HOW DO DIVIDEND ANNOUNCEMENTS AFFECT BONDHOLDER AND SHAREHOLDER WEALTH?

by

JASON L. TURKIELA

A DISSERTATION

Presented to the Department of Finance
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

September 2014

DISSERTATION APPROVAL PAGE

Student: Jason L. Turkiela

Title: How Do Dividend Announcements Affect Bondholder and Shareholder Wealth?

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Finance by:

Ro Gutierrez	Chair
John Chalmers	Core Member
Zhi (Jay) Wang	Core Member
Wesley Wilson	Institutional Representative

and

J. Andrew Berglund	Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

Degree awarded September 2014

DISSERTATION ABSTRACT

Jason L. Turkiela

Doctor of Philosophy

Department of Finance

September 2014

Title: How Do Dividend Announcements Affect Bondholder and Shareholder Wealth?

Dividend payments to shareholders can create conflicts between debt and equity investors as these payments can expropriate wealth from bondholders to shareholders. However, dividend payments can also serve as a signal regarding firms' future earnings. Utilizing both improved bond event study techniques as well as a conditional event study model to control for self-selection and the presence of confounding earnings announcements, I find that, on net, dividend increases represent a transfer of wealth from debtholders to shareholders. Nevertheless, bondholders react more favorably to larger dividend changes consistent with the presence of a positive signaling effect. The conditional event study approach also provides the ability to test whether managerial hesitancy in cutting dividends may represent an additional source of expropriation. My results indicate that while bondholders are clearly harmed by these implicit dividend increases, evidence in support of shareholders' gains is mixed.

CURRICULUM VITAE

NAME OF AUTHOR: Jason L. Turkiela

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, OR
Central Michigan University, Mount Pleasant, MI
Michigan State University, East Lansing, MI

DEGREES AWARDED:

Doctor of Philosophy, Finance, 2014, University of Oregon
Master of Arts, Economics, 2008, Central Michigan University
Bachelor of Arts, Economics, 2004, Michigan State University

AREAS OF SPECIAL INTEREST:

Corporate Debt

Payout Policy

PROFESSIONAL EXPERIENCE:

Treasury Analyst, Cherokee Insurance Company, January 2005 – August 2007

Rates Analyst, Central Transport, Inc., November 2004 – January 2005

GRANTS, AWARDS, AND HONORS:

Graduate Teaching Fellowship, University of Oregon, 2009 - 2014

Doctoral Travel Grant, American Finance Association, 2013

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my dissertation committee, Ro Gutierrez (Chair), John Chalmers, Jay Wang, and Wes Wilson, for their guidance and feedback throughout this process. Special appreciation is given to Diane Del Guercio for the extensive amount of time and effort she provided to help improve previous versions of this study. Additionally, I am grateful to Julian Atannasov, Larry Dann, Pei-Hui Hsu, Hai Tran, and seminar participants at Washington State University for their helpful comments.

Most importantly, I would like to thank my parents, Gary Turkiela and Michelle Vasley, my siblings, Rachel and Michael Turkiela, my in-laws, David and Cathy Shield, and my wife and daughter, Christina and Evelyn Turkiela, for all of the sacrifices they have made to provide me this opportunity.

TABLE OF CONTENTS

Chapter Page

LIST OF FIGURES

Figure | Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

Bonds and equity possess option-like payoffs such that shareholders generally wish to increase the risk of the firm whereas bondholders prefer to minimize downside risk (Merton, 1974). Given the differing nature of these securities, debtholders and shareholders can come into conflict with one another regarding the optimal management of a leveraged firm. Commonly mentioned examples of this behavior include the asset substitution problem raised by Jensen and Meckling (1976) and the debt overhang issue explored by Myers (1977). A third example, and the focus of this study, is the transfer of wealth from bondholders to shareholders through dividend payments.

Dividends can potentially transfer wealth from bondholders to shareholders by increasing the default risk of the outstanding debt (Galai and Masulis, 1976). As noted by Lease, John, Kalay, Loewenstein, and Sarig (2000), by paying dividends, stockholders appropriate assets (i.e. cash) shared by all securityholders to their exclusive control. This harms debtholders as it not only increases the likelihood of default, but also lowers the amount of assets that can be used for repayment should forfeiture occur. As bondholders are not compensated for the increased riskiness of their claims, they lose wealth when dividends are paid, while shareholders ultimately gain.

However, it is not necessarily the case that dividend payments should be interpreted negatively by bondholders. The information content of dividends hypothesis (e.g. Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985) posits that, in the presence of asymmetric information, managers can use dividend increases as a credible mechanism to communicate to external investors that earnings will be higher in the future. Therefore, a positive change in dividends paid may indicate an increase in the likelihood of repayment. While the empirical evidence in favor of the information content of dividends hypothesis has been mixed (see Kalay and Lemmon, 2007, for an overview), recent work by Grullon, Michaely, and Swaminathan (2002), DeAngelo, DeAngelo, and Stulz (2006), and Denis and Osobov (2008) has found support for the life-cycle hypothesis of dividends. The life-cycle hypothesis suggests that as companies mature, their ability to generate stable cash flows outpaces the number of profitable investment opportunities available to them. Consequently, they disburse their free cash flows as dividends. Thus, regardless of whether dividend increases signal the rise of earnings growth or stability of firms' future permanent income, dividend announcements have the potential to be positive news for bondholders.

To date, previous work has reached differing conclusions on how bondholders view dividend announcements. For example, Woolridge (1983) and Handjinicolaou and Kalay (1984) execute event studies and find that bondholders experience positive, albeit statistically insignificant, abnormal returns from the announcement of dividend increases, but respond in a negative and statistically significant fashion to dividend decreases. As these studies find that abnormal bond returns move in the same direction as abnormal stock returns, their results are consistent with the signaling hypothesis. However, in line with the wealth transfer hypothesis and contrary to theoretical models which suggest that larger dividend changes should send more credible signals to market participants, Dhillon and Johnson (1994) find that the bond market reacts negatively to dividend initiations and increases greater than 30% in magnitude and positively to dividend omissions and decreases.

Aside from the ambiguity surrounding the conclusions reached in prior studies, the ability to generalize the results from the extant literature is further complicated by two factors. First, a number of substantial changes have taken place in both payout policy and corporate governance since the 1970's, the sample period examined by previous work. As bondholders' responses to dividend announcements are likely to depend on these conditions, a reinvestigation of how debtholders respond to these events seems warranted. This is especially pressing given that many of these changes may adversely affect bondholders. For instance, Fama and French (2001) find that while there are now fewer firms paying dividends, the real amount of aggregate dividends has steadily increased over time. Moreover, as noted by DeAngelo, DeAngelo, and Skinner (2004), dividend payment has become increasingly concentrated in large, mature industrial firms where asymmetric information should not be a pressing concern. From the perspective of bondholders, these developments may prove worrisome as they indicate that while the need to use dividends as a signaling device has lessened, firms are nevertheless paying out dividends at higher levels. Moreover, Skinner (2008) shows that share repurchases have recently become the predominant method of corporate payout, with only a few firms now paying dividends exclusively. Thus, given that shareholders are already distributing cash to themselves in the form of share repurchases and repurchases offer distinct advantages relative to dividends (e.g. greater flexibility, tax treatment), the announcement of a dividend increase may be viewed by debtholders as simply an additional wealth grab by equityholders.

Signaling is not the only motivation that the payout literature has proposed for issuing dividends. Indeed, a large literature has emerged which suggests that dividend payments are an effective means of reducing the agency problems associated with free cash flow (e.g. Easterbrook, 1984). However, it is not immediately obvious that corporate governance mechanisms that have developed to protect shareholders' interests necessarily safeguard bondholders. For example, recent work (e.g. Klock, Mansi, and Maxwell, 2005; Chava, Kumar, and Warga, 2010) has shown that debtholders prefer firms with higher levels of managerial entrenchment, as it insulates them from costly anti-takeover measures[1] and results in the use of less leverage (Garvey and Hanka, 1999). Directly related to dividend policy, Francis, Hasan, John, and Song (2011) use the changes in state-level anti-takeover laws as a quasi-natural experiment to show that increases to managerial entrenchment led to lower dividend payout levels. This suggests that another reason bondholders may favor entrenched management is their lower propensity to pay out.[2] Consequently, the general

[1]See Dann and DeAngelo (1988), Denis (1990), Heron and Lie (2006) and Billett and Xue (2007) for evidence of payouts as a takeover defense mechanism. Also, see Warga and Welch (1993) and Billett, King, and Mauer (2004) for evidence of bondholder losses following successful takeover bids.

[2]It is worth noting that Hu and Kumar (2004) find that more entrenched managers are more likely to pay out and have higher payout levels. The authors attribute this to entrenched managers preempting any type

decrease in managerial entrenchment over time may alter how bondholders perceive dividend payments.

Other areas of corporate governance have also undergone substantial changes over time, such as the increased presence of institutional investors and modifications to how managerial compensation is awarded. As Aghion, Van Reenen, and Zingales (2013) note, in 1970 institutions only owned 10% of publicly-traded equity, but by 2006, they owned nearly 60%. Since recent work has shown that concentrated institutional ownership can adversely affect bondholders (Bhojraj and Sengupta, 2003) and can shape payout policy (Desai and Jin, 2011; Crane, Michenaud, and Weston, 2012; Gaspar, Massa, Matos, Patgiri, and Rehman, 2013), exploring how their increased presence has affected debtholders through dividend policy seems worthwhile. Likewise, executive compensation may affect how debtholders view dividend payments. Relative to the 1970's, there has been sizable growth in the use of equity-based compensation over time (Frydman and Saks, 2010). The impetus behind this shift is that equity-based compensation is thought to better align managers' and shareholders' interests. However, doing so comes with the potential problem of exacerbating the agency costs of debt (John and John, 1993).[3] As executive compensation packages are multifaceted, it is not easy to succinctly state how these changes may affect bondholders' perceptions of dividend payments. Even so, given its potential to change managers' incentives, an investigation seems prudent.

The second reason that it is difficult to extrapolate the results of previous studies to bondholders today is that prior work was based on small, hand-collected samples of bond prices from the mid-1970's. Additionally, as noted by Bessembinder, Kahle, Maxwell, and Xu (2009), these studies often focused on a "representative bond" method where only one

---

of disciplinary takeover. However, Hu and Kumar do not attempt to control for the possible endogeneity between the dividend payout decision and the level of entrenchment.

[3]Consistent with this idea, Brockman, Martin, and Unlu (2010) note that credit rating agencies often consider executive compensation in making their credit assessments as it directly affects managers incentives in setting firm policy, while Kuang and Qin (2013) actually show that increases in equity-based compensation lead to credit rating downgrades. Finally, Billett, Mauer, and Zhang (2010) show that announcements of equity-based compensation tend to be good news for shareholders and negative news for bondholders.

bond per firm was selected for analysis. This approach was obviously understandable given the difficulty in obtaining reliable daily bond prices at the time. Nonetheless, it clearly has the potential to misrepresent the true wealth effect generated from a dividend announcements since companies, such as the large, mature types of firms that populate the universe of dividend payers, often have multiple debt issues outstanding. However, the recent availability of transaction-level bond price data through the Trade Reporting and Compliance Engine (TRACE) coupled with the newly developed bond event study methodology spearheaded by Bessembinder et al. (2009) should provide a more comprehensive assessment of the wealth effects caused by dividend announcements.

Given the aforementioned issues, the goal of this study is to reassess how dividend announcements affect bondholders' wealth using data from the TRACE database from 2002 to 2012. In order to accomplish this task, I will first focus on performing an event study to establish whether the wealth transfer or signaling effect dominates on net. While this approach is how previous studies have typically proceeded, it does not provide a complete picture of the potential wealth effects caused by dividend announcements. For example, categorizing abnormal returns into bins based on dividend announcement type ignores the cross-sectional variation in the abnormal returns due to factors such as the magnitude of the announced dividend change. This point is particularly germane as previous authors have noted that the wealth transfer and signaling hypotheses are not mutually exclusive; it is possible for both effects to simultaneously exist. Thus, finding that abnormal bond returns earned at dividend increases are negative on average does not preclude the possibility that dividends do not also serve a signaling function and vice versa. Therefore, it seems reasonable to conduct a regression-based analysis to further examine any conclusions reached from the event study results.

The use of a regression-based analysis is also beneficial in the context of the current study as there are two pertinent issues that traditional event study techniques are ill-equipped to handle. The first concern is that the decision of the firm's management to modify its dividend payout is not a random outcome; rather, it is one that managers purposefully self-select.[4] For example, the results of Brav, Graham, Harvey, and Michaely (2005) indicate that over two-thirds of the Chief Financial Officers surveyed indicated that a careful consideration of the permanence of future earnings was critical in making a dividend payout decision. The self-selection issue has direct consequences for the abnormal returns earned by securityholders at dividend announcements. If the event is largely anticipated by securityholders, the announcement period abnormal returns will be muted since the value-relevant information from the event will have largely been priced into the security. However, if the actual announcement differs from the market's expectation, then larger abnormal returns will be experienced. Thus, predicting the market's expectations regarding the likelihood of a dividend change based on observables related to the firm's financial condition, governance mechanisms, and financial contracting (i.e. the presence of restrictive dividend covenants) environment is crucial in properly understanding how dividend announcements affect the wealth of bondholders and shareholders.

Secondly, as has been recognized since at least Aharony and Swary (1980), dividend news is often released near quarterly earnings announcements. As prior research (e.g. Easton, Monahan, and Vasvari, 2009) has shown that the corporate debt market responds to earnings announcements, the presence of these secondary announcements raises the concern about confounding information invalidating the event study results. While the customary advice would be to drop the dividend announcements with corresponding earnings announcements nearby, this is problematic for two reasons. First, as dividends and current earnings are thought to provide a signal regarding the firm's future earnings, the fact that managers choose to pair both types of information does not seem coincidental. Previous work has demonstrated that dividend and earnings announcements have a corroborative relationship. For example, both Ofer and Siegel (1987) and Ely and Mande (1996) find that analysts use information from dividend announcements to update their predictions of fu-

[4] See Li and Prabhala (2007) for recent overview of self-selection models in corporate finance.

ture earnings while Kane, Lee, and Marcus (1984) find direct evidence of a joint signaling effect in abnormal stock returns and Datta and Dhillon (1993) find a similar effect in the bond market. These results, coupled with the fact that managers often strategically time both earnings (e.g. Penman, 1984) and dividend announcements (Kalay and Loewenstein, 1986), suggests that the joint announcement decision should be controlled for rather than ignored. Second, as noted by Nayak and Prabhala (2001), the elimination of confounding observations may not eliminate bias from the sample. Specifically, if the market expects a joint announcement to occur, then its absence (i.e. a "non-event") may cause a price reaction. Thus, the seemingly "clean" sample may contain multiple instances of these non-events and be biased itself. This point is particularly relevant given that Venkatesh and Chiang (1986) find an increase in asymmetric information following the absence of an anticipated joint dividend and earnings announcement suggesting that investors respond to so-called non-events.

The use of a self-selection model also allows me to explore a form of wealth transfer that has been suggested in the literature, but never explicitly tested. Specifically, as discussed by Allen and Michaely (2003), the idea that managers will attempt to systematically expropriate bondholders by paying shareholders excessively high dividends seems somewhat implausible given reputational costs and the possibility of having to return to the corporate debt market sometime in the future (e.g. John and Nachman, 1985). However, Allen and Michaely suggest that a form of *passive expropriation* may be possible.

Given the well-documented reluctance of managers to cut dividend payments, managerial inaction in cutting an unsustainable dividend may create a transfer of wealth from bondholders to shareholders. If capital market participants are anticipating that a firm will cut its dividend, the failure to do so will result in an *implicit* dividend increase. Hence, it is a non-event that the market reacts to rather than an explicit action on the part of managers. Both survey (Brav, Graham, Harvey, and Michaely, 2005) and empirical (Daniel, Denis, and Naveen, 2010) evidence suggests that managers may take actions to maintain dividend payments that are detrimental to bondholders, such as taking on additional debt or cutting investment expenditures. Traditional event study techniques would not be equipped to deal with measuring such non-events. However, given that the conditional event study methodology employed in this study measures the difference between the announcement the firm chooses and what the market was anticipating, measuring these types of passive actions is fairly straightforward.

Overall, the results from my event study tests demonstrate that dividend increases represent a transfer of wealth from bondholders to shareholders. For example, at the [-2,+2] event window, debtholders lose -7.52 basis points (bps) on average, while shareholders gain 56.03 bps. While a loss of -7.52 bps may seem modest, as the average market value of debt for firms in my sample is $8.44 billion, the typical loss of bondholders' wealth at these announcements is approximately $6.34 million. Thus, while dividend increases do not represent pure wealth transfers, as shareholders gains outstrip bondholders' losses, at least some portion of the value earned by shareholders appears to be expropriated from debtholders. The event study results from the announcement of a dividend cut yield inconclusive results. In smaller event windows (e.g [-1,+1]), dividend cuts appear to be reverse wealth transfers with bondholders earning positive, albeit statistically insignificant, abnormal returns while shareholders clearly lose. Yet, in longer windows (e.g. [-3,+3]), bondholders appear to lose wealth as well, although the results are again statistically insignificant. However, additional evidence from dividend omissions seems to hint at dividend reductions as being negative signals. As my results indicate that dividend increases are wealth transfers on net and dividend decreases show no consistent evidence of being negative signals for bondholders, my findings appear to contradict the conclusions reached by Handjinicolaou and Kalay (1984).

I next estimate a conditional event study model similar to the one designed by Nayak and Prabhala (2001) to handle managers' self-selection into particular dividend and earnings announcement decisions. The results from the conditional event study support the findings from the traditional event study. Specifically, the conditional model finds that unexpected dividend increases cause bondholders to lose wealth while simultaneously benefiting shareholders. However, the conditional event study regressions also demonstrate that both investors' abnormal returns are increasing in the size of the announced dividend change. Thus, my results indicate that larger dividend increases are responded to more positively than smaller dividend increases and larger dividend cuts yield more negative abnormal returns than smaller dividend decreases. Taken together, these results suggest that while dividend increases are wealth transfers on average, the transfer of wealth is partially mitigated by the signaling effect. These findings are consistent with theoretical signaling models (e.g. Miller and Rock, 1985) which posit that the strength of the signal released at a dividend announcement is a function of the dividend change. This result is also noteworthy since it differs from prior studies examining bondholders' reactions to alternative payout mechanisms, such as share repurchases (Maxwell and Stephens, 2003) and spin-offs (Maxwell and Rao, 2003). Similar to dividend payments, these alternative payout schemes are thought to possibly contain both signaling and wealth transfer effects. However, these studies demonstrate that these events represent a transfer of wealth on average and that bondholders' losses grow as the size of the payout increases. Thus, it seems that the implicit costliness of maintaining a quarterly dividend payment makes dividend policy a more credible signaling mechanism to bondholders relative to more transitory payout schemes.

To examine the passive expropriation hypothesis, I focus on the subsample of dividend announcements that feature no change in the dividend payout. As passive expropriation is caused by managerial inertia in cutting dividends, it should be present during announcements where the firm states that it will not modify its established dividend level, despite the fact that the market predicts that it will lower it. As the conditional event study approach produces a measure of the market's surprise relative to the actual dividend announcement, it is possible to use this measure to test of passive expropriation. Consistent with passive expropriation, I find that bondholders in firms that surprisingly declare that their dividend level will not change when a dividend cut is anticipated earn lower abnormal returns (-7.36 bps) over the [-2,+2] event window than other bondholders (-1.67 bps). However, while shareholders of firms that maintain their payout level when a cut is expected earn higher abnormal returns (17.11 bps) compared to shareholders (0.69 bps) in firms that are not expected to lower their dividend payment, the results are weak in terms of statistical significance. To place the results for the bond market in context, note that the wealth loss generated by the implicit dividend increase caused by passive expropriation is only slightly less than the magnitude of the wealth loss experienced at an actual dividend increase announcements (i.e. -7.52 bps). Further testing finds that the use of debt to maintain an otherwise unsustainable dividend level exacerbates bondholders' losses while simultaneously augmenting shareholders' gains, suggesting that it may be one mechanism through which passive expropriation reliably occurs. Therefore, passive expropriation appears to be a real phenomenon that adversely affects bondholders while concurrently benefiting shareholders under certain circumstances.

My study contributes to three different literatures. First, it adds to the extant work on dividend policy in general. While a substantial amount of attention has been dedicated to how dividend policy affects shareholders, there is a relative dearth of evidence on how dividend policy affects debtholders' wealth. This is especially concerning given the wide-spread changes that have occurred since prior studies were completed. Therefore, the current study aims to provide an updated, comprehensive account of how bondholders react to dividend announcements in order to remedy this gap. Second, my study augments the corporate governance literature, and more specifically, the literature pertaining to shareholder-bondholder conflicts. To date, this area has largely focused on risk-shifting (i.e. investment policy) concerns, however my study is one of a select few to extend this analysis to payout policy. Furthermore, my study is novel given that it is the first to test for wealth transfers arising from managerial inertia in cutting or suspending dividends. The third area that my study supplements is the use of conditional event study techniques. To my knowledge, this is the first study to apply the conditional event study framework to a bond event study. While the conditional event study procedure seems to largely verify the conclusions reached through the traditional event study approach, it nevertheless highlights the usefulness of conditional models in testing for the presence of value-relevant "non-events".

The remainder of this paper is structured as follows: In Chapter II, I outline how the event sample is formed, discuss the methodology used for the event studies in both the bond and stock markets, and introduce the conditional event study regression framework. In Chapter III, I present the event study results. In Chapter IV, I discuss the findings from the conditional event study. Chapter V investigates the passive expropriation hypothesis and Chapter VI concludes.

CHAPTER II

DATA AND METHODOLOGY

In the first section, I discuss how the event sample is formed and highlight the prevalence of joint dividend and quarterly earnings announcements within the sample. In the second section, I provide an overview of how the event studies for both the bond and stock markets are executed. In the third section, I introduce the conditional event study model I will employ to deal with managers' non-random choice of dividend (i.e. whether to increase, decrease, or leave the dividend payout level unchanged) and earnings announcement (i.e. whether to announce earnings joint with dividends or not) type.

Event Sample Construction

The sample of dividend announcing firms comes from the Center for Research in Security Prices (CRSP) events file. To be included in the sample, a firm must possess a share code of either 10 or 11 (i.e. the firm must be incorporated in the United States and cannot be either a real estate investment trust or closed-end fund) and announce the payment of an ordinary cash dividend at a quarterly frequency (i.e. CRSP distribution code 1232). To match the coverage of the daily bond return data discussed below, the sample period spans from the start of July 2002 to the end of December 2012. Additionally, I require that there be at least 30 calender days and no more than 184 calendar days between subsequent quarterly dividend announcements.[5]

Besides providing announcement dates, the CRSP events file also supplies the announced dividend amount. I modify the reported dividend amount to account for non-cash distributions such as stock splits and spin-offs and use the adjusted dividend amount ($Div_{i,t}^{adj}$) to determine the percentage change in dividends paid ($\Delta Div_{i,t}$) as:

[5] I select a maximum of 184 days as it is the maximum number of days that can pass between the beginning of one quarter to the end of the following quarter.

$$\Delta Div_{i,t} = \left(\frac{Div_{i,t}^{adj} - Div_{i,t-1}^{adj}}{Div_{i,t-1}^{adj}} \right) * 100 \tag{1}$$

As shown in Panel A of Table 1, the sample is comprised of 8,611 dividend announcements made by 503 different firms. Breaking down the announcements by the direction of dividend change, it is obvious that the overwhelming majority of observations (7,006) feature no change in the dividend payout level whatsoever, which is consistent with the notion that managers are generally adverse to modifying dividend policy unless material shifts in the firm's permanent income have occurred. Conditional on a positive change occurring (1,521 observations), the average increase in the quarterly dividend is 31.31% on average with a median change of 10.84%. Confirming prior findings of managerial reluctance to cut dividends, there are only 84 dividend decreases in the sample; however, despite their relative scarcity, the average reduction of -57.78% (median cut = -50.00%) is substantial in magnitude.

Confounding Earnings Announcements

As earlier studies (e.g. Aharony and Swary, 1980) have indicated, one of the most pervasive facts regarding dividend announcements is that they are often coupled near quarterly earnings announcements. As shown in Figure 1, this holds true in my sample as well since nearly 12% of firms appear to release dividend and earnings announcements on the exact same day. Extending this further, within the [-4,+4] dividend announcement event window, approximately 38% of sample firms have chosen to make a quarterly earnings announcement and in the [-7,+7] event window, around 48% of firms have made a joint announcement in quarter *t*.

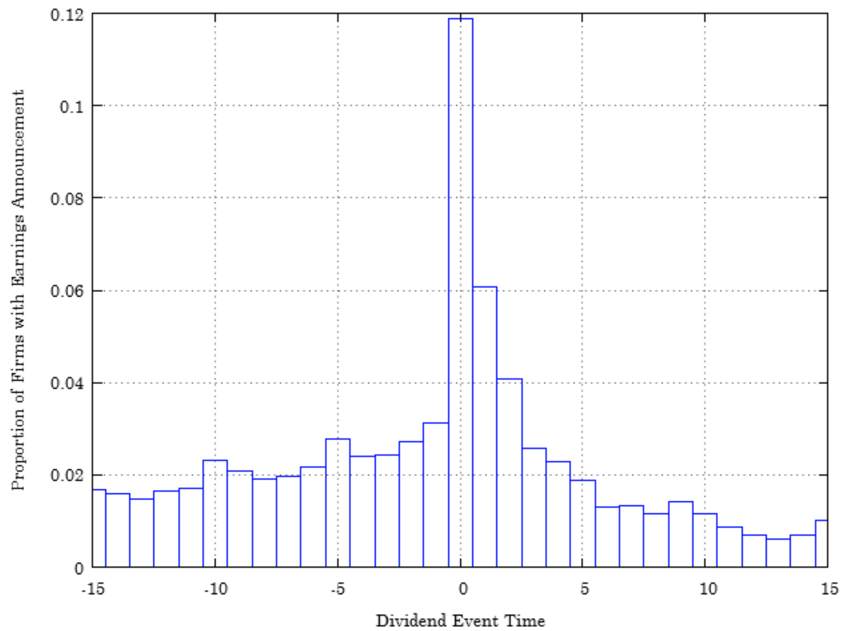
Table 1: Dividend Event Summary Statistics. Summary statistics for the intersection of firms covered by both the CRSP and TRACE databases are presented above. In Panel C, the bond ratings on the left-hand side are from Moody's while the those on the right-hand side are from either Standard and Poor's or Fitch. The bond classifications in Panel C include any subranking included within the category (e.g. the Aa/AA group includes bonds rated by Moody's as Aa1, Aa2, Aa3 and bonds rated by Standard and Poor's or Fitch as AA+, AA, or AA-).

Panel A. Dividend Summary Statistics			
Event	**Observations**	**Mean Percentage Change**	**Median Percentage Change**
Positive Change	1,521	31.31%	10.84%
Negative Change	84	-54.53%	-50.00%
No Change	7,006	0.00%	0.00%
	8,611		
Number of Firms	503		

Panel B. Dividend Events by Year			
Year	**Positive Change**	**Negative Change**	**No Change**
2002	7	1	74
2003	53	2	344
2004	104	1	475
2005	168	7	736
2006	176	1	720
2007	157	3	696
2008	144	12	707
2009	110	27	806
2010	180	6	835
2011	211	9	845
2012	211	10	774
	1,521	84	7,066

Panel C. Dividend Events by Bond Rating			
Bond Rating	**Positive Change**	**Negative Change**	**No Change**
Aaa/AAA	29	0	92
Aa/AA	64	1	220
A/A	511	7	1,888
Baa/BBB	644	39	2,918
Ba/BB	184	24	1,141
B/B and below	89	13	747
	1,521	84	7,066

Figure 1: Proportion of Firm that Jointly Announce Both Dividends and Earnings in Dividend Event Time. Event date zero is the announcement of a quarterly dividend. The height of the boxes indicate the proportion of firms with an earnings announcement on the given event date.



Given the proximity of these events, executing an event study on dividend announcements becomes more difficult as the reaction to the earnings announcements obscures the amount of change in market value that occurs due to the dividend announcement. Traditionally, the method to deal with confounding events would be to eliminate announcements contaminated by the secondary announcement from the sample. However, this method has three disadvantages. First, as discussed by Kane et al. (1984), dividends and earnings only provide crude signals about the firm's future earnings. One manner for managers to improve the quality of the signal they transmit is to strategically choose to release the information together. This way investors have the opportunity to immediately determine whether the individual signals corroborate or conflict one another. Consistent with this idea, Kane et al. (1984) and Datta and Dhillon (1993) find evidence of a corroborative effect (e.g. positive (negative) dividend and earnings information released together generates higher (lower) returns than either event announced separately) in the stock and bond markets respectively. The interplay between these two signaling mechanisms is important to consider in the current study since certain signaling outcomes will affect bondholders and shareholders differently. For example, the announcement of a dividend increase coupled with the firm missing analysts' expectations may be the type of scenario where a wealth transfer is most likely to occur. Therefore, it seems beneficial to control for the joint earnings decision rather than simply discarding these observations.

One possible objection that could be raised is that the decision to joint announce earnings and dividend information is not a choice that managers make for signaling purposes, rather it is one that firms simply perform quarter after quarter. To provide some initial evidence that the joint announcement decision acts as an additional signaling mechanism, in Table 2, I determine the proportion of sample firms that choose to jointly announce dividend and earnings together in quarter *t* and then subsequently choose to make joint announcements in the following quarters. As can be seen, while there does appear to be a non-trivial number of firms that consistently make joint announcements (about 15% of firms jointly announce in quarters *t*, *t+1*, *t+2*, *t+3*, and *t+4*), there is also a substantial reduction as each quarter progresses, suggesting that managers do select in and out of the joint announcement decision.

The second reason for keeping these observations comes from Nayak and Prabhala (2001). As the authors point out, expunging confounding observations from an event study may not cure the problem of bias; but rather, only serve to introduce a new type into the sample. Namely, as market participants are likely to create expectations about joint announcements occurring, the *non-occurrence* of a predicted event can actually cause investors to react. The findings of Venkatesh and Chiang (1986) confirm this fact for dividend and earnings announcements as the authors find that asymmetric information increases following expected joint announcements that do not occur. As traditional event study methods are not equipped to determine if a particular event was expected to happen, non-events can consequently contaminate a supposedly clean sample. Therefore, they recommend the use

Table 2: Stability of Joint Dividend and Earnings Announcements Decisions Over Time. The table below lists the proportion of sample firms which choose to jointly announce both dividend and earnings information during the [-7,+7] interval in dividend event time across consecutive quarters.

Joint Announcement in quarter *t*	Joint Announcement in *t* and *t-1*	Joint Announcement in *t*, *t-1*, and *t-2*	Joint Announcement in *t*, *t-1*, *t-2*, and *t-3*	Joint Announcement in *t*, *t-1*, *t-2*, *t-3*, and *t-4*
47.68%	29.89%	22.04%	17.43%	15.40%

of conditional event study methods for dealing with the issue of joint announcements. Following their suggestion, I employ a conditional event study approach in this study which is described in more detail in a subsequent section.

Event Study Methodology

The daily stock return data necessary for the event study come from the CRSP daily returns file. Abnormal stock returns ($AR_{i,t}^{stock}$) are calculated as:

$$AR_{i,t}^{stock} = r_{i,t}^{stock} - \hat{\beta}_i r_{vw,t} \tag{2}$$

where $r_{i,t}^{stock}$ is the daily return for firm i on day t, $\hat{\beta}_i$ is firm i's estimated beta, and $r_{vw,t}$ is the daily return of the CRSP value-weighted market index. As noted by Kothari and Warner (2007), the choice of benchmark has little effect on the results of short-run event studies, therefore the abnormal returns calculated in excess of the market model (Brown and Warner, 1985) should not differ materially from abnormal returns derived from more complicated benchmarking schemes.

Daily bond returns are formed using transaction-level data from the TRACE database. As discussed by Bessembinder, Maxwell, and Venkataraman (2006), the TRACE database was initiated by the National Association of Securities Dealers on July 1, 2002 at the behest of the Securities and Exchange Commission as a means of improving the transparency of the secondary bond market. At its inception, the TRACE database only covered 498 bond issues, but as of February 2005, it now covers nearly all over-the-counter bond transactions. Panel B of Table 1 lists the number of dividend events by year for the intersection of firms tracked by both the CRSP and TRACE databases. The limited coverage of the TRACE database prior to 2005 is evident given the lower number of transactions in 2002, 2003, and 2004. Furthermore, the consequences of the recent financial crisis are clearly discernible as the number of positive dividend changes fell, and the number of dividend cuts increased, throughout 2008 and especially 2009.

Daily bond returns are formed using transaction-level data from the TRACE database from July 2002 to December 2012. To calculate daily bond returns, I largely follow the procedure established by Bessembinder et al. (2009). I begin by first dropping transactions involving the debt of financial firms and bond issues with option-like features, such as convertible debt and putable bonds, although it is worth noting that I do retain callable bonds in my sample as they constitute a large percentage of the issues (around 47%) in my sample. I also eliminate transactions in TRACE which are under $100,000 in volume as well as all canceled, corrected, commission, and duplicate trades.

As a particular bond issue may trade multiple times in a given day, and therefore have several recorded prices, I form a single daily price for each bond by weighting each transaction price by the dollar amount of its trade divided by the total daily dollar amount of activity for that issue. From these trade-weighted prices (P^{tw}), I calculate the "dirty" holding period return for bond i on day t ($r_{i,t}^{bond}$) using the following formula:

$$r_{i,t}^{bond} = \frac{\left(P_{i,t}^{tw} - P_{i,t-1}^{tw}\right) + AI_{i,t}}{P_{i,t-1}^{tw}} \tag{3}$$

where $AI_{i,t}$ is the amount of interest that has accrued over the holding period. My decision to report dirty returns (i.e. returns that include accrued interest) is primarily based on the fact that it most accurately reflects the returns that bondholders would experience from the sale of a bond. Nevertheless, my results are robust to the use of "clean" returns (i.e. those that ignore accrued interest), which is not surprising given that the amount of interest which will accrue over the holding period will typically be small relative to the bond's market price.

Given the illiquidity of the corporate bond market, it is often the case that a bond does not trade at least once per day. Therefore, it is worth noting that the return calculated in equation (2) may not be a daily return; rather it may represent a holding period return calculated over several days. The fact that the last recorded transaction price for a bond may be several days old raises the concern that returns calculated by equation (1) may be biased due to stale pricing.[6] To mitigate this concern, I impose two filters for a bond to have a usable return. First, I require that a bond must have traded at least once in the past month (i.e. 20 trading days), and second, I require that the bond issue must trade at least once during the event window. I impose one final condition for a bond issue to have a usable return; specifically, consistent with Bessembinder et al., I omit bonds with returns greater than 20% in absolute value to reduce the influence of outliers.[7]

To calculate the abnormal bond returns ($AR_{i,t}^{bond}$) for each issue, I first create twenty-four benchmark portfolios sorted by credit rating and time-to-maturity. Benchmarking event bonds' returns to similar bonds based on credit rating and time-to-maturity controls for any systematic factors that may influence either default risk or the term structure of interest rates. The data necessary to determine the bond's credit rating and time-to-maturity are obtained from the Fixed Income Security Database (FISD) provided by Mergent. In the case of a conflict between rating agencies, I use the Moody's Inc. rating if available, followed by the Standard & Poor's rating, and finally the Fitch rating if the other two are unavailable. The benchmark portfolios are formed on a value-weighted basis using the returns

[6] Another potential issue is bid-ask bounce. However, as noted by Bessembinder et al., the elimination of smaller trades and the use of transaction-weighted prices should largely mitigate these concerns.

[7] Bessembinder et al. (2009) find that the majority of cases where bonds have returns greater than 20% in absolute value typically involve firms in default. Correspondingly, they do not likely represent the types of returns financially healthy firms experience and are thus inappropriate for benchmarking. However, I find little difference in my results if I extend the absolute value limit to 50%.

calculated from all straight, industrial bonds included in TRACE. To ensure comparability to the event bond returns, I require that the bonds that constitute the benchmark portfolios meet the same selection criteria as the event bonds (e.g. they must be issued by an industrial firm, they must have traded at least once in the past month) and, additionally, that they have valid returns for both time *t* and *t - 1*. The benchmark portfolios are sorted into six bins on the basis of credit rating (i.e. AAA, AA, A, BBB, BB, B and lower) and then each credit rating category is further split into one of four groups (i.e. time-to-maturity between one and three years, time-to-maturity between three and five years, time-to-maturity between five and ten years and time-to-maturity greater than ten years) based on the issue's time-to-maturity.

After obtaining the benchmark portfolios' returns ($r_{i,t}^{rate/ttm}$), each bond's abnormal holding period return is calculated as:

$$AR_{i,t}^{bond} = r_{i,t}^{bond} - r_{i,t}^{rate/ttm} \tag{4}$$

Once again due to the illiquidity of the corporate bond market, abnormal returns are computed on a holding period basis where the holding period may be of several days length. For example, if a bond last traded seven days ago, its raw return would be calculated over a seven day holding period and its benchmark return would similarly be computed over the same seven-day interval. This approach ensures that bond returns are judged against benchmark returns of comparable length.

While it is possible to execute a bond event study at the issue level, due to concerns such as overweighting firms with multiple bond issues and having to correct for the cross-sectional correlation between a particular firm's different bond issues, Bessembinder et al. (2009) advocate the use of firm-level rather than issue-level returns in bond event studies. The firm-level approach has the added advantage of measuring the average total change in the market value of the firm's debt as opposed to the average change in the value of a particular debt issue which makes it particularly relevant for the current study.

To form the firm-level abnormal bond returns, I begin by constructing a linking table which helps to correct for several difficulties in matching the data from TRACE and Mergent FISD to the data from CRSP, such as variations in issuer CUSIPs[8] and changes in debt responsibility due to merger activity[9], to ensure that my tests provide an accurate appraisal of bondholders' wealth changes at dividend announcements. After assigning each of my sample firms the debt issues that they are obligated to pay, each firm is treated as a portfolio of bonds in which the issue-level abnormal returns are weighted by their respective market capitalizations. I will use these firm-level abnormal returns in my statistical testing. Following the advice of Bessembinder et al. (2009), I will test for the statistical significance of the firm-level abnormal bond returns using the nonparametric sign and sign-rank tests in addition to the standard t-test, as the authors find that nonparametric test have superior ability in detecting abnormal performance in abnormal bond returns.

The Choice of Event Window

While the choice of a proper event window is crucial for any event study, it is particularly imperative in a bond event study. Given the illiquidity of the corporate debt market,

[8]For instance, in CRSP, the only eight-digit CUSIP assigned to Abbott Laboratories over its history is 00282410, which implies an issuer identification, or base, of 002824 (i.e. the first six digits of the CUSIP). However, Mergent FISD lists additional debt belonging to Abbott under the base of 002819. Therefore, the linking table assigns debt under both the 002824 and 002819 bases to Abbott's unique CRSP PERMCO identifier.

[9]Consider the following example. The current company known as AT&T was formed from the merger of SBC Communications and the old AT&T effective on 11/18/2005 and the merger of the aforementioned entity with BellSouth effective on 12/29/2006. Currently, Mergent FISD has assigned all debt belonging to the new AT&T to the parent ID of 19126. However, during some point in my sample period, the old AT&T, BellSouth, and SBC Communications were all independent companies that paid a quarterly dividend. Therefore, to properly determine the effect of a dividend announcement on bondholders' wealth, it is necessary to ascertain which entity had responsibility for a particular debt issue at a given point in time. This process is further complicated by the fact that each of these firms has made prior acquisitions which need to be investigated. My linking table establishes an ownership record for each debt issue and thus helps to properly assign its returns to the correct firm.

expanding the event window has the advantage of increasing the number of usable bond issues; however, this comes at a cost as it simultaneously increases the likelihood of confounding information biasing the sample. Therefore, to help judge the appropriate window length, Figure 2 displays the average and median daily dollar volume in dividend event time. Panel A of Figure 2 shows the daily volume for the total sample, while Panel B shows the volume for the sample excluding the dividend announcements made near earnings announcements. I chose to examine the volume patterns for each sample separately in order to assess whether the widespread presence of the quarterly earnings announcements affects the event window selection.

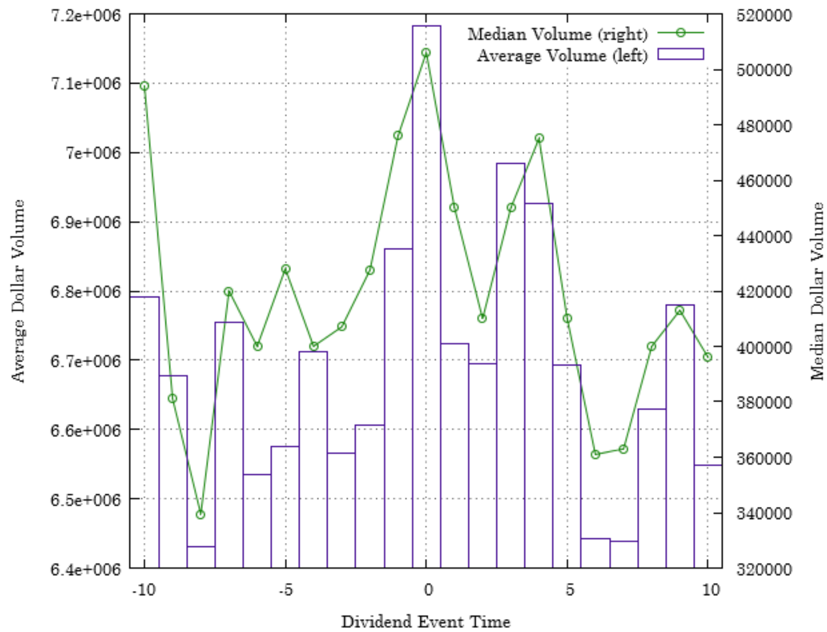
Overall, the volume patterns appear to be roughly similar. In both cases, there appears to be a detectable spike in volume on the dividend announcement day (i.e. event day 0) followed by a decline in activity over event days +1 and +2. This is followed by a sharp increase in volume over event days +3 and +4 before the volume once again decreases. In order to capture, the spike in activity during days +3 and +4, I will investigate four different symmetric windows starting from [-1,+1] to [-4,+4]. One noticeable difference across the samples is that Panel A typically has a much smaller daily volume than the firms in Panel B. Consistent with a signaling motivation, this is primarily due to the fact that joint announcers tend to be smaller firms which usually have smaller debt issuances and less liquid bonds (Sarig and Warga, 1989), which in turn lowers the average daily volume.[10]

Conditional Event Study Regressions

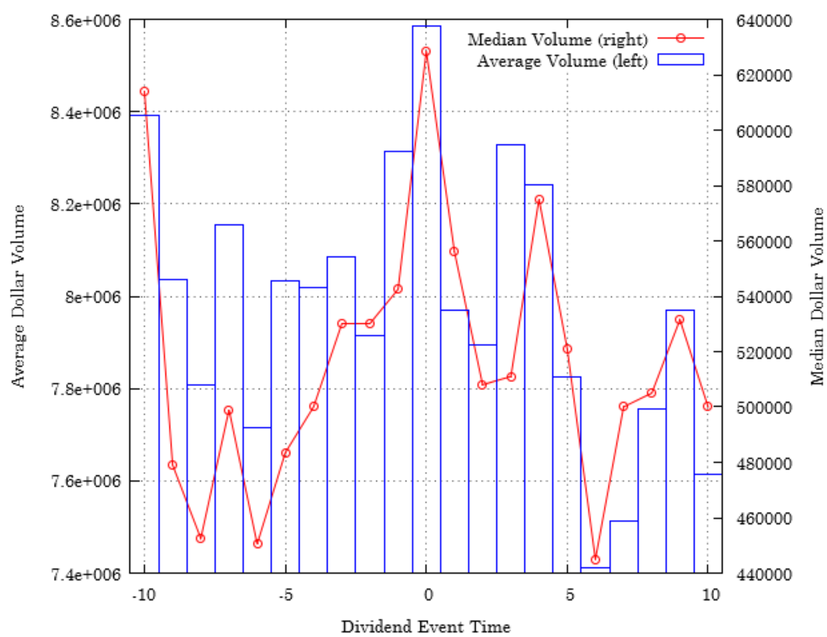
There are two particularly challenging aspects to determining how bondholders and shareholders react to a dividend announcement. The first problem is that dividend an-

[10] In unreported results, I examine whether the joint announcement decision yields increased attention for firms in the form of higher trading volume. Indeed, across firm size terciles, joint announcers tend to have statistically higher dollar volume in both the bond and stock markets during the dividend event window relative to non-joint announcers. For example, in the smallest size tercile, joint announcers witness a $31 million bump in dollar volume across the [-2,+2] event window compared to non-joint announcers.

Figure 2: Average and Median Dollar Volume During Dividend Event Time. Event date zero is the announcement of a quarterly dividend. Panel A depicts the average (boxes) and median (line) dollar volume in dividend event time for the entire sample (i.e. including firms with joint earnings and dividend announcements). Panel B displays the average (boxes) and median (line) dollar volume for the sample of firms that do not have a contemporaneous earnings announcement during the [-7,+7] dividend event window.



Panel A. Average and Median Dollar Volume for Whole Sample.



Panel B. Average and Median Dollar Volume for Sample without Contemporaneous Earnings Announcements.

nouncements are not random decisions; rather, they are the result of firms self-selecting into a dividend announcement type. The second issue is that dividend payments are often announced near quarterly earnings releases. Both of these concerns can affect the inferences reached using standard event study techniques. In the first case, self-selection implies that investors may be able to determine which firms will choose a particular announcement action based on pre-announcement period observables. In well-functioning capital markets, investors will impound this information into security prices which may lead to a somewhat muted (i.e. biased) response when the announcement is actually made. In the second case, information learned from the earnings announcement will contaminate the abnormal returns calculated during dividend event time, potentially leading to erroneous conclusions regarding the effect of dividend announcements on securityholders' wealth. Thus, while the traditional event study approach is useful in getting a broad assessment of the net effect of a given announcement and has some limited ability to control for confounding events (e.g. partitioning into subsamples), I will also employ the conditional event study method.

I execute a conditional event study utilizing regression techniques developed by Nayak and Prabhala (2001) to deal with the aforementioned problems. To begin, I introduce a self-selection model to predict the firm's choice of a dividend. Following Lintner (1956), Kumar and Lee (2001), and Hu and Kumar (2004), I assume that the dividend decision made by management is a deliberate two-stage process. In the first stage, the manager judges whether the firm's expected permanent income is sufficient to support a change in the payout level (i.e. the extensive margin) and then, conditional on a change being made, decides on the appropriate magnitude of the change (i.e. the intensive margin).[11] The managers' decision along the extensive margin is assumed to be determined by a latent variable, $Div^{*}_{i,t}$, which can be thought of as the utility management derives from making the dividend

[11]Taking a broader perspective, the decision to simply pay a dividend at all can be considered the extensive margin decision. I do not include this selection into my framework since they represent changes in *payout policy* versus modification of the firms current *dividend policy* and moreover movements along this margin tend to be fairly rare (i.e. once a firm pays a dividend, it tends to continually pay). However, I do examine dividend initiations and omissions in Appendix C.

announcement.[12] While $Div^*_{i,t}$ is imperceptible, market participants can nevertheless still form expectations regarding managerial utility through a set of variables $(w_{i,t-1})$ that are publicly available prior to the announcement period. Thus, $div^*_{i,t}$ can be expressed as the following linear function:

$$Div^*_{i,t} = \alpha w_{i,t-1} + u_{i,t} \tag{5}$$

where $\alpha w_{i,t-1}$ represents investors' ex-ante expectations with respect to the benefit experienced by firm i's management from announcing a dividend payout and $u_{i,t}$ is an innovation term that is assumed to follow a standard normal distribution and constitutes management's private information set.

Although managerial utility is unobservable, the decision they eventually undertake is easily discernible. Specifically, managers can choose one of three potential dividend announcement options (indexed by $j = \{0,1,2\}$ respectively); that is, they can either choose to cut the dividend payment (C), leave the dividend payment unchanged (U), or increase the dividend payout level (I). Therefore, managers' dividend announcement decision can be cast in terms of an ordered probit regression model, such that managers will:

$$\begin{cases} \text{choose I if} & Div^*_{i,t} > \mu_2 \\ \text{choose U if} & \mu_1 \leq Div^*_{i,t} \leq \mu_2 \\ \text{choose C if} & Div^*_{i,t} < \mu_1 \end{cases} \tag{6}$$

where μ_j are unknown, but estimable, cutoff values.

[12] For the time being, I do not take any stance on whether management's utility is aligned with the goal of maximizing the value of shareholders' equity as the degree to which this holds depends on the compensation structure managers are given. Compensation variables will be included in the ordered probit model predicting firms' dividend choices to account for the fact that managers' personal incentives may influence dividend policy.

Rather than being a direct focus itself, the primary function of the ordered probit model is in determining the extent to which a given dividend announcement is anticipated by debt and equity investors. Accordingly, following studies such as Kao and Wu (1990), I collect the generalized residuals from the ordered probit model and include them as a regressor in a set of cross-sectional regressions on abnormal bond and stock returns. In essence, this is a control function approach where the generalized residuals from the ordered probit model serve as an analog to the correction developed by Heckman (1979) to the omitted variable problem induced by selection bias.[13] Following Gourieroux, Monfort, Renault, and Trognon (1987), the generalized residuals ($\hat{\lambda}_{i,t}^{div}$) for the dividend announcement ordered probit model are calculated as:

$$\hat{\lambda}_{i,t}^{div} = \frac{\phi(\hat{\mu}_j - \hat{\alpha} w_{i,t-1}) - \phi(\hat{\mu}_{j+1} - \hat{\alpha} w_{i,t-1})}{\Phi(\hat{\mu}_{j+1} - \hat{\alpha} w_{i,t-1}) - \Phi(\hat{\mu}_j - \hat{\alpha} w_{i,t-1})} \tag{7}$$

where $\phi(\cdot)$ is the probability density function for the standard normal distribution and $\Phi(\cdot)$ is the cumulative density function for the standard normal distribution. Positive values of $\hat{\lambda}_{i,t}^{div}$ represent unexpectedly high deviations from investors' ex-ante predictions. Given the choice set available to managers, this can either occur when the market anticipates that the firm will cut dividends, but instead chooses to leave them untouched, or when investors believe that the firm will leave its dividend the same, but the firm unexpectedly increases its payout level. Conversely, negative values of $\hat{\lambda}_{i,t}^{div}$ will occur when the firm chooses a dividend action that is below investors' expectations, such as if the firm were to cut dividends when no change is predicted or leave the dividend level the same when the market is anticipating an increase.

As emphasized by Li and Prabhala (2007), the variable $\hat{\lambda}_{i,t}^{div}$ has a special interpretation in the context of a conditional event study as it measures managers' private information released at the announcement. Accordingly, it provides an indicator of how investors'

[13] Indeed, as noted by Chiburis and Lokshin (2007), replacing $\mu_j = 0$ and $\mu_{j+1} = \infty$ in equation (7) will yield the familiar inverse Mills' ratio.

respond to the unexpected portion of the dividend announcement. For example, if both debtholders and equityholders view unanticipated dividend increases as positive signals, then the sign on the estimated coefficient of a regression of cumulative abnormal returns against $\hat{\lambda}_{i,t}^{div}$ will be positive for both markets. However, if unforeseen dividend increases benefit shareholders at the expense of bondholders, then the estimated coefficient will be positive for the stock market and negative in sign for the bond market, indicating a wealth transfer.

Having dealt with the non-randomness of the dividend announcement decision, it is now possible to focus on the joint earnings announcement issue. I define an earnings announcement to have occurred simultaneously with a dividend announcement if the earnings announcement takes place somewhere in the [-7,+7] event window in dividend event time. I address the secondary announcement problem in two different ways. The first is a relatively simple approach following Dutordoir and Hodrick (2012). In their study, the authors examine stock returns following the announcement of either equity, convertible debt, or straight debt financing using a switching regression model which is very similar to the self-selection model discussed above. In their sample, they have a number of contaminated observations (e.g. approximately 39% of the straight debt offerings in the sample are near another material corporate event). To deal with this issue, Dutordoir and Hodrick simply include an indicator variable into their cross-sectional regressions to control for the presence of a secondary event. In a similar manner, I include two indicator variables into my cross-section regression specifications to control for the presence of joint meet-or-beat or missed earnings announcements. As the omitted category is dividend announcements that are made separate from an earnings announcement, the estimated coefficients of the two indicator variables measure the incremental value that a joint earnings announcement adds to the abnormal returns earned following a dividend announcement.

Admittedly, the indicator variable approach is fairly crude since it fails to account for the fact that the decision to jointly announce quarterly earnings is self-selected. Therefore, my second method of controlling for joint earnings announcements closely follows the design used for modeling the dividend announcement choice. Specifically, I assume that managers' latent utility with respect to making a joint dividend and earnings announcement ($Earn^*_{i,t}$) can be thought of as a linear combination of the ex-ante information known to capital market participants ($z_{i,t-1}$) and managers' private information ($v_{i,t}$) such that:

$$Earn^*_{i,t} = \gamma z_{i,t-1} + v_{i,t} \tag{8}$$

Just as in the dividend announcement case, managers' utility with respect to the earnings announcement is unobservable, but nonetheless drives the observable earnings announcement decision. Given the large body of evidence in the accounting literature which suggests that managers possess a strong preference to either meet-or-beat analysts' quarterly earnings estimates (e.g. Bartov, Givoly, and Hayn, 2002), I assume that managers will always prefer to meet-or-beat analysts' expectations rather than miss them. Additionally, as announcing earnings joint with dividends will bring additional attention to the firm, managers will prefer to announce jointly when the information they are signaling is good and will avoid announcing joint when it is poor. This creates four potential outcomes which are ordered from most preferred to least: (i.) announce dividends jointly with a meet-or-beat announcement (*MBJ*), (ii.) announce a meet-or-beat away from the dividend announcement (*MBS*), (iii.) announce the miss of quarterly earnings targets separately (*MS*), and (iv.) announce a miss together with a dividend (*MJ*). Taken in whole, managers are assumed to pursue the following joint announcement strategy set:[14]

[14]In unreported results, I tested an alternative specification that treats the joint announcement decision as an independent self-selection decision (i.e. estimates a generalized residual term from a probit model with a dependent variable equal to one if the firm jointly announces and zero otherwise) and interacts the surprise from the joint announcement with the announced earnings surprise. In essence, this specification decouples the joint announcement decision from the sign of the earnings surprise announcement. Ultimately, my results were materially unaffected by this modification.

$$\begin{cases} \text{choose MBJ if} & Earn^*_{i,t} > \mu_{MBS} \\ \text{choose MBS if} & \mu_{MS} \leq Earn^*_{i,t} \leq \mu_{MBS} \\ \text{choose MS if} & \mu_{MJ} \leq Earn^*_{i,t} \leq \mu_{MS} \\ \text{choose MJ if} & Earn^*_{i,t} < \mu_{MJ} \end{cases} \tag{9}$$

Similar to the dividend event choice, the following system can be estimated in an ordered probit regression framework and its generalized residuals computed to form a variable (i.e. $\hat{\lambda}^{earn}_{i,t}$) which measures the amount of surprise market participants experience from a given earnings announcement decision. To control for the fact that the latent dividend and earnings functions described by equations (5) and (8) are subject to common shocks, the order probit equations described by equations (6) and (9) will be jointly estimated.

As discussed in Acharya (1988), given that investors expectations are being captured by the generalized residual terms and assuming that capital markets are informationally efficient, abnormal bond and stock returns should not be affected by ex-ante variables. Therefore, the only variables that should enter into the conditional event study specifications are those that are revealed at the time of the announcement.[15] These variables would include the extensive margin dividend decision (i.e. whether to increase, decrease, or leave the dividend untouched, as measured by $\hat{\lambda}^{div}_{i,t}$), the intensive margin dividend decision (i.e. the size of the announced dividend change, $DivChg_{i,t}$), and any information released via the quarterly earnings announcements. Thus, the systems of cross-sectional regression specifications listed in equations (10) and (11) will form the basis of my analysis:

$$\begin{cases} CAR^{bond}_{i,t} & = \beta_0 + \beta_1 DivChg_{i,t} + \beta_2 \hat{\lambda}^{div}_{i,t} + \beta_3 Meet\,or\,Beat_{i,t} + \beta_4 Missed_{i,t} + \varepsilon_{i,t} \\ CAR^{stock}_{i,t} & = \delta_0 + \delta_1 DivChg_{i,t} + \delta_2 \hat{\lambda}^{div}_{i,t} + \delta_3 Meet\,or\,Beat_{i,t} + \delta_4 Missed_{i,t} + \nu_{i,t} \end{cases} \tag{10}$$

where $CAR^{bond}_{i,t}$ and $CAR^{stock}_{i,t}$ are the cumulative abnormal returns for the bond and stock market respectively, $Meet\,or\,Beat_{i,t}$ is an indicator variable which is equal to one if the firm

[15]However, in some testing situations I do utilize interaction terms between ex-ante variables and those only discovered following the announcement.

announces a joint meet-or-beat earnings announcement and zero otherwise and $Missed_{i,t}$ is an indicator variable equal to one if the firm announces that they missed their quarterly earnings target near the dividend announcement and zero otherwise. My preferred specification, due to the fact that it explicitly controls for the joint announcement decision, is:

$$\begin{cases} CAR_{i,t}^{bond} & = \beta_0 + \beta_1 DivChg_{i,t} + \beta_2 \hat{\lambda}_{i,t}^{div} + \beta_3 \hat{\lambda}_{i,t}^{earn} + \varepsilon_{i,t} \\ CAR_{i,t}^{stock} & = \delta_0 + \delta_1 DivChg_{i,t} + \delta_2 \hat{\lambda}_{i,t}^{div} + \delta_3 \hat{\lambda}_{i,t}^{earn} + \nu_{i,t} \end{cases} \tag{11}$$

where the variables are the same as defined above.

The standard errors of the estimated coefficients from equations (10) and (11) will be biased due to the presence of generated regressors (e.g. $\hat{\lambda}_{i,t}^{div}$). As Pagan (1984) notes, the presence of generated regressors does not bias the parameter estimates, but does render the standard errors of the parameter estimates inconsistent. Therefore to correct my standard errors for the presence of generated regressor bias, I bootstrap the regression standard errors using 1,000 replications (Hill, Adkins, and Bender, 2003).

CHAPTER III

TRADITIONAL EVENT STUDY RESULTS

In the first section, I discuss the event study results for the entire sample. Given the extensive presence of quarterly earnings releases near dividend announcements, in the second section, I partition abnormal bond and stock returns into bins based on the firm's dividend and earnings announcement choice.

Basic Event Study Results

Table 3 lists the cumulative abnormal returns for the entire sample across several different event windows. The results in Panel A show the response of the stock market to dividend announcements. Overall, the results in Panel A appear to be consistent with previous studies documenting the stock market's reactions to dividend changes. On average, dividend increases are received positively by the stockholders, garnering cumulative abnormal returns ranging from 50.28 basis points at the [-1,+1] event window to 59.49 bps at the [-4,+4] event window. In economic terms, as the average market value of equity in my sample is approximately $24.30 billion, the mean gain in shareholder wealth from a dividend increase at the [-2,+2] window is nearly $136.13 million. The results in Panel A also show that dividend cuts earn negative abnormal stock returns of -212.69 to -368.38 bps depending on the event window. This is in line with prior studies (e.g. Jensen, Lundstrum, and Miller, 2010) which document a strong negative reaction from shareholders when dividends are reduced.

Comparing the magnitudes of the results in Panel A to prior work, Grullon et al. (2002) find cumulative abnormal returns over a [-1,+1] event window of -371.00 bps for dividend cuts and 134.00 bps for dividend increases. The fact that there is a sizable difference in magnitude between the results presented in Grullon et al. (2002) and Table 2 for dividend

Table 3: Event Study Results by Type of Dividend Announcement. Average cumulative abnormal returns are stated in basis points. Median cumulative abnormal returns for the event window are reported in italics and are also stated in basis points. The p-values from two-sided t-tests, sign tests, and sign-rank tests are reported below in parenthesis (), braces {}, and brackets [], respectively. A dagger (i.e †) next to the p-value from either the sign or sign-rank test indicates that over 50% of the observations are negative in sign.

	Panel A. Abnormal Returns - Stocks				**Panel B.** Abnormal Returns - Bonds			
Dividend	**Event Windows**				**Event Windows**			
Announcement Choice	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]
Positive	50.28	56.03	57.73	59.49	-5.12	-7.52	-7.49	-10.21
	31.63	*40.79*	*47.97*	*64.56*	*-4.52*	*-3.21*	*-3.42*	*-7.61*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.123)	(0.046)	(0.078)	(0.028)
	{0.000}	{0.000}	{0.000}	{0.000}	{0.006}†	{0.064}†	{0.068}†	{0.001}†
	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]†	[0.024]†	[0.051]†	[0.001]†
Obs.	1,521	1,522	1,524	1,526	1,521	1,522	1,524	1,526
Negative	-273.39	-368.38	-350.00	-212.69	18.39	11.64	-39.26	-40.99
	-92.17	*-198.63*	*-118.15*	*-103.35*	*6.37*	*7.60*	*-15.93*	*-26.42*
	(0.051)	(0.033)	(0.037)	(0.086)	(0.550)	(0.759)	(0.298)	(0.646)
	{0.052}†	{0.025}†	{0.007}†	{0.237}†	{0.826}	{0.510}	{0.510}†	{0.124}†
	[0.012]†	[0.036]†	[0.006]†	[0.088]†	[0.573]	[0.730]	[0.238]†	[0.345]†
Obs.	84	84	84	84	84	84	84	84
No Change	5.46	4.14	6.33	10.29	-1.81	-2.86	-5.60	-7.45
	0.70	*0.02*	*0.90*	*2.05*	*0.79*	*-1.57*	*-2.80*	*-2.31*
	(0.189)	(0.417)	(0.279)	(0.121)	(0.320)	(0.172)	(0.018)	(0.003)
	{0.858}	{1.000}	{0.849}	{0.784}	{0.396}	{0.148}†	{0.015}†	{0.130}†
	[0.708]	[0.952]	[0.683]	[0.677]	[0.861]	[0.033]†	[0.003]†	[0.008]†
Obs.	7,006	7,010	7,017	7,028	7,006	7,010	7,017	7,028

increases is likely due to sample construction. The firms currently under study are specifically limited to those that have both issued publicly-traded debt and are dividend payers. As has been extensively documented, both types of firms tend to be larger in size relative to the universe of publicly-traded firms. Given that larger firms experience lower announcement period returns at dividend announcements (Haw and Kim, 1991), the smaller magnitude of cumulative abnormal stock returns across events is expected.

Panel B of Table 3 lists the cumulative abnormal returns earned by the bondholders following dividend announcements. The results of Panel B indicate that bondholders tend to lose wealth when dividends are increased. Across event windows, debtholders lose between -5.12 to -10.21 bps, on average. In terms of total wealth, given that the average market value of debt in the current sample is \$8.44 billion, bondholders losses are approximately \$6.34

million on average over the [-2,+2] event window. As the announcement of a dividend increase causes equityholders to gain while debtholders lose, my results indicate that dividend increases are transfers of wealth, on average. While the increase in shareholder value exceeds the absolute value of the losses to bondholders, indicating that dividend increases do not appear to be primarily motivated by the desire to expropriate wealth from debtholders, it is nevertheless the case that a non-trivial portion of shareholders' gains come from bondholders' losses. Overall, my findings stand in contrast to the results of Handjinicolaou and Kalay (1984) who find positive, but statistically insignificant, abnormal bond returns from the announcement of a dividend increase.

The response to dividend cuts appears to be mixed for bondholders. The returns from the tighter event windows (i.e. [-1,+1] and [-2,+2]) show evidence of positive, although statistically insignificant, abnormal bond returns. However, the empirical results from longer event windows (i.e. [-3,+3] and [-4,+4]) show debtholders earning negative and statistically insignificant abnormal returns. Therefore, it appears to be difficult to ascertain precisely how bondholders react to dividend decreases. However, as Handjinicolaou and Kalay (1984) find statistically significant evidence that dividend cuts act as strong negative signals to bondholders and shareholders, my findings once again appear to diverge from theirs.

The final results in Table 3 pertain to dividend announcements that feature no change in the stated payout level. While most studies ignore these events, as they are thought to provide no new information to capital markets about firms' payout policy, they nonetheless play a special role in this study. Specifically, to the extent that passive expropriation exists, it will occur when the firm is expected to cut its dividend level, but decides to leave it untouched. Therefore, if present, it will happen during announcements featuring no announced change to dividend policy. Overall, the results in both the bond and stock market appear to be consistent with the idea of these events being of low informational value. For the most part, they tend to feature small, statistically insignificant returns. However, this is not surprising. While passive expropriation may exist, it is likely not pervasive enough to show up so easily in the cross-section. Therefore, in Chapter V, I will direct more focused tests on this subsample to test for passive expropriation.

Event Study Results Partitioned by Dividend and Earnings Announcement Choice

While the results from the previous section were helpful in gauging how debtholders and equityholders react to dividend announcements on net, the sample contained numerous instances of dividend announcements that were made near quarterly earnings announcements. The purpose of this section is to provide a sense for how the interplay between the dividend and earnings announcements chosen by the firm affect abnormal bond and stock returns.

To accomplish this, in Tables 4 and 5, I sort the cumulative abnormal returns for the stock and bond markets, respectively, into bins based on the dividend and earnings choices given to managers; that is, firms can choose to either increase, reduce, or leave their dividend payment unchanged and they can choose to announce either a meet-or-beat earnings announcement separately or jointly or announce a miss of analysts' expectations separately or jointly. Firms are judged to have either meet-or-beat or missed their earnings targets by examining the sign of their surprise unexpected earnings (SUE), which is determined by:

$$SUE = \left(\frac{EPS_{i,t}^{act} - EPS_{i,t}^{\mu}}{EPS_{i,t}^{\mu}} \right) * 100 \tag{12}$$

where $EPS_{i,t}^{act}$ is the actual earnings per share (EPS) firm i announces in quarter t and $EPS_{i,t}^{\mu}$ is the last consensus average of analysts' EPS forecasts for firm i in quarter t. The data used to construct SUE come from the I/B/E/S database. A firm is considered to have a meet-or-beat announcement if SUE ≥ 0 and to have missed their earnings target if SUE < 0. I include the mean dividend change and SUE in each category to help ascertain whether the results are driven by the magnitude of the announced dividend or earnings change.

The results of Tables 4 and 5 show that the decision to announce jointly seems to be more a function of the strength or weakness of the firm's earnings quality (as measured by SUE) versus the magnitude of the dividend change as joint meet-or-beat (missed) announcements have greater (lower) SUEs than stand alone announcements. This finding suggests that managers may self-select into the joint earnings decision in order to highlight particularly good earnings information. Correspondingly, this suggests that variables related to the financial performance of the firm should help to positively predict the joint announcement decision. Additionally, in Table 4, the pattern of the abnormal stock returns seems to broadly conform to ordering assumed in equations (6) and (9); that is, abnormal returns are usually larger as one moves from the dividend decreases to dividend increases and as one moves from joint announcements featuring an earnings miss to joint meet-or-beat announcements.

While there appears to be evidence of a corroborative effect in the stock market, since the lowest average abnormal returns (-798.17 bps) in Table 4 are earned in dividend cut/joint missed earnings bin and the highest average abnormal returns (134.59 bps) are generated in the dividend increase/joint meet-or-beat category, the corroborative effect does not seem to be present in the bond market on average. Indeed, in Table 5, abnormal bond returns reach their extremes during non-corroborative scenarios. Bondholders' average returns are highest (85.39 bps) in the dividend cut/meet-or-beat bin, suggesting that debtholders do best when the firm reduces its payouts to shareholders, but also provide evidence that earnings are strong enough to meet current debt obligations. As equityholders lose wealth on average at these types of announcements (albeit statistically insignificant), there is some cursory evidence of a reverse wealth transfer from shareholders to bondholders. Conversely, bondholders' losses (-26.52 bps) are greatest in announcements where the dividend is increased and the firm announces that they have missed analysts' earnings expectations. This increases concern for bondholders over default risk as the firm is committing to a higher dividend payout level while simultaneously signaling that the company's earnings are weaker.

However, on net, these events do not appear to be a wealth transfer, since shareholders also view them very negatively (-169.56 bps, on average). When viewed as a whole, the results of Tables 4 and 5 point to shareholders doing better when placed in to higher ordered dividend categories, while bondholders seem to prefer being in lower ordered groups. Thus, based on the results of Tables 4 and 5, I anticipate that my conditional event study tests will find that positive, unexpected dividend information will be value-increasing for equityholders, but value-decreasing for debtholders.

Although Table 4 provides a general sense of how managerial decisions regarding dividend and earnings announcements affect the abnormal returns earned by bondholders and stockholders, it is difficult to draw any strong conclusions from the findings. This is due to two factors. First, in many cases, the partitioning of announcements into groups leaves certain cells with a small amount of observations (e.g. the dividend cut sample). This adversely affects the power of the statistical test to detect abnormal performance and hence the ability to draw inferences. While the paucity of observations will negatively influence the statistical power for both sets of returns, it will be particularly harmful for the abnormal bond returns given their well-documented power issues in small samples (Bessembinder et al., 2009). Second, the table does not control for cross-sectional heterogeneity in investors' expectations regarding the dividend-earnings announcement choice (i.e. self-selection) nor does it take into account the magnitude of the announced dividend change. As both of these variables are likely relevant in explaining investors' abnormal returns, it is necessary to turn to the conditional event study approach.

Table 4: Stock Event Study Results by Dividend and Earnings Announcement Choice. Event study results from the [-2,+2] event window are presented below. Average cumulative abnormal returns are stated in basis points. Median cumulative abnormal returns for the event window are reported in italics and are also stated in basis points. The p-values from two-sided t-tests, sign tests, and sign-rank tests are reported below in parenthesis (), braces {}, and brackets [], respectively. A dagger (i.e †) next to the p-value from either the sign or sign-rank test indicates that over 50% of the observations are negative in sign. Dividend change refers to the average dividend change experienced by the subsample, while surprise unexpected earnings (SUE) measures the average difference of firm's announced earnings from the average analysts' expectation scaled by the mean of analysts' last forecasts prior to the announcement.

	Earnings Announcement Choice			
Dividend Announcement	**Missed & Announced Joint**	**Missed & Announced Separate**	**Meet-or-Beat & Announced Separate**	**Meet-or-Beat & Announced Joint**
Decrease	-798.17/*-43.73*	-288.55/*-355.95*	-106.03/*-57.96*	-9.00/*-203.38*
	(0.249) [1.000] {0.355}	(0.298) [0.031]† {0.170}†	(0.205) [0.845]† {0.248}†	(0.968) [0.481]† {0.500}†
Obs.	22	18	26	18
Dividend Change/SUE	-53.46%/-81.65%	-60.66%/-40.44%	-52.76%/42.65%	-52.25%/90.18%
No Change	-111.08/*-92.17*	-20.07/*-18.14*	-0.34/*2.75*	59.75/*36.31*
	(0.000) [0.000]† {0.000}†	(0.106) [0.018] {0.030}	(0.956) [0.586] {0.975}	(0.000) [0.000] {0.000}
Obs.	857	1,058	2,645	2,450
Dividend Change/SUE	0.00%/-46.49%	0.00%/-39.45%	0.00%/19.83%	0.00%/26.69%
Increase	-169.56/*-69.92*	64.67/*48.56*	41.66/*28.89*	134.59/*95.51*
	(0.000) [0.099]† {0.001}†	(0.012) [0.072] {0.007}	(0.001) [0.001] {0.000}	(0.000) [0.000] {0.000}
Obs.	162	164	633	563
Dividend Change/SUE	17.69%/-17.34%	26.31%/-15.59%	38.77%/9.73%	28.37%/11.02%

Table 5: Bond Event Study Results by Dividend and Earnings Announcement Choice. Event study results from the [-2,+2] event window are presented below. Average cumulative abnormal returns are stated in basis points. Median cumulative abnormal returns for the event window are reported in italics and are also stated in basis points. The p-values from two-sided t-tests, sign tests, and sign-rank tests are reported below in parenthesis (), braces { }, and brackets [], respectively. A dagger (i.e †) next to the p-value from either the sign or sign-rank test indicates that over 50% of the observations are negative in sign. Dividend change refers to the average dividend change experienced by the subsample, while surprise unexpected earnings (SUE) measures the average difference of firm's announced earnings from the average analysts' expectation scaled by the mean of analysts' last forecasts prior to the announcement.

	Earnings Announcement Choice			
Dividend Announcement	**Missed & Announced Joint**	**Missed & Announced Separate**	**Meet-or-Beat & Announced Separate**	**Meet-or-Beat & Announced Joint**
Decrease	18.28/*-18.57*	53.69/*61.50*	-74.16/*-7.16*	85.39/*53.91*
	(0.803) [0.664]† {0.417}†	(0.568) [0.238] {0.122}	(0.345) [0.845]† {0.469}†	(0.104) [0.238] {0.199}
Obs.	22	18	26	18
Dividend Change/SUE	-53.46%/-81.65%	-60.66%/-40.44%	-52.76%/42.65%	-52.25%/90.18%
No Change	-22.39/*-5.80*	0.56/*-2.19*	2.96/*1.19*	3.35/3.94
	(0.003) [0.056]† {0.001}†	(0.920) [0.341]† {0.678}†	(0.335) [0.392] {0.452}	(0.342) [0.031] {0.096}
Obs.	857	1,058	2,645	2,450
Dividend Change/SUE	0.00%/-46.49%	0.00%/-39.45%	0.00%/19.83%	0.00%/26.69%
Increase	-26.52/*-6.01*	-8.89/0.32	-1.05/-3.94	-8.93/-3.09
	(0.080) [0.099]† {0.001}†	(0.328) [1.000] {0.788}	(0.847) [0.189]† {0.167}†	(0.162) [0.189]† {0.234}†
Obs.	162	164	633	563
Dividend Change/SUE	17.69%/-17.34%	26.31%/-15.59%	38.77%/9.73%	28.37%/11.02%

CHAPTER IV

CONDITIONAL EVENT STUDY RESULTS

In this chapter, I estimate the conditional event study. In the first section, I provide an overview of the variables that I will be using to predict firms' dividend and earnings announcement choices. In the second section, I briefly discuss the result from the ordered probit models. Finally, in the third section, I present the conditional event study results.

Variable Selection for Ordered Probit Models

The first step in undertaking the conditional event study approach is to estimate the ordered probit regressions predicting firms' dividend and earnings announcement choices. This necessitates the collection of a relevant set of variables that capital market investors may use in forecasting managers' announcement decisions. Given that very few studies attempt to predict firms' dividend announcement choices,[16] I take a broad approach in determining potential regressors. Therefore, in this section, I discuss the variables employed in forming investors' information sets. As the goal of estimating the ordered probit models is to gauge investors' expectations, all of the measures discussed below are lagged one quarter back to mitigate concerns over look-ahead biases and to avoid any potential mechanical relationships emerging between the announcement decisions and the prediction variables. A complete inventory of how the variables are calculated is provided in Appendix A.

Financial Variables

The first group of variables I consider are measures of the financial health of the firm. These include measures of the firm's leverage (*Leverage*), earnings (*Net Income*), and level

[16]Li and Lie (2006) and Li and Zhao (2008) are notable exceptions.

of cash holdings (*Cash*). I expect the likelihood of a dividend increase to be negatively related to leverage and positively related to its earnings and cash holdings. Based on the work of DeAngelo et al. (2006) on the life-cycle hypothesis of dividends, I also add the ratio of retained earnings to total assets (*Ret Earn*). According to the life-cycle hypothesis, an increase in this ratio should be associated with a higher propensity to increase dividends.

As this study focuses on leveraged firms, I also include several variables that specifically relate to the firm's ability to repay its debt obligations. The first variable is an indicator equal to one if the firm has a non-investment grade credit rating (*Non-Invest*). Besides controlling for the firm's current credit rating, I also include a variable that indicates whether the firm has experienced a ratings downgrade over the past year (*Downgrade*). Last, as debtholders may be concerned that dividend payments may inhibit the ability of the firm to make its interest payments, I add a variable which denotes whether the firm has a negative interest coverage ratio (*IC Neg*). Overall, I expect each of these measures to be negatively related to the firm's decision to increase its dividend.

Early work dealing with the agency conflicts that can emerge in a leveraged firm (e.g. Handjinicolaou and Kalay, 1984) pointed out that dividend increases that were made by either issuing new debt or cutting investment expenditures could be especially harmful to bondholders. Therefore, I incorporate variables to account for these possibilities. The first variable, *Debt Chg*, measures the percentage change in the firm's total debt (i.e. short-term plus long-term) that takes place in the previous quarter. Yet, given that prior studies, such as Long, Malitz, and Sefcik (1994), have not found any evidence that debt increases lead to explicitly higher payouts, I do not expect *Debt Chg* to positively predict dividend increases. The second variable, *Underinvest*, indicates if a firm is investing less than the average firm in its two-digit SIC code defined industry. I do not have an expectation regarding the sign that *Underinvest* will take in the ordered probit regressions. While investment cuts may be used to fund dividend increase, it is also possible that decreases in capital expenditure may be due to financing constraints which would suggest that underinvestment will negatively predict dividend increases.

The last four financial variables considered are firm *i*'s stock return (*Return*) over the previous quarter, an indicator signifying if the firm was a net equity repurchaser (*Repurchase*) in the past quarter, the firm's market-to-book ratio (*MTB*), and the firm's size (*Size*). As prior studies (e.g. Nayak and Prabhala, 2001) have found that firms that increase their dividend usually have a significant stock price run-up, I expect that *Return* will positively predict a dividend increase. The expected sign on *Repurchase* is ambiguous as firms that are actively repurchasing shares may be more likely to increase their dividend payouts as the repurchase activity indicates improved cash flow, however it may also be negative if firms view repurchases and dividends as substitutes. I anticipate that the estimated sign for *MTB* will be negative since it acts as a proxy for Tobin's *q*, lowering the likelihood of increasing the dividend payout as higher values imply the firm has a greater number of profitable investment to undertake. Finally, given the results of prior work (e.g. Fama and French, 2001), I expect the propensity to increase dividends to be positively related to the firm's size.

Corporate Governance Variables

The next set of variables I turn my attention toward are measures of the firm's corporate governance environment. Each of the three measures considered is related to managerial entrenchment. As discussed by Klock et al. (2005) and Chava et al. (2010), in contrast to shareholders, bondholders often prefer entrenched managers due to the fact that they are less likely to subject debtholders to costly anti-takeover maneuvers and they pay out less (Francis et al., 2011). Thus, variables that reflect more entrenched management will likely lower the probability of a dividend increase. My first variable is the proportion of independent directors that sit on the firm's board of directors (*Board Indep*). I chose the independence of the board as a regressor because independent boards are thought to serve as a check against managerial power and the board has a direct role in setting the firm's payout policy (Allen and Michaely, 2003).

My second variable is based on the results of Chava et al. (2010). Specifically, Chava et al. investigate the determinants of various bond covenants and find that longer tenured Chief Executive Officers (CEOs) are less likely to have restrictive dividend covenants placed on their debt. Therefore, I add *CEO Tenure* as a regressor under the expectation that longer tenured CEOs are more entrenched and hence less likely to announce a dividend increase.

My final variable is the percentage of the firm's outstanding equity that is owned by its top five institutional bondholders (*IO Top 5%*). Institutional investors are often thought to have a preference for dividend-paying firms due to either an advantageous tax status or concerns over meeting prudent-man standards. Consequently, as powerful shareholders, they may influence firms' payout policy toward their own ends (Desai and Jin, 2011). While prior studies (Grinstein and Micheaely, 2005; Barclay, Holderness, and Sheehan, 2009) have typically found that increased institutional ownership does not lead to higher payout levels, more recent studies (e.g. Crane et al., 2012; Gaspar et al., 2013) have found otherwise. Alternatively, as Amihud and Li (2006) show, the increase in institutional investment over time has improved the information environment of firms and lessened the need for managers to use dividends as a signaling mechanism. Thus, the anticipated sign on the institutional ownership variable is ambiguous.

In addition to the governance measures listed above, I also include a variable to control for the presence of restrictive dividend covenants (*Dividend Covt*).[17] As the abnormal

[17] One unfortunate consequence of using firm-level abnormal bond returns is that issue-level information is often swept away through the aggregation. This is costly as it obscures pontentially economically interesting relationships. While covenants fall victim to this problem, another casualty is the maturity structure of the firm's debt. As long-term debtholders have greater sensitivity to changes in the firm's future cash flows, whether dividend increases act as signals or wealth transfers, they are likely to be more affected to dividend policy changes than short-term debtholders. Moreover, not only will maturity structure affect bondholders' reactions to dividend announcements, they will also affect managers' likelihood of selecting into certain

bond returns that I utilize in my cross-sectional regressions are based at the firm-level, the dividend covenant variable is the proportion of firm *i*'s debt that has a dividend covenant in place. It is worth noting that dividend covenants do not explicitly restrict the payment of dividends, but rather define an inventory of funds that are able to be paid over the life of the bond.[18] Therefore, while it is intuitive to think that the presence of dividend covenants may inhibit managers ability to increase dividends, so long as the firm has a positive reservoir of funds available to them, the dividend covenant will not be binding.[19]

Managerial Compensation Variables

As prior research has found that managerial compensation has a sizable role in shaping payout policy, it is crucial to consider how managers' compensation affects their incentives to modify to dividend policy. To capture the complex relationship between managerial compensation and dividend policy, I consider three different aspects of the compensation package.

First, I consider how much equity the firms' top management owns (*Owner*). Brown, Liang, and Weisbenner (2007) find that managers with greater equity ownership stakes in their firms were more likely to increase dividend payments following the 2003 dividend tax cuts, which lowered the personal income tax rates on dividend payments. As my sample

---

dividend actions. While it is possible to control for the firm's average maturity at the firm-level, this clearly masks the fact that firms can have substantial heterogeneity in maturity across bond issues. Therefore, a promising area for future research would be to conduct a similiar type of study at the issue-level.

[18]Smith and Warner (1979) note that the maximum amount of dividends (D_t^*) that are allowed to be paid over the life of the bond (which begins at $t = 0$) with a dividend covenant in place is:

$$D_t^* = k\left(\sum_{t=0}^{t} E_t\right) + \left(\sum_{t=0}^{t} S_t\right) + F - \left(\sum_{t=0}^{t-1} D_t\right)$$

where E_t is the firm's net earnings for quarter t, S_t is proceeds from any stock issuances during the quarter, F is a fixed number known as the "dip", and k is a constant such that $0 \leq k \leq 1$.

[19]Kalay (1982) finds that most firms do not pay themselves the maximum amount of dividends each quarter, but rather tend to leave a substantial reserve around 12% of firm value.

period covers the entire span of the 2003 dividend tax cut, I expect managers with greater ownership stakes to have an increased likelihood of boosting the firm's dividend payments.

Besides controlling for the ownership stake management holds, I also control for managers' wealth sensitivity to changes in market value (*Delta*). As demonstrated by Lambert, Lanen, and Larcker (1989), managers that are paid with high amounts of equity option-based compensation are less likely to increase dividends as the value of their options decreases as dividends are paid. Therefore, as option-based compensation typically leads to greater wealth sensitivity of performance, I expect managers with high levels of *Delta* to be less likely to increase the firm's dividends. I also control for the sensitivity of managers' compensation to the firm's volatility (*Vega*). Intuitively, it is not clear whether managers with higher levels of *Vega* will prefer higher dividend payouts. To the extent that dividend payments are leverage increasing events and will increase the volatility of the firm, they may desire higher payout levels; however, as noted by Liu and Mauer (2011), managers with high sensitivity to firm volatility are often constrained into stockpiling liquidity, suggesting that they may prefer lower dividend levels.

Signaling Variables

I include three variables to control for managers' incentive to use dividends and earnings announcements as signaling mechanisms. The first variable is a measure of analysts' disagreement over the forecasted earnings of the firm (*Dispersion*) and the second measure is the number of analysts covering the firm (*Analyst*). If managers wish to use dividends as signals of firm value, then these signals will have the greatest value when either *Dispersion* is high or analyst coverage is low. However, Li and Zhao (2008) find that there is actually a negative relationship between asymmetric information and the decision to increase dividend payments, contrary to the theoretical signaling literature. Therefore, I expect the sign on *Dispersion* to be negative and the sign on *Analyst* to be positive in the dividend ordered probit model. The third signaling variable that I include is a dummy variable noting whether the firm has multiple classes of stock trading (*Dual Class*). As Francis, Schipper, and Vincent (2005) both argue and document, the increased separation between voting rights and cash flow rights in dual class firms affords managers greater secrecy, making their earnings reports less informative. Therefore, these firms have a greater incentive to use dividends to credibly convey earnings information to the market. Thus, I expect *Dual Class* to positively predict dividend increases.

Other Variables

Given the results of Table 1, which show a noticeable change in dividend activity due to the recent financial crisis, I use an indicator variable (*Fin Crisis*) to flag dividend and earnings announcements that take place during this period. I follow Duchin, Ozbas, and Sensoy (2010) and define the financial crisis as having occurred from July 2007 to March 2009. More broadly, I also control for systematic changes in the default premium (*Default Prem*) to account for any macroeconomic shocks that may affect firms' probability of default. To account for any time-varying dividend clientele effects, I add the dividend premium (*Dividend Prem*) from Baker and Wurgler (2004) into the ordered probit regressions as well. I include a dummy variable (*Tax Year*) for observations in 2010 and 2012 to deal with the uncertainty surrounding the extension of the 2003 dividend tax cuts that took place during these years. Finally, both ordered probit regressions include fiscal quarter dummy variables to control for any seasonality in dividend and earnings announcements.

To provide some unique variation to each of the ordered probit models, I added variables unique to each set of decisions. For the dividend order probit model, I included the variable, *Last Divd Act*, which indicates whether the previous quarter featured a dividend increase. As firms are unlikely to announce dividend increases in consecutive quarters, this variable should load negatively in the ordered probit model.[20] For the earnings ordered probit model, I include two unique regressors, *Last Joint Ann* and *Last Earn Ann*. The first variable (i.e. *Last Joint Ann*) notes whether the firm made a joint dividend-earnings announcement in the past quarter, while the second variable (i.e. *Last Earn Ann*) indicates whether the firm made a meet-or-beat earnings announcement in the previous quarter.

Summary Statistics

Table 6 displays the mean and median values for the aforementioned variables partitioned by dividend announcement type. Broadly speaking, the measures of financial health appear to be strongest (e.g. have less leverage, more net income, greater cash holdings, tend to be investment-grade, etc.) in firms that are going to announce a dividend increase in the subsequent quarter and weakest in firms that will eventually reduce their dividend payout. Overall, there appears to be little variation in the governance variables across dividend types which suggests that they will not load significantly into the ordered probit model. However, all three managerial compensation variables appear to increase in value over the dividend announcement choices. Given the discussion in above, this is somewhat understandable for *Owner* and *Vega*, but difficult to rationalize for *Delta*. Finally, consistent with the findings of Li and Zhao (2008), *Dispersion* and *Analyst* appear to move in the opposite direction suggested by the theoretical signaling literature.

In the next section, I will use these variables to estimate the dividend and earnings ordered probit models and form the generalized residual terms necessary to estimate the conditional event study model.

[20] An alternative approach to capturing the dynamics of the dividend decision would be to model the distance of firm *i*'s current dividend payout ratio to its long-run average. As has been recognized since Lintner (1956), and more recently formalized by Lambrecht and Myers (2012), managers typically have benchmark dividend payout ratios (defined as the ratio of current dividends paid to current total earnings) that they attempt to target over time. Therefore, if the current dividend-to-earnings ratio is lower than the firm's historical average, this is likely a good indicator that a dividend increase is becoming more probable. I believe this alternative specification is worthy of additional investigation in subsequent work.

Table 6: Firm-level Summary Statistics. The mean values of various firm-level variables are presented below. Median values are presented in italics (medians are not reported for dummy variables). All variables are lagged one quarter back from their respective dividend announcement. Details on variable construction can be found in Appendix A. All continuous variables are winsorized at the 1- and 99-percentile levels unless otherwise noted in Appendix A.

Continuous Variables								**Dummy Variables (in %)**			
	Dividend Action				**Dividend Action**				**Dividend Action**		
Variable	**Cut**	**No Change**	**Increase**	**Variable**	**Cut**	**No Change**	**Increase**	**Variable**	**Cut**	**No Change**	**Increase**
Leverage	28.14	21.34	18.53	Board Indep	79.39	77.55	77.55	Non-invest	44.14	30.99	20.50
	27.06	*19.30*	*16.40*		*81.82*	*80.00*	*80.00*	Downgrade	40.00	21.51	18.20
Cash	6.67	7.19	7.36	CEO Tenure	7.19	7.30	7.19	IC Neg	24.30	6.44	2.40
	4.05	*4.06*	*4.40*		*6.00*	*5.00*	*6.00*	Underinvest	64.14	57.11	55.28
Net Income	0.20	1.35	1.90	Ownership	1.03	1.45	1.60	Repurchase	22.76	39.15	47.07
	0.62	*1.25*	*1.67*		*0.37*	*0.43*	*0.53*	Dual Class	2.07	2.43	2.87
Retained Earn	20.62	26.93	30.58	Delta	1.16	2.02	2.16	Fin Crisis	28.28	17.00	15.75
	19.65	*25.06*	*28.63*		*0.40*	*0.78*	*0.99*	Tax Year	15.17	17.72	20.58
Debt Change	-0.11	2.52	2.12	Vega	0.40	0.59	0.69				
	-0.02	-0.10	-0.01		*0.21*	*0.34*	*0.43*				
MTB	2.20	2.82	3.10	Dispersion	0.69	0.26	0.13				
	1.54	*2.11*	*2.42*		*0.22*	*0.08*	*0.07*				
Return	-6.24	2.82	3.32	Analyst	2.22	2.33	2.40				
	-4.13	*2.51*	*3.23*		*2.30*	*2.40*	*2.48*				
Size	8.27	8.54	8.92	Dividend Prem	0.05	-1.14	-1.04				
	8.31	8.46	8.91		*-3.48*	*-3.48*	*-3.61*				
Dividend Covt	11.79	12.47	8.70	Default Prem	3.58	2.70	2.61				
	0.00	0.00	0.00		*3.26*	*2.64*	*2.56*				
IO Top 5%	27.01	27.47	25.61								
	26.05	26.12	24.41								

Ordered Probit Results

The estimated coefficients of the ordered probit are listed in Table 7. Overall, the fit (pseudoR^2= 10.90%) for dividend model is fairly good, especially given the disproportionate amount of no change dividend announcements in the sample. The fit (pseudoR^2= 3.49%) for the earnings announcement model is less encouraging. This is likely due to the fact that earnings model is attempting to not only only predict whether a manager will meet-or-beat analysts' expectations, but also predict if the manager will make the earnings announcement jointly. However, as the estimation of the ordered probit model is only an intermediary step in executing the conditional event study, rather than discussing each statistically significant variable in Table 7, I will focus my attention toward a few of the more notable results.

First, in the dividend ordered probit model, while the vast majority of the financial health variables ended up with their predicted signs, the cash holding variable loaded negatively suggesting that, all else equal, firms with greater amounts of cash are less likely to increase their dividend payments. While this result is counterintuitive, Li and Lie (2006) also find a negative coefficient on cash when using a multinominal logit model to predict dividend changes, which suggests that this finding is not specific to my sample.[21] Second, *IO Top 5%* and *Vega* both load negatively and are the only statistically significant variables from the set of proposed corporate governance and managerial compensation measures. The results for institutional ownership are consistent with the idea that while institutions prefer firms that pay a dividend they are less concerned with how much is being paid (Grinstein and Micheaely, 2005). The results for *Vega* are in line with the findings of Liu and Mauer (2011) which indicate that high *Vega* managers are more likely to horde liquidity

[21] One possible reason for this finding is that firms may be stockpiling cash in order to finance future expenditures. Consequently, as they are in the process of saving internally generated cash flow, they are less likely to announce a dividend increase.

than to disburse it. Somewhat surprisingly, the financial crisis indicator variable did not load significantly, but this is due to the presence of the default premium measure.

The results for the earnings ordered probit model indicate that the likelihood of making a meet-or-beat joint decision is positively related to the firm's financial standing. For instance, firms that have less leverage, have greater stock price run-ups, have not experienced a credit rating downgrade, and have recently been repurchasing shares are all more likely to make positive joint announcements. As was discussed in Chapter 2, the decision to jointly announce meet-or-beat earnings near a dividend announcement is inversely related to the size of the firm. This is consistent with a signaling motivation as smaller firms have a greater incentive to reduce asymmetric information about their financial performance. Also interesting is the fact that while analysts' dispersion is negatively related to the meet-or-beat joint earnings decision, contrary to the signaling hypothesis, the decision is more likely the greater the number of analysts following the firm. Given that both Ofer and Siegel (1987) and Ely and Mande (1996) find that analysts use dividend information to help update their forecasts of future earnings, it makes sense that firms with greater analyst coverage are more likely to cater to analysts' desires to have both pieces of information immediately available.

Conditional Event Study Results

After estimating the ordered probit models and computing their generalized residuals according to equation (7), it is now possible to execute the conditional event study. The cross-sectional regression results for the conditional event study are listed in Table 8. The primary results are provided in models (1) and (2), which are the estimated versions of equations (10) and (11) from Chapter 2. The first pertinent results to discuss are the estimated coefficients on the dividend announcement surprise variable, $\hat{\lambda}_{i,t}^{div}$. Across specifications (1) and (2), the estimated coefficients are positive for the stock market and negative for the bond market. As the generalized residual measures the amount of surprise investors

Table 7: Ordered Probit Selection Models. Listed below are the results from the ordered probit selection models. Details on the definition and construction of the regressors can be found in Appendix A. To account for the correlation between the two decisions, the ordered probit models are jointly estimated. The correlation coefficient between the residuals from each ordered probit is $\rho_{div,earn}$. μ_C, μ_U, μ_{MBS}, μ_{MS}, and μ_{MJ} are the cutoff points estimated by each model. $\hat{\lambda}_{i,t}^{div}$ and $\hat{\lambda}_{i,t}^{earn}$ are the generalized residuals formed from the dividend choice and earnings choice models, respectively. P-values are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels respectively.

Dividend Choice Model				**Earnings Choice Model**			
Variable	**Coefficient**	**Variable**	**Coefficient**	**Variable**	**Coefficient**	**Variable**	**Coefficient**
Leverage	-0.006***	Dispersion	-0.040***	Leverage	-0.005***	Dispersion	-0.057***
	(0.000)		(0.001)		(0.002)		(0.000)
Cash	-0.008***	Analyst	-0.083**	Cash	0.002	Analyst	0.053*
	(0.000)		(0.020)		(0.211)		(0.055)
Net Income	0.027***	Dividend Prem	0.001	Net Income	0.003	Dividend Prem	-0.003**
	(0.000)		(0.556)		(0.679)		(0.013)
Retained Earn	-0.001	Default Prem	-0.102***	Retained Earn	0.000	Default Prem	-0.010
	(0.343)		(0.000)		(0.914)		(0.473)
Debt Change	-0.000	Dividend Covt	-0.000	Debt Change	-0.001*	Dividend Covt	0.000
	(0.795)		(0.569)		(0.082)		(0.537)
MTB	-0.001	Non-invest	-0.201***	MTB	0.003	Non-invest	0.040
	(0.786)		(0.000)		(0.452)		(0.308)
Return	0.002**	Downgrade	-0.109***	Return	0.004***	Downgrade	-0.073**
	(0.028)		(0.003)		(0.000)		(0.031)
Size	0.084***	IC Neg	-0.312***	Size	-0.040**	IC Neg	-0.112
	(0.000)		(0.000)		(0.011)		(0.106)
IO Top 5%	-0.009***	Underinvest	-0.117***	IO Top 5%	0.001	Underinvest	0.044*
	(0.000)		(0.000)		(0.394)		(0.078)
Board Indep	-0.000	Repurchase	0.142***	Board Indep	0.001	Repurchase	0.130***
	(0.797)		(0.000)		(0.183)		(0.000)
CEO Tenure	0.001	Dual Class	0.303***	CEO Tenure	-0.008***	Dual Class	0.040
	(0.830)		(0.004)		(0.000)		(0.328)
Ownership	-0.001	Fin Crisis	-0.001	Ownership	-0.007*	Fin Crisis	-0.096***
	(0.836)		(0.979)		(0.082)		(0.008)
Delta	0.000	Tax Year	0.171***	Delta	-0.000	Tax Year	-0.083***
	(0.831)		(0.000)		(0.780)		(0.008)
Vega	-0.045**	Last Divd Ann	-0.894***	Vega	0.109***	Last Joint Ann	0.137***
	(0.065)		(0.000)		(0.000)		(0.000)
						Last Earn Ann	0.477***
							(0.000)
$\hat{\mu}_u$	0.264	$\hat{\lambda}_{i,t}^{div}$- Average	0.000	$\hat{\mu}_{MBS}$	0.857	$\hat{\lambda}_{i,t}^{earn}$- Average	0.000
$\hat{\mu}_c$	-3.501	$\hat{\lambda}_{i,t}^{div}$- Std. Dev	0.675	$\hat{\mu}_{MS}$	-0.251	$\hat{\lambda}_{i,t}^{earn}$- Std. Dev	0.903
				$\hat{\mu}_{MJ}$	-0.760		
$\rho_{div,earn}$ =0.057; p-value = 0.001***							
Fiscal Quarter Dummies		Yes		Fiscal Quarter Dummies		Yes	
PseudoR^2		10.90%		Pseudo-R^2		3.49%	

experience as managers reveal their private information to the market, the signs on these coefficients imply that the release of an unexpected dividend increase represents a transfer of wealth from bondholders to shareholders. Focusing on the results from model (2), the estimated coefficient on $\hat{\lambda}_{i,t}^{div}$ is -9.35 for the bond market and 41.63 for the stock market. This means that a one standard deviation increase above investors' expectations (i.e. 0.675, from Table 7) represents a loss of wealth to bondholders of approximately -6.31 bps and a gain to shareholders' wealth of 28.11 bps. In dollar terms, these figures would represent a decrease in bondholders' wealth of around $5.32 million and an increase in shareholders' wealth of approximately $68.30 million. Thus, the results from the conditional event study model seem to largely confirm with what was observed from the traditional event study approach; namely, that while surprise dividend increases do not represent pure wealth transfers, a non-trivial portion of shareholders' gains from these announcements are captured from bondholders.

However, the conditional event study results also demonstrate that a positive signaling effect is present in both markets. Specifically, consistent with theoretical signaling models (e.g. Miller and Rock, 1985), both bondholders' and shareholders' abnormal returns are increasing in the size of the announced dividend change. Again focusing on the results from specification (2), the estimated coefficient on *Dividend Chg* is 0.28 for the bond market and 0.82 for the stock market. Interpreting these coefficients suggests that a 100 basis point increase in the dividend payout level increases bondholders' wealth by 0.28 bps and shareholders' wealth by 0.82 bps. Thus, while it appears that unexpected positive dividend announcements expropriate wealth away from bondholders toward shareholders, this effect is partially mitigated by the signaling effect that is transmitted through the size of the announced dividend change. This finding stands in stark contrast to previous work done on the changes to bondholders' wealth due to alternative payout mechanisms. For example, Maxwell and Stephens (2003) and Maxwell and Rao (2003) investigate how debtholders respond to the announcement of share repurchases programs and corporate spin-offs, respectively. Similar dividends, each of these payout mechanisms is posited to potentially have both wealth transfer and signaling effects. In both studies, the authors find that these events represent wealth transfers on average and that bondholders' losses are increasing in the size of the transaction. Therefore, it appears that the credible commitment to maintain a quarterly dividend payment allows it to act as signaling mechanism when compared to other methods.

The results discussed above appear to be robust regardless of whether the presence of confounding earnings announcements is controlled for via the dummy variable approach of Dutordoir and Hodrick (2012) or the self-selection method adapted from Nayak and Prabhala (2001). The primary difference between the two methods seems to rest in their ability to detect a statistically significant effect for unexpected positive earnings announcements in the bond market, with the self-selection model doing a better job. Thus,the aforementioned results do not appear to be driven by the presence of confounding earnings announcements.

Robustness Checks

To ensure the robustness of my results, I modify my approach along several different dimensions to ascertain whether the results uncovered in specifications (1) and (2) still present themselves. In models (3) and (4), I substitute a surprise dividend change term for the actual announced dividend change. The reason for doing so is straightforward; its seems naive to assume that investors can make assessments of firms' dividend and earnings announcement choices, but they are not similarly able to partially predict the magnitude of announced dividend change. To create the surprise dividend change variable, I follow the approach of Nayak and Prabhala (2001) and run the following regression:

$$DivChg_{i,t} = \pi_0 + \pi_1 w_{i,t-1} + \pi_2 \hat{\lambda}_{i,t}^{div} + u_{i,t}^{surprise\,div} \tag{13}$$

where $w_{i,t-1}$ are the vector of lagged variables used to predict the firm's dividend announcement choice, $\hat{\lambda}_{i,t}^{div}$ is the generalized residual from the dividend ordered probit

Table 8: Cross-sectional Abnormal Return Regressions. Listed below are the cross-sectional regressions for both the cumulative abnormal bond ($CAR_{i,t}^{bond}$) and stock ($CAR_{i,t}^{stock}$) returns earned at dividend announcements. Both the cumulative abnormal bond and stock returns are recorded over the [-2,+2] event window. *Surprise Div* is the unexpected portion of announced dividend change and *Surprise Earn* is the unexpected portion of the SUE announced in quarter *t*. Both *Surprise Div* and *Surprise Earn* are computed via the procedure established in Nayak and Prabhala (2001). All other variables are defined in Appendix A. Standard errors are bootstrapped to account for generated regressors bias using 1,000 replications. P-values are recorded in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

	(1.)			(2.)			(3.)			(4.)	
	Dependent Variable			Dependent Variable			Dependent Variable			Dependent Variable	
Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$
Div Chg	0.80***	0.28***	Div Chg	0.82***	0.28***	Surprise Div	0.79***	0.27***	Surprise Div	0.79***	0.27***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.001)		(0.000)	(0.000)
$\hat{\lambda}_{i,t}^{div}$	42.96***	-9.21***	$\hat{\lambda}_{i,t}^{div}$	41.63***	-9.35***	$\hat{\lambda}_{i,t}^{div}$	54.31***	-5.23*	$\hat{\lambda}_{i,t}^{div}$	53.34***	-5.23*
	(0.000)	(0.003)		(0.000)	(0.000)		(0.000)	(0.078)		(0.000)	(0.070)
Meet-or-beat	72.53***	2.27	$\hat{\lambda}_{i,t}^{earn}$	76.91***	4.89**	Meet-or-beat	72.57***	2.28	$\hat{\lambda}_{i,t}^{earn}$	76.90**	4.88**
	(0.000)	(0.597)		(0.000)	(0.027)		(0.000)	(0.596)		(0.000)	(0.028)
Missed	-190.81***	-19.21***	Constant	0.31	-2.82	Missed	-191.16***	-19.34***	Constant	3.24	-1.82
	(0.000)	(0.003)		(0.907)	(0.160)		(0.000)	(0.003)		(0.518)	(0.362)
Constant	-3.98	-1.43***				Constant	-1.12	-0.42			
	(0.567)	(0.607)					(0.872)	(0.878)			
Obs.	8,548	8,548		8,548	8,548		8,548	8,548		8,548	8,548
R^2	0.027	0.002		0.032	0.003		0.034	0.003		0.039	0.003

	(5.)			(6.)			(7.)		(8.)
	Dependent Variable			Dependent Variable			Dependent Variable		Dependent Variable
Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{bond}$	Regressors	$CAR_{i,t}^{bond}$
Div Chg	0.82***	0.28***	Surprise Div	0.79***	0.27***	$CAR_{i,t}^{stock}$	0.03***	$CAR_{i,t}^{stock}$	0.03***
	(0.000)	(0.000)		(0.000)	(0.001)		(0.001)		(0.000)
SUE	-0.04	-0.01	Surprise Earn	-0.05	-0.02	Div Chg	0.26***	Div Chg	0.33***
	(0.407)	(0.657)		(0.308)	(0.251)		(0.000)		(0.000)
$\hat{\lambda}_{i,t}^{div}$	41.25***	-9.43***	$\hat{\lambda}_{i,t}^{div}$	52.96***	-5.47*	$\hat{\lambda}_{i,t}^{div}$	-10.49***	$CAR_{i,t}^{stock}$ x Div Chg	-0.00
	(0.000)	(0.000)		(0.000)	(0.063)		(0.000)		(0.141)
$\hat{\lambda}_{i,t}^{earn}$	77.95***	4.95**	$\hat{\lambda}_{i,t}^{earn}$	77.00***	4.76**	$\hat{\lambda}_{i,t}^{earn}$	2.78	$\hat{\lambda}_{i,t}^{div}$	-11.55***
	(0.000)	(0.027)		(0.000)	(0.032)		(0.213)		(0.000)
Constant	0.11	-2.71	Constant	2.84	-1.76	Constant	-2.83	$CAR_{i,t}^{stock}$ x $\hat{\lambda}_{i,t}^{div}$	0.02**
	(0.982)	(0.179)		(0.572)	(0.377)		(0.158)		(0.014)
								$\hat{\lambda}_{i,t}^{earn}$	2.42
									(0.281)
								$CAR_{i,t}^{stock}$ x $\hat{\lambda}_{i,t}^{earn}$	-0.00
									(0.315)
								Constant	-3.02
									(0.136)
Obs.	8,548	8,548		8,548	8,548		8,548		8,548
R^2	0.034	0.003		0.039	0.003		0.004		0.005

model, and $u_{i,t}^{unexp\,div}$ are the regression's residuals which represent the unpredicted part of the announced dividend change (i.e. *Surprise Div*). As can be seen in models (3) and (4), the results to the inclusion of this variable are somewhat robust. While he statistical significance of the estimated coefficient on $\hat{\lambda}_{i,t}^{div}$ in the bond equation remains, albeit at the lower 10% level, the magnitude of the estimated coefficient on $\hat{\lambda}_{i,t}^{div}$ is almost reduced in half to -5.23 bps. Therefore, it appears that including a measure of dividend announcement surprise which incorporates investors' expectations regarding the anticipated dividend announcement noticeably weakens, but does not completely eliminate, evidence of a systematic transfer of wealth from bondholders to shareholders.

In my second set of robustness checks, I include measures of SUE into the cross-sectional regressions to ascertain whether the magnitude of the earnings surprise affects my results. In model (5), I simply include SUE, as calculated in equation (12), as an additional regressor and in model (6), I calculate the unpredicted amount of SUE in an analogous manner to the surprise dividend change in equation (13) with the exception that the right-hand side variables come from the earnings ordered probit regression. Overall, the results are robust to this modification; neither measure of the magnitude of surprise earnings is statistically significant. This suggest that $\hat{\lambda}_{i,t}^{earn}$ captures all of the value relevant information connected to the earnings announcement.[22]

The final set of reported robustness checks incorporate the cumulative abnormal stock returns earned at the dividend announcements into the abnormal bond return regressions. The purpose of this exercise is to determine how shareholders' abnormal returns affect the abnormal returns earned by bondholders. If shareholders gains are increasing in the amount of wealth they expropriate from bondholders, then the estimated coefficient sign for $CAR_{i,t}^{stock}$ will be negative; but, if shareholders' and debtholders' returns generally react in a similar fashion to dividend news, the sign will be positive. The results of models (7) and

[22]In unreported work, I dropped $\hat{\lambda}_{i,t}^{earn}$ from the equation and found that in this case the SUE variables were statistically significant and positive. This supports the conclusion that $\hat{\lambda}_{i,t}^{earn}$ is capturing this source of earnings information.

(8) seem to suggest that after controlling for the dividend surprise, both pairs of abnormal returns are positively related to one another, consistent with the presence of signaling.

In addition to the robustness checks listed in Table 8, there are a number of unreported robustness checks that I have estimated. These include: (i.) dropping the no change announcement firms from the regressions, (ii.) using clear returns versus dirty returns, (iii.) partitioning the dividend and earnings announcement choices into finer bins (e.g. considering five bins for the dividend announcement type: large increase, small increase, no change, small decrease, and large decrease),[23] (iv.) testing for a nonlinear relationship between the magnitude of the announced dividend change and abnormal returns,[24] and (v.) testing cumulative abnormal bond and stock returns from different event windows. In all cases the results were robust with the exception of the models estimated using cumulative abnormal bond returns from the [-1,+1] event window. In general, the regressions estimated using abnormal bond returns from the [-1,+1] event window failed to produce statistically significant coefficients on the announced dividend change variable and $\hat{\lambda}_{i,t}^{div}$.[25]

[23] Overall, the results from this specification are nearly identical to the three-choice model. The reason the three-choice model was employed throughout the paper is that it possessed a slightly higher pseudoR^2 (i.e. 10.90%, from Table 7) than the five-choice alternative, whose psuedo-R^2 was equal to 7.63%

[24] In fact, I do find some evidence of nonlinearities for both sets of investors. However, to a large extent the nonlinearities tend to be concentrated in the extremes of the announced dividend changes. Thus, over the vast majority of the data, the relationship between the announced dividend change and the abnormal returns earned in each market appears to be fairly linear.

[25] It is not immediately clear why the estimated coefficients on these two variables were statistically insignificant however one possible explanation may be that the relative illiquidity of the corporate debt market prevents bond investors from trading immediately on their information which leads to longer event windows having a greater potential to detect abnormal performance.

CHAPTER V

PASSIVE EXPROPRIATION

In this chapter, I investigate the passive expropriation hypotheses of Allen and Michaely (2003). In the first section, I provide an overview of the approach I will utilize to test for the presence of passive expropriation. In the second section, I discuss my empirical findings.

Detecting Passive Expropriation

In their review of payout policy, Allen and Michaely (2003) briefly discuss the potential agency issues that may arise between bondholders and shareholders due to dividend policy. Allen and Michaely conclude that any attempt to expropriate wealth from bondholders in the form of a large dividend payment would likely be detrimental to the firm in the long-run due to the negative reputational costs (e.g. John and Nachman, 1985) it would impose upon the firm if they return to the public debt market for financing in the future. Consequently, they conclude that such blatant wealth grabs are unlikely to occur.

However, they propose a more subtle method through which dividend policy may transfer wealth from bondholders to shareholders. Citing studies such as DeAngelo and DeAngelo (1990), which find that managers are extremely hesitant to cut the firm's dividends even in periods of intense financial distress, Allen and Michaely suggest that managerial *inaction* in cutting a unsustainable dividend level may shift wealth from debtholders to shareholders. If investors are anticipating that the firm will cut its dividend, then the surprise announcement that the dividend level will remain the same acts as an *implicit* dividend increase. Hence, it is a "non-event" (i.e. the inability to reduce the dividend) that the market is reacting to rather than an explicit action taken by management.

Prior work has documented evidence that managers will often take actions to maintain dividend levels that may be harmful to bondholders. For instance, Brav et al. (2005) survey a number of Chief Financial Officers about their attitudes toward dividend policy and find that managers are willing to take a number of drastic actions, such as selling assets, terminating employees, taking on additional debt, and foregoing positive net present value investment projects, before contemplating cutting dividends. Daniel et al. (2010) investigate the behavior of firms facing expected cash flow shortfalls and find that the overwhelming majority of companies will cover the expected shortfall by either cutting back investment or taking on additional debt. Alternative options such as cutting dividends, issuing equity, selling assets, or drawing down cash balances do not appear to be widely implemented. Given these results, the possibility that passive expropriation both exists and is detrimental bondholders seems very real.

Testing for passive expropriation requires the ability to determine dividend announcements where a dividend reduction is anticipated by capital market participants, but ultimately managers decide to leave the existing payout level untouched. Fortunately, the conditional event study approach discussed earlier is readily amenable to this task. As the generalized residuals produced from the ordered probit model predicting the firm's choice of dividend announcement (i.e. $\hat{\lambda}_{i,t}^{div}$) measure the surprise caused by announcement, they provide a natural means of testing the passive expropriation hypothesis. Specifically, by focusing on the sample of dividend announcements that feature no change in the dividend payout, it is possible to ascertain which firms announced an unexpected, implicit dividend increase by investigating the sign of the generalized residual. If passive expropriation is present in the data, it should be concentrated in firms that exceeded investors' expectations by announcing there would be no dividend change; in other words, to the extent that passive expropriation exists, it should be most readily detectable in firms with positive generalized residuals.

Therefore, I will take two different approaches for testing for passive expropriation. The first method is to sort the abnormal bond and stock returns generated from dividend announcements where no change in the dividend level is made into two groups; the first containing firms with positive generalized residuals and the second set comprised of all other firms. While this dichotomous sorting is somewhat crude, it should serve to distinguish whether passive expropriation exists on net in the types of firms where it is most likely to occur. In my second set of tests, I will estimate regressions that include the generalized residuals from both ordered probit models. These tests provide a more refined approach as they control for both the magnitude of the dividend surprise as well as any confounding effects emanating from nearby earnings announcements. In addition to these tests, based on the results of Brav et al. (2005) and Daniel et al. (2010), I will also estimate regressions which include variables measuring changes in debt and underinvestment to determine if these factors exacerbate bondholders' losses from passive expropriation. The results of these tests are presented in the following section.

Passive Expropriation Results

Table 9 presents abnormal bond and stock returns sorted into categories based on the sign of the predicted generalized residual, $\hat{\lambda}_{i,t}^{div}$. Overall, the results appear to be somewhat consistent with the presence of passive expropriation. Across event windows, firms classified into the negative generalized residual group tend to have economically small and statistically insignificant cumulative abnormal bond and stock returns. This suggests that both sets of investors in this group view no change dividend announcements as relatively uninformative. The picture is markedly different for investors in firms with positive generalized residuals. Starting at the [-2,+2] event window, the event study results clearly show that bondholders do poorly at these events. At the [-2,+2] event window, debtholders lose an average (median) of -7.36 bps (-4.95 bps). To place this finding in context, recall from Table 3 that at the [-2,+2] event window an *explicit* dividend increase generates a mean (median) loss of -7.52 bps (-3.21 bps). Thus, the *implicit* dividend increase caused by managers' inertia in reducing dividends is roughly equivalent in magnitude to an explicitly announced dividend increase. Moreover, at the longer event windows, the mean and median losses experienced by debtholders from implicit dividend increases are actually slightly larger than their explicitly announced counterparts in Table 3.

Yet the degree to which shareholders gain from these implicit dividend increases is unclear. For instance, while the average cumulative abnormal returns earned by shareholders at the [-2,+2] event window are 17.11 bps, the median abnormal returns are only 2.01 bps. In fact, the pattern of relatively large mean abnormal stock returns coupled with much smaller median abnormal returns persists across all event windows. Given the stark difference between the mean and median abnormal stock returns, it appears that shareholders' gains from implicit dividend increases are not widely experienced. Rather, taken together with the results from the bond market, these findings suggest that while bondholders are adversely affected by managers' hesitancy in cutting dividends, the ability of shareholders to gain from managers' reluctance are largely concentrated in a subset of firms.

To help identify the circumstances in which bondholders' losses and equityholders' gains from passive expropriation increase, I estimate cross-sectional regressions of the abnormal stock and bond returns earned at no change dividend announcements against the generalized dividend residual, $\hat{\lambda}_{i,t}^{div}$. Besides allowing for greater variation in the amount of surprise realized by bond and stock investors, the regression-based approach will allow me to test whether issuing debt or cutting capital expenditures to maintain an established dividend level expropriates wealth from bondholders while simultaneously controlling for the presence of contemporaneous earnings information.

The cross-sectional regression results are presented in Table 10. In the first specification, I simply include the generalized residuals from the dividend and earnings ordered probit models as regressors. The results from this specification seems to largely concur with the findings from Table 9; namely, that larger positive dividend surprises at announcements of no dividend change are received negatively by debtholders, but do not affect shareholders' wealth in a statistically significant fashion. In terms of economic significance, the

Table 9: Passive Expropriation Event Study Results. The table below lists the results from an event study which partitions abnormal bond and stock returns earned from dividend announcements which feature no change in the dividend payout level into two groups. The first set of firms are those with negative generalized residuals from the order probit model (i.e. $\hat{\lambda}_{i,t}^{div} \leq 0$, firms that were either predicted to increase their dividend payout level, but chose to leave it the same, or firms that were correctly predicted to leave their dividend payment unmodified). The second group are firms with positive generalized residuals (i.e. $\hat{\lambda}_{i,t}^{div} > 0$, firms that were predicted to cut their dividend payment, but instead announced that they were leaving it untouched). The average cumulative abnormal returns are stated in basis points. Median cumulative abnormal returns for the event window are reported in italics and are also stated in basis points. The p-values from two-sided t-tests, sign tests, and sign-rank tests are reported below in parenthesis (), braces { }, and brackets [], respectively. A dagger (i.e †) next to the p-value from either the sign or sign-rank test indicates that over 50% of the observations are negative in sign.

	No Change Dividend Announcements with Negative Generalized Residuals - $\hat{\lambda}_{i,t}^{div} \leq 0$							
	Stock Abnormal Returns				**Bond Abnormal Returns**			
	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]
	3.10	0.69	1.01	2.81	-1.51	-1.67	-3.58	-5.56
	0.96	*-0.15*	*0.01*	*1.57*	*1.16*	*-0.88*	*-2.77*	*-0.15*
	(0.479)	(0.899)	(0.870)	(0.683)	(0.434)	(0.461)	(0.167)	(0.052)
	[0.872]	[0.946]†	[1.000]	[0.819]	[0.282]	[0.476]†	[0.129]†	[0.925]†
	{0.723}	{0.681}†	{0.986}	{0.855}	{0.754}	{0.201}†	{0.068}†	{0.132}†
Obs.	5,533	5,536	5,540	5,546	5,533	5,536	5,540	5,546
	No Change Dividend Announcements with Positive Generalized Residuals - $\hat{\lambda}_{i,t}^{div} > 0$							
	Stock Abnormal Returns				**Bond Abnormal Returns**			
	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]
	14.31	17.11	26.27	38.25	-3.00	-7.36	-13.18	-16.05
	0.32	*2.01*	*6.80*	*4.26*	*-0.20*	*-4.95*	*-4.82*	*-9.78*
	(0.190)	(0.193)	(0.083)	(0.033)	(0.537)	(0.160)	(0.022)	(0.019)
	[0.958]	[0.896]	[0.677]	[0.897]	[0.835]†	[0.081]†	[0.019]†	[0.002]†
	{0.848}	{0.511}	{0.351}	{0.205}	{0.358}†	{0.035}†	{0.005}†	{0.006}†
Obs.	1,473	1,474	1,477	1,482	1,473	1,474	1,477	1,482

estimated coefficient on $\hat{\lambda}_{i,t}^{div}$ (i.e. - 20.71) in the abnormal bond return equation implies that a one standard deviation announcement surprise (i.e. 0.675, from Table 7) would correspond to a -13.71 bps decrease in wealth, or an approximately \$6.89 million drop in the average market value of debt. This finding once again highlights the seriousness that implicit dividend increases can have on bondholder wealth.

In the second and third specifications, I augment the framework in the first model to include variables measuring the lagged percentage increase in total debt (i.e. long-term plus short-term debt) and lagged underinvestment as Brav et al. (2005) and Daniel et al. (2010) have identified them as avenues through which passive expropriation may occur. The results from the second specification investigating debt issuance show strong evidence that the use of debt to preserve a pre-established dividend level transfers wealth from bondholders to shareholders. Specifically, the estimated coefficient on the debt change variable is positive for the stock equation and negative for the bond equation. This implies that equity-holders' wealth is increasing, and debtholders' wealth is decreasing, in the amount of debt issued to maintain the existing dividend level. Additionally, as the estimated coefficient on the interaction term between the percentage change in total debt and $\hat{\lambda}_{i,t}^{div}$ is positive for the stock market and negative for the bond market, this suggests that the wealth transfer effect is amplified by the magnitude of the announcement surprise.[26]

The results for the underinvestment specification (column 3) demonstrate that maintaining a dividend through investment cuts tend to decrease both bondholder and shareholder wealth, although the results are only statistically significant for the abnormal stock return equation. The findings of the fourth specification, which simply combines specifications two and three, largely confirm the previous results. Namely, the use of additional debt to finance an otherwise unsustainable dividend payment benefits shareholders at debtholders'

[26]One possible concern is that the absolute value of the estimated coefficients on $\hat{\lambda}_{i,t}^{div}$x Debt Change should be approximately the same size if the the use of debt to maintain the dividend levels truly acts as expropriation. However, leverage increasing events are likely to benefits shareholders in other ways (e.g. increasing the size of the interest expense tax shield, discipling managers, etc.), thus it is not necessarily the case that the two coefficients should be approximately equal.

Table 10: Passive Expropriation Regression Results. Listed below are the cross-sectional regressions for both the cumulative abnormal bond ($CAR_{i,t}^{bond}$) and stock ($CAR_{i,t}^{stock}$) returns earned at dividend announcements. Both the cumulative abnormal bond and stock returns are recorded over the [-2,+2] event window. Standard errors are bootstrapped to account for generated regressors bias using 1,000 replications. P-values are recorded in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

	Dependent Variables							
	(1.)		**(2.)**		**(3.)**		**(4.)**	
Regressors	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$	$CAR_{i,t}^{stock}$	$CAR_{i,t}^{bond}$
$\hat{\lambda}_{i,t}^{div}$	-8.55	-20.71*	-19.35	-21.50*	74.25*	-9.13	59.77	-3.65
	(0.752)	(0.079)	(0.477)	(0.066)	(0.062)	(0.593)	(0.136)	(0.832)
$\hat{\lambda}_{i,t}^{earn}$	79.25***	5.49**	79.07***	5.52**	88.36***	8.73**	88.36***	8.83**
	(0.000)	(0.030)	(0.000)	(0.028)	(0.000)	(0.018)	(0.000)	(0.018)
Debt Change			1.13***	-0.37***			1.11***	-0.37***
			(0.000)	(0.003)			(0.000)	(0.002)
Underinvest					-31.98*	-5.09	-29.08*	-6.09
					(0.069)	(0.500)	(0.099)	(0.420)
$\hat{\lambda}_{i,t}^{div}$x Debt Change			2.71***	-0.97**			2.55***	-1.00**
			(0.006)	(0.022)			(0.009)	(0.017)
$\hat{\lambda}_{i,t}^{earn}$x Debt Change			0.05	-0.02			0.04	-0.02
			(0.800)	(0.812)			(0.835)	(0.780)
$\hat{\lambda}_{i,t}^{div}$x Underinvest					-158.21***	-31.27	-150.81***	-34.24
					(0.004)	(0.180)	(0.006)	(0.142)
$\hat{\lambda}_{i,t}^{earn}$x Underinvest					-16.81	-6.06	-17.05	-6.04
					(0.150)	(0.226)	(0.144)	(0.228)
Constant	-5.12	-11.02***	-9.59	-8.32**	12.29	-7.09	6.22	-5.05
	(0.555)	(0.004)	(0.273)	(0.027)	(0.359)	(0.217)	(0.644)	(0.382)

expense while underinvestment leads to statistically significant lower returns for shareholders, but not debtholders.

Overall, the results of Table 9 provide some evidence of the existence of the passive expropriation hypothesis of Allen and Michaely (2003). They demonstrated that bondholders are clearly harmed from the "announcement" of an implicit dividend increase, but provided mixed evidence as to whether shareholders systematically gained from managers' reluctance to cut dividends. However, the results of Table 10 provided some additional context by finding that the use of additional debt to maintain firms' established dividend policies tends to exacerbates the passive wealth transfer from bondholders to shareholders. These findings are important as they uncover a subtle method through which wealth expropriation can occur and they emphasize the importance of using conditional event study techniques in determining how "non-events" can affect investors' wealth.

CHAPTER VI

CONCLUSION

The purpose of this study is to provide a comprehensive account of how dividend announcements affect bondholders' wealth. While the question has been addressed by previous work, a number of systematic changes related to how payout policy is conducted and firms are governed have occurred since their publication, prompting the need for a reinvestigation.

I utilized two different methods for investigating the research question at hand. The first was a traditional event study approach using the updated bond event study methodology developed by Bessembinder et al. (2009). In contrast to the the results from Handjinicolaou and Kalay (1984), these findings from my tests showed that dividend increases represent a transfer of wealth from bondholders to shareholders, on average, with approximately 3.54% of shareholders' total dollar gains over the [-2,+2] event window coming via transfer of wealth from debtholders.[27] Further contrary to results of Handjinicolaou and Kalay (1984), I find no evidence that dividend cuts are interpreted by bond and stock investors as negative signals, although the correlation between abnormal bond and stock returns earned at dividend omissions provides some cursory support for this conclusion.

The second approach used was a conditional event study based on the framework established by Nayak and Prabhala (2001). The purpose of the conditional event study was help control for the non-random selection of a particular dividend announcement choice (i.e either increasing, decreasing, or leaving the dividend unchanged) by managers and to control for the pervasive presence of quarterly earnings releases made near dividend announcements. The findings from the conditional event study buttresses those from the traditional event study. Specifically, unexpected dividend increase are viewed positively by

[27] Bondholders lose about $4.32 million and shareholders gain $122.16 million on average over the [-2,+2] event window during a dividend increase ($4.32/$122.16 = 3.54%).

the stock market, but negatively by debtholders, ultimately resulting in a transfer of wealth between the two parties. Yet, the conditional event study also demonstrates that both bondholders' and equityholders' abnormal returns are increasing in the size of the announced dividend change. This finding is consistent with the presence of a positive signaling effect. Taken in whole, these results imply that while surprise dividend increases lead to a decrease in debtholders' wealth, the decline in value is dampened by the positive signaling effect. Additionally, it was demonstrated that the aforementioned results are not driven by the presence of confounding earnings announcements.

The use of the conditional event study methodology provides the added benefit of being able to test for the presence of passive expropriation. Originally proposed by Allen and Michaely (2003), the passive expropriation hypothesis posits that managerial inaction in reducing a unsustainable dividend may cause a transfer of wealth from bondholders to shareholders. Intuitively, if investors' believe that the firm will cut its dividend, the unexpected announcement that the dividend will remain unchanged acts as an implicit dividend increase. Investigation of a sample of firms that announced no change in their dividend payout level provided some evidence of passive expropriation. The results found that while bondholders plainly lose when managers fail to make expected dividend cuts, the extent to which shareholders gain is unclear. Additional testing based on the work of Brav et al. (2005) and Daniel et al. (2010) found that the issuance of additional debt financing to maintain the established dividend amount was one avenue through which passive expropriation occurs.

Overall, this study helps to fill a deficit in the corporate governance literature pertaining to our knowledge about how payout policy can cause conflicts between creditors and owners. It is my hope that this study will help to spur further work along these lines; for example, investigating the wealth effects experienced by bondholders following the rash of special dividend payments made before the expiration of the 2003 dividend tax cuts at the end of 2012 or examining how the increased use of dividend recapitalizations by private equity firms affects their bondholders' wealth.

APPENDIX A

SIZE TESTS

As extensive data on daily corporate bond prices has only recent become available with the implementation of the TRACE database in 2002, there is still a great amount of heterogeneity across studies with regards to the appropriate benchmarking method needed to calculate well-behaved abnormal bond returns. Consequently, different benchmarking schemes may yield abnormal bond returns with very different characteristics. Therefore, the purpose of this appendix is to provide some guidance on the statistical properties of my firm-level cumulative abnormal bond returns.

In Panel A of Table 11, I display summary statistics for the firm-level abnormal bond returns formed using the procedure outlined in Chapter 2. The most noteworthy points to emerge from Panel A is that the firm-level abnormal returns appear to have a negative tilt. While abnormal returns do not seem to exhibit a sizable amount of negative skew (the skewness measure is only -0.07), the fact that both the mean and median cumulative abnormal firm-level returns are negative and the percentage of positive cumulative abnormal returns is slightly below 50.00% does suggest that the abnormal bonds returns used throughout the study are biased downward.

To ascertain how the negative bias affects the ability of my statistical tests (i.e. student's t-test, sign test, and sign-rank test) to detect abnormal performance when none is present, in Panel B, I present the results of a Monte Carlo simulation which randomly selects 200 firms and calculates their cumulative abnormal returns over two different event windows, [-1,+1] and [-4,+4] and the repeats this exercise 1,000 times. I partition the failure to accept the null hypothesis of no abnormal performance into two groups depending on whether the failure occurred in the lower (2.50%) or upper tail (97.50%) of the distribution. If the test statistics are well-behaved at the 5.00% level of statistical significance then the rate of failure should be around 2.50% in each tail.

Table 11: Summary Statistics and Size Properties for Cumulative Abnormal Bond Returns. Panel A displays the statistical properties of the firm-level cumulative abnormal returns calculated from the [-1,+1] event window. The mean, median, and standard deviation are reported in basis points. Panel B shows the percentage of times the respective tests incorrectly rejects the null hypothesis of no abnormal performance at the 5.00% level for cumulative abnormal returns calculated at the [-1,+1] and [-4,+4] event windows. The results come from a Monte Carlo simulation where the cumulative abnormal returns from 200 randomly selected firms are collected and the procedure is repeated 1,000 times. The inability to correctly fail to reject the null hypothesis of no abnormal performance is broken into two different types of failures: (i.) those events that found false evidence of negative abnormal performance (i.e. the 2.50% tail) and (ii.) those that incorrectly found positive abnormal performance (i.e. the 97.50% tail).

Panel A. Return Properties			
Mean	-1.11	*Skewness*	-0.07
Median	-1.02	*Excess Kurtosis*	0.17
Standard Deviation	13.04	*% Positive*	47.84%

Panel B. Size Tests						
	T-test		*Sign test*		*Sign-rank test*	
Event Window	2.50%	97.50%	2.50%	97.50%	2.50%	97.50%
[-1,+1]	2.80%	2.21%	3.22%	4.41%	2.11%	1.73%
[-4,+4]	3.41%	0.90%	4.74%	3.81%	2.83%	1.44%

Despite the negative tilt, the results from Panel B shows that the t-test and sign-rank tests now appear to be fairly well-specified at the [-1,+1] interval. The false acceptance rate for my abnormal bond returns are 2.80% and 2.21% for the t-test and 2.11% and 1.73% of the sign-rank test, respectively. For the sake of comparison, Bessembinder et al. (2009) find that the false acceptance rate are 2.30% and 2.18% for the t-test and 2.54% and 1.50% for the sign-rank test for the lower and upper tails, respectively.[28] Thus, my abnormal bond returns tend to show a slightly greater tendency to detect negative abnormal performance where none is present using t-test compared to Bessembinder et al. (2009) at the [-1,+1] event window. However, my results for the sign test appear to underreject the null hypothesis far too often in both directions. In particular, the false acceptance rates I find are 3.22% in the lower tail and 4.41% in the upper tail. Both of these values are higher

[28]The results from Bessembinder et al. (2009) come from their Table 8 for the investment-grade bond sample (which comprise around 80% of my observations) with returns calculated on a trade-weighted basis featuring trades over $100,000 in size.

than the 2.68% and 2.30% reported by Bessembinder et al. (2009). Therefore, it appears that my procedure for calculating abnormal returns leads to very poorly specified sign tests.

The results for the [-4,+4] event window demonstrate an increased propensity to incorrectly detect negative abnormal performance across each of the statistical tests. For example, the false rejection for the t-test in the lower tail is 3.41% and 4.74% for the sign test. Thus, there is a greater likelihood of finding negative abnormal performance where none actually exists using the t-test and sign test over longer event windows. However, in contrast, the sign-rank test still appears to be relatively well-specified during the longer event window. Thus, taken together, the results from Table 11 seem to indicate that there is a slight negative bias to my abnormal bond returns and that this negative bias affects the ability to correctly detect non-abnormal performance especially during longer event windows.

APPENDIX B

DIVIDEND INITIATIONS AND OMISSIONS

Rather than representing a modification of the firm's existing *dividend policy* (whether to maintain or modify the firm's existing dividend payout level), which is the primary focus of this study, the decision to either initiate or omit a dividend payment embodies a fundamental shift in the firm's *payout policy* (the decision of whether the firm should payout at all). Consequently, I have excluded dividend initiations and omissions from my primary tests. Moreover, given that the movement along this margin tends to be fairly limited and the choice modeling framework is already crowded by three different managerial decisions, it is not obvious that the additional cost in terms of econometric complexity is worth whatever information could be gained. Nevertheless, as these events represent significant shifts in payout policy regarding dividends, they provide an unique setting for determining how investors in leveraged firms view the payment of dividends in general.

My sample of dividend initiators comes from the CRSP events file. To be considered an initiator, a firm must be establishing a quarterly dividend payment for the first time and cannot have paid a dividend at any time in the past. CRSP does not include dividend omissions in its events file, therefore to generate the sample of dividend omitters, I searched LexisNexis for news stories involving the firms in my sample that appear to suddenly stop paying dividends.[29] Consistent with the infrequency of these events, after applying the data filters discussed in Chapter 2., my final sample only includes around 39 initiations and 28 omissions.

The event study results for both sets of firms are presented in Table 12. One fact that becomes immediately obvious is that while the average abnormal bond and stock returns are often large in magnitude, they are also generally statistically insignificant. This is

[29] Search terms included the firm name and phrases such as "quit dividend", "dividend ended", "dividend suspended", and "dividend omitted".

Table 12: Dividend Initiations and Omissions. Average cumulative abnormal returns are stated in basis points. Median cumulative abnormal returns for the event window are reported in italics and are also stated in basis points. The p-values from two-sided t-tests, sign tests, and sign-rank tests are reported below in parenthesis (), braces { }, and brackets [], respectively. A dagger (i.e †) next to the p-value from either the sign or sign-rank test indicates that over 50% of the observations are negative in sign. Panels C and D report the Spearman correlation coefficient (i.e. ρ) between the cumulative abnormal bond and stock returns in the given event window. The p-values for Spearman's ρ are listed below in parentheses.

	Panel A. Abnormal Stock Returns				**Panel B.** Abnormal Bond Returns			
	Event Window				**Event Window**			
	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]	[-1,+1]	[-2,+2]	[-3,+3]	[-4,+4]
Initiations	141.08	180.46	147.66	140.32	11.44	-1.58	-10.88	-17.34
	84.72	*189.83*	*211.22*	*159.48*	*9.32*	*0.90*	*-22.18*	*-38.29*
	(0.065)	(0.030)	(0.092)	(0.101)	(0.528)	(0.949)	(0.645)	(0.479)
	{0.256}	{0.053}	{0.108}	{0.336}	{0.256}	{0.871}	{0.337}†	{0.053}†
	[0.078]	[0.033]	[0.106]	[0.159]	[0.321]	[0.883]	[0.258]†	[0.185]†
Obs.	38	39	39	39	38	39	39	39
Omissions	-163.59	-333.92	-741.66	-776.47	-23.69	-170.92	-179.58	-76.38
	-109.11	*-307.92*	*-977.41*	*-683.96*	*-33.61*	*-58.38*	*-6.00*	*-76.38*
	(0.667)	(0.456)	(0.203)	(0.133)	(0.831)	(0.112)	(0.129)	(0.589)
	{0.851}	{0.185}†	{0.085}†	{0.087}†	{0.701}†	{0.122}†	{0.701}†	{0.442}†
	[0.909]	[0.426]†	[0.106]†	[0.062]†	[0.561]†	[0.148]†	[0.356]†	[0.368]†
Obs.	28	28	28	28	28	28	28	28
	Panel C. Spearman Correlation - Initiations				**Panel D.** Spearman Correlation - Omissions			
Spearman's ρ	0.298	0.102	-0.064	0.086	0.504	0.533	0.336	0.199
(p-value)	(0.069)	(0.535)	(0.698)	(0.601)	(0.006)	(0.004)	(0.081)	(0.309)

primarily due to the paucity of observations. Given the relatively small sample sizes, it is perhaps best to view the results of Table 12 qualitatively rather than quantitatively.

The dividend initiation sample shows some evidence of dividends being interpreted as positive signals in the [-1,+1] event window. During this event period, shareholders gain around 141.08 (84.72) bps on average (median) while debtholders earn 11.44 (9.32) bps. As I do not include these events into my cross-sectional regressions, I list the Spearman correlation coefficient between both sets of abnormal returns to ascertain whether they generally move in the same direction (consistent with signaling) or whether they move in opposite directions (consistent with expropriation). At the [-1,+1] event window, the correlation between the abnormal bond and stock returns earned at the initiation of a dividend is 0.298 and statistically significant at the 10% level. This indicates that both groups of investors view the establishment of a dividend payment as a positive signal. However, the evidence for signaling weakens as the length of the event window increases. At the longer windows, the average and median abnormal bond returns turn negative and the correlation coefficient becomes statistically insignificant. Thus, while there is some cursory evidence of dividend initiations being positive signals for both debtholders and equityholders, it cannot be considered consistent.

The dividend omission sample demonstrates a more persistent pattern of abnormal returns relative to the initiation sample. Across all event windows, both the abnormal bond and stock returns are reliably negative and large in magnitude, albeit statistically insignificant. Additionally, the Spearman's correlation coefficient is positive across all event windows and is statistically significant at the 10% level in three of the four cases. The positive correlation between the abnormal returns suggests that both groups of investors view dividend omissions as negative signals of firm value. Taken together, the results from dividend initiation and omission samples seem to provide some evidence of omissions as acting as negative signals while the results from initiations are generally inconclusive.

APPENDIX C

VARIABLE DEFINITIONS

This appendix outlines the construction of the variables used throughout this study. All continuous variables are winsorized at the 1- and 99-percentiles unless otherwise stated.

Financial Variables

- *Leverage* is defined to be the ratio of total financial debt held by firm *i* in quarter *t-1* divided by the firm's financial debt plus its market value of equity in quarter *t-1* multiplied by 100. Data are from Compustat.
- *Cash* is the lagged ratio of the firm's cash holdings to its total assets multiplied by 100. Data are from Compustat.
- *Net Income* is the lagged ratio of firm *i*'s net income divided by its total assets multiplied by 100. Data are from Compustat.
- *Ret Earn* is the lagged proportion of the firm's retained earnings to its total assets multiplied by 100. Data are from Compustat.
- *Debt Change* is the lagged percentage change in the firm's total financial debt (i.e. short-term plus long-term) multiplied by 100. Data are from Compustat.
- *MTB* is firm *i*'s market-to-book ratio from quarter *t-1*. It is defined as the ratio of firm *i*'s lagged market value of equity from quarter t-1 divided by the firm's book value of assets. Data are from Compustat.
- *Non-Invest* is a dummy variable equal to one if the firm has non-investment grade debt and zero otherwise. Data are from Mergent FISD.

- *Downgrade* is a dummy variable equal to one if the firm has had its debt downgraded in the past year. Data are from Mergent FISD.

- *IC Neg* is dummy variable equal to one if firm *i*'s interest coverage ratio (defined as the ratio of firm *i*'s earnings before interest and taxes to its interest expense) is less than zero. Data are from Compustat.

- *Underinvest* is a dummy variable equal to one if the firm invested less than the median firm in its two-digit SIC code industry in quarter *t-1*. Data are from Compustat.

- *Repurchase* is a dummy variable equal to one if the firm was a net stock repurchaser (i.e. the amount of stock purchased surpasses the amount of stock issued) in quarter *t-1*. Data are from Compustat.

- *Return* is the percentage return of the firm's stock from quarter *t-2* to *t-1*. Data are from CRSP and are unwinsorized.

- *Size* is the natural logarithm of the firm's lagged market value of equity. Data are from CRSP and are unwinsorized.

Governance Variables

- *IO Top 5%* is the lagged proportion of the firm's outstanding shares owned by its five largest institutional shareholders. Institutional Ownership data are from Thomson-Reuters and shares outstanding data are from CRSP.

- *Board Indep* is the lagged proportion of board seats held by independent directors on the firm's board of directors. Data are from RiskMetrics and are unwinsorized.

- *CEO Tenure* is equal to the number of years, as of quarter *t-1*, the current CEO has been at their current position. Data are from Execucomp and are unwinsorized.

- *Dividend Covt* is the proportion of firm *i*'s debt issues with a restrictive dividend covenant in place. Data are from Mergent FISD.

Managerial Compensation Variables

- *Ownership* is defined as the percentage of the firm's outstanding equity is owned by its top management. Ownership data are from Execucomp and shares outstanding data are from CRSP.

- *Delta* is the dollar change in managers' wealth given a one percent change in stock price; it is measured in thousands of dollars. Data used to calculate the delta measure are from Execucomp. *Delta* is calculated in the manner developed in Core and Guay (2002) and refined by Coles, Daniel, and Naveen (2006).

- *Vega* is the dollar change in managers' wealth increases given a one percent change in the standard deviation of stock returns; it is measured in thousands of dollars. Data used to calculate the delta measure are from Execucomp. *Vega* is calculated in the manner developed in Core and Guay (2002) and refined by Coles, Daniel, and Naveen (2006).[30]

Signaling Variables

- *Dispersion* is the difference between the the highest and lowest analyst estimates of earnings per share divided by the absolute value of the median analyst forecast from quarter *t -1*. Data are from IBES.

[30] I kindly thank Jeffrey Coles, Naveen Daniel, and Lalitha Naveen for making their code to calculate *Delta* and *Vega* publicly available.

- *Analyst* is equal to the natural logarithm of one plus the number of analysts following the firm in quarter *t-1*. Data are from IBES.
- *Dual Class* is a binary variable equal to one if the firm has more than one class of share that publicly trades. Data are from CRSP.

Other Variables

- *Financial Crisis* is a dummy variable equal to one if the dividend annoucement took place during the recent subprime mortgage crisis. Following Duchin et al. (2010), I define the crisis period as having occurred from July 2007 to March 2009.
- *Dividend Prem* is the lagged dividend premium from Baker and Wurgler (2004). The dividend premium is defined as the difference between the natural logarithm of the average value-weighted market-to-book ratio for dividend payers and non-payers.
- *Default Prem* is the lagged spread between the yields on AAA-rated corporate debt versus ten-year Treasury bonds. Data are from the Federal Reserve Bank of St. Louis's FRED database.
- *Tax Year* is a dummy variable equal to one if the year is either 2010 or 2012.
- *Last Divd Act* is a dummy variable equal to one if the firm announced a dividend increase in the last quarter and zero otherwise.
- *Last Joint Ann* is an indicator variable that is equal to one if the firm announced earnings information within the [-7,+7] dividend event window last quarter and zero otherwise.
- *Last Earn Ann* is a dummy variable equal to one if the firm announced earnings that meet-or-beat analysts' expectations last quarter.

- *Meet-or-beat* is an indicator variable equal to one if firm *i* announced a meet-or-beat earnings announcement during the [-7,+7] dividend event window and zero otherwise. A firm is considered to have meet-or-beat analysts' expectations if its surprise unexpected earnings (SUE, defined in equation 12) are non-negative (i.e. SUE ≥ 0).

- *Missed* is a dummy variable equal to one if firm *i* announced quarterly earnings that missed analysts' forecast during the [-7,+7] dividend event window and zero otherwise. A firm is considered to have missed analysts' expectations if its surprise unexpected earnings (SUE, defined in equation 12) are strictly negative (i.e. SUE $<$ 0).

REFERENCES CITED

ACHARYA, S. (1988): "A Generalized Econometric Model and Tests of a Signalling Hypothesis with Two Discrete Signals," *Journal of Finance*, 43, 413–429.

AGHION, P., J. VAN REENEN, AND L. ZINGALES (2013): "Innovation and Institutional Ownership," *American Economic Review*, 103, 277–304.

AHARONY, J. AND I. SWARY (1980): "Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis," *Journal of Finance*, 35, 1–12.

ALLEN, F. AND R. MICHAELY (2003): "Payout policy," in *Corporate Finance*, ed. by G. Constantinides, M. Harris, and R. Stulz, Elsevier, vol. 1, part A of *Handbook of the Economics of Finance*, chap. 7, 337–429.

AMIHUD, Y. AND K. LI (2006): "The Declining Information Content of Dividend Announcements and the Effects of Institutional Holdings," *Journal of Financial and Quantitative Analysis*, 41, 637–660.

BAKER, M. AND J. WURGLER (2004): "A Catering Theory of Dividends," *Journal of Finance*, 59, 1125–1165.

BARCLAY, M. J., C. G. HOLDERNESS, AND D. P. SHEEHAN (2009): "Dividends and Corporate Shareholders," *Review of Financial Studies*, 22, 2423–2455.

BARTOV, E., D. GIVOLY, AND C. HAYN (2002): "The rewards to meeting or beating earnings expectations," *Journal of Accounting and Economics*, 33, 173–204.

BESSEMBINDER, H., K. M. KAHLE, W. F. MAXWELL, AND D. XU (2009): "Measuring Abnormal Bond Performance," *Review of Financial Studies*, 22, 4219–4258.

BESSEMBINDER, H., W. MAXWELL, AND K. VENKATARAMAN (2006): "Market transparency, liquidity externalities, and institutional trading costs in corporate bonds," *Journal of Financial Economics*, 82, 251–288.

BHATTACHARYA, S. (1979): "Imperfect Information, Dividend Policy, and 'The Bird in the Hand' Fallacy," *Bell Journal of Economics*, 10, 259–270.

BHOJRAJ, S. AND P. SENGUPTA (2003): "Effect of Corporate Governance on Bond Ratings and Yields: The Role of Institutional Investors and Outside Directors," *Journal of Business*, 76, 455–475.

BILLETT, M. T., T.-H. D. KING, AND D. C. MAUER (2004): "Bondholder Wealth Effects in Mergers and Acquisitions: New Evidence from the 1980s and 1990s," *Journal of Finance*, 59, 107–135.

BILLETT, M. T., D. C. MAUER, AND Y. ZHANG (2010): "Stockholder and Bondholder Wealth Effects of CEO Incentive Grants," *Financial Management*, 39, 463–487.

BILLETT, M. T. AND H. XUE (2007): "The Takeover Deterrent Effect of Open Market Share Repurchases," *Journal of Finance*, 62, 1827–1850.

BRAV, A., J. R. GRAHAM, C. R. HARVEY, AND R. MICHAELY (2005): "Payout policy in the 21st century," *Journal of Financial Economics*, 77, 483–527.

BROCKMAN, P., X. MARTIN, AND E. UNLU (2010): "Executive Compensation and the Maturity Structure of Corporate Debt," *Journal of Finance*, 65, 1123–1161.

BROWN, J. R., N. LIANG, AND S. WEISBENNER (2007): "Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut," *Journal of Finance*, 62, 1935–1965.

CHAVA, S., P. KUMAR, AND A. WARGA (2010): "Managerial Agency and Bond Covenants," *Review of Financial Studies*, 23, 1120–1148.

CHIBURIS, R. AND M. LOKSHIN (2007): "Maximum likelihood and two-step estimation of an ordered-probit selection model," *Stata Journal*, 7, 167–182.

COLES, J. L., N. D. DANIEL, AND L. NAVEEN (2006): "Managerial incentives and risk-taking," *Journal of Financial Economics*, 79, 431–468.

CORE, J. AND W. GUAY (2002): "Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility," *Journal of Accounting Research*, 40, 613–630.

CRANE, A. D., S. MICHENAUD, AND J. P. WESTON (2012): "The Effect of Institutional Ownership on Payout Policy: A Regression Discontinuity Design Approach," Rice University Working Paper.

DANIEL, N. D., D. J. DENIS, AND L. NAVEEN (2010): "Sources of Financial Flexibility: Evidence from Cash Flow Shortfalls," Purdue University Working Paper.

DANN, L. Y. AND H. DEANGELO (1988): "Corporate financial policy and corporate control: A study of defensive adjustments in asset and ownership structure," *Journal of Financial Economics*, 20, 87–127.

DATTA, S. AND U. S. DHILLON (1993): "Bond and Stock Market Response to Unexpected Earnings Announcements," *Journal of Financial and Quantitative Analysis*, 28, 565–577.

DEANGELO, H. AND L. DEANGELO (1990): "Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms," *Journal of Finance*, 45, 1415–1431.

DEANGELO, H., L. DEANGELO, AND D. J. SKINNER (2004): "Are dividends disappearing? Dividend concentration and the consolidation of earnings," *Journal of Financial Economics*, 72, 425–456.

DEANGELO, H., L. DEANGELO, AND R. M. STULZ (2006): “Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory,” *Journal of Financial Economics*, 81, 227–254.

DENIS, D. J. (1990): “Defensive Changes in Corporate Payout Policy: Share Repurchases and Special Dividends,” *Journal of Finance*, 45, 1433–1456.

DENIS, D. J. AND I. OSOBOV (2008): “Why do firms pay dividends? International evidence on the determinants of dividend policy,” *Journal of Financial Economics*, 89, 62–82.

DESAI, M. A. AND L. JIN (2011): “Institutional tax clienteles and payout policy,” *Journal of Financial Economics*, 100, 68–84.

DHILLON, U. S. AND H. JOHNSON (1994): “The Effect of Dividend Changes on Stock and Bond Prices,” *Journal of Finance*, 49, 281–289.

DUCHIN, R., O. OZBAS, AND B. A. SENSOY (2010): “Costly external finance, corporate investment, and the subprime mortgage credit crisis,” *Journal of Financial Economics*, 97, 418–435.

DUTORDOIR, M. AND L. S. HODRICK (2012): “Self-Selection and Stock Returns Around Corporate Security Offering Announcements,” Columbia Business School Research Paper No. 12-11.

EASTERBROOK, F. H. (1984): “Two agency-cost explanations of dividends,” *American Economic Review*, 74, 650–659.

EASTON, P. D., S. J. MONAHAN, AND F. P. VASVARI (2009): “Initial Evidence on the Role of Accounting Earnings in the Bond Market,” *Journal of Accounting Research*, 47, 721–766.

ELY, K. M. AND V. MANDE (1996): “The Interdependent Use of Earnings and Dividends in Financial Analysts’ Earnings Forecasts,” *Contemporary Accounting Research*, 13, 435–456.

FAMA, E. F. AND K. R. FRENCH (2001): “Disappearing dividends: changing firm characteristics or lower propensity to pay?” *Journal of Financial Economics*, 60, 3–43.

FRANCIS, B. B., I. HASAN, K. JOHN, AND L. SONG (2011): “Corporate Governance and Dividend Payout Policy: A Test Using Antitakeover Legislation,” *Financial Management*, 40, 83–112.

FRANCIS, J., K. SCHIPPER, AND L. VINCENT (2005): “Earnings and dividend informativeness when cash flow rights are separated from voting rights,” *Journal of Accounting and Economics*, 39, 329–360.

FRYDMAN, C. AND R. E. SAKS (2010): “Executive Compensation: A New View from a Long-Term Perspective, 1936–2005,” *Review of Financial Studies*, 23, 2099–2138.

GALAI, D. AND R. W. MASULIS (1976): "The option pricing model and the risk factor of stock," *Journal of Financial Economics*, 3, 53–81.

GARVEY, G. T. AND G. HANKA (1999): "Capital Structure and Corporate Control: The Effect of Antitakeover Statutes on Firm Leverage," *Journal of Finance*, 54, 519–546.

GASPAR, J.-M., M. MASSA, P. MATOS, R. PATGIRI, AND Z. REHMAN (2013): "Payout Policy Choices and Shareholder Investment Horizons," *Review of Finance*, 17, 261–320.

GOURIEROUX, C., A. MONFORT, E. RENAULT, AND A. TROGNON (1987): "Generalised residuals," *Journal of Econometrics*, 34, 5–32.

GRINSTEIN, Y. AND R. MICHEAELY (2005): "Institutional Holdings and Payout Policy," *Journal of Finance*, 60, 1389–1426.

GRULLON, G., R. MICHAELY, AND B. SWAMINATHAN (2002): "Are Dividend Changes a Sign of Firm Maturity?" *Journal of Business*, 75, 387–424.

HANDJINICOLAOU, G. AND A. KALAY (1984): "Wealth redistributions or changes in firm value: An analysis of returns to bondholders and stockholders around dividend announcements," *Journal of Financial Economics*, 13, 35–63.

HAW, I.-M. AND W.-S. KIM (1991): "Firm Size and Dividend Announcement Effect." *Journal of Accounting, Auditing & Finance*, 6, 325–344.

HECKMAN, J. J. (1979): "Sample selection bias as a specification error," *Econometrica*, 47, 153–161.

HERON, R. A. AND E. LIE (2006): "On the Use of Poison Pills and Defensive Payouts by Takeover Targets," *Journal of Business*, 79, 1783–1807.

HILL, R. C., L. C. ADKINS, AND K. A. BENDER (2003): *Maximum Likelihood Estimation of Misspecified Models: Twenty Years Later*, Emerald Group Publishing Limited, vol. 17 of *Advances in Econometrics*, chap. Test Statistics and Critical Values in Selectivity Models, 75–105.

HU, A. AND P. KUMAR (2004): "Managerial Entrenchment and Payout Policy," *Journal of Financial and Quantitative Analysis*, 39, 759–790.

JENSEN, G. R., L. L. LUNDSTRUM, AND R. E. MILLER (2010): "What do dividend reductions signal?" *Journal of Corporate Finance*, 16, 736–747.

JENSEN, M. C. AND W. H. MECKLING (1976): "Theory of the firm: Managerial behavior, agency costs and ownership structure," *Journal of Financial Economics*, 3, 305–360.

JOHN, K. AND D. C. NACHMAN (1985): "Risky Debt, Investment Incentives, and Reputation in a Sequential Equilibrium," *Journal of Finance*, 40, 863–878.

JOHN, K. AND J. WILLIAMS (1985): "Dividends, Dilution, and Taxes: A Signalling Equilibrium," *Journal of Finance*, 40, 1053–1070.

JOHN, T. A. AND K. JOHN (1993): "Top-Management Compensation and Capital Structure," *Journal of Finance*, 48, 949–974.

KALAY, A. (1982): "Stockholder-bondholder conflict and dividend constraints," *Journal of Financial Economics*, 10, 211–233.

KALAY, A. AND M. LEMMON (2007): "Payout Policy," in *Handbook of Empirical Corporate Finance*, ed. by B. E. Eckbo, San Diego: Elsevier, chap. 10, 3–57.

KALAY, A. AND U. LOEWENSTEIN (1986): "The informational content of the timing of dividend announcements," *Journal of Financial Economics*, 16, 373–388.

KANE, A., Y. K. LEE, AND A. MARCUS (1984): "Earnings and Dividend Announcements: Is There a Corroboration Effect?" *Journal of Finance*, 39, 1091–1099.

KAO, C. AND C. WU (1990): "Two-Step Estimation of Linear Models With Ordinal Unobserved Variables: The Case of Corporate Bonds," *Journal of Business & Economic Statistics*, 8, 317–325.

KLOCK, M. S., S. A. MANSI, AND W. F. MAXWELL (2005): "Does Corporate Governance Matter to Bondholders?" *Journal of Financial and Quantitative Analysis*, 40, 693–719.

KOTHARI, S. P. AND J. B. WARNER (2007): "Econometrics of Event Studies," in *Handbook of Corporate Finance: Empirical Corporate Finance*, ed. by B. E. Eckbo, Elsevier/North-Holland, vol. I.

KUANG, Y. F. AND B. QIN (2013): "Credit Ratings and CEO Risk-Taking Incentives," *Contemporary Accounting Research*, 30, 1524–1559.

KUMAR, P. AND B.-S. LEE (2001): "Discrete Dividend Policy with Permanent Earnings," *Financial Management*, 30, 55–76.

LAMBERT, R. A., W. N. LANEN, AND D. F. LARCKER (1989): "Executive Stock Option Plans and Corporate Dividend Policy," *Journal of Financial and Quantitative Analysis*, 24, 409–425.

LAMBRECHT, B. M. AND S. C. MYERS (2012): "A Lintner Model of Payout and Managerial Rents," *Journal of Finance*, 67, 1761–1810.

LEASE, J. C., K. JOHN, A. KALAY, U. LOEWENSTEIN, AND O. H. SARIG (2000): *Dividend Policy: Its Impact on Firm Value*, Harvard Business School Press.

LI, K. AND N. R. PRABHALA (2007): "Self-selection Models in Corporate Finance," in *Handbook of Corporate Finance: Empirical Corporate Finance*, ed. by B. E. Eckbo, Elsevier/North-Holland, vol. I.

LI, K. AND X. ZHAO (2008): "Asymmetric Information and Dividend Policy," *Financial Management*, 37, 673–694.

Li, W. and E. Lie (2006): "Dividend changes and catering incentives," *Journal of Financial Economics*, 80, 293–308.

Lintner, J. (1956): "Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes," *American Economic Review*, 46, 97–113.

Liu, Y. and D. C. Mauer (2011): "Corporate cash holdings and CEO compensation incentives," *Journal of Financial Economics*, 102, 183–198.

Long, M. S., I. B. Malitz, and S. E. Sefcik (1994): "An Empirical Examination of Dividend Policy Following Debt Issues," *Journal of Financial and Quantitative Analysis*, 29, 131–144.

Maxwell, W. F. and R. P. Rao (2003): "Do Spin-offs Expropriate Wealth from Bondholders?" *Journal of Finance*, 58, 2087–2108.

Maxwell, W. F. and C. P. Stephens (2003): "The Wealth Effects of Repurchases on Bondholders," *Journal of Finance*, 58, 895–919.

Merton, R. C. (1974): "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates," *Journal of Finance*, 29, 449–470.

Miller, M. H. and K. Rock (1985): "Dividend Policy under Asymmetric Information," *Journal of Finance*, 40, 1031–1051.

Myers, S. C. (1977): "Determinants of corporate borrowing," *Journal of Financial Economics*, 5, 147–175.

Nayak, S. and N. R. Prabhala (2001): "Disentangling the Dividend Information in Splits: A Decomposition Using Conditional Event-Study Methods," *Review of Financial Studies*, 14, 1083–1116.

Ofer, A. R. and D. R. Siegel (1987): "Corporate Financial Policy, Information, and Market Expectations: An Empirical Investigation of Dividends," *Journal of Finance*, 42, 889–911.

Pagan, A. (1984): "Econometric issues in the analysis of regressions with generated regressors," *International Economic Review*, 25, 221–247.

Penman, S. H. (1984): "Abnormal returns to investment strategies based on the timing of earnings reports," *Journal of Accounting and Economics*, 6, 165–183.

Sarig, O. and A. Warga (1989): "Bond Price Data and Bond Market Liquidity," *Journal of Financial and Quantitative Analysis*, 24, 367–378.

Skinner, D. J. (2008): "The evolving relation between earnings, dividends, and stock repurchases," *Journal of Financial Economics*, 87, 582–609.

Smith, C. W. and J. B. Warner (1979): "On financial contracting: An analysis of bond covenants," *Journal of Financial Economics*, 7, 117–161.

VENKATESH, P. AND R. CHIANG (1986): "Information Asymmetry and the Dealer's Bid-Ask Spread: A Case Study of Earnings and Dividend Announcements," *Journal of Finance*, 41, 1089–1102.

WARGA, A. AND I. WELCH (1993): "Bondholder losses in leveraged buyouts," *Review of Financial Studies*, 6, 959–982.

WOOLRIDGE, J. R. (1983): "Dividend Changes and Security Prices," *Journal of Finance*, 38, 1607–1615.