Investor anticipation and the stock price reaction to dividend initiations and omissions

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April 30, 2018

Abstract

In this paper, we assess investors' anticipation of dividend initiations and omissions, and the extent to which investor anticipation about the likelihood of these events can influence their subsequent stock price reactions. We find a negative and statistically significant relationship between the degree of investor anticipation and the magnitude of the announcement-period abnormal returns for dividend initiating and omitting firms. Turning to the post-announcement drift, we find that the long-run price effect for dividend initiations is confined to the year following the announcement. Furthermore, we find no long-run price effects for dividend omissions, suggesting that investors are, on average, less surprised by dividend omissions relative to initiations. We also find that controlling for contemporaneous changes in the matching covariates is sufficient to explain the one-year price effect for dividend initiations.

Keywords— Dividend initiations, dividend omissions, information content, underreaction, investor anticipation, self-selection

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The authors would like to thank Henning Schroeder, seminar participants at the University of Groningen, the Centre for Financial Markets at University College Dublin and the 2015 Australasian Finance and Banking Conference for their insightful and constructive comments. The authors also like to thank Yi Wan for excellent research assistance. Mohamad Faour also gratefully acknowledges support of a generous UCD Business School Doctoral Scholarship.

1 Introduction

According to the efficient market hypothesis, new firm-relevant information should be rapidly incorporated into prices. However, this 'new' information is not always a complete surprise to investors, since such announcements can be partially anticipated by investors in varying degrees. While the event study literature that examines the price reactions to different corporate events is large[1], a far less-studied question is whether investors' partial anticipation of information announcements is incorporated into prices.

In this paper, we assess investors' anticipation of dividend initiations and omissions, and the extent to which investor anticipation about the likelihood of these events can influence their subsequent stock price reactions. We link investors' anticipation of dividend initiations and omissions to the announcement period and the post-announcement abnormal returns of dividend initiating and omitting firms.

Our proxy for the degree of investor anticipation is the propensity to initiate/omit dividends, estimated from a logit model that predicts the likelihood of a firm to initiate/omit a dividend payout, based on publicly available information. We then examine the cross-sectional relation between announcement period abnormal returns and the propensity to initiate/omit dividends. More anticipated events should have a lower surprise element for investors, which should be reflected in a lower price reaction on the announcement day.

We then link investors' anticipation of dividend initiations and omissions to the post-announcement drift that has been documented in the prior literature (Michaely, Thaler and Womack, 1995, Boehme and Sorescu, 2002, and Liu, Szewczyk and Zantout, 2008), using a difference-in-differences propensity score matching methodology. Our approach allows us to explicitly account for the ex-ante expectations of investors in the market, in our estimation of the long-run abnormal returns.[2] The event firms and the matched firms are therefore, indistinguishable from the perspective of investors, prior to the event firm's self-selection to the event.

Cash dividend initiations (omissions) have been typically associated with substantive positive (negative) stock price impacts, both on the announcement and post-announcement period. The latter has attracted more attention, since it calls into question the informational efficiency of capital markets. Michaely, Thaler and Womack (1995) find evidence of a three-year price drift following dividend initiations and omissions, using equally weighted buy-and-hold returns. Fama (1998) however argues that findings such as Michaely, Thaler and Womack (1995), that report long-run abnormal returns following corporate events, may simply be due to chance, biased methodologies, or misspecified asset

[1] Kothari and Warner (2009) conduct a census of event studies published in five leading finance journals from 1974 through 2000. They report a lower bound of 565 event study papers published during that period.

[2] In line with the semi-strong form of the efficient market hypothesis (Fama, 1970), investors can have expectations, based on publicly available information, on the likelihood of a dividend payout event. The propensity score is our estimate of the likelihood to initiate/omit dividends.

pricing models. Responding to Fama's call for additional statistical rigor in testing for long-run market anomalies, Boehme and Sorescu (2002) and Liu, Szewczyk and Zantout (2008) re-examine dividend initiations and resumptions, and dividend reductions and omissions, respectively. They confirm that the long-run price effects are sensitive to choice of methodology used in estimating abnormal returns. Bessembinder and Zhang (2013) further finds that long-run price effects of a group of corporate events (which include dividend initiations), can be attributed to imperfect control-firm matching. They find that controlling for differences in firm characteristics between event firms and control firms over the return measurement horizon explains away the long-run price drifts.

However, as with the vast majority of the event study literature, previous attempts to assess the price effects of dividend payout announcements failed to account for the fact that corporate events are an endogenous choice of the firm's management. Traditional approaches in the event study literature, has estimated the price effects of corporate events by conditioning solely on variables related to the cross-section of stock returns, while neglecting the information set that informs the firm's self-selection to the event. Li and Prabhala (2009) argue that the negligence of the information set that informs an endogenously determined corporate event (in this case dividend initiation/omission), represents an omitted variable bias that may lead to biased and inconsistent estimates of the price effects of the event.

In this paper, we follow the approach of von Eije, Goyal and Muckley (2014) to tackle this self-selection problem, in the context of dividend initiations and omissions. Propensity-score matched difference-in-differences can, in this setting, elicit consistent estimates of the price impact of dividend initiations and omissions. This approach explicitly accounts for the ex-ante expectations of the investors in the market, on the likelihood of the dividend payout event. In our setting, we make a critical distinction between the decision makers who self-select to the event (firms' management) and the decision makers who determine the capital market value of the event (investors). The decision to self-select, on part of the management, is only revealed to the investors on the announcement, who accordingly determine the capital market value of the revealed information. The decision to initiate and/or omit a dividend is therefore an exogenous shock from the perspective of market participants, relative to a counterfactual with a similar ex-ante propensity to initiate/omit dividends. We therefore argue that accounting for investor expectations on the likelihood of a dividend payout event, proxied by the propensity to initiate/omit dividends, mitigates the endogeneity problem that has plagued the merit of findings in earlier studies.[3]

Our key findings are as follows. First, we find that dividend omissions are more predictable by

[3]The central premise of our argument is based on the assumption that investors and management have different information sets. While management makes the self-selection decision based on a combination of public and private information, investors on the other determine the ex-ante likelihood of the event based on publicly available information. Such an assumption requires invoking a simple information asymmetry argument, which is typical in a semi-strong form efficient market.

investors, compared to dividend initiations. Second, we find a statistically significant relationship between the propensity to initiate/omit dividends and the announcement period abnormal returns in the cross-section. Events that are more predictable by investors have, in absolute value, lower announcement period abnormal returns relative to less-predictable events. Third, we find a post-announcement drift of 5.84% for dividend initiations, which is confined to the year following the announcement. For dividend omissions, we find no evidence of a statistically significant price drift, suggesting that investors are less surprised by dividend omissions relative to initiations. Fourth, we find that the one-year price drift for dividend initiations can be explained by changes in firm characteristics during the announcement year, which suggests that the post-announcement drift is not due to investor underreaction to the private information conveyed by the event. Not surprisingly, we find that the price effects for dividend omissions remain insignificant after controlling for contemporaneous changes in firm characteristics.

Our paper is related to the literature that attempts to link investor anticipation to the stock price impact of corporate events. Malatesta and Thompson (1985) present a model that formalizes the intuition that stock price reactions reflect both the economic importance of the event and the extent to which those events are surprises. For mergers and acquisitions, Becher (2009) and Cai, Song and Walking (2011) document the anticipated components of the returns to merger bids. They find that failure to account for investor anticipation underestimates the gains of mergers to bidder firms. Cornett, Tanyeri and Tehranian (2011) link investor anticipation of bidder and target firms to value between bidding and target firms. They find that bidding firms can be predicted more accurately than target firms and this asymmetry (partially) explains the disparity in bidder and target firm announcement-period CARs. For stock splits, Hwang, Keswani and Shackleton (2008) compare the long run price reaction between anticipated and surprise split announcements. They find that anticipated splits have far more pronounced degree of underreaction. They attribute this finding to anticipated stock splits representing a more credible signal, and are hence invested in more by investors. For seasoned equity offerings, Bilinski and Strong (2013) decompose post-SEO three year BHARs into 41% that represent lower risk exposure, and 59% that represents the surprise element. They find that, contrary to previous studies that document a three-year drift, the surprise component of SEOs persists for up to 16 months after the offering. For dividend increases, Andres and Hofbaur (2017) find that firms that pay quarterly dividends have become significantly more likely to announce dividend increases in four-quarter cycles, making them more predictable by investors. They also find that firms that adopt this four-quarter cycle in announcing dividend increases have lower announcement-period returns compared to firms that do not, consistent with investors incorporating event predictability into their expectations.

Our paper contributes to the existing literature in a number of ways. First, we add to the literature

that links investor anticipation of corporate events to their stock price reactions, by examining two previously unexamined events - dividend initiations and omissions. Our results suggest that investors can (partially) anticipate dividend initiations and omissions, and this anticipation is incorporated into the price reactions to dividend initiations and omissions, as some event-related information is stale at the time of the announcement.

Second, we add to the discussion on the stock price reactions to dividend initiations and omissions. While dividend omissions have been associated with more pronounced stock price reactions compared to initiations, arguably due to the managerial reluctance to omit dividends (Michaely, Thaler and Womack, 1995, Liu, Szewczyk and Zantout, 2008), we find that the surprise element of dividend omissions is smaller than that of dividend initiations. Furthermore, our findings do not support the conjecture that investors underreact to the private information content of dividend initiations and omissions.

Third, our paper makes an important methodological contribution for researchers analyzing the price effects of corporate events. The event study literature usually neglects the endogenous nature of corporate events in estimating their price effects. We suggest that accounting for investors' partial anticipation of corporate events, while availing of a simple information asymmetry argument between management and investors, allows researchers to obtain consistent estimates of the price effects of endogenously determined corporate events. This approach can be generalized to any corporate event, where researchers attempt to estimate its price effects.[4]

Finally, our paper connects between two seemingly loosely related strands of research - the propensity to pay dividends (e.g.: Fama and French, 2001, DeAngelo DeAngelo and Stulz, 2006, Denis and Osobov, 2008, Hoberg and Prabhala, 2009, etc.) and the stock price effects of dividend initiations and omissions (e.g.: Michaely, Thaler and Womack, 1995, Boehme and Sorescu, 2002, Liu, Szewczyk and Zantout, 2008) . While both of these strands of literature have been examined individually, our research points to a link between the propensity to pay dividends and how investors react to dividend initiations and omissions.

The remainder of the paper is organized as follows. In section 2, we describe and motivate our methodology. Section 3 discusses the variables that are related to the propensity to pay dividends. Section 4 describes our data and sample selection criteria. Section 5 presents our empirical results. Section 6 concludes.

[4]This does however assume that the researcher can successfully model investor expectations on the likelihood of the event.

2 Methodology

This section explains and motivates our methodology to elicit a capital market effect of a dividend initiation or omission. We follow Von Eije, Goyal and Muckley (2014) to show that while corporate dividend decisions are inherently endogenous, the information content of the dividend announcements can yield an exogenous shock to investors' expectations. A tailored difference-in-differences methodology, with propensity score matching using publicly available information related to the dividend decision, is adopted. It can, hence, yield a consistent estimate of the capital market effect of the surprise component of a dividend initiation or omission.

2.1 The endogenous nature of dividend initiations and omissions

Dividend payout announcements, such as initiations and omissions, are inherently endogenous events. Their magnitude and timing is decided (self-selected) by corporate management. In the context of a firm's self-selection to a so-called "treatment", e.g. a dividend decision, Li and Prabhala (2009) argue that a matching methodology is less plausible due to the concern of endogeneity - the likelihood that unobserved firm traits inform the dividend decision. The self-selection aspect of a dividend decision implies that firms which select to initiate or omit can be distinct, on unobserved firm traits (i.e. a private information set of a firm's management), from firms which opt not to do so.[5] Hence, Li and Prabhala (2009) highlight that any effect can be ascribed to the unobserved firm traits as opposed to the dividend decision *per se*.

The essence of this difficulty in inference is that the set of firms which opts not to initiate or omit a dividend is an inadequate representation of the counterfactual scenario, for the initiating or omitting firm. To test for a causal impact of a dividend initiation/omission, it is necessary to conceptualise and approximate for a counterfactual scenario. A counterfactual is what would have happened to the event firm if the event had not occurred. Researchers, however, observe only the outcome of the event but not the outcome of the non-event. This inability to observe the "true" counterfactual is the fundamental problem in eliciting causal inferences. In the setting of dividend initiations/ omissions, due to the unobserved private information of firm management it is not possible to successfully select counterfactual firms in a process of modeling on observable firm traits.

2.2 Dividend initiations and omissions can produce exogenous shocks to investors' expectations

In the setting of dividend initiations and omissions, corporate management self-selects to initiate or omit a dividend based, in part, on private information (i.e. the unobserved firm traits). This

[5]This distinction violates the assumption of exogeneity such that statistical estimators cannot yield a consistent estimate [Greene...].

private information, which manifests as a bias to self-select (or not), is revealed to investors only at the announcement (or non-announcement) of the dividend event. Investors then revise their expectations about the firm and accordingly make their trading decisions, which, in turn, determines the price impact of the event. We, hence, match firms with similar propensities to the corporate dividend initiation or omission event, using publicly available information. This matching process on propensity scores, together with a difference-in-differences methodology, allows us to obtain a consistent estimate of the capital market effect of dividend initiations and omissions.

The specifics of this argument can be outlined as follows. While corporate events, such as dividend initiation and omission announcements, are indeed endogenous from the perspective of the firm's management, from the perspective of investors, the surprise component of such events can be understood as an exogenous shock to their expectations.[6] This is due to an assumption of an information asymmetry between management and investors. It is in line with the semi-strong form of the efficient market hypothesis (Fama, 1970), whereby investors can have expectations, based on publicly available information, on the likelihood of a dividend payout event. The second requisite assumption is that we can consistently model the propensity to the dividend event. If we adequately capture and account for investor expectations, then we can isolate the surprise component, and the capital market effect, of the dividend initiation/omission event.

The requirement of an information asymmetry, between management and investors, is a critical distinction. It is not relevant in the estimation of the impact of an event, where the impact is, in part, determined by corporate management (e.g. the impact of a corporate policy change on firm-level innovation). But it is satisfied where the estimation of the impact of an event is determined exclusively by investors (e.g. the impact of a corporate policy change on stock market value). Since our empirical setting is concerned with the latter, we argue that self-selection will not bias our inferences, but rather it informs them. The 'bias' to self-select to the dividend initiation/omission decision due to unobservables (i.e. private information only available to the decision makers of the firm) is the surprise component that is revealed to the market through the decision to initiate or omit a dividend payout. We, hence, nuance the concern raised by Li and Prabhala (2009). Self-selection bias in inference is a matter of concern only if two points are satisfied. First, the event is endogenous (i.e. self-selected possibly on unobservable traits) and, second, critically, if the decision makers with respect to the event, and those who determine the impact of the event, have equal access to the same information set.

[6] One frequently used mechanism, in the natural and social sciences, to mitigate self-selection bias, is to conduct a randomized control trial, where the event is ascribed to the individual in an exogenous random process. This process is the gold standard with which to test for a causal inference. Our approach does not serve to eliminate the self-selection bias, but rather information pertaining to the self selection bias is precisely that information which informs our estimated inferences. Our approach provides a consistent estimate of the information content of the dividend event.

2.3 Accounting for investor expectations

We adopt a new counterfactual, which explicitly accounts for the estimated propensity of a firm to self-select to a dividend initiation/omission, based on information publicly available to the capital market.

To do so, we match on the propensity score (Rosenbaum and Rubin, 1983, Rubin and Thomas, 1992), p, of a dividend initiation/omission event, which is estimated as the conditional probability obtained from a logistic regression of a binary variable that takes the value of 1 if the firm has initiated (omitted) a dividend payout and zero otherwise, on a set of covariates that explain the propensity of a firm to initiate (omit) dividends.[7]

$$p(event_k, t = 1) = f(X_k, t - 1)$$

The set of matching covariates, X, are observed in year *t-1*. Once the propensity scores are estimated from the logistic model, we adopt nearest-neighbor matching, within each year, to identify comparable counterfactual firms, prior to the announcement of a dividend initiation (omission).

Conditional on the assumption of information asymmetry between firms' management and investors, and our ability to adequately capture investors' expectations using publicly available information, our counterfactual firms would have a comparable ex-ante likelihood (from the perspective of capital market participants) to initiate/omit a dividend. Investors would therefore be unable to distinguish between the event firm and the matched counterfactual firm prior to the self-selection to the event.[8]

We interpret the difference in stock price changes between the event firms and their matched counterfactual firms as the capital market surprise component of the payout event, which is determined by the investors' interpretation of the new information that has been revealed through the event, and their subsequent trading decisions.

Traditional approaches, in the corporate finance literature, have availed of matching on observable characteristics that are reportedly correlated with cross-sectional differences in expected returns, such as size, market-to-book and industry (see Michaely, Thaler and Womack, 1995, Boehme and Sorescu, 2002, Liu, Szewczyk and Zantout, 2008 and Bessembinder and Zhang, 2013), to approximate the counterfactual. However, they fail to explicitly account for the propensity to initiate/omit a cash payout. This neglect of investor expectations in respect to the dividend event, can, therefore, lead to an omitted variable bias in the matching process.

[7] Our choice of variables is informed from a large body of literature that examines the propensity to pay dividends. Details on the variables used and the underlying literature are presented in section 4.

[8] We conduct balancing score tests (Rosenbaum and Rubin, 1985) to check the quality of our matching.

2.4 Accounting for contemporaneous effects

We also account for changes in the differences in matched covariates over the return measurement interval. Since the return measurement interval ranges between one year and five years, the values of the matched covariates for both the event and counterfactual firms are likely to change over time, with new information being disclosed to the market about the said covariates. This will likely lead to a deterioration of the quality of the matching over time (Bessembinder and Zhang, 2013).

We therefore regress the post-announcement abnormal returns on subsequent differences-in-differences in the matched covariates.

$$DID_X = (X_{i,t} - X_{j,t}) - (X_{i,t-1} - X_{j,t-1})$$

where DID_X is the difference-in-difference in the matched covariate X, subscripts i and j represent the event firm and the counterfactual firm respectively and t represents the time period (in years).

The intercept (our variable of interest) measures the expected value of the dependent variable (post-announcement abnormal returns), conditional on values of zero for the independent variables (differences-in-difference in matched covariates).

3 Determinants of the propensity to pay dividends

Previous work on the determinants of dividend payout decisions have provided evidence that a firm's dividend policy is influenced by: (1) Profitability; (2) Investment opportunities; (3) Size; (4) Firm risk; (5) Cash flow uncertainty; (6) Financial slack; (7) Firm age and (8) Past stock price performance.

Fama and French (2001), Denis and Osobov (2008) and Grullon, Paye, Underwood and Weston (2011) show that profitability, growth opportunities and size are associated with the propensity to pay dividends. More specifically, they find that dividend payers have higher profitability, are larger in size, and have lower growth opportunities relative to non-payers. We use the natural log of total assets (LNTA) to proxy for firm size, the market-to-book ratio (MB) to proxy for growth opportunities, and return on assets (ROA) to proxy for profitability.

DeAngelo, DeAngelo and Stulz (2006) provide evidence that dividend payers have higher retained earnings relative to non-payers, consistent with a life-cycle theory of dividend payout decision. They also find that retained earnings to total equity and retained earnings to total assets increase (decrease) in the five years prior to dividend initiations (omissions). They do however suggest that these increases (decreases) are not large and that the typical retained earnings ratios of dividend initiating (omitting) firm tends to be in the middle ground between the typical payer and non-payer. To account for a potential life-cycle explanation for the dividend initiation (omission) decision, we use retained earnings to total equity (RETE) to proxy for the same.

Dividends can also be motivated by an Easterbrook's (1984) and Jensen's (1986) agency-cost explanation of dividends, where shareholders may extract dividends from cash-rich companies, especially when their reinvestment opportunities are poor. On the flip-side (Brockman and Unlu, 2009), creditors may demand more restrictive dividend policies, depending on the balance of power between shareholders and debtholders. We therefore use the ratio of Cash and cash equivalents to total assets (CASH) and long-term debt to total assets (LTDTA) to proxy for the role of agency problems in determining dividend policy.

Hoberg and Prabhala (2009) find that firm risk is a significant determinant of the propensity to pay dividends - firms that pay dividends have lower risk relative to non-payers. We therefore use idiosyncratic risk (IRISK) and systematic risk (SRISK) to proxy for firm riskyness.

Chay and Suh (2009) find that cash flow uncertainty is related to the propensity to pay dividends - firms with less (more) volatile cash flows tend to be more(less) likely to pay dividends. We therefore use the three-year standard deviation of return on assets (SDROA) to proxy for cash flow uncertainty.

Michaely, Thaler and Womack (1995) find that dividend initiations(omissions) are preceded by positive(negative) stock returns in the years prior to the initiation (omission). Furthermore, De Cesari and Huang-Meier (2015) find evidence that managers learn new information from stock prices and use it to decide on their dividend policy. We therefore use 12-month buy and hold abnormal returns (BHAR) to proxy for the same.

4 Data and Sample Construction

Our dataset comprises cash dividend initiations and omissions, from 1967 to 2015, of US-based firms listed at NYSE and/or NASDAQ. We obtain our initial sample of dividend initiations/omissions from the CRSP daily stock event file. We define a dividend initiation as a firm's first cash dividend payment reported in the CRSP daily stock event file. For dividend omissions, the announcement should either be the first announcement of a cash dividend omission in the firm's history, or after a minimum of six regular cash dividend payments. Unlike dividend initiations, the CRSP tape does not contain the announcement date of dividend omissions. Therefore, to construct our sample, we first start by examining the distribution records in the CRSP stock master file for firms that have potentially omitted regular cash dividends during our sample period. We then search the Wall Street Journal (WSJ), Nexis and Factiva to identify the exact date of the dividend omission announcement. To further maximize our sample of dividend omission announcements, we also follow a reversed method, where we start by searching for dividend omission announcements from WSJ, Nexis and Factiva.

Finally, initiating and omitting firms are included in the final sample if they satisfy the following criteria: (1) the firm's data is available on both CRSP and Compustat; (2) Only ordinary common

shares of firms domiciled in the US are included (share codes 10 or 11); (3) The firm does not pertain to regulated utilities (SIC codes 4900-4949) or financial firms (SIC codes 6000-6999); (4) To minimize the effect of small stocks, for each year t, we exclude firms that had a stock price less than \$1 in December of year t-1; (5) The firm should have been traded on NYSE/NASDAQ for at least two years prior to the initiation/omission payout announcement; (6) The initiation/omission announcement does not pertain to firms undergoing a liquidation or merger; (7) Dividend omissions should not follow a dividend cut in the preceding quarter. This screen leaves us with a sample of 1398 dividend initiations and 889 dividend omissions.

5 Empirical Analysis

5.1 Predicting the propensity to initiate/omit dividends

Table 1 shows the logit model specifications used in to predict the propensity to initiate (omit) dividends. Overall, the logit model captures 14.14%(17.73%) of the variance, as indicated by the Pseudo-R^2. Dividend initiations are associated with higher total assets, higher retained earnings, higher past stock returns, lower idiosyncratic risk, higher return on assets, lower market-to-book ratios, higher cash holdings, lower ROA volatility and less growth in total assets. Dividend omissions are on the other hand associated with lower past stock returns, higher idiosyncratic risk, lower return on assets, lower market-to-book ratios, higher long-term debt to total assets and lower cash holdings to total assets.

Table 2 presents the average estimated propensity of a firm to initiate (omit) a dividend payout, based on our logit model specifications. Panel A reports the estimated propensity scores for dividend initiating firms and non dividend-paying firms that do not initiate a payout (Non-payers). Panel B reports the same for dividend omitting firms and dividend-paying firms that do not omit their payout (Payers). The fraction of dividend initiating (omitting) firms to the subsample of non-payers (payers) is 2.06% (1.64%), suggesting that these events are relatively rare. The average ex-ante propensity of dividend initiating (omitting) firms to initiate (omit) dividends is 5.77% (8.47%), compared to an average of 1.94% (1.53%) for non-payers (payers) that do not initiate (omit). Thus, our propensity score specification correctly estimates that dividend initiating (omitting) firms are more likely to initiate (omit) dividends than non-payers (payers). Furthermore, we note that the propensity score for dividend omitting firms is higher than that of dividend initiating firms, suggesting that dividend omissions are more predictable by investors, compared to dividend initiations. The asymmetry in event predictability between initiations and omissions, in this instance, would be expected to manifest as a lower capital market surprise effect for omissions relative to initiations.

[INSERT TABLE 1 HERE]

[INSERT TABLE 2 HERE]

5.2 Announcement period price responses to dividend initiations/omissions

We start by examining whether investor anticipation of dividend initiations (omissions), proxied by the propensity to initiate (omit) a dividend, affects announcement period stock price responses. We calculate the three-day cumulative abnormal returns (CARs), centered around the announcement date for dividend initiations (omissions). A market model is estimated for the period beginning 252 days prior to the announcement until 45 days prior to the announcement, using the CRSP value-weighted index as the market proxy.

The mean CARs for dividend initiations (omissions), which are presented in table 2, are consistent with expectations. We find that the mean CAR for dividend initiations and omissions are 2.83% and -7.11%, respectively. The percentage of negative(positive) CARs for dividend initiations (omissions) are 37.20% (21.68%), which represent a sizable proportion of the sample. This suggests that dividend initiations (omissions) need not always represent good (bad) news from an investor's perspective. Intuitively, a dividend initiation may be interpreted as bad news by investors if it signals a decline in the firms' future growth prospects, in line with the Maturity hypothesis of Grullon, Michaely and Swaminathan (2002). Dividend omissions on the other hand may be interpreted favorably by investors if it is viewed as a prudent financial policy during periods of severe financial distress. Furthermore, dividend omissions need not be bad news if the purpose of the omission is to build flexibility to reinvest in growth opportunities, in line with Blau and Fuller(2008).

[INSERT TABLE 3 HERE]

To examine the effect of investor anticipation on announcement CARs for dividend initiations and omissions, we run cross-sectional regressions of CARs on the propensity to initiate/omit dividends (PSCORE). Empirically, we cannot assign a negative or positive coefficient estimate to PSCORE. This is because investors can interpret either announcements positively or negatively, as evidenced by the sizable variation in the announcement period CARs between positive and negative price reactions for both dividend initiations and omissions. The coefficient on PSCORE would be negative when investors favorably view an initiation/omission, and positive when investors do not favorably view an initiation/omission. To address this, we follow Cornett, Tanyeri and Tehranian (2011) by assigning a dummy variable (POSITIVE) that takes the value of 1 when the CAR is positive and zero otherwise. We repeat the same with a dummy variable that takes the value of 1 when the CAR is negative and zero otherwise (NEGATIVE). We then interact this variable with the propensity score to condition the relationship between investor anticipation and the announcement period returns on whether the partially anticipated event represents good (bad) news from the investors' perspective. Therefore, when the dummy is POSITIVE (NEGATIVE), the coefficient on PSCORE is interpreted as the

relation between investor anticipation of a dividend payout event and CARs when the event represents bad (good) news from the investors' perspective.

Finally, we run the following models separately for initiations and omissions:

$CAR = \alpha + PSCORE + POSITIVE * PSCORE + YIELD + SIZE + RETE + ROA + \Delta IRISK + \Delta SRISK$

$CAR = \alpha + PSCORE + NEGATIVE * PSCORE + YIELD + SIZE + RETE + ROA + \Delta IRISK + \Delta SRISK$

Where CAR is the cumulative abnormal return in the three days centered around the announcement, PSCORE is the propensity to initiate (omit) dividends, POSITIVE*PSCORE is the interaction between a dummy variable that takes the value of 1 (0) if CAR is positive (negative) and the propensity to initiate (omit) dividends, NEGATIVE*PSCORE is the interaction between a dummy variable that takes the value of 1 (0) if CAR is positive (negative) and the propensity to initiate (omit) dividends, YIELD is the dividend yield, RETE is retained earnings to total equity, ROA is return on assets, ΔIRISK is the the annual change in idiosyncratic volatility and ΔSRISK is the annual change in systematic risk.[9]

Table 3 presents regression results of the three-day CAR for dividend initiating and omitting firms. Regressions (1) to (4) represent results for dividend initiating firms and regressions (5) to (8) represents results for dividend omitting firms.

For dividend initiating firms, we find that the coefficient on PSCORE is positive (negative) and statistically significant at the 1% level when the announcement represents bad (good) news from an investor's perspective. This supports the hypothesis that the magnitude of the CARs are affected by the extent to which investors anticipate a dividend initiation event. For negative CAR announcements, a higher level of investor anticipation leads to a higher (less negative) price reaction to the announcement. For positive CAR announcements, a higher level of investor anticipation leads to a lower price reaction to the announcement. This result remains consistently significant after accounting for the control variables in (3) and (4). We find similar results for dividend omitting firms. PSCORE is positive (negative) and statistically significant at the 5% (1%) level when the announcement represents bad (good) news from an investor's perspective. Again, our general conclusion is similar for omissions - higher level of investor anticipation attenuates the magnitude of the announcement-period CARs, since the event represents less of a surprise to investors.

[INSERT TABLE 4 HERE]

Taken together, our regression results suggest that a higher degree of investor anticipation, proxied by the propensity to initiate/omit dividends based on publicly available information, attenuates

[9]The dummy variables POSITIVE (NEGATIVE) are dropped from our regressions due to severe multicollinearity between them and their respective interaction term. The correlations between POSITIVE*PSCORE and POSITIVE are -0.869 (-0.872) for initiations (omissions) and the correlations between NEGATIVE*PSCORE and NEGATIVE are -0.918 (-0.735) for initiations (omissions).

the magnitude of announcement period CARs, as these announcements represent less of a surprise for investors. Investors react less to the announcement of a dividend initiation/omission when these events are partially anticipated by them. This result is consistent with investors incorporating the predictability of dividend initiations/omissions into their expectations, and the ultimately the stock price reaction to these announcements. This further motivates the importance of accounting for investor expectations in assessing the stock price effects of dividend initiations and omissions; something which the previous literature on the price impact of dividend initiations and omissions has not accounted for.

5.3 Long-run price reaction to dividend initiations/omissions

Having provided evidence that investors incorporate the predictability of dividend initiations and omissions into their expectations, a natural question that arises is whether investors underreact to the private information that is conveyed by these announcements. We therefore re-examine long-run abnormal returns by matching on the propensity to initiate/omit a dividend, using propensity score matching. Using the predicted likelihood of an initiation/omission obtained from the logit model in table 1, we perform a nearest-neighbor match (with replacement), within each year.

To show the robustness of our matching, we re-run the logit model specification on the post-matched sample. As shown in table 5, we find that all the coefficients lose their significance and the Pseudo-R^2 drops to 0.3%(0.6%) for dividend initiations (omissions). Furthermore, we conduct a balancing test on the matching covariates. The results presented in table 6 show that all the differences in the covariates between the treatment and counterfactual firms are statistically indistinguishable at all levels. Furthermore, the absolute standardized bias of all the covariates for the post-match sample are below 20%, following the rule of thumb proposed by Rosenbaum and Rubin (1985).

[INSERT TABLE 5 HERE]

[INSERT TABLE 6 HERE]

Table 7 presents the Buy and Hold abnormal returns (BHAR) for dividend initiations (Panel A) and omissions (Panel B). The first column shows the BHARs over a three-year post-announcement window. A possible scenario however is that the reported BHARs are confined to particular sub-periods in the return measurement horizon and that the reported estimates are merely due to a compounding effect, when the duration of the drift may be shorter than three years. We therefore split the three-year horizon into three annual horizons - day 2 to day 252, day 253 to day 504 and day 505 to day 756. Furthermore, while our focus is on the surprise component of the announcement, which we measure as the difference between the buy-and-hold returns of the event firms and our matched counterfactual firms, we also calculate buy-and-hold returns by matching on size and market-to-book ratio to compare our estimates against.

For initiations, the buy-and-hold returns calculated using size and book-to-market ratio provide evidence of a seemingly robust price drift of 19.09%, which is significant at the 1% level, over the three-year post-announcement period. Splitting the three-year window into three sub-periods reveals that the apparent drift is significant in the first two years (9% and 3.5% respectively) and loses significance in the third year. However, when matching on the propensity to initiate dividends, we obtain estimates that are substantially lower, with a three-year BHAR is 10.85% that is significant at the 5% level. Further splitting the window into three sub-periods reveals that the post-announcement drift is confined to the year following the announcement, with BHARs of 5.84% that are significant at the 1% level.

Turning to omissions, the BHARs calculated using size and book-to-market ratio provide evidence of a three-year price drift of -26.9%, which is significant at the 1% level. Splitting the window into three sub-periods reveals a seemingly consistent price drift over each of the three years (-12.72%, -6.12% and -9.7% respectively). Dividend omissions therefore, seem to have a more pronounced price effect compared to dividend initiations, as suggested by Michaely, Thaler and Womack (1995). However, this seemingly more pronounced effect for dividend omissions is difficult to reconcile with our finding that dividend omissions are more predictable by investors, and therefore represent less of a surprise to them compared to initiations. If that were the case, then we would expect a smaller price effect for dividend omissions relative to initiations. This becomes clearer when matching on the propensity to omit dividends - while the three-year BHARs of -17.74% are significant at the 1% level, we find that they are insignificant over each of the three years following the announcement. The absence of any significant BHARs over each of our three-year post-event windows suggests the absence of a significant surprise component for dividend omissions in the long run.

Taken together, our findings suggest that dividend omissions are more easily predictable by investors compared to dividend initiations. After controlling for varying degrees in predictability between initiations and omissions, there is no evidence of a long-run price drift for dividend omissions, compared to a one-year price drift for dividend initiations. Investors are therefore less surprised by the dividend omission announcement as compared to dividend initiations.

[INSERT TABLE 7 HERE]

Table 8 shows tests of whether there are changes in the matching covariates during the year of the initiation (omission). This is a further extension to von Eije, Goyal and Muckley (2014), who show significant idiosyncratic and systematic risk changes based on differences-in-differences for dividend initiating and omitting firms. We extend that work to the other variables that have been theoretically or empirically linked to the dividend initiation (omission) decision. The results presented in table 8 confirm that the covariates have changed during the year of the initiation (omission) for both treatment and counterfactual firms. Dividend initiating firms have an increase in profitability (DROA),

total assets (DLNTA) and cash holdings (DCATA), and a decrease in ROA volatility (DVOLROA), long-term debt (DLTDTA), idiosyncratic risk (DIRISK) and systematic risk (DSRISK). Dividend omitting firms have a decrease in profitability (DROA), market-to-book ratios (DMB), and cash holdings (DCATA), and an increase in ROA volatility (DVOLROA), long-term deb (DLTDTA), idiosyncratic risk (DIRISK) and systematic risk (DSRISK). All these changes are significant at the 1% and 5% levels.

[INSERT TABLE 8 HERE]

Tables 9 and 10 show regression analysis of whether contemporaneous (announcement year) differences-in-differences in the covariates between event firms and counterfactual firms influence the price effect of dividend initiations and omissions respectively. We regress the one-year BHARs on the differences-in-differences in the matching covariates. Column 1 presents the unconditional mean of the winsorised BHAR, which are nearly identical to the non-winsorised means reported in table 6. Columns 2 to 10 present the output of univariate regressions of BHARs on each of the matching covariates.

Table 9 presents the regression results for dividend initiations. We find that contemporaneous differences-in-differences in return on assets (ROA), market-to-book ratio (DDMB) and total assets (DDLNTA) positively influence the one-year BHARs. The remaining return effect that is not explained by the differences-in-differences, represented by the constant term, is statistically insignificant, suggesting that the price effects are primarily driven by increases in these covariates during the year of the announcement, rather than underreaction to private information conveyed by the announcement. It is also worth noting that DDROA sufficiently explains the price effects, as indicated by the statistically insignificant constant term obtained from the univariate regression in column 2.[10]

[INSERT TABLE 9 HERE]

Table 10 presents the regression results for dividend omissions. Although the BHARs for dividend omitting firms are statistically insignificant without controlling for differences-in-differences, it could be the case that the confounding effects of the differences-in-differences mask rather than explain the event effect (Kolari, Pynnonen and Tuncez, 2017). As a consequence, controlling for these factors may reveal these hidden effects. We find that contemporaneous differences-in-differences in return on assets, market-to-book ratio, and to some extent long-term debt to total assets, and systematic risk positively influence BHAR. Idiosyncratic risk on the other hand, negatively influences BHAR. The remaining price effect, represented by the constant term, remains statistically insignificant.[11]

[INSERT TABLE 10 HERE]

All in all, our results suggest that post-announcement abnormal returns for dividend initiations are

[10] We repeat the analysis using three-year BHARs as the dependent variable and regressing them on the three-year differences-in-differences. The results are qualitatively similar.

[11] Again, we repeat the same analysis using three-year BHARs as the dependent variable and regressing them on the three-year differences-in-differences. The results remain unchanged.

confined to the year following the announcement, and can be explained by the event-year differences-in-differences in the matching covariates. Dividend omissions on the other hand are not associated with any significant post-announcement return effects, with and without controlling for differences-in-differences in the covariates. Our overall results therefore suggest that investors do not underreact to the private information conveyed by dividend initiations and omissions.

6 Conclusion

Cash dividend initiations and omissions have been associated with substantive stock price impacts (Michaely, Thaler, and Womack, 1995; Boehme and Sorescu, 2002; Liu, Szewczyk and Zantout, 2008). We assess the extent to which investor anticipation about the likelihood of these events can influence these stock price effects.

Our findings are as follows. First, we find that dividend omissions are more predictable by investors than dividend initiations. Second, we find a negative and statistically significant relationship between the degree of investor anticipation and the magnitude of the announcement-period abnormal returns for dividend initiating and omitting firms. Events that are more predictable by investors have, in absolute value, lower announcement period abnormal returns relative to less-predictable events. Third, using propensity score matching to control for investor expectations (von Eije, Goyal and Muckley, 2014), we obtain new estimates for the long-run price effects of dividend initiations and omissions. For dividend initiations, we find a price drift of 5.84% that is confined to one year following the announcement. For dividend omissions, we find no statistically significant price drifts, confirming that dividend omissions are not as much a surprise to investors as initiations. Fourth, we find that the one-year price drift for dividend initiations can be explained by announcement-year changes (differences-in-differences) in profitability, market-to-book ratio and total assets, suggesting that investors do not underreact to the information content of dividend initiations. For omissions, we find that the price effects remain insignificant after correction for contemporaneous differences-in-differences in the matching covariates, which further confirms that there are no long-run price effects following dividend omission announcements.

Our findings therefore, highlight the importance of accounting for investor expectations in eliciting the stock price effects of corporate events. By invoking a simple information asymmetry argument that makes a distinction between the information sets available to the firms' management who self-select to the event and the investors who decide on the stock price effect of the event, matching on the propensity to the event can elicit consistent estimates of the capital market effects of endogenously determined corporate events.

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Table 1: Logit Regressions for dividend initiations and omissions

The dependent variable of columns 1 and 2 is a dummy variable that takes the value of 1 if the firm has initiated (omitted) a dividend during a given year and zero otherwise. LNTA is the natural log of total assets, RETE is retained earnings to total equity, BHAR is the past years buy-and-holder returns, IRISK is idiosyncratic risk, SRISK is systematic risk, ROA is return on assets, MB is market to book ratio, LTDTA is long-term debt to total assets, CATA is cash holdings to total assets, SDROA is the past three-years standard deviation in return on assets, DTA is the relative change in total assets in year t relative to t-1, AGE is the firms age in years, T and T2 represent a linear and quadratic time trend. The risk measures are calculated following Hoberg and Prabhala (2009). All variables are lagged at one year and winsorized at the top and bottom 1%. Industry dummies based on one-digit SIC code are included but have been suppressed to conserve space.

	(1)	(2)
	INITIATE	OMIT
LNTA	0.173***	-0.040
	(0.000)	(0.182)
RETE	0.139***	0.121
	(0.001)	(0.372)
BHAR	0.339***	-1.848***
	(0.000)	(0.000)
IRISK	-22.374***	18.191***
	(0.000)	(0.000)
SRISK	3.154	-0.259
	(0.550)	(0.972)
ROA	9.589***	-14.734***
	(0.000)	(0.000)
MB	-0.394***	-0.184**
	(0.000)	(0.024)
LTDTA	-0.183	1.024***
	(0.351)	(0.000)
CATA	1.017***	-1.371***
	(0.000)	(0.001)
SDTOA	-4.114***	-0.543
	(0.000)	(0.686)
DTA	-0.608***	0.125
	(0.000)	(0.499)
AGE	-0.018***	-0.006***
	(0.000)	(0.009)
T	-0.152***	0.036***
	(0.000)	(0.006)
T2	0.002***	-0.001***
	(0.000)	(0.003)
N	69123	54846
$Pseudo - R^2$	0.1412	0.1773

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Propensity score estimates for dividend initiating (omitting) firms

This table reports the mean, standard deviation, minimum and maximum of the ex-ante probability to initiate (omit) dividends for firms that initiate (omit) dividends as estimated by the logit model. Panel A reports the estimated probability to initiate dividends for our sample of firms that do initiate and for the remaining firms that do not pay dividends. Panel B reports the estimated probability to omit dividends for our sample of firms that do omit and for the remaining firms that continue to pay dividends. Predicted probabilities are in percent.

	Mean (%)	Standard deviation	Minimum	Maximum	N
Panel A: Dividend Initiations					
Initiating firms	5.77	4.90	0.00	35.33	1,397
Non-payers	1.94	2.65	0.00	44.29	67,725
Panel B: Dividend Omissions					
Omitting firms	8.47	6.36	0.00	54.24	884
Payers	1.53	3.03	0.00	61.50	53,957

Table 3: Dividend initiations and omissions announcement CARs

The table presents the announcement cumulative abnormal returns (CARs) for our sample of dividend initiations(omissions) over the period 1967-2015. Announcement CARs are calculated for the three-day window centered around the announcement. The market model is used to estimate normal returns and abnormal returns are the daily realised returns less the predicted normal returns. %Neg (Pos) is the percentage of negative (positive) CARs for dividend initiations (omissions).

	Dividend initiation CAR (-1,+1)	Dividend omission CAR (-1,+1)
Mean (%)	2.83%***	-7.11%***
P-value	0.00	0.00
% Neg (Pos)	37.20%	21.68%
N	1397	884

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Cross-sectional regressions of dividend initiating (omitting) CARs

The table reports results of regressions examining whether investor anticipation of dividend initiations (omissions) affect announcement period CARs. PSCORE is the log-odds propensity score, which is our proxy for the extent of investor anticipation, POSITIVE*PSCORE is an interaction term between a dummy variable that takes the value of 1(0) if CARs are positive(negative) with PSCORE, NEGATIVE*PSCORE is an interaction term between a dummy variable that takes the value of 1(0) if CARs are negative(positive) with PSCORE, SIZE is the natural log of firm's market capitalization in the month-end prior to the announcement, YIELD is the dividend yield, which is calculated as the cash dividend amount paid out at (prior to) the dividend initiation (omission) scaled by the stock price five days prior to the announcement date, RETE is retained earnings to total equity, ROA is the return on assets and ΔIRISK and ΔSRISK are the annual changes in idiosyncratic and systematic risk prior to the announcement of the dividend initiation (omission). The risk measures are calculated for each calendar year following Hoberg and Prabhala (2009). The standard errors are White's heteroskedasticity robust. All variables are winsorized at the top and bottom 1%.

	(1) INITIATIONS	(2) INITIATIONS	(3) INITIATIONS	(4) INITIATIONS	(5) OMISSIONS	(6) OMISSIONS	(7) OMISSIONS	(8) OMISSIONS
PSCORE	0.017***	-0.011***	0.016***	-0.010***	0.010***	-0.032***	0.009**	-0.034***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.028)	(0.000)
POSITIVE*PSCORE	-0.028***		-0.027***		-0.043***		-0.043***	
	(0.000)		(0.000)		(0.000)		(0.000)	
NEGATIVE*PSCORE		0.028***		0.027***		0.043***		0.043***
		(0.000)		(0.000)		(0.000)		(0.000)
SIZE			-0.004***	-0.004***			-0.002	-0.002
			(0.000)	(0.000)			(0.333)	(0.333)
YIELD			0.769***	0.769***			-0.166	-0.166
			(0.000)	(0.000)			(0.516)	(0.516)
RETE			-0.001	-0.001			-0.005	-0.005
			(0.731)	(0.731)			(0.415)	(0.415)
ROA			0.034	0.034			-0.028	-0.028
			(0.171)	(0.171)			(0.708)	(0.708)
ΔIRISK			-0.170	-0.170			-0.130	-0.130
			(0.368)	(0.368)			(0.779)	(0.779)
ΔSRISK			0.023	0.023			0.337	0.337
			(0.926)	(0.926)			(0.665)	(0.665)
CONS	0.026***	0.026***	0.035***	0.035***	-0.067***	-0.067***	-0.059***	-0.059***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	1397	1397	1395	1395	884	884	881	881
R^2	0.409	0.409	0.471	0.471	0.315	0.315	0.318	0.318

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Logit Regressions on the matched sample for dividend initiations and omissions

The dependent variable of columns 1 and 2 is a dummy variable that takes the value of 1 if the firm has omitted (initiated) a dividend during a given year and zero otherwise. LNTA is the natural log of total assets, RETE is retained earnings to total equity, BHAR is the past years buy-and-holder returns, IRISK is idiosyncratic risk, SRISK is systematic risk, ROA is return on assets, MB is market to book ratio, LTDTA is long-term debt to total assets, CATA is cash holdings to total assets, SDROA is the past three-years standard deviation in return on assets, DTA is the relative change in total assets in year t relative to t-1, AGE is the firms age in years, T and T2 represent a linear and quadratic time trend. The risk measures are calculated following Hoberg and Prabhala (2009). All variables are lagged. Industry dummies based on one-digit SIC code are included but have been suppressed to conserve space.

	(1)	(2)
	INITIATE	OMIT
LNTA	0.010	0.009
	(0.777)	(0.808)
RETE	0.019	0.014
	(0.248)	(0.271)
BHAR	0.020	0.136
	(0.657)	(0.334)
IRISK	1.294	1.900
	(0.718)	(0.682)
SRISK	2.021	-7.657
	(0.773)	(0.378)
ROA	0.599	0.586
	(0.251)	(0.348)
MB	0.031	-0.129
	(0.502)	(0.156)
LTDTA	0.130	-0.169
	(0.592)	(0.585)
CATA	0.018	-0.239
	(0.947)	(0.670)
SDROA	0.847	0.866
	(0.267)	(0.441)
DTA	0.021	-0.109
	(0.860)	(0.448)
AGE	0.000	-0.002
	(0.960)	(0.422)
T	-0.003	-0.011
	(0.858)	(0.527)
T2	0.000	0.000
	(0.934)	(0.471)
CONS	-0.180	0.525
	(0.521)	(0.197)
N	2770	1698
$Pseudo - R^2$	0.003	0.006

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Tests on common mean characteristics of treated and counterfactual firms for variables used in the logit analysis

This table reports the differences in the (lagged) matching covariates used in the propensity score matching for initiating (Treatment in panel A) and omitting (Treatment in panel B) firms and their nearest neighbours in the common support region (Counterfactual). ROA is return on assets, SDROA is the standard deviation of the return on assets, LNTA is the natural log of total assets, DTA is the relative change in total assets, RETE is retained earnings to total equity, LTDTA is long-term debt to total assets, CATA is cash holdings to total assets, MB is the market-to-book value, IRISK is idiosyncratic risk, SRISK is systematic risk and BHAR is the 12-month buy-and-hold returns. The risk measures are calculated following Hoberg and Prabhala (2009). Differences is the difference in the matching covariates and %bias is the standardised bias.

	Treatment	Counterfactual	Differences	%bias	T-stat	P-value
Panel A: Dividend Initiations (1385 observations)						
ROA	0.072	0.064	0.007	6.0	1.590	0.112
SDROA	0.038	0.039	0.000	-1.1	-0.290	0.769
LNTA	4.816	4.800	0.018	0.9	0.230	0.815
DTA	0.162	0.154	0.011	2.9	0.770	0.439
RETE	0.353	0.329	0.048	3.0	0.790	0.427
LTDTA	0.173	0.173	0.002	0.4	0.10	0.919
CATA	0.156	0.150	0.006	3.8	0.990	0.323
MB	1.565	1.481	0.079	8.0	0.100	0.919
IRISK	0.030	0.031	-0.001	-4.8	-1.270	0.206
SRISK	0.009	0.009	-0.000	-1.7	-0.450	0.651
BHAR	0.337	0.351	-0.026	-1.8	-0.480	0.635
AGE	21.253	20.020	1.233	10.3	-0.214	0.831
N	2770					
Panel B: Dividend Omissions (849 observations)						
ROA	0.007	0.007	0.000	0.3	0.05	0.957
SDROA	0.041	0.039	0.002	4.4	0.90	0.366
LNTA	5.507	5.562	-0.055	-3.1	-0.64	0.524
DTA	0.064	0.076	-0.011	-5.3	-1.1	0.271
RETE	0.619	0.631	-0.012	-4.4	-0.91	0.363
LTDTA	0.229	0.237	-0.007	-4.6	-0.94	0.345
CATA	0.071	0.072	-0.001	-0.8	-0.17	0.864
MB	1.110	1.140	-0.030	-5.4	-1.11	0.269
IRISK	0.0274	0.0267	0.001	6.4	1.31	0.190
SRISK	0.008	0.007	0.000*	8.0	1.65	0.098
BHAR	-0.142	-0.147	0.006	1.7	0.34	0.733
AGE	31.806	32.357	-0.551	-3.0	-0.62	0.534
N	1698					

Table 7: Dividend initiation and omission Buy-and-hold Abnormal Returns (1967-2015)

This table reports the Buy-and-hold Abnormal Returns (BHAR) for our sample of dividend initiations (Panel A) and omissions (Panel B) over the period 1967-2015 over the three one-year intervals following the announcement. Buy-and-hold Abnormal Returns are calculated as the difference in the buy-and-hold returns between the event firms and their matched counterfactual firms.

	Day 2 to Day 756	Day 2 to Day 252	Day 253 to Day 504	Day 505 to Day 756
Panel A: Dividend Initiations				
Size and Book-to-Market	0.1909***	0.090***	0.0350**	-0.0141
	(0.000)	(0.000)	(0.043)	(0.519)
Propensity Score	0.1085**	0.0584***	-0.0108	-0.010
	(0.041)	(0.007)	(0.637)	(0.612)
N	1,370	1,370	1,307	1,122
Panel A: Dividend Omissions				
Size and Book-to-Market	-0.2690***	-0.1272***	-0.0612***	-0.0970***
	(0.000)	(0.000)	(0.001)	(0.000)
Propensity Score	-0.1774***	-0.0626	0.0037	-0.0413
	(0.008)	(0.114)	(0.889)	(0.153)
N	847	847	797	695

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Fiscal year changes in firm characteristics in the year of initiation or omission (1967-2015)

This table reports the change in characteristics of initiating (Treatment in panel A) and omitting (Treatment in panel B) firms are compared to their nearest neighbors in the common support region (Counterfactual) during the year of the initiation or omission. DROA is the change in Return on Assets, DVOLROA is the change in the three-year standard deviation in Return on Assets, DRETE is the change in Retained Earnings to Total Equity DMB is the change in the Market-to-Book ratio, DLNTA is the change in the natural log of total assets, DLTDTA is the change in long-term debt to total assets, DCATA is the change in cash holdings to total assets, DIRISK is the change in Idiosyncratic risk, DSRISK is the change in Systematic risk. The risk measures are calculated following Hoberg and Prabhala (2009). Differences is the contemporaneous difference-in-differences in firm characteristics.

	N	Treatment	Counterfactual	Differences	T-stat	P-value
Panel A: Dividend Initiations						
DROA	1,366	0.004	−0.025	0.029***	7.21	0.000
DVOLROA	1,370	−0.002	0.004	−0.006***	−2.90	0.004
DRETE	1,366	−0.010	−0.701	−0.691	1.21	0.113
DMB	1,366	0.062	0.021	−0.041*	1.55	0.060
DLNTA	1,367	0.137	0.117	0.020**	2.26	0.012
DLTDTA	1,365	−0.005	0.003	−0.007**	−2.43	0.015
DCATA	1,367	0.004	−0.007	0.011***	3.63	0.000
DIRISK	1,370	−0.002	−0.001	−0.001***	−3.11	0.002
DSRISK	1,370	−0.003	−0.000	−0.003***	−3.13	0.002
Panel B: Dividend Omissions						
DROA	830	−0.063	0.012	−0.076***	−9.46	0.000
DVOLROA	847	0.030	0.004	0.026***	9.05	0.000
DRETE	832	1.338	−0.036	1.374	1.23	0.220
DMB	833	−0.065	0.035	−0.100***	−4.94	0.000
DLNTA	836	−0.051	0.024	−0.075***	−7.31	0.000
DLTDTA	835	0.012	−0.001	0.013**	2.55	0.011
DCATA	835	0.001	0.008	−0.006**	−2.13	0.034
DIRISK	847	0.008	0.001	0.006***	10.67	0.000
DSRISK	847	0.002	0.000	0.002***	3.44	0.000

Table 9: Regression output of Buy-and-hold abnormal returns for dividend initiating firms on contemporaneous differences in difference in firm characteristics

This table reports cross-sectional regressions of Buy-and-hold abnormal returns (BHAR) for dividend initiating firms on contemporaneous (same year) differences-in-differences in firm characteristics. DDROA is the difference-in-difference in return on assets, DDVOLROA is the difference-in-difference in the three-year standard deviation of return on assets, DDRETE is the difference-in-difference in retained earnings to total equity, DDMB is the difference-in-difference in market-to-book ratio, DDLNTA is the difference-in-difference in the natural log of total assets, DDLTDTA is the difference-in-difference in long-term debt to total assets, DDCATA is the difference-in-difference in cash holdings to total assets, DDIRISK is the difference-in-difference in Idiosyncratic risk, DDSRISK is the difference-in-difference in systematic risk. CONS is the intercept term, which is our main variable of interest and is interpreted as the mean BHAR, conditional on no changes in the difference-in-differences in the matching covariates. Risk measures are estimated following Hoberg and Prabhala (2009) for each firm-year. Coefficient estimates are standardized for comparability. The standard errors are Whites heteroskedasticity-robust. All variables are winsorised at the 1% level.

	(1) BHAR	(2) BHAR	(3) BHAR	(4) BHAR	(5) BHAR	(6) BHAR	(7) BHAR	(8) BHAR	(9) BHAR	(10) BHAR	(11) BHAR
DDROA		0.195***									0.141***
		(0.000)									(0.000)
DDVOLROA			-0.081**								-0.013
			(0.011)								(0.702)
DDRETE				0.070**							0.037
				(0.040)							(0.331)
DDMB					0.271***						0.258***
					(0.000)						(0.000)
DDLNTA						0.101***					0.076**
						(0.000)					(0.011)
DDLTDTA							-0.054*				-0.015
							(0.064)				(0.606)
DDCATA								0.053*			0.002
								(0.074)			(0.932)
DDIRISK									-0.106		0.017
									(0.749)		(0.593)
DDSRISK										0.060*	0.022
										(0.053)	(0.455)
CONS	0.058***	0.015	0.053**	0.050**	0.046**	0.051**	0.053**	0.052**	0.058***	0.060***	0.012
	(0.006)	(0.525)	(0.013)	(0.017	(0.026)	(0.016)	(0.013)	(0.015)	(0.006)	(0.005)	(0.632)
N	1,370	1,366	1,370	1366	1,366	1,367	1,365	1,367	1,370	1,370	1,362
R^2	0.000	0.038	0.007	0.005	0.073	0.010	0.003	0.003	0.000	0.004	0.110

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Regression output of Buy-and-hold abnormal returns for dividend omitting firms on contemporaneous differences in difference in firm characteristics

This table reports cross-sectional regressions of Buy-and-hold abnormal returns (BHAR) for dividend omitting firms on contemporaneous (same year) differences-in-differences in firm characteristics. DDROA is the difference-in-difference in return on assets, DDVOLROA is the difference-in-difference in the three-year standard deviation of return on assets, DDRETE is the difference-in-difference in retained earnings to total equity, DDMB is the difference-in-difference in market-to-book ratio, DDLNTA is the difference-in-difference in the natural log of total assets, DDLTDTA is the difference-in-difference in long-term debt to total assets, DDCATA is the difference-in-difference in cash holdings to total assets, DDIRISK is the difference-in-difference in Idiosyncratic risk, DDSRISK is the difference-in-difference in systematic risk. CONS is the intercept term, which is our main variable of interest and is interpreted as the mean BHAR, conditional on no changes in the difference-in-differences in the matching covariates. Risk measures are estimated following Hoberg and Prabhala (2009) for each firm-year. Coefficient estimates are standardized for comparability. The standard errors are Whites heteroskedasticity-robust. All variables are winsorised at the 1% level.

	(1) BHAR	(2) BHAR	(3) BHAR	(4) BHAR	(5) BHAR	(6) BHAR	(7) BHAR	(8) BHAR	(9) BHAR	(10) BHAR	(11) BHAR
DDROA		0.150***									0.149**
		(0.001)									(0.015)
DDVOLROA			-0.086**								-0.004
			(0.033)								(0.935)
DDRETE				0.013							0.011
				(0.729)							(0.779)
DDMB					0.128***						0.161***
					(0.000)						(0.000)
DDLNTA						0.093**					0.051
						(0.022)					(0.228)
DDLTDTA							0.036				0.066*
							(0.258)				(0.050)
DDCATA								0.015			0.016
								(0.698)			(0.673)
DDIRISK									-0.181***		-0.144***
									(0.000)		(0.002)
DDSRISK										0.090*	0.083*
										(0.067)	(0.069)
CONS	-0.063*	0.012	-0.032	-0.053	-0.026	-0.032	-0.058*	-0.055*	-0.059*	-0.063*	0.022
	(0.056)	(0.763)	(0.357)	(0.101)	(0.469)	(0.350)	(0.077)	(0.091)	(0.079)	(0.054)	(0.590)
N	847	830	847	832	833	836	835	835	847	847	825
R^2	0.000	0.022	0.007	0.000	0.016	0.009	0.001	0.000	0.032	0.008	0.066

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$