Chasing dividends during the COVID-19 pandemic

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Abstract
This paper investigates the impact of the coronavirus disease 2019 pandemic on investors’ trading behaviors around ex-dividend dates in Europe. The sudden decrease in the number of companies paying dividends reduced the opportunities to capture dividends. Thus, the firms that maintained dividend payments during the pandemic attracted more interest than before. This led to a doubling in the magnitude of stock return patterns usually observed around ex-dividend days. Our evidence indicates that dividend-seeking investors are likely to be the main driver of the price patterns observed around ex-dividend dates.

KEYWORDS
COVID-19, dividend capture, event study, ex-dividend date, price pressure

JEL CLASSIFICATION
G12; G14; G35

1 INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic deeply impacted businesses worldwide. Due to the large drop in consumption following widespread lockdowns, many companies saw their revenues and profits decline and their financial position deteriorate. To mitigate financial concerns or to ensure corporate survival, a number of firms further decided to forego dividend payments and keep the cash (Wigglesworth et al., 2020). This also had negative consequences on investors looking for dividend-paying stocks. Thus, in this paper, we examine how the pandemic affected stock price patterns of Western European companies surrounding the ex-dividend day, as COVID-19 (and the associated lockdowns) surprisingly hit this region just before the dividend distribution season.1

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Studies on stock price behavior around ex-dividend days have a long-standing history (Campbell & Beranek, 1955). In perfect capital markets, the stock price drop should equal the amount of the dividend paid out on the ex-dividend day. Many studies over the past 50 years have shown that this is not the case. The ex-dividend day premium (the ratio of price decline to dividend) has been shown to be consistently below one, thus generating positive returns (e.g., Elton & Gruber, 1970 or Eades et al., 1994). Over time, several reasons have been offered to explain this phenomenon.\(^2\)

Elton and Gruber (1970) propose a tax clientele effect. The stock price and ex-dividend day behavior will depend on the difference in taxation between capital gains and dividends. Later studies (e.g., Frank & Jagannathan, 1998) contradict this finding as the effect appears to remain in the absence of differential tax treatments. Kalay (1982) proposes that the insufficient price drop reflects the transaction costs of arbitrageurs trading such stock. These short-term traders will generate abnormal profit through dividend capturing. Michaely and Vila (1995), in a dynamic dividend clientele model, reconcile both explanations by examining all types of traders affecting the equilibrium price on the ex-dividend day. Finally, market microstructure may also explain the existence of this phenomenon. Bali and Hite (1998) and Frank and Jagannathan (1998) show that both price discreteness and a bid-ask bounce affect the ex-dividend price drop.

In this paper, we use the drop in dividends during the pandemic to investigate a new explanation based on behavioral aspects. It states that supply and demand are likely to shift a few days before the ex-dividend day as some investors buy the stock to capture the dividend. This will attract arbitrageurs who will profit from offsetting price movements due to this dividend-motivated trading. If a demand overhang exists and arbitrageurs cannot counterbalance it, stock prices should increase (Eades et al., 1985; Hartzmark & Solomon, 2013). If price pressure is responsible for positive abnormal returns before dividend payments, one ought to observe a decrease in prices after the ex-dividend day when investors sell their shares (Hartzmark & Solomon, 2013; Lakonishok & Vermaelen, 1986). However, as some investors keep the shares after the ex-date, this leads to positive abnormal returns on aggregate. This pattern in prices is termed the dividend month premium. Its existence has been corroborated internationally (Ainsworth & Nicholson, 2014; Koo & Chae, 2020; Kreidl & Scholz, 2021) and for several types of dividends (Berkman & Koch, 2017; Bessembinder & Zhang, 2015). Different explanations for the excess demand for dividends leading to positive price pressure before the ex-date have been proposed in the literature. They include catering theory (Baker & Wurgler, 2004), mutual funds’ investments in dividend-paying stocks before the ex-dividend date to increase their dividend yield (Harris et al., 2015), or investors’ lack of attention in the stock price reduction from the cum-dividend to ex-dividend dates (Hartzmark & Solomon, 2019).

In the context of the COVID-19 pandemic, we argue that the dividend month premium suggested by Hartzmark and Solomon (2013) should increase due to investors’ exceptional situations. Assuming a constant demand for dividends, the price pressure on shares still paying dividends should grow given the decline in the number of dividend-paying companies during the pandemic. Therefore, we expect to observe generally stronger price patterns around ex-dividend dates. Hartzmark and Solomon (2013) and Berkman and Koch (2017) further show that investor demand is more substantial for companies paying larger dividends. Therefore, we expect large dividend payers to be particularly prone to price pressure during the COVID-19 pandemic.

Our empirical results tend to confirm our hypotheses and show that the price patterns observed around ex-dividend dates during the COVID-19 pandemic are amplified. Compared to previous years, we observe a doubling in the magnitude of stock return patterns around this date during the COVID period. This increase is even larger for high dividend payers. Therefore, our findings suggest that dividend-seeking investors are likely to be the main driver of the price changes around ex-days. Our paper contributes to the literature examining the stock price behavior around recurring corporate events by studying how an exogenous shock impacts investors’ decision-making. More specifically, we confirm the price pressure explanation of Hartzmark and Solomon (2013) and highlight the important role of dividend-chasing investors in the predictable evolution of stock prices around ex-dividend dates. Further, we provide the first evidence on the impact of the COVID-19 pandemic on investors’ response to corporate payout policies. Our paper is structured as follows. Section 2 presents the data and methodology, Section 3 empirical findings, while Section 4 concludes.
DATA AND METHODOLOGY

2.1 Sample

The data set covers the universe of publicly-listed Western European companies. All data are downloaded for the period January 2018–July 2020 from Refinitiv Datastream and converted into EUR for markets outside the Eurozone. To ensure that companies show a minimum standard, the sample is limited to companies traded in their own country (i.e., avoiding international cross-listings) and active in July 2020. Further, we restrict the sample to investable companies by implementing the following two restrictions: the stock price is above EUR 1.00, and the market capitalization higher than EUR 50 million. We then divide our sample into two groups: dividend payments occurring before (pre-COVID) and after (COVID) the pandemic started. We use the first day of lockdown in a Western European country, February 24, 2020, as a cut-off date. Thus, the COVID period encompasses the period from February 24, 2020 to July 31, 2020. The pre-COVID period is used as a control group covering the period from January 1, 2018 to February 24, 2020.

Table 1 provides evidence on the temporal evolution of dividend payouts for all companies (payers and non-payers) of the sample and an identical time period (February 24 to July 31 of the respective year).

The fraction of payers in our sample dropped from 66.41% in 2019 to 35.76% in 2020. Moreover, we report that about one-third of companies stopped paying dividends during the COVID period, while these numbers were around 7% before. A marked increase also is present in companies diminishing their dividend payments. Around 10.60% of companies reduced their payouts, and 7.66% cut it by more than 25%. Overall, these statistics confirm that opportunities to trade on ex-dividend dates strongly decreased with the pandemic’s arrival.

For the rest of the study, we only use dividend-paying firms to reflect the investment universe of firms available to dividend-chasing investors. Table 2 exhibits the final sample composition by market. It includes 2248 companies from 16 Western European markets and comprises 6865 dividend distributions, of which 1066 occurred during the COVID period. Our data set appears representative of the overall European environment with the United Kingdom, France, and Germany being the most represented markets in terms of companies and the number of dividend payouts. A higher payment-frequency in the United Kingdom (bi-annual and quarterly) explains its higher number of payouts.

2.2 Methodology

Our analysis is based on a standard event study methodology (Brown & Warner, 1985; Campbell et al., 1997). The daily stock returns are computed as

| Year | Payers | Stop dividend | Reduction |
|------|--------|---------------|-----------|
|      |        |               | Total     | >25%      | Firms     |
| 2018 | 66.69% | 7.64%         | 7.45%     | 4.58%     | 2750      |
| 2019 | 66.41% | 6.16%         | 9.74%     | 5.49%     | 2843      |
| 2020 | 35.76% | 33.58%        | 10.60%    | 7.66%     | 2886      |

Note: This table reports, for the period February 24 to July 31 of each year, the fraction of dividend payers, companies stopping dividend payments, and firms reducing payments (overall or by more than 25%).
where $P_{i,t}$ is the closing price on day $t$ for stock $i$ (except for $t_0$ where it is the opening price on the ex-date), and $D_{i,t}$ is the dividend per share which was paid out. Thus, $R_{i,t}$ corresponds to an overnight return of a stock going from cum to ex (after the stock exchange closes), while $R_{i,t+1}$ is measured from the opening of the ex-date to the closing of the subsequent day.

Abnormal returns are calculated as

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

where daily market returns ($R_{m,t}$) are calculated for each of the corresponding 16 benchmark indices. Then, we winsorize all $AR_{i,t}$ at the 0.1%–99.9% level and calculate average abnormal returns (AAR$_t$) as

$$AAR_t = \frac{1}{N} \sum_{t-1}^{N} AR_{i,t}$$

with $AR_{i,t}$ for a given period (e.g., pre-COVID and COVID) and cumulated average abnormal returns for a given event window as

| Market   | Benchmark index     | Firms | Total | Pre-COVID | COVID |
|----------|---------------------|-------|-------|-----------|-------|
| Austria  | ATX                 | 45    | 97    | 81        | 16    |
| Belgium  | BEL All share       | 76    | 209   | 164       | 45    |
| Denmark  | OMX Copenhagen      | 66    | 171   | 144       | 27    |
| Finland  | OMX Helsinki        | 93    | 273   | 206       | 67    |
| France   | CAC All-tradable    | 298   | 750   | 611       | 139   |
| Germany  | XETRA Prime All-share | 270  | 637   | 506       | 131   |
| Greece   | Athetax Composite   | 35    | 96    | 70        | 26    |
| Ireland  | ISEQ All-share      | 19    | 70    | 63        | 7     |
| Italy    | FTSE MIB            | 149   | 360   | 290       | 70    |
| Netherlands | AEX              | 63    | 227   | 199       | 28    |
| Norway   | Oslo SE OBX         | 100   | 310   | 247       | 63    |
| Portugal | PSI All-share       | 19    | 47    | 38        | 9     |
| Spain    | Madrid SE IGBM      | 99    | 317   | 268       | 49    |
| Sweden   | OMX Stockholm       | 223   | 606   | 521       | 85    |
| Switzerland | Swiss Performance Index | 192 | 496   | 361       | 135   |
| United Kingdom | FTSE All-share | 501   | 2199  | 2030      | 169   |
| Total    |                     | 2248  | 6865  | 5799      | 1066  |

Note: This table reports the number of dividend-paying companies per market and the number of payments done in total, in the pre-COVID period (January 1, 2018–February 23, 2020), and after the COVID outbreak (February 24, 2020–July 31, 2020) in Europe.
The first part of the analysis compares AAR and CAAR depending on the period and dividend payout level. We further split the sample into firms with high (yearly upper quartile dividend yield) versus low dividend yields (bottom three quartiles) to test if high dividend stocks show a stronger reaction and confirm the hypothesis that dividend-seeking investors have more demand for shares paying high dividends (Hartzmark & Solomon, 2013).

Finally, we supplement the AAR and CAAR analysis by examining the market reaction drivers in a panel regression analysis. The identification strategy is based on interactions between dividend level and period indicators as follows:

\[
y_{jt} = \alpha_i + \delta_{1j} \text{High}_{\text{preCOVID}} + \delta_{2j} \text{High}_{\text{COVID}} + \delta_{3j} \text{Low}_{\text{COVID}} + \beta_i' X_{jt} + \theta_i \text{Industry} + \omega_i \text{Country} + \varepsilon_{jt}
\]  

### TABLE 3  AAR and CAAR around ex-dividend dates

| Panel A: AAR | COVID (1) | Pre-COVID (2) | Difference (1)–(2) |
|-------------|-----------|---------------|-------------------|
| –5          | 0.0025*** | 0.0007***     | 0.0018*           |
| –4          | 0.0006    | 0.0006**      | –0.0000           |
| –3          | 0.0015*   | 0.0006**      | 0.0010            |
| –2          | 0.0036*** | 0.0011***     | 0.0024***         |
| –1          | 0.0046*** | 0.0010***     | 0.0036***         |
| 0           | 0.0087*** | 0.0069***     | 0.0018**          |
| +1          | –0.0058** | –0.0019***    | –0.0038***        |
| +2          | –0.0032** | –0.0006***    | –0.0026***        |
| +3          | –0.0026** | 0.0004*       | –0.0030***        |
| +4          | –0.0024** | 0.0009        | –0.0024***        |
| +5          | –0.0009   | 0.0005**      | –0.0014*          |

**Observations** 1066 5799

| Panel B: CAAR | COVID (1) | Pre-COVID (2) | Difference (1)–(2) |
|---------------|-----------|---------------|-------------------|
| [–5; 0]       | 0.0214*** | 0.0109***     | 0.0105***         |
| [–4; 0]       | 0.0189*** | 0.0102***     | 0.0087***         |
| [–3; 0]       | 0.0184*** | 0.0096***     | 0.0087***         |
| [–2; 0]       | 0.0168*** | 0.0091***     | 0.0078***         |
| [–1; 0]       | 0.0133*** | 0.0079***     | 0.0053***         |
| [+1; +2]      | –0.0089***| –0.0025***    | –0.0064***        |
| [+1; +3]      | –0.0115***| –0.0022***    | –0.0094***        |
| [+1; +4]      | –0.0140***| –0.0022***    | –0.0118***        |
| [+1; +5]      | –0.0149***| –0.0016***    | –0.0132***        |

**Observations** 1066 5799

Note: This table reports AAR (Panel A) and CAAR (Panel B) for different time windows around ex-dividend dates for the COVID and pre-COVID period.

***Significance at the 1%-level.

**Significance at the 5%-level.

*Significance at the 10%-level.
### TABLE 4  AAR and CAAR around ex-dividend dates—high- versus low-dividends

| Panel A: AAR | COVID | Pre-COVID | COVID/Pre-COVID |
|-------------|-------|-----------|----------------|
|             | High-dividend | Low-dividend | Difference (1)–(2) | High-dividend | Low-dividend | Difference (3)–(4) | Difference (1)–(3) |
| –5          | 0.0050*** | 0.0015 | 0.0035* | 0.0006 | 0.0007** | –0.0001 | 0.0044** |
| –4          | –0.0001 | 0.0008 | –0.0008 | 0.0010** | 0.0005* | 0.0006 | –0.0011 |
| –3          | 0.0034* | 0.0009 | 0.0026 | 0.0013*** | 0.0003 | 0.0010* | 0.0021 |
| –2          | 0.0050*** | 0.0030*** | 0.0019 | 0.0016*** | 0.0010*** | 0.0006 | 0.0033* |
| –1          | 0.0055*** | 0.0042*** | 0.0013 | 0.0008* | 0.0010*** | –0.0002 | 0.0047*** |
| 0           | 0.0154*** | 0.0062*** | 0.0092*** | 0.0126*** | 0.0051*** | 0.0075*** | 0.0028*** |
| +1          | –0.0139*** | –0.0027** | –0.0111*** | –0.0053*** | –0.0008** | –0.0045*** | –0.0086*** |
| +2          | –0.0060** | –0.0021** | –0.0039** | –0.0014*** | –0.0004 | –0.0010* | –0.0046** |
| +3          | –0.0034** | –0.0024** | –0.0010 | –0.0006 | 0.0007*** | –0.0013** | –0.0028* |
| +4          | –0.0032** | –0.0022** | –0.0010 | –0.0009** | 0.0003 | –0.0012** | –0.0022 |
| +5          | –0.0016 | –0.0006 | –0.0010 | –0.0004 | 0.0009*** | –0.0013** | –0.0011 |
| Observations | 288 | 778 | 1429 | 4370 |

| Panel B: CAAR | COVID | Pre-COVID | COVID/Pre-COVID |
|--------------|-------|-----------|----------------|
|              | High-dividend | Low-dividend | Difference (1)–(2) | High-dividend | Low-dividend | Difference (3)–(4) | Difference (1)–(3) |
| [–5; 0]      | 0.0343*** | 0.0166*** | 0.0177*** | 0.0180*** | 0.0086*** | 0.0094*** | 0.0163*** |
| [–4; 0]      | 0.0292*** | 0.0151*** | 0.0141*** | 0.0173*** | 0.0079*** | 0.0095*** | 0.0119*** |
| [–3; 0]      | 0.0293*** | 0.0143*** | 0.0150** | 0.0163** | 0.0074** | 0.0089** | 0.0130** |
| [–2; 0]      | 0.0259*** | 0.0135*** | 0.0124*** | 0.0150*** | 0.0071*** | 0.0079*** | 0.0108*** |
| [–1; 0]      | 0.0209*** | 0.0104*** | 0.0105*** | 0.0134*** | 0.0061*** | 0.0073*** | 0.0075*** |
| [+1; +2]     | –0.0199*** | –0.0049*** | –0.0150*** | –0.0067*** | –0.0012*** | –0.0055*** | –0.0132*** |
| Panel B: CAAR | COVID | | | | Pre-COVID | | | | COVID/Pre-COVID |
|----------------|-------|-------|-------|-------|----------------|-------|-------|-------|----------------|
|                | High-dividend | Low-dividend | Difference (1)–(2) | High-dividend | Low-dividend | Difference (3)–(4) | Difference (1)–(3) |
| [-1; +3]       | −0.0232*** | −0.0072*** | −0.0160*** | −0.0073*** | −0.0005 | −0.0068*** | −0.0160*** |
| [-1; +4]       | −0.0264*** | −0.0094*** | −0.0170*** | −0.0082*** | −0.0002 | −0.0080*** | −0.0182*** |
| [-1; +5]       | −0.0280*** | −0.0100*** | −0.0180*** | −0.0086*** | 0.0007  | −0.0092*** | −0.0194*** |
| Observations   | 288    | 778    |         | 1429    | 4370   |         |         |

Note: This table reports AAR (Panel A) and CAAR (Panel B) for different time windows around ex-dividend dates for the COVID and pre-COVID period. The sample is further split into high-dividend for companies in the yearly upper quartile of dividend yields and low-dividend for other firms.

***Significance at the 1%-level.
**Significance at the 5%-level.
*Significance at the 10%-level.
where \( y_{i,j,t} \) measures the CAR for different time windows \( i \) for company \( j \) in year \( t \). High_preCOVID\(_t\) denotes the interaction between the high dividend indicator and the dividend payments indicator in the pre-COVID period. It gives the difference in CAR between high and low dividend firms during the pre-COVID period. High_COVID\(_t\) and Low_COVID\(_t\) are interaction terms between dividend-size indicators and the indicator for the COVID period. These variables differentiate the CAR between the pre-COVID and COVID period for low and high dividend-paying firms, respectively. \( X_{j,t} \) is a vector of firm-level characteristics. Following Zhang et al. (2008) and Le et al. (2020), we include the relative risk (defined as the variance of a stock over its respective market variance over 40 days), beta (defined as the regression coefficient of a stock’s returns on the returns of its respective market index over a 250-day window), and size (defined as the natural logarithm of a company’s market capitalization). All three variables are calculated 21 days before the ex-dividend day. We also include country and industry dummies to account for possible differences along these dimensions. We cluster SEs at the firm level.

### 3 | EMPIRICAL RESULTS

Table 3 exhibits AAR over a [−5; +5] day window around the ex-dividend date for both the COVID and pre-COVID periods as well as CAAR for different windows before and after the ex-dividend date. In both cases, the returns are significantly positive until the ex-dividend date and negative thereafter as investors build up price pressure to capture dividends followed by a reversal.
Column 3 reports the difference in abnormal returns between the two periods. As expected, we observe that the price reaction around dividend payments amplified during the COVID period. For example, an investor buying a stock five (one) days before the ex-dividend date and selling it at the ex-day opening would have earned an average abnormal return of 2.14% (1.33%) during the COVID period, while he would have obtained 1.09% (0.79%) previously. This result suggests that investors traded up stocks paying dividends more intensely than in regular times to capture dividends where possible.

Hartzmark and Solomon (2013) and Berkman and Koch (2017) document that stocks with higher dividends exhibit higher abnormal returns on the ex-day. As the pandemic triggered a drop in firms paying dividends, we argue that this effect was further exacerbated during this period. Consistent with our expectation, the results of Table 4 show stronger return patterns for high dividend stocks than for low dividend stocks in both the pre-COVID and COVID periods. This is especially evident when looking at the CAAR (Panel B). All the differences (columns 3 and 6) are positive and highly significant up to the ex-date, and then significantly negative. Buying a stock paying a large dividend five (one) days before the ex-date and selling it at the ex-day opening, would have provided an average abnormal return of 3.43% (2.09%) during the COVID period, while only 1.8% (1.34%) in regular times. Moreover, the
last column indicates that during the COVID pandemic, high dividend stocks exhibited the largest abnormal returns (in absolute terms). Again, all the differences are highly significant in Panel B. This provides evidence that investors were especially seeking those stocks allowing them to capture the highest possible dividend.

These results are confirmed in Figure 1. It illustrates CAAR over a $[-5; 5]$ day window for the baseline specification and the one splitting by dividend-payment intensity. In the three graphs, we can observe a clear amplification of the price patterns during the COVID period (solid line), when compared to the pre-COVID period (dashed line). Furthermore, the y-axis being the same across the graphs, we can also clearly see the higher peak for the high-dividend stocks.

Table 5 presents estimates for Equation (5). Consistent with our prediction, return patterns are more pronounced during the COVID period. Relative to the low dividend firms in the pre-COVID period, we observe that, in the COVID period, high (low) dividend firms exhibit 2.4% (0.8%) higher CAR over the 5 days before the ex-date. We further observe stronger negative CAR following ex-dividend days. Due to a shortage of dividends during the pandemic, this result supports the hypothesis of an increased price pressure. Also, the regression analyses confirm the stronger return patterns for firms paying high dividends during both pre-COVID and COVID periods. Additionally, we observe that this phenomenon is exacerbated during the COVID period. The difference in abnormal returns between low and high dividend stocks on ex-dividend day is 0.6% in the pre-COVID period increasing to 0.8% during the COVID period. Similar patterns are observed for cumulated returns.

Table 5 also points out some interesting results concerning control variables. We find significantly negative coefficients for firm size before the ex-date (columns 1–3), followed by positive ones (columns 4 and 5). Therefore, the return patterns are attenuated for large firms. This is consistent with the findings of Zhang et al. (2008) who argue that large-capitalization stocks have lower transaction costs, which reduces ex-dividend day excess returns. Furthermore, consistent with Michaely and Vila (1995), we find that beta is the main risk priced in the ex-day excess returns.

4 | CONCLUSIONS

The COVID-19 pandemic induced a drop in dividend distributions in Europe, providing a unique setting to examine dividend-seeking investors’ impact on stock prices around ex-dividend days. Indeed, those investors are likely to have focused their trades on firms maintaining dividend payments, increasing price pressure on these stocks. Consistent with our hypothesis, an investor buying a stock 5 days before the ex-dividend date and selling it at the ex-day opening would have earned an average abnormal return of 2.14% during the COVID period. This is close to double the average premium obtained on an equivalent trade in the pre-COVID period. The premium even triples for high dividend payers during the COVID period. This indicates that dividend capture plays an important role in price formation around the ex-date.

ENDNOTES

1 This paper focuses on abnormal stock returns over a short window around the ex-dividend day. For analyses of stock returns behavior over longer horizons during the COVID-19 pandemic, see for instance Ding et al. (2021).

2 For a detailed overview, see Farre-Mensa et al. (2014).

3 The indices are listed in Table 2.
We run several robustness tests and find that (i) restricting the data set to companies with a minimum market capitalization of EUR 100 million, (ii) using a pre-COVID period over 2015–2019 or for 2019 only, or (iii) taking the closing price of the ex-dividend day \( t_0 \), all lead to qualitatively very similar results.

Splitting dividend-paying stocks at the yearly median instead of the top-quartile yields qualitatively similar results for Tables 4 and 5.

REFERENCES

Ainsworth, A., & Nicholson, M. (2014). Can dividend schedules predict abnormal returns? International evidence. 2015 Financial Markets & Corporate Governance Conference, Available at https://ssrn.com/abstract=2556560.

Baker, M., & Wurgler, J. (2004). A catering theory of dividends. Journal of Finance, 59, 1125–1165.

Bali, R., & Hite, G. L. (1998). Ex dividend day stock price behavior: Discreteness or tax-induced clienteles? Journal of Financial Economics, 47, 127–159.

Berkman, H., & Koch, P. D. (2017). DRIPs and the dividend pay date effect. Journal of Financial and Quantitative Analysis, 52, 1765–1795.

Bessembinder, H., & Zhang, F. (2015). Predictable corporate distributions and stock returns. Review of Financial Studies, 28, 1199–1241.

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. Journal of Financial Economics, 14, 3–31.

Campbell, J., Lo, A., & Mackinlay, C. (1997). The econometrics of financial markets. Princeton University Press.

Campbell, J. A., & Beranek, W. (1955). Stock price behavior on ex-dividend dates. Journal of Finance, 10, 425–429.

Ding, W., Levine, R., Lin, C., & Xie, W. (2021). Corporate immunity to the COVID-19 pandemic. Journal of Financial Economics, 141, 802–830.

Eades, K. M., Hess, P. J., & Kim, E. H. (1985). Market rationality and dividend announcements. Journal of Financial Economics, 14, 581–604.

Eades, K. M., Hess, P. J., & Kim, E. H. (1994). Time-series variation in dividend pricing. Journal of Finance, 49, 1617–1638.

Elton, E., & Gruber, M. (1970). Marginal stockholder tax rates and the clientele effect. Review of Economics and Statistics, 52, 68–74.

Farre-Mensa, J., Michaely, R., & Schmalz, M. (2014). Payout policy. Annual Review of Financial Economics, 6, 75–134.

Frank, M., & Jagannathan, R. (1998). Why do stock prices drop by less than the value of the dividend? Evidence from a country without taxes. Journal of Financial Economics, 47, 161–188.

Harris, L. E., Hartzmark, S. M., & Solomon, D. H. (2015). Juicing the dividend yield: Mutual funds and the demand for dividends. Journal of Financial Economics, 116, 433–451.

Hartzmark, S. M., & Solomon, D. H. (2013). The dividend month premium. Journal of Financial Economics, 109, 640–660.

Kalay, A. (1982). The ex-dividend day behavior of stock prices: A re-examination of the clientele effect. Journal of Finance, 37, 1059–1070.

Koo, B., & Chae, J. (2020). Dividend month premium in the Korean stock market. Journal of Derivatives and Quantitative Studies, 28, 77–104.

Kreidl, F., & Scholz, H. (2021). Exploiting the dividend month premium: Evidence from Germany. Journal of Asset Management, 22, 253–266.

Lakonishok, J., & Vermaelen, T. (1986). Tax-induced trading around ex-dividend days. Journal of Financial Economics, 16, 287–319.

Le, N. N. A., Yin, X., & Zhao, X. (2020). Effects of investor tax heterogeneity on stock prices and trading behaviour around the ex-dividend day: The case of Australia. Accounting & Finance, 60, 3775–3812.

Michaely, R., & Vila, J.-L. (1995). Investors’ heterogeneity, prices, and volume around the ex-dividend day. Journal of Financial and Quantitative Analysis, 30, 171–198.

Wigglesworth, R., Martin, K., & Darbyshire, M. (2020). How Covid-19 sparked a dividend drought for investors. Financial Times, London.

Zhang, Y., Farrell, K. A., & Brown, T. A. (2008). Ex-dividend day price and volume: The case of 2003 dividend tax cut. National Tax Journal, 61, 105–127.