.00186***
	(58.17)	(109.98)	(277.66)
Account FE	No	Yes	Yes
Date FE	No	No	Yes
$\mathbb{R}^2$	0.0000538	0.0176	0.0179
Observations	44351457	44351395	44351395

Panel B: Mutual Funds

	(1)	(2)	(3)	(4)
Div Received	0.530***	0.446***	0.692***	0.641***
	(4.39)	(3.88)	(4.95)	(4.59)
YM FE	No	Yes	No	Yes
Portno FE	No	No	Yes	Yes
R <sup>2</sup>	198141	198139	197716	197714

# **Table XII**Market Returns Based on Lagged Dividend Payment

This table shows how the current day's dividend is predicted by dividends from that day in prior years (Panel A) and how market returns vary with prior year's dividends (Panel B). Each column uses dividend payments of the indicated lag. For example, if the left hand side variable is from day D, month M and year Y, then the column labeled "X Yr Lag" indicates the dividend payment yield matched to that observation is from day D, month M, and year Y-X. Panel C performs the baseline regressions of contemporaneous measures of dividend payment on returns on the sample of observation included for a given lag in panel B. All regressions contain year-by-month fixed effects. Panel A reports the within  $R^2$  which is the  $R^2$  after accounting for the influence of the fixed effects. t-statistics based on heteroskedasticity-robust standard errors are in parentheses.

Panel A: Current Dividends predicted by dividends in prior years

	$1~{\rm Yr}~{\rm Lag}$	r Lag 2 Yr Lag	3  Yr Lag	Yr Lag 4 Yr Lag 5 Y		$6~{ m Yr~Lag}$	$7~{\rm Yr~Lag}$	$8~{ m Yr~Lag}$	9  Yr Lag	10 Yr Lag
	(1)	$\overline{(2)}$	$\overline{(3)}$	$\overline{(4)}$	$\overline{\qquad \qquad } $	$\overline{\qquad \qquad }$	$\overline{(7)}$	(8)	$\overline{\qquad \qquad }$	$\overline{(10)}$
Mkt Div Pay	0.789***	0.646***	0.640***	0.757***	0.822***	0.758***	0.582***	0.525***	0.576***	0.679***
	(210.45)	(116.03)	(100.31)	(119.40)	(193.88)	(198.36)	(113.91)	(84.23)	(88.18)	(121.34)
Within R <sup>2</sup> R <sup>2</sup> Observations	0.719	0.483	0.417	0.501	0.670	0.672	0.474	0.350	0.373	0.498
	0.756	0.558	0.513	0.581	0.716	0.717	0.553	0.457	0.486	0.580
	18449	15485	15149	15273	19597	20249	15446	14210	14073	15824

Panel B: Current Returns predicted by dividends in prior years

	$\frac{1 \text{ Yr Lag}}{(1)}$	$\frac{2 \text{ Yr Lag}}{(2)}$	$\frac{3 \text{ Yr Lag}}{(3)}$	$\frac{4 \text{ Yr Lag}}{(4)}$	$\frac{5 \text{ Yr Lag}}{(5)}$	$\frac{6 \text{ Yr Lag}}{(6)}$	$\frac{7 \text{ Yr Lag}}{(7)}$	8 Yr Lag (8)	9 Yr Lag (9)	$\frac{10 \text{ Yr Lag}}{(10)}$
Mkt Div Pay	69.69*** (3.64)	62.79*** (3.45)	88.79*** (5.02)	51.29*** (2.73)	34.47** (2.06)	73.16*** (4.49)	55.83*** (3.54)	73.58*** (4.87)	81.95*** (5.42)	58.85*** (4.19)
Observations	18449	15485	15149	15273	19597	20249	15446	14210	14073	15824

Panel C: Current Returns predicted by current dividends restricting sample to Panel B Observations

	1 Yr Lag	$2~{\rm Yr}~{\rm Lag}$	3  Yr Lag	$4~{\rm Yr}~{\rm Lag}$	$5~{ m Yr~Lag}$	$6~{ m Yr~Lag}$	$7~{\rm Yr~Lag}$	8 Yr Lag	$9~{\rm Yr}~{\rm Lag}$	$10~{\rm Yr~Lag}$
	(1)	$\overline{(2)}$	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Mkt Div Pay	92.24*** (3.79)	59.58** (2.51)	90.76*** (3.41)	53.23** (2.20)	54.73** (2.51)	94.76*** (4.52)	69.73*** (2.60)	80.44*** (4.53)	85.68*** (4.88)	59.51*** (3.68)
Observations	18449	15485	15149	15273	19597	20249	15446	14210	14073	15824