

What Do Firms Do When Dividend Tax Rates Change? An Examination of Alternative Payout Responses to Dividend Tax Rate Changes

Michelle Hanlon
MIT
mhanlon@mit.edu

Jeffrey L. Hoopes
University of Michigan
jhoopes@umich.edu

Preliminary and Incomplete: Please do not Quote

Draft: November 28, 2011

Abstract: This paper investigates the responsiveness of corporate payout policy to individual-level taxes. We predict and find a surge of special dividends in the final months of 2010, immediately before individual-level dividend tax rates were expected to increase (but did not). Consistent with prior research on dividend taxes and payout, we find that much of the increase is concentrated in firms largely held by insiders. In addition, we find evidence that firms alter the timing of their regular dividend payments by shifting what would normally be January, 2011 regular dividend payments into December of 2010. To our knowledge this is the first evidence in the literature about the timing of regular dividend payments in response to tax law changes. The changing of the timing of regular dividend payments is consistent with Slemrod's (1992) framework of taxpayer responsiveness to tax changes.

We appreciate comments from participants at the 2011 World Conference of the International Institute of Public Finance, the 2011 BYU Accounting Symposium, and the 2011 National Tax Association Meetings. We also appreciate comments from Erlend Bø (discussant), Dane Christensen, Jesse Edgerton (discussant), Cristi Gleason, David Kenchington, and Doug Skinner. We are also grateful for assistance from Harry De Angelo. Jeffrey Hoopes thanks the Deloitte Foundation for its financial support.

What Do Firms Do When Dividend Tax Rates Change? An Examination of Alternative Payout Responses to Dividend Tax Rate Changes

1. Introduction

This paper examines how investor level dividend tax rates affect firms' decisions regarding payout policy. Whether, how, and to what extent individual taxes affect corporate payout has been the subject of much research (discussed below). As Chetty and Saez (2005) note, this is likely due to the economic implications of dividend taxes on efficiency. If investor level taxes affect firm payout or investment, they have implications for the efficient operation of the market as a whole, with lower dividend tax rates most often associated with increased efficiency. Prior literature with respect to payout focuses primarily on whether individual level dividend taxes affect firm's payment of regular dividends, but gives little attention to alternative payout responses to changes in dividend tax rates. However, as a result of several limitations, results with respect to this question are somewhat mixed. In our paper, we examine two corporate alternative responses to changing dividend tax rates that have received less attention in the literature – issuing special dividends and altering the timing of regular dividends.¹

Our primary research setting is the dividend tax rate increase expected to occur on January 1, 2011. As background, the Jobs Growth and Tax Relief Reconciliation Act of 2003 (JGTRRA) reduced the tax rate on dividends from a maximum of 35% to a maximum of 15%. This reduction in tax rates, however, was intended to be temporary, scheduled to expire on December 31, 2010.² In late 2010, the U.S. economy was recovering from the recession of 2008-2009 and much debate ensued about the effects of increasing taxes during a depressed economic

¹ Chetty and Saez (2005) and Blouin, Raedy and Shackelford (2004) document an increase in special dividends surrounding the 2003 dividend tax cut, but, as explained latter, their time period of investigation included limiting factors not faced in our time period.

² The Act was originally set to expire in 2008, but the Tax Increase Prevention and Reconciliation Act of 2005 extended the expiration date through 2010.

cycle. Through late 2010, there was uncertainty regarding the extension of the favorable dividend tax rate (i.e., the Bush Tax Cuts), with deadlock in Congress making some deem it likely that no congressional action would be taken, the provisions would sunset, and the dividend rate would revert back to pre-JGTRRA levels (a maximum rate equal to the top individual tax rate, potentially as high as 39.6%) (e.g. Bases, 2010).³ The next most likely alternative appeared to be a compromise, with the dividend tax rate being legislated at 20% (Briginshaw, 2010; Norris, 2010). Finally, on December 16th, 2010, uncertainty around the investor level dividend tax rate was resolved, and the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (Jobs Act) was passed into law, extending the favorable 15% maximum rate that had existed from 2003-2010, for the next two years.

While firms may respond to dividend tax changes by altering their regular dividend payout, we posit that an even more likely, and less costly, response when faced with a dividend tax increase is to distribute special dividends. Similar to regular dividends, special dividends distribute cash to shareholders. However, special dividends do not commit firms to payout policies that may become untenable should the economic and tax environment change.⁴

³ For example, Bases (2010) reported that “Companies and investors have been left in limbo as Congress and the White House wrangle over whether to extend the Bush-era tax cuts on dividends....” Further, while speculation about the likelihood of an extension of the favorable dividend rate ran rampant, many in the financial sector assumed the extension would not happen. For example, in a conference call for Scripps Networks Interactive Incorporated held on September 22, 2010, analyst Brian Karimzad asked, “As we get to January 1, we're probably going to see a hike up in the dividend tax rate....How is that kind of changing the tenor or the options you are considering, things like a special dividend that you may not normally think about?” Similar questions from analysts are not rare when reading conference call transcripts around that time period.

⁴ Prior literature provides evidence that equity markets punish cuts in regular dividends (Healy and Palepu, 1988; DeAngelo and DeAngelo, 1990). Further, Brav et al. (2005: 491) find that 88.1% of surveyed managers agree or strongly agree that “there are negative consequences to reducing dividends.” Thus, because special dividends are less costly than regular dividends in terms of future commitments, we predict a surge of special dividends immediately prior to the dividend tax rate increase. Special dividends may be a particularly attractive response given that recently, dividend tax rates in the U.S. have been especially variable. In the time period between 1980 to 2011, the tax rate applicable to dividends has been changed eight times. Starting with the rate change from the Economic Recovery Tax Act of 1981, to the most recent time the rate was changed, JGTRRA, the average tenure for a dividend tax rate has been three years.

Anecdotal evidence exists that supports our conjecture. For example, Masimo issued a special dividend on December 21, 2010, and in a press release dated November 22, 2010, stated that “The special dividend is another step in demonstrating our commitment to enhancing stockholder value...In addition, due to the uncertainty over potential changes in tax policy, the timing of this dividend will allow Masimo stockholders to take advantage of the current low dividend tax rate.”

We also examine a second type of response—the shifting of regular dividends across tax rate regimes. Slemrod (1992) lays out a framework in which he outlines potential behavioral responses to changes in tax policy. He argues that taxpayers may, in order, alter 1) the timing of economic transactions, 2) repackage financial transactions, and 3), alter real decisions. The shifting of regular dividend payments from a period of high taxes to one of low taxes falls into Slemrod’s first order of responsiveness. There is also anecdotal evidence of this type of response. For example, in an announcement on October 28, 2010, Sarah Lee Corporation stated that, given the “uncertainty surrounding the renewal of the current dividend tax rates,” its board had “decided to accelerate the payment of the dividend by one week so that stockholders can benefit from the lower dividend tax rate that is currently set to expire at calendar year end.”

We test cross-sectional variation in the response to the expected tax increase by examining whether the response, if any, is greater for firms with more insider ownership. Prior literature reports that firms with larger levels of inside ownership are more sensitive to investor-level dividend tax rate changes (for example, see CS and Blouin et al., 2011). A greater effect for firms with greater inside ownership is consistent with an agency cost explanation in the sense that managers only seem to respond when it affects their own personal wealth. One could also consider the result consistent with incentive alignment – when managers have a large equity

stake they are incentivized to maximize shareholder wealth. In either case, the cross-sectional prediction is that more insider holdings leads to a greater responsiveness of payout with respect to dividend taxes.

We find evidence of both increased special dividends and a shifting of regular dividend payment in expectation of the increase in the dividend tax rate near the end of 2010. There is a statistically and economically significant surge in the number of special dividends in November and December of 2010. There is also evidence of firms shifting regular dividends from January, 2011 to December, 2010. This shifting is further evidence of payout policy being responsive to investor-level taxes. Brav et al. (2008) conjecture that this may be one type of response and it conforms to Slemrod's (1992) taxpayer responsiveness model; however, to our knowledge, the shifting of dividends around an individual tax rate change has not been empirically investigated previously.

In additional analysis, we do not find evidence that real estate investment trusts (REITs) which have different tax incentives, shifted their regular dividends in response to the tax rate change, lending support to our hypothesis that our results are tax driven and not caused by macro-economic factors.⁵ Finally, we find no evidence that firms increased their payment of special dividends near the end of 2010 by substituting special dividends for share repurchases. Indeed, we find a dramatic increase in the dollar value and incidence of repurchases in the final quarter of 2010 as well. This increase likely also has a tax explanation—capital gains tax rates were also expected to rise at the end of 2010.

Overall, we conclude from the evidence that individual level taxes affect payout policy in terms of timing of payments and for payout types that do not require high commitments to

⁵ REITs rarely pay special dividends, thus, we do not formally examine whether there was a surge in special dividend payments in late 2010 by REITs. We discuss more below.

continue payments (i.e., special dividends and share repurchases). Relative to changing regular dividend policy which has been tested in prior research, the responses that we test are less costly methods of responding to taxation. Evidence consistent with responsiveness using less costly methods is consistent with Slemrod's (1992) hierarchy of taxpayer responsiveness. However, while our paper provides evidence consistent with corporate responsiveness to individual level tax rate changes, the results do not suggest a large, aggregate change in payout policy and thus our results are not inconsistent with the statements in Brav et al. (2005, 2008) that taxes are likely a second order effect for corporate payout policy.

Our paper contributes to the literature in several ways. First, our study provides additional evidence in the debate about taxes and payout policy. Chetty and Saez (2005) and Blouin et al. (2011) report evidence consistent with changes in individual level dividend tax rates affecting firms' payout policy (broadly defined). However, Edgerton (2010) finds little tax-motivated corporate response to JGTRRA – he finds that similar responses occurred at real estate investment trusts (REITS) that do not have the same tax incentives. Our paper helps to bridge the gap between these two sets of papers by documenting less costly actions firms can take in response to dividend tax rate changes. By documenting less costly responses by firms, we show that there are alternative payout responses to dividend tax rate changes, providing support that managers are cognizant of investor level taxes. We contend that evidence on the timing changes by management are important given Slemrod's (1992) statement that "...understanding tax policy implications for retiming and repackaging of transactions is essential to understanding the tax system as a whole."⁶

⁶ In addition, Blouin et al. (2011) state that further research is needed to understand the role of insiders in the interaction of shareholder taxes and distribution policies. Our paper helps provides an answer to this call.

Second, we contribute to the literature on special dividends more generally. DeAngelo et al. (2000) conclude that special dividends are rarely paid in recent times (except for large specials). Indeed, their evidence leads them to conclude that "...the disappearance of specials is connected to forces that made specials per se unattractive and not to factors that generally discouraged dividend payments." With more specific attention to taxes the authors state that "If tax changes were the primary reason that firms altered their usage of special dividends, the incidence of specials should increase in recent years, the opposite of what actually occurred" (page 345). Using data after the time period studied in DeAngelo et al. (2000), we find (along with Chetty and Saez, 2005) a resurgence of special dividends which appear to be tax motivated. While we are not disputing the statements in DeAngelo et al. (2000), we suggest that the relation between taxes and special dividends is more nuanced and that specials are responsive to dividend taxation, especially immediately prior to a rate increase and when insiders own a relatively high proportion of the firm.

This paper proceeds as follows. Section 2 provides a discussion of prior literature and develops our hypothesis. Section 3 discusses our research design and results. Section 4 concludes.

2. Prior Research and Hypothesis Development

2.1 Prior Research and Empirical Setting

The relation between investor-level taxes and firms' payout policy has received considerable attention in the literature but the results are somewhat mixed. For example, Gordon and Mackie-Mason (1990) find a payout response to dividend tax rate changes but Act et al. (1990) and Bolster and Vahan (1991) find no or little response. Recently, the Jobs Growth and Tax Relief Reconciliation Act of 2003 (JGTRRA) provided a potentially fruitful setting to test

the affect of investor-level tax rates on payout policy because JGTRRA reduced the dividend tax rate (on qualified dividends) for individuals from a maximum of 35% to a maximum of 15%.⁷ While there are a myriad of studies on JGTRRA (for example, Blouin et al., 2004; Chetty and Saez, 2005; Julio and Ikenberry, 2004; Chetty and Saez, 2006; Aboody and Kasznik, 2008; Edgerton, 2010; Blouin et al., 2011), the findings of these studies have also been somewhat mixed and varied. Using primarily non-parametric graphical analysis, Chetty and Saez (2005) find an increase in dividend payments (along both the extensive and intensive margin) as a result of the dividend tax rate reduction. Chetty and Saez (2005) report a 20% increase in dividends after the passage of the JGTRRA, which they attribute to the reduction in the tax rate. They also find an increase in special dividends following JGTRRA and that firms were not merely substituting regular dividends for share repurchases. However, they concede that their findings are not obtainable in a standard time series regression, as a result of entry and exit effects in the sample and the concentrated nature of dividends. They also acknowledge that, as a result of other economic events that surrounded 2003 (which we discuss below), their study is limited.

Using a similar time period as Chetty and Saez (2005), Blouin et al. (2004) also study the JGTRRA, but find somewhat different results. They report that aggregate dividends increased after JGTRRA, but that this was largely due to a small number of firms issuing large, special dividends. Unlike Chetty and Saez (2005), they find little evidence of an increase in regular, quarterly dividends. In addition, they also find that share buybacks acted as a substitute for regular dividends, and that share buybacks increased after JGTRRA.⁸ In a follow-up study, Blouin et al. (2011) find that the percentage of total payout represented by regular dividends

⁷ Qualified dividends are defined by IRC 1(h)(11)(B), and generally include all dividends paid by a domestic corporation or a qualified foreign corporation, with several specific exceptions regarding holding periods and the type of corporation issuing the dividend.

⁸ Shevlin (2008) reports similar evidence.

increased after JGRRTA, and attribute some of the mixed findings of Blouin et al. (2004) and Chetty and Saez (2005) to the failure of these studies to simultaneously model both shareholder and managerial responses to tax rate changes. Taken together, Blouin et al. (2011) and Chetty and Saez (2005) find that corporate payout responds to changes in the dividend tax rate in a manner consistent with tax incentives.

Edgerton (2010) also investigates firms' reactions to the JGTRRA and finds an increase in dividends after JGTRRA. However, Edgerton (2010) attributes the increase in dividends to other factors, such as rising firm profitability and investors' demand for cash, both points conceded as potential confounding factors by Chetty and Saez (2005). Edgerton (2010) investigates the reaction of the JGTRRA by using a difference-in-difference technique. Edgerton notes that dividends from real estate investment trusts (REITs) are not qualified dividends under the JGTRRA and, thus, are not subject to the special lower tax rate.⁹ In light of this fact, only dividends on regular C-corporations that are in excess of the increase experienced by REITs can be attributed to the dividend tax rate reduction. Using this difference-in-difference framework, Edgerton estimates that the impact of JGTRRA on aggregate dividend payouts is statistically insignificant. Further, Edgerton also documents that the ratio of dividend payouts to corporate earnings changed very little after the tax cut, consistent with the dividend increases resulting from increased firm profitability. Similarly, Julio and Ikenberry (2005) contend that the increase in dividends was merely a result of a change in firm composition over the studied time period, a point noted by Chetty and Saez (2005) as a difficulty to be overcome in the examination of the question.

Survey evidence has also weighed in to suggest that the relationship between investor-level tax rates and payout policy is not strong. For example, Brav et al. (2008) reports that

⁹ As stipulated by IRC 1(h)(11)(D)(iii).

surveyed managers rank taxes as fifth in order of importance among factors that affect their dividend decisions (after factors such as the stability of cash flows and the historic level of dividends). Further, of managers at firms that initiated dividends in the three years surrounding the 2003 act, the average manager stated that the tax change had “a little” effect on the decision to increase/initiate dividends payments. Brav et al. (2008) thus supports the sentiment, echoed in Brav et al. (2005), that dividend tax rates and payout policy are only weakly related and suggests that investor level tax rates are at best of second order importance with respect to corporate payout policy.¹⁰

The contradictory findings in this body of work are potentially attributable to many factors. First, many papers were completed before a sufficient time series of data was available to fully analyse the response to JGTRRA. Second, the decrease in the dividend tax rate did not create an unambiguous time period in which to explore changes in payout policy by firms.¹¹ For this reason, in the studies that examine JGTRRA, there is not consistency with regard to the event period (starting with either the announcement of the possibility of a rate decrease, to the legislative proposal, to final passage of the bill). Further, even if a date that firms anticipated the bill to be passed is known, it is not certain how long firms take to respond to such information, and understanding over which period firms will respond to the tax change is essential for estimation (Shevlin, 2008).

A third important confounding factor in prior work is that the period around the passage of JGTRRA was full of other economic events that could have affected firms’ payout. During this period, the economy was recovering from a massive stock market crash which changed the

¹⁰ This is constant with prior survey work done after a prior tax rate reduction, which finds evidence that “cast[s] doubt on the notion that dividend policy is based on shareholders’ tax rates (Abrutyn and Turner, 1990: 493).”

¹¹ For example, Brown et al. (2007) treat all 2003 initiations as having occurred after JGTRRA, even though, as Blouin et al. (2011) specifically mention, the Act was not passed into law (and then, by only one vote), until May of 2003.

composition of the market and there were several highly publicized instances of corporate fraud that may have made investors wary of leaving cash at firms and spurred demand for dividends (in line with Jensen, 1986). Indeed, JGTRRA was, in part, a response to the economic downturn and even the corporate scandals.¹² In addition to this, corporate earnings were increasing following the recession of the early 2000s, which may have contributed to increased dividends (Edgerton, 2010). Chetty and Saez (2005) list these reasons as limitations of their study and conclude by suggesting that “future tax changes might allow identification of tax effects in an environment where such scandals are less relevant (Chetty and Saez, 2005; 816).” Our paper aims to satisfy this condition.

We extend the examination of individual level taxes and payout policy to a setting less contaminated by the factors above and by examining alternative methods of responding to tax rate changes. By both changing our setting (the potential sunset of JGTRRA instead of the passage of JGTRRA¹³) and the types of behavior studied (to those appropriate for the new setting – special dividends and regular dividend shifting), we contribute to the literature and add to our knowledge about firm responses to individual level dividend taxation. We note that our setting in some sense has the opposite limitation relative to prior literature. While the JGTRRA provisions were scheduled to expire on December 31, 2010, they did not actually expire and instead were extended until December 31, 2012. Thus, our setting suffers from pressure against finding results

¹² Vice President Dick Cheney stated “Abolishing the double-taxation on dividends will...transform corporate behavior in America and encourage responsible practices...” He went on to say “...investors will demand higher cash dividends, and companies will be motivated to share them. This should discourage companies from artificially inflating profits just to cause a temporary spike in stock prices” (Weil, 2003).

¹³ For example, because we study an expected tax increase, our setting offers an unambiguous and narrow time period in which to study corporate payout behavior. We need not worry if our event period captures all of the effect of the rate increase, as all dividends would have had to have been paid before December 31, 2010 to be subject to the lower rate. Further, given our very short event window (two months), general trends such as increased demand for dividends because of accounting fraud, economic cyclicalities, changes in corporate earnings¹³ will be much less likely to adversely affect our estimation. In sum, this shortened event window offers a sharper test, with less chance that other economic factors are creating a spurious result.

because the expiration of JGTRRA was not a certainty (and indeed, it did not end up materializing). Thus, if evidence of increased payouts in response to an expectation of higher rates exists in our setting, it is likely a lower-bound of the responsiveness of payout to taxation.

2.2 Hypothesis Development

We use the expected expiration (sunset) of JGTRRA to test three hypotheses. First, firms may consider the after-tax benefit of paying dividends to their investors when considering whether to pay a dividend. As a result of lower tax rates currently relative to the tax rates after the impending rate increase, companies may opt to pay more dividends in time periods which are tax favored. This would suggest a surge in special dividends prior to December 31, 2010. As discussed above, special dividends do not generate expectations of continued dividend payments and offer the benefit of being “one-time” in nature. This allows payouts to occur before the rate increase is in effect without creating an expectation that payouts will continue at that level after rates increase. As a result, we make the formal hypothesis:

H1: *There is a surge of special dividends immediately prior to the expected dividend tax rate increase.*

Prior research also provides evidence that firms held by insiders are more likely to increase dividends in response to tax rate changes. If insiders pay more special dividends, this would be consistent with a potential agency cost explanation and/or an incentive alignment explanation. In terms of agency costs, managers with large shareholdings may have been anxious to issue special dividends in order to accrue the benefits of lower dividend taxation for themselves. Indeed, the popular press discusses this factor; Driebusch (2010) states, “For executives with large holdings in their company's shares, the [tax induced special] payouts aren't entirely altruistic.”¹⁴ However, one could view such a result as indicating incentive alignment as

¹⁴ See also Bases, 2010.

well. Managers with more shareholdings are more concerned with the tax effects for themselves and as a result take action consistent with concern for shareholders in general (assuming that general shareholders would prefer receiving tax advantaged dividends).¹⁵

Prior literature has found evidence consistent with firms with large proportions of insider ownership being more sensitive to dividend tax increases. For example, Chetty and Saez (2005) find that firms that have relatively more inside ownership were more apt to respond to the dividend tax reduction of 2003. However, other evidence is mixed with regards to the relationship between corporate payout policy and firm ownership (see Zechhauser and Pound, 1990; Eckbo and Verma, 1994; Kahn, 2006; and Renneboog and Traojanowski, 2008). As a result, we investigate whether firms' proclivity to pay specials as a result of the prospective tax increase varies with the percentage of the firm held by insiders. This leads to our second hypothesis:

H2: *The surge in special dividends is greater at firms with higher inside ownership.*

As previously noted, Slemrod (1992) posits that taxpayers' responsiveness to tax rate changes could be in one of several forms. He argues that the behavioral responses to taxation will occur in the following order: 1) the timing of economic transactions, 2) financial repackaging of transactions, and 3) real decisions. Our first two hypotheses focus on a real decision - the issuance of a special dividend.¹⁶ We also investigate the possibility that firms may

¹⁵ In this light the *agency problem* would exist for managers that hold little to no shares in the company. Because such a manager does not benefit from altering payout, fewer changes in payout policy are observed for firms where insider holdings are relatively small. One story told by T. Boone Pickens suggests that managers are reticent to pay dividends merely to benefit shareholders. He tells of a board meeting of Union Oil Company of California where a board member suggested paying a dividend. The CEO "responded with typical managerial disdain for shareholders: 'Have you lost your @#\$\$%&! mind? Why would we give people we don't know a bunch of money (Pickens, 2008: 22)?"

¹⁶ This, of course, assumes that the special dividends themselves are not merely an inter-temporal shifting of regular dividends from future periods into 2010. Specials could represent a change in the timing of distributions as well. Indeed, there are anecdotes of this behavior. For example, in a press release on December, 9, 2010, Seaboard Corporation explained the size of its \$6.75 dividend, payable on December 31, 2010. It stated that: "The increased

have taken a less costly action that would have nevertheless displayed a recognition and consideration of shareholder level taxes. We posit that firms that would have otherwise paid a regular dividend at the beginning of 2011 shifted those dividends to the end of 2010, taking advantage of what was perceived as the tax-favored period. This type of response is consistent with Slemrod's first potential behavioral response to taxation, a change in the timing of transactions.

Shifting the timing of dividend payments has been mentioned as a possibility in the literature. For example, Brav et al. (2008: 619) find that initiations that occurred just after the passage of JGTRRA were much more likely to mention the tax rate change as a motive for initiating dividends, and suggest that this is evidence that firms that "had been on the fence about initiating a dividend decide[d] to accelerate their first dividend payout once taxes were cut." Further, Bagwell and Shoven (1989) also find evidence consistent with firms shifting their share repurchases in anticipation of the Tax Reform Act of 1986. In light of the possibility of dividend shifting, and anecdotal evidence suggesting it takes place, we form our third hypothesis:

H3: *Regular dividends normally paid in January, 2011 are shifted to December, 2010, before the expected tax rate increase.*

We argue that documenting a timing response to a tax change is economically substantive and important for two reasons. First, the fact that firms are willing to take what, for them, is a non-costly action that benefits shareholders, is important. This suggests that firms are cognizant of, and are willing to take action in light of, shareholders' individual tax considerations

amount of the dividend (which has historically been \$0.75 per share on a quarterly basis or \$3.00 per share on an annual basis) represents payment of the regular fourth quarter dividend of \$0.75 per share and a special dividend of \$6.00 per share, equaling the anticipated annual 2011 and 2012 dividends (\$3.00 per share per year). This increased dividend is being made to ensure that the taxes shareholders will pay based on the receipt of the dividend is taxed at the currently favorable 2010 tax rate on dividends. The Corporation does not intend to declare any further dividends for the years 2011 and 2012." (Incidentally, over 70% of Seaboard equity is held by insiders.) Other evidence is found in Briginshaw (2010). Norris (2010) also suggests dividend shifting as a potential response by firms facing an increase in dividend tax rates.

subject to cost constraints. In other words, firms' responsiveness, even if using non-costly action such as retiming over very short periods of time, suggests the existence of a "time notch" from the perspective of the firm (and not just the individual), indicating that individual dividend tax rates affect the choice set of the firm (see Slemrod, 2010). Second, as suggested by Slemrod (1992), understanding the first two behavioral responses in his framework (retiming and recharacterizing) is imperative to understanding the third response (real action).

3. Data, Tests, and Results

3.1 Data

We employ monthly dividend data provided by the Center for Research in Securities Prices (CRSP), which was updated by CRSP on February 14, 2011 (and as a result, has all dividend payments that had been announced through February, 2011). We retain only observations from 1980-2010.¹⁷ We exclude all firms in the financial or utilities industries (SIC codes between 4900 and 4949 and between 6000 and 6999) because these firms have characteristically different dividend payment patterns (in general, they are much less variable), and as a result, are typically excluded when studying firms' payouts (e.g. Allen and Michaely, 2003). For our main tests, we also exclude all securities that do not have a share code equal to 10 or 11, which eliminates REITs, ADRs, closed-end funds, and firms not incorporated in the United States (DeAngelo et al., 2000). These types of entities also have different characteristics that make them undesirable for our sample—for example, dividend payments by firms incorporated outside of the United States or by certain pass-through entities (such as REITs) may

¹⁷ We retain only observations since 1980 because payout behavior in general has changed at firms over time, making earlier time periods substantially different than more modern time periods (DeAngelo et al., 2004). This is consistent with, for example, Chetty and Saez (2005), who examine 1982-2004.

not be qualified dividends under JGRRTA. Our sample selection process and resultant number of observations is outlined in Table 1.¹⁸

We classify payouts by firms into two categories—special dividends and regular dividends. Following DeAngelo et al. (2000), we define special dividends as distributions with CRSP distribution codes equal to 1262 or 1272, codes associated with “US cash dividend, year-end or final, taxable same rate as dividends” or “US cash dividend, extra or special, taxable same rate as dividends,” respectively. We define regular dividends as those with distribution codes 1232, 1212, 1222 or 1242 – cash dividends, paid either quarterly, monthly, semi-annually, or with unspecified frequency, which are taxable at the same rate as ordinary dividends.¹⁹ All other distribution codes not mentioned above are not retained in the sample—many are distributions associated with merger and acquisition activity, stock splits or reorganizations. Our unit of observation is firm-month distributions.²⁰

In order to examine our second hypothesis, we obtain data on insider ownership data from two different sources to ensure robustness — Compustat’s Execucomp and Factset’s LionShares.²¹ Execucomp is what is used most often in research (for example, Chetty and Saez (2005) use Execucomp) and has the benefit of providing data on holdings for individual

¹⁸ We examine REITS as a control group in our robustness tests below.

¹⁹ Departing from DeAngelo et al. (2000), we do not include distribution codes equal to 1218 as these are taxable at the ordinary income rate. There are fewer than 200 of these distributions in the entire CRSP database, and including them does not change our results. It may be the case the CRSP codes dividends as dividends taxable at the dividend tax rate that eventually are classified as a return of capital, and thus not subject to the dividend tax rate (and that should not be in our sample). This could be the case both because of CRSP error, and because firms often do not know the tax status of their payouts until they calculate earnings and profits at year end, and issue Form 1099 to their shareholders. Since we have no reason to expect these errors to be clustered around any time period, we have no reason to believe that this would bias our results towards rejecting the null.

²⁰ We opt to aggregate at the firm-month level as opposed to the firm-quarter level because we expect to see an increase in dividends for the last two months of 2010, and expect to see dividends especially concentrated in December. Reducing the data to quarter-firm data instead of month-firm data makes for coarser granularity, and does not allow us to examine the period in which we expect to see the largest response to the dividend tax increase (i.e. November and December, 2010).

²¹ Execucomp covers only the largest firms, so, this imposes some bias in our sample—however, since these firms represent a majority of the market, we still think this is an economically meaningful sample.

managers. However, as noted in Chetty and Saez (2005), Execucomp covers a limited set of firms (S&P 1500). This limited coverage may induce a bias, making our results not applicable to firms in general. On the other hand, Factset has much better coverage of firms than Execucomp. However, the Factset data are not panel data – these data are produced for actual market participants, and so only contains the percentage of the firm held by insiders at the time the data is retrieved. For our sample, the Factset data were downloaded on December 15, 2010, the day before the final resolution of uncertainty regarding the dividend tax rate.

In order to conduct our tests, we use three measures of insider holdings. First, we use the percentage of the firm held by all executives covered by Execucomp (*Execucomp Insider Holdings*). Second, we use the percentage of the firm held by the manager with the largest shareholdings in each firm year, also calculated from Execucomp data (*Largest Insider's Holdings*). This measure is more relevant if there is one single controlling manager, who makes decisions on his personal behalf. Lastly, we use the Factset measure of insider holdings (*Factset Insider Holdings*), which is a firm-level measure that is the percentage of the firm held by insiders as of December 15, 2010. This provides insider holdings data with more extensive coverage than Execucomp, at the cost of using insider holdings data that does not vary by firm-year (only by firm).²²

Table 2 provides some descriptive statistics for our sample and sub-samples of firms. We show the data for three different samples: 1) the entire sample described in Table 1, 2) firms that paid a special dividend anytime during the sample period (not just firm/months observations with a special dividend), and 3) firms that paid a special dividend in November or December of 2010. The data reveal that firms that pay specials are smaller (asset size, Compustat AT, and

²² The percentage of the firm held by insiders seems to be a relatively fixed firm construct. For example, in our sample, estimating a regression of Execucomp Insider Holdings regressed on firm fixed effects has an adjusted R-squared in excess of 70%. This assuages some concerns with using the Factset data.

market value of equity, $CSHO*PRCC_F$) than the average dividend paying firm.²³ In addition, firms that paid a special in November or December, 2010, are smaller than special dividend paying firms in general, a fact discussed later in the paper.

3.2 Test of Hypothesis 1

We start by graphing the raw number of special dividends paid in each month over the sample period 1980-2010. The graph, Figure 1, shows a decline in the use of specials throughout the 1990s, consistent with DeAngelo et al. (2000), whose data end in 1995. Our data are also consistent with the Chetty and Saez (2005) data in that we see a resurgence of specials in 2003, around the time of the enactment of JGTRRA and around the time the recession of that period ended. We also extend the analysis beyond the beginning of 2004 (where the data in Chetty and Saez (2005) stops). From this extension we can see that the resurgence in the number of specials in 2003 was not ephemeral—it extends into 2010 – consistent with the tax rate reduction extending through this time period. If firms suspected that the favorable dividend tax rate was not permanent and would be allowed to lapse, paying special dividends in the 2003-2010 period would be a way to take advantage of the decreased shareholder-level dividend tax rate without creating shareholder expectations about permanently increased regular dividend payments.

While the post-2003 resurgence of special dividends is notable, most notable is the surge in the number of special dividends experienced in the final months of 2010. Indeed, the rate of special dividends in the final months of 2010 is substantially higher than any other time in our sample, with the exception of the increase in special dividends experienced in December of 1980 (48 specials) and January of 1982 (41 specials). These other jumps may also be tax-induced—the tax rate on dividends in 1981 was set at a maximum of 70% (the same as the individual income

²³ Some of this effect may merely be the declining popularity of special dividends documented by DeAngelo et al. (2000) coupled with inflation.

rate), which decreased to a maximum of 50% in 1982, potentially resulting in the surge in specials in January of 1982. These high levels of specials early in the time series also reflect the fact that specials were simply more popular in the earlier period and have been declining in popularity (DeAngelo et al., 2000).²⁴ For a discussion and brief analysis of past tax rate changes, please see the Appendix.

Figure 2 is a graph of the total number of special dividends issued each month, scaled by the sum of the number of special dividends and non-special dividends in the same month (as in DeAngelo et al. (2000)). Scaling controls for 1) the general dividend activity of firms by representing the number of specials as a percentage of the number of all dividends issued and 2) the total number of firms in the economy (but it does not control for changing characteristics of firms in the economy). This graph shows that firms paid more specials as a percentage of all dividends near the end of 2010 than in any other period in the graph. Both Figure 1 and Figure 2 suggest that special dividends increased at the extensive margin at the end of 2010, near the scheduled end of the Bush Tax Cuts.

Figure 3 examines special dividends at the intensive margin. Panel A depicts the actual aggregate dollar magnitude of specials divided by the aggregate dollar magnitude of all dividends. Panel B scales the aggregate dollar of special dividends by the aggregate market value of the firms in the sample. The most immediately recognizable characteristic of these graphs is the large spike in December of 2004—a spike entirely attributable to Microsoft’s payment of a \$32 billion special dividend. In addition, as in the previous figures, there is a large surge of special dividends in the final months of 2010 in both panels. Surges of equivalent size happened in 1987 and 1988 (both years of dividend tax rate changes), as well as in 2006 and one nearly as

²⁴ In untabulated data we split the firms in our sample into those traded on NYSE and those traded on NASDAQ. We find similar trends for both NASDAQ and NYSE firms.

big in 2007, suggesting that the increase along the intensive margin in 2010 was not extremely anomalous. The presence of a strong reaction along the extensive margin (frequency), but not the intensive margin (magnitude), suggests that most of the abnormal response is due to an increase in the number of specials; the overall dollar magnitude of special dividends is not as unusually large as the frequency of specials.

In order to obtain statistical estimates as to the significance of the effect of the expected tax increase on the incidence of special dividends, we estimate the following linear probability model²⁵:

$$\text{Special Dividend}_{it} = \beta_0 + \beta_1 \text{NOVDEC2010}_{it} + \sum \beta_k \text{Month Fixed Effects} + \sum \beta_k \text{Year Fixed Effects} + e \quad (1)$$

where the dependent variable, *Special Dividend*, is an indicator variable set to 1 if the firm paid a special dividend in that month, and *NOVDEC2010* is an indicator variable coded as 1 for firm-months occurring in November and December of 2010, the period in which we posit firms responding to the potential increase in investor level tax rates would issue special dividends. We include both month and year fixed effects to control for, respectively, the concentration of special dividends in particular months (December is a very popular month in which to issue specials) and economy-wide factors that may have influenced special dividend payments (special dividends have generally fallen out of favor since the 1980s). As a result of the fixed effects, β_1

²⁵ We opt to use a linear probability model (LPM) as opposed to a non-linear limited dependent variable (LDV) model (Angrist and Pischke, 2009). While the signs and statistical significances of the coefficient estimates of our variables of interest are all similar when using a non-linear estimation approach (probit), we opt for the LPM to allow for easy interpretation of the coefficients (especially the interacted coefficients in Model 3, for the difficulties in such interpretations see Ai and Norton (2003)), as well as the use of fixed effects in our model. The use of LPM does not impose potential bias or inconsistency on the coefficients and standard errors (Greene, 2004). In contrast, a potential bias exists in a non-linear LDV model especially when group sizes are small (Greene, 2004) as is the case in our setting. The use of a LPM in a LDV situation is supported by Angrist and Pischke (2009). We use heteroskedasticity robust standard errors in our estimation of the LPM to adjust for the well-known problem of heteroskedasticity when using an LPM with a LDV. Lastly, because the issuance of special dividends is relatively rare, the problem of predicted values falling outside of [0,1] is not common in our data. For example, in the estimation of Column 1, Table 3, the fitted values all fall within [-.001, .076].

indicates the increase in the likelihood that a firm would issue a special dividend in November and December of 2010, above and beyond both the likelihood that the firm issues a special dividend in November or December generally, or in the year 2010. The estimates from estimating Equation (1) are presented in Column 1 of Table 3. The estimate of β_1 , 0.04, is positive and significant, consistent with an increase in the frequency of special dividend payments in November and December of 2010 as firms anticipated a dividend tax increase. It suggests that the potential tax rate increase increased firms' likelihood of paying a special dividend by 4%, a noteworthy increase given the tax rate increase did not happen.

We next replace the indicator variable, *Special Dividend*, with the magnitude of the special dividend (the dollar value of the special dividend issued by the firm, scaled by the market value of the firm in year t). We eliminate the 32 billion dollar special dividend issued by Microsoft because it is an outlier. We then estimate an ordinary least squares regression, and tabulate the results in Column 2 of Table 3. The coefficient on NOVDEC2010 is statistically significant, and the value of 0.0003 suggests that on average, holding the other covariates constant, firms paid 0.03% more of their market value out in special dividends in November and December of 2010 relative to other months in the time series. Thus, in dollar terms the special dividend is statistically different relative to other months, however, the effect is arguably not as economically large as the increase in the frequency of special dividends.

3.3 Test of Hypothesis 2

Our second hypothesis is that the increase in special dividends will vary cross-sectionally with inside ownership. Figure 4 graphically displays the data. Panel A is analogous to Figure 2. It is a graph of the frequency of special dividends – the total number of special dividends divided by the total number of dividend paying firms in that month – partitioned by high and low

inside ownership. High (low) inside ownership is defined as above (below) the sample median of insider ownership as a percentage of the firm. For this analysis, we use the Factset data (a similar pattern emerges with the Execucomp data). The data in Panel A are consistent with firms held by insiders having a greater response to the impending tax rate change than firms that have low insider holdings. Panel B of Figure 4 is analogous to Figure 3. The graph is of the *dollar value* of special dividends each month scaled by the total value of all dividends, partitioned by the level of inside ownership. In this panel, the data are less stark. Firms with high insider holdings have a small spike at the end of 2010 and firms with low insider holdings appear to have a small spike a bit earlier in 2010 but still late in the year. However, these spikes do not appear to be extremely unusual as compared to the entire time series.

In order to obtain statistical estimates as to the significance of the difference between the two groups of firms, we estimate the following equation:

$$\begin{aligned} \text{Special Dividend}_{it} = & \beta_0 + \beta_1 \text{NOVDEC2010}_{it} + \beta_2 \text{Insider Holdings} + \beta_3 \text{Insider Holdings} * \\ & \text{NOVDEC2010}_{it} + \sum \beta_k \text{Month Fixed Effects} + \sum \beta_k \text{Year Fixed Effects} + e \end{aligned} \quad (2)$$

where the dependent variable, *Special Dividend*, is an indicator variable set to 1 if the firm paid a special dividend in that month, *NOVDEC2010* is an indicator variable coded as 1 for firm-months occurring in November and December of 2010, the period in which we posit that firms responded to the potential increase in investor level tax rates would issue special dividends. *Insider Holdings* is measured in the three ways described above—a firm-year measure from Execucomp that equals the percentage of the firm held by insiders (*Execucomp Insider Holdings*), a firm-year measure from Execucomp that equals the percentage of the firm held by the insider with the largest shareholdings (*Largest Insider's Holdings*), and a firm measure from Factset that equals the percentage of the firm held by insiders (*Factset Insider Holdings*). We

also include month fixed effects, to control for the monthly cyclical in special issuances. Lastly, we include year fixed effects to control for general economic trends and general popularity in special usage that may have produced more specials in general in a given year, irrespective of tax effects. We expect the interaction between *Insider Holdings* and *NOVDEC2010* to be positive, but make no directional prediction for *Insider Holdings*.

The results of estimating equation (2) are in Table 4, Columns 1 through 3. Column 1 contains the estimates using *Execucomp Insider Holdings* as the measure of insider holdings. The coefficient on the interaction between *NOVDEC2010* and *Execucomp Insider Holdings* is significant and positive. Column 2 uses the percentage of the firm held by the largest inside shareholder as a measure of insider holdings (*Largest Insider's Holdings*), as measured by Execucomp. The coefficient on the interaction between *Largest Insider's Holdings* and *NOVDEC2010* is also positive and significant. Interestingly, in Column 2, as in Column 1, the coefficient on *NOVDEC2010* is insignificant when including the *Largest Insider's Holdings* and the *NOVDEC2010* interaction. This suggests that firms held relatively more by insiders were not only more likely to issue specials near the end of 2010, but, the effect of increased specials is entirely concentrated among these firms, at least for the sample of firms for which we can obtain insider holdings measures.

Column 3 uses *Factset Insider Holdings*, and is consistent with the other two proxies of insider holdings, with the interaction is both positive and significant. The sum of the evidence combines to suggest that the increase in the issuance of specials near the end of 2010 was especially, if not entirely, concentrated among firms with relatively large insider holdings. Columns 4, 5 and 6 estimate model 2, but replace the dependent variable with the dollar value of the special dividend, scaled by the market value of the firm. The results of these estimations are

consistent with the results in columns 1, 2 and 3, in that the interaction between Insider Holdings (measured three different ways) and NOVDEC2010 is positive and significant, suggesting that the magnitude of the special dividend increased more for firms with high insider holdings as a result of the anticipated higher tax rates. This supports DeAngelo et al.'s (2008: 214) assertion that “the idiosyncratic preferences of controlling stockholders ... are potentially first order determinants of payout policy for firms with dominant stockholders.” It is also consistent with managers having their incentives aligned with shareholders through stock ownership in the firm.

3.4 Test of Hypothesis 3

Our third hypothesis predicts that firms will shift regular dividend payments normally paid in January to December 2010 to avoid the anticipated higher tax rate. To examine this hypothesis, we again start by graphically examining the data. Figure 5, Panel A, presents a bar chart of the number of regular dividends issued in December of a given year, next to the number of regular dividends issued in January of the following year. The graph reveals that, over this time period, more regular dividends are issued in December than in January in almost every year. A notable exception is in January 1982, which may also be tax induced. In January 1982 the dividend tax rate dropped from 70% applicable in December of 1981 to 50% effective in January 1982.

For purposes of our paper, notably there is an apparent shift in the December 2010/January 2011 time periods in Panel A of Figure 5. Consistent with dividend shifting in response to expected tax increases, the black bar (December year t) and the hollow bar (January year $t+1$) sharply diverge in 2010/2011, suggesting a dearth of January, 2011 payments, and an excess number of December, 2010 payments, especially relative to the previous years. This shift is economically significant. In December 2009/January 2010, there were a total of 578 dividend

payments for our sample firms, 59.9% of which happened in December. In December 2010 and January 2011 there is an almost identical number of dividend payments by our sample firms, 587, but 70.7% occurred in December of 2010. Using the 2009/2010 season as a benchmark, this suggests that 63 firms ($587 \times (70.7\% - 59.9\%)$) shifted their January, 2011 dividend into December of 2010. In dollar magnitude, there were \$33.8 billion in dividends in the December 2009/January 2010 time period, with 64.4% of those dollars getting paid in December 2009. There were \$38.6 billion paid in the December 2010/January 2011 period, with 70.5% of those dividends paid in December of 2010. Using 64.4% as a benchmark, this suggests that \$2.4 billion ($38.6 \times (70.5\% - 64.5\%)$) was shifted into December 2010 from January, 2011. Had the dividend tax rate returned to 35% (one of the possible rates had the low 15% rate not been extended) and all shareholders been subject to this maximum rate, this would have resulted in shareholders in these 63 dividend-shifting firms saving a total of \$483.3 million dollars ($2.4 \times 35\% - 15\%$), a potential tax savings to investors of nearly a half billion dollars for a nearly costless corporate action.

To illustrate the shift differently, Panel B of Figure 5 graphs the ratio of December regular dividends to the number of January regular dividends and also suggests a dramatic increase in December dividends and decrease in January dividends in 2010/2011. The ratio of December to January regular dividend payments jumped from 1.49 in 2009/2010 to 2.41 in 2010/2011, a 62% increase, larger than any other percentage increase in the time series of regular dividend payments for over six decades. The standard deviation of changes in this ratio from 1933 to 2010 is .394, making the 2009/2010 to 2010/2011 change of .95 a 2.33 standard deviation change in this ratio, suggesting a clearly statistically significant change in the ratio of December to January dividends.

Panel C of Figure 5 replicates the graph in Panel B of Figure 5, but divides firms into firms with an above the median (below the median) value for insider ownership. If firms with high insider ownership are more responsive to individual level-taxation than firms with low insider holdings, we expect the ratio of December to January dividend payments to increase to a greater extent for firms with high insider ownership in 2010/2011 than for those with lower insider ownership. Panel C of Figure 5 reveals that this is the case—for low insider ownership firms the ratio of December to January dividends increased from 1.61 to 2.14 (a 33% increase), while for high insider ownership firms, it went from 1.52 to 2.65 (a 74% increase). Of note here, is that firms with low insider holdings still exhibit a shift in the timing of dividend payments, it is just smaller than at firms with high insider holdings.

This shifting also appears to be prevalent for some of the other instances in which the dividend tax rate changed.²⁶ For example, in January of 1982, the dividend tax rate decreased from 70% to 50%, providing incentives for firms to shift December, 1981 dividends into January, 1982 dividends. The ratio (bar) of December to January dividends in 1981/1982 is 0.857, the first time it had been below unity since 1933/1934.

While an inter-temporal shift of regular dividends is likely less economically meaningful than actual real changes to payout policy, it is nevertheless important. Inter-temporal shifting by a mere month does not affect investment, aggregate savings, or cost of capital in the same way as actual changes to long-term regular payout policies (shifting changes investors' after-tax cash flows by only the tax savings induced by shifting). However, it does signal firms' cognizance of, and willingness to take action as a result of, changes in investor-level dividend tax rate changes. Given the existence of theories in the literature which suggest that firms may be completely

²⁶ See the Appendix for a description of the tax rate changes. We examine only tax rate changes that are significant (changed the rate by more than 10%), and that were not enacted retroactively (managers would have been able to anticipate them and shift between years).

unresponsive to changes in investor level tax rates (e.g. Auerbach, 1979), evidence of inter-temporal shifting suggests that at least in some situations, firms are responsive to dividend tax rates.

4. Additional Analyses

4.1 REIT responses to the potential expiration of the JGTRRA tax cuts

In our analysis thus far, we compare firms' behavior in a time period where we believe tax incentives exist to firms' behavior in time periods in which we believe there are no tax incentives. However, if other unobservable factors that cause changes in payout policy exist in the narrow windows considered in our test (if, for example, there was sudden investor demand for distributions in November and December of 2010 for some reason unrelated to taxes), our inference may be erroneous. In this section, we conduct a false experiment to help verify that the abnormal payout behavior in 2010 was tax induced. As explained in Edgerton (2010), dividends paid from real estate investment trusts (REITs) do not qualify for the reduced dividend tax rates legislated under JGTRRA, but rather, continue to be taxed at the normal individual income tax rate. As such, incentives for REITs to change their payout behavior in anticipation of the sunset of JGTRRA did not exist in the same way for REITs as they did for corporations which paid qualifying dividends.²⁷

Given the lack of tax incentives for REITs near the end of 2010, we expect to see little payout response in reaction to the tax rate change. Because REITs very rarely pay special dividends (there were 3 paid in 2010 and 7 paid in 2009), we can only use REITs to examine our third hypothesis, that firms shifted regular dividends from January 2011, to December 2010.²⁸

²⁷ REITs may have experienced some tax incentives for payment of special dividends near the end of 2010, as individual income tax rates were also anticipated to increase. However, these increases were relatively modest compared to the potential increases of over 100% for the dividend tax rate for qualified dividends.

²⁸ For example, over the entire sample period, 1996 had the most special payments from REITs, with only 22.

This analysis is conducted in Figure 6, which is essentially a replication of Figure 5, but using only regular dividends paid by REITs. Looking at both Panel A and Panel B, we observe no abnormal relationship between the December 2010 and January 2011 regular dividend payments. The change from the 2009/2010 ratio of December to January dividends to the 2010/2011 ratio is 0.055. The standard deviation of this change since 1980 is 0.449, meaning that this change is not statistically significant at any level. This suggests that the abnormal shifting that occurred for regular firms in 2010/2011 was due to some incentive not present at REITs, likely the individual level qualified dividend tax rate.

4.2 Repurchase Activity

Our paper focuses on special dividends and the shifting of regular dividends in anticipation of a dividend tax increase. Another payout form firms employ are share repurchases. Repurchases could have been affected at the end of 2010 for two potential reasons. First, if firms substituted special dividends for share repurchases (i.e., paid special dividends instead of share repurchases) repurchase activity during the final months of 2010 would have declined. Second, an alternative outcome is that firms increase share repurchases as well as dividends because capital gains tax rates were also scheduled to increase at the end of 2010, albeit by a much smaller amount (5 percentage points). To get a better sense on whether the impending tax increase altered total payouts we also examine share repurchase activity at the end of 2010. First, we graph the dollar value of all repurchases from 1985 to 2010 (repurchases did not gain wide-spread popularity until the mid-80s) as well as the number of firms that repurchased shares, for all firms in our sample which issued a special dividend in November or December of 2010.²⁹

²⁹ We define share repurchases following Blouin et al (2011), that is, either the change in treasure stock (Compustat Item TSTKQ), or, if that value is 0, the difference between stock sales and stock repurchases (PRSTKCY-SSTKY). Given our interest in the change near the end of 2010, we measure repurchases using quarterly data.

Figure 7 Panels A and B graph the dollar value and incidence of share repurchases for the firms included in our original sample and which paid a special dividend in November or December of 2010. From these two graphs, we see a general increase in share repurchases over the examined time series, and especially an overall increase since 2003. However, contrary to what one would expect if firms were substituting special dividends for repurchases dividends near the end of 2010, we also see a surge in repurchases among these firms in the final quarter of 2010. These data help assuage concerns that firms merely substituted specials for repurchases. Furthermore, the data suggest that the smaller capital gains tax increase scheduled to occur at the end of 2010 also had an effect on payout – firms increased share repurchases.

5. Conclusion and Implications

The relation between dividend tax rates and payout policy is an important question that has received significant attention in the literature; however the evidence has been mixed. We investigate firms' use of two alternative payout policy changes—the paying of special dividends and the inter-temporal shifting of dividends across small time periods. We find evidence that firms pay more specials and shift regular dividends in response to tax rate changes. This is consistent with Chetty and Saez (2005) and Blouin et al. (2011) in suggesting that firms are responsive to dividend tax rate changes. We do this using a period, the expected lapse of the favorable tax dividend tax rates passed in 2003 under JGRRTA, which allows us to examine a short and well defined time period which was not tainted with accounting scandals.

Our evidence suggests that firms issued an unusual number of special dividends near the end of 2010, concurrent with the expected lapse of the favorable 2003 dividend tax rates. This suggests that firms are cognizant of, and act upon, shareholder-level taxes. We also find that the issuance of specials was concentrated in firms with high insider ownership. In addition, we find

that firms shifted dividend payments from January of 2011 to December of 2010, consistent with a willingness to take (costless) action in response to individual-level taxes. This shifting did not occur in real estate investment trusts, consistent with the observed behavior being tax-induced. Finally, we find that share repurchases also increased at the end of 2010 indicating that firms did not merely substitute special dividends for repurchases but rather increased repurchases to avoid the impending capital gains tax rate increase as well.

Our evidence is consistent with Slemrod's (1992) hierarchy of responses to tax rates. Taxpayers will respond to taxes using the least costly means available. While taxes may have, at best, a second order effect for overall payout policy (especially the determination of regular dividend policy) for the broad spectrum of U.S. corporations (Brav et al. (2005)), our evidence suggests that there are firms and payout forms/timing that are particularly tax-sensitive and for which changes in tax rates (or even the anticipation of changes in tax rates) are important.

Finally, the expected dividend tax rate increase studied in this paper never actually occurred. On December 17, 2010, the 15% dividend tax rate was extended, and signed into law through the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. That firms were sensitive enough to respond to an expected, but unrealized, tax rate change is interesting in its own right. This finding is consistent with prior research which finds responses to proposed changes to tax law that did not actually materialize into actual tax policy (Erickson and Maydew, 1998). This suggests that policy makers should not only consider payout responses when considering changes to the dividend tax rate, but also recognize that merely considering policy changes is likely to elicit a behavioral response from some very tax-sensitive firms.

References

- Abrutyn, Stephanie and Robert Turner. Taxes and Firms' Dividend Policies; Survey Results, *National Tax Journal*, December 1990, 491-497.
- Ai, Chunrong and Norton, E.C. 2003. Interaction terms in logit and probit models. *Economic Letters*, 80: 123-129.
- Allen, F., Michaely, R., 1995. Dividend policy. In: Jarrow, R.A., Maksimovic, V., Ziemba, W.T. (Eds). *Operations Research and Management Science*, Elsevier Science, Amsterdam.
- Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricists Companion*. Princeton: Princeton University Press.
- Auerbach, A. 1979. Wealth Maximization and the Cost of Capital. *Quarterly Journal of Economics*, 93. 433-446.
- Auerbach, Alan. 2003. Taxation and Corporate Financial Policy, in Alan Auerbach and Martin Feldstein, eds. *Handbook of Public Economics*, Volume 3 (Amsterdam: North-Holland).
- Auerbach, A. and J. Slemrod. 1997. The Economic Effects of the Tax Reform Act of 1986. *Journal of Economic Literature*, 35:2. 589-632.
- Bagwell, Laurie Simon and John B. Shoven. 1989. Cash Distributions to Shareholders. *The Journal of Economic Perspectives*, 3(3) 129-140.
- Baker, M. and Wurgler, J. 2004. Catering Theory of Dividends. *The Journal of Finance* 59: 3. 1125–1165.
- Bases, Daniel. 2010. Analysis-U.S. tax changes won't kill dividend trend. Reuters News. 18 November, 2010.
- Becker, Nathan. 2010. VeriSign To Pay \$516 Million Special Dividend With Divestiture Proceeds. Dow Jones Newswires. December 12, 2010.
- Blouin, J, J.Raedy, and D. Shackelford. 2004. The Initial Impact of the 2003 Reduction in the Dividend Tax Rate. Working paper, University of North Carolina at Chapel-Hill.

- Blouin, J. J. Raedy, and D. Shackelford. 2011. Dividends, Share Repurchases, and Tax Clienteles: Evidence from the 2003 Reductions in Shareholder Taxes. *The Accounting Review* 86(3) 887-914.
- Bolster, Paul J. and Janjigian, Vahan. 1991. Dividend Policy and Valuation Effects of the Tax Reform Act of 1986, *National Tax Journal*. 44:4, 2. 511-18.
- Brav, A., J. R. Graham, C. R. Harvey, and R. Michaely. 2005. Payout policy in the 21st century. *Journal of Financial Economics* 77, 483–528.
- Brav, A., J. R. Graham, C. R. Harvey, and R. Michaely. 2008. Managerial Response to the May 2003 Dividend Tax Cut. *Financial Management*. Winter.
- Briginshaw, John. 2010. Attn: The Corner Office – Why U.S. Firms Should Pay Special Dividends Before Year-End 2010. *Graziadio Business Review*. 13:4.
- Chetty, R. and Saez, E. 2005. Dividend Taxes And Corporate Behavior: Evidence From The 2003 Dividend Tax Cut. *The Quarterly Journal Of Economics* CXX:3. 791-833.
- Chetty, R. and Saez, E. 2010. Dividend and Corporate Taxation in an Agency Model of the Firm. *American Economic Journal: Economic Policy*. August: 1-31.
- DeAngelo, Harry, and Linda DeAngelo. 1990. Dividend Policy and Financial Distress: An Empirical Examination of Troubled NYSE Firms, *Journal of Finance*, 45:1415–1431
- DeAngelo, H., DeAngelo, L., Skinner, D., 2000. Special dividends and the evolution of dividend signaling. *Journal of Financial Economics* 57, 309–354.
- DeAngelo, H., DeAngelo, L., Skinner, D., 2004. Are dividends disappearing? Dividend concentration and the consolidation of earnings. *Journal of Financial Economics* 72(3), 425–456.
- DeAngelo, H., L. DeAngelo and D. Skinner. 2008. Corporate payout policy. *Foundations and Trends in Finance*. 3:2-3. 95-287.
- Driebusch, Corrie. 2010. Looming Tax Increases, Cash Piles Drive One-Time Dividend Boom. Dow Jones Newswires. December 2, 2010.
- Eckbo, B. E. and S. Verma. 1994. Managerial share ownership, voting power, and cash dividend policy. *Journal of Corporate Finance* 1, 33–62.
- Edgerton, J. 2010. Effects of the 2003 Dividend Tax Cut: Evidence from Real Estate Investment Trusts. Working paper, Federal Reserve Board.

- Erickson, M. and E. Maydew 1998. Implicit taxes in high dividend yield stocks. *The Accounting Review* 73(4): 435-458.
- Gordon, Roger and Jeffrey MacKie-Mason. Effects of the Tax Reform Act of 1986 on Corporate Financial Policy and Organizational Form, In *Do Taxes Matter? The Impact of the Tax Reform Act of 1986*, ed. Joel Slemrod, 1990, 91-131.
- Greene, W. 2004. The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects. *Econometrics Journal*, 7: 98–119.
- Healy, Paul M. and Krishna G. Palepu. 1988. Earnings information conveyed by dividend initiations and omissions. *Journal of Financial Economics*, 21(2): 149-175.
- Jensen, Michael C. 1986. Agency Costs of Free Cash Flow, Corporate Finance and Takeovers, *American Economic Review*, LXXVI, 323–329.
- Johnson, David Cay and Eric Lipton. October 16, 2004. Kerry's Wife Releases Part of Her 2003 Income Tax Return. *The New York Times*. Retrieved from <http://www.nytimes.com/2004/10/16/politics/campaign/16teresa.html> on June 16, 2011.
- Julio, Brandon, and David Ikenberry. 2005. Reappearing Dividends. *Journal of Applied Corporate Finance*, XVI, 89–100.
- Khan, T. (2006), 'Company dividends and ownership structure: Evidence from UK panel data'. *Economic Journal* 116, C172–C189.
- Kingsbury, Kevin. 2010. Freeport-McMoRan Plans Special Dividend, 2-For-1 Stock Split. Dow Jones Newswires. December 9, 2010.
- Korinek, Anton and Joseph E. Stiglitz. 2009. Dividend taxation and intertemporal tax arbitrage. *Journal of Public Economics* 93: 142-159.
- Norris, Floyd. August 12, 2010. Taxes No Longer So Certain. *The New York Times*.
- Papaioannou, G. and C. Savarese. 1994. Corporate Dividend Policy Response to the Tax Reform Act of 1986. *Financial Management*. Spring. 56-63.
- Pickens, T.B. 2008. *The First Billion Is the Hardest: Reflections on a Life of Comebacks and America's Energy Future*. Random House Publishing, New York.
- Renneboog, L. and G. Trojanowski. 2008, 'Patterns in payout policy and payout channel choice of U.K. firms in the 1990s'. Working paper, European Corporate Governance Institute.

Shevlin, T. 2008. Discussion of: Executive stock-based compensation and firm's cash payout: The role of shareholders' tax-related payout preferences. *Review of Accounting Studies* 13(2-3): 252-265

Slemrod, J. 1992. Do Taxes Matter? Evidence from the 1980s. *American Economic Review*, vol. 82: 250-256.

Slemrod, J. 2010. Buenas Notches: Lines and Notches in Tax System Design. Working Paper, University of Michigan.

Weil, J., 2003, Companies Face a Harsh Reality Involving Dividend Payments, *The Wall Street Journal* p. C1.

Zeckhauser, R. J. and J. Pound. 1990. 'Are large shareholders effective monitors? An investigation of share ownership and corporate performance'. In: R. G. Hubbard (ed.): *Asymmetric Information, Corporate Finance, and Investment*. Chicago, IL: University of Chicago Press.

Appendix – Examination of Other Tax Rate Changes

Summary of changes to the dividend tax rate since 1980

Year	Act	Signed into law	Date Rate Took Effect	Previous Rate	Enacted Rate	Percentage Rate Decrease	Included in Test
1982	Economic Recovery Tax Act of 1981	August 13, 1981	January 1, 1982	70.0%	50.0%	28.6%	Yes
1987	Tax Reform Act of 1986	October 22, 1986	January 1, 1987	50.0%	38.5%	23.0%	Yes
1988	Tax Reform Act of 1986	October 22, 1986	January 1, 1988	38.5%	28.0%	27.3%	Yes
1991	Omnibus Budget Reconciliation Act of 1990	November 5, 1990	January 1, 1991	28.0%	31.0%	-10.7%	Yes
1994	Omnibus Budget Reconciliation Act of 1993	August 10, 1993	January 1, 1994	31.0%	39.6%	-27.7%	Yes
2001	Economic Growth and Tax Relief Reconciliation Act of 2001	June 7, 2001	January 1, 2001	39.6%	39.1%	1.3%	No
2002	Economic Growth and Tax Relief Reconciliation Act of 2001	June 7, 2001	January 1, 2002	39.1%	38.6%	1.3%	No
2003	Jobs and Growth Tax Relief Reconciliation Act of 2003	May 23, 2003	January 1, 2003	38.6%	15.0%	61.1%	No

Appendix (Continued) – Examination of Other Tax Rate Changes

Discussion - Special Dividend Payments and Tax Rate Changes – Historical Evidence

We examine whether the finding that firms alter their payouts of special dividends as a result of investor level dividend tax rate changes applies more generally to other tax rate changes prior to 2010/2011. We analyze several different dividend tax rate changes that have happened in the United States since 1980.³⁰ Since 1980, the dividend tax rate has exhibited substantial variation, changing eight times, from a maximum of 70% to a minimum of 15%. A summary of these changes is outlined above. In order to be able to examine firm responses in changes to dividend tax rates, we require two properties of the change in the dividend tax rate. First, we require that the dividend tax rate change was a *substantial* change. For example, the dividend tax rate was reduced in both 2001 and 2002, but, less than 2 percent of the original rate, and as a result, we do not think they are substantial enough to generate a corporate response. For this reason, we disregard the rate changes of 2001 and 2002 in our analysis.

Second, we require that the tax rate was enacted prior to the period the tax rate would take effect, allowing firms to anticipate and respond to the tax rate change. For example, the dividend tax rate change in 2003 was signed into law by President Bush on May 23, 2003, and was applicable to all dividend payments made beginning January 1, 2003. As a result, given that boards of directors have to meet and authorize dividend payments before the payments occur, there is no concrete time period in which we would expect an increase in the payment of special dividends. For this reason, we exclude the dividend tax rate changes in 2003. Given our two requirements, we are left with five dividend tax rate changes which were substantial (all in excess of a 10% change), and which allow for an unambiguous time period in which we could expect increased dividend payments. These are the tax rate changes that took effect in 1982, 1987, 1988, 1992 and 1993.

Using these five rate changes, we graphically examine the effect of dividend tax rate changes on the issuance of special dividends. We expect firms to pay more special dividends in December of the year previous to a dividend tax rate increase (1990 and 1992) and to pay more dividends in January of the year of a dividend tax rate decrease (1982, 1987 and 1988). In addition, if there is no tax effect, we expect the number of special dividends in a given month to be equivalent to the short-term average of special dividends in that month. Operationalized, this means that the number of *abnormal* special dividends in a given month is the number of special dividends in that month, less the average from the same month in the year before, and the year after.³¹

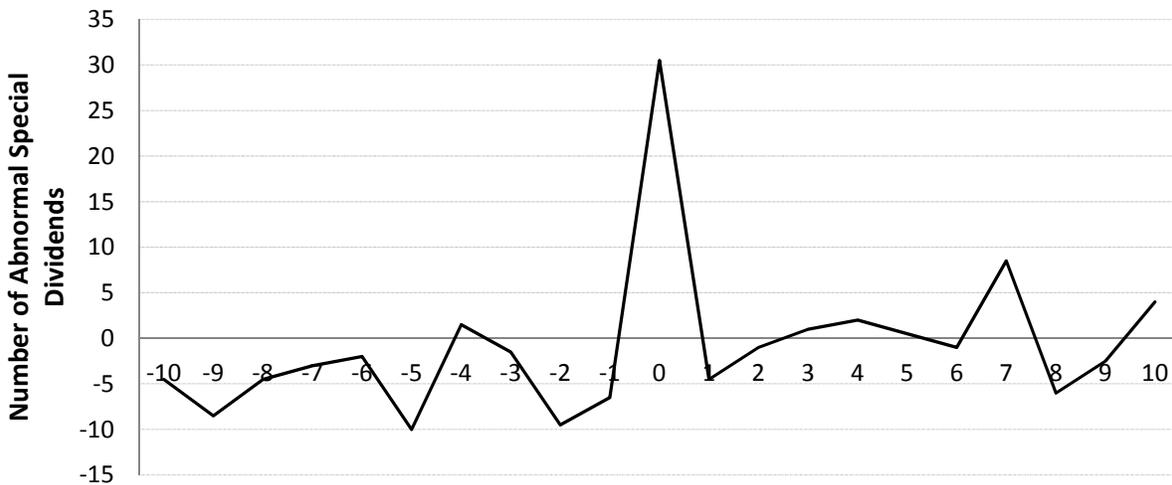
Figure Appendix-1 below graphs the number of abnormal dividends paid in each month for the 10 months prior to, and 10 months following a dividend tax rate change, labeled as period

³⁰ Several of these tax rate changes have been examined in previous papers for the effect they had corporate payouts. However, as with CS and Blouin et al. (2011) and JGTRRA, the focus of these papers was primarily normal dividends, and their testing procedure focused merely on some time period after the passage of the act (rather than a specific month before or after the act). Further, the findings of these papers are mixed. For example, Bolster and Vahan (1991) find no response in payout policy as a result of the 1986 Act et al. (1990) find that executives did not anticipate the act having an effect on payouts, whereas Gordon and Mackie-Mason (1990) find an increase in corporate payouts around the 1986 Act.

³¹ The analysis is relatively unchanged if abnormality is defined using the prior one, two, three, and four year averages of dividends paid in the same month. However, since special dividend payments have generally been declining in use over the sample period, using a strictly backward looking average imposes a negative bias on the number of abnormal dividends.

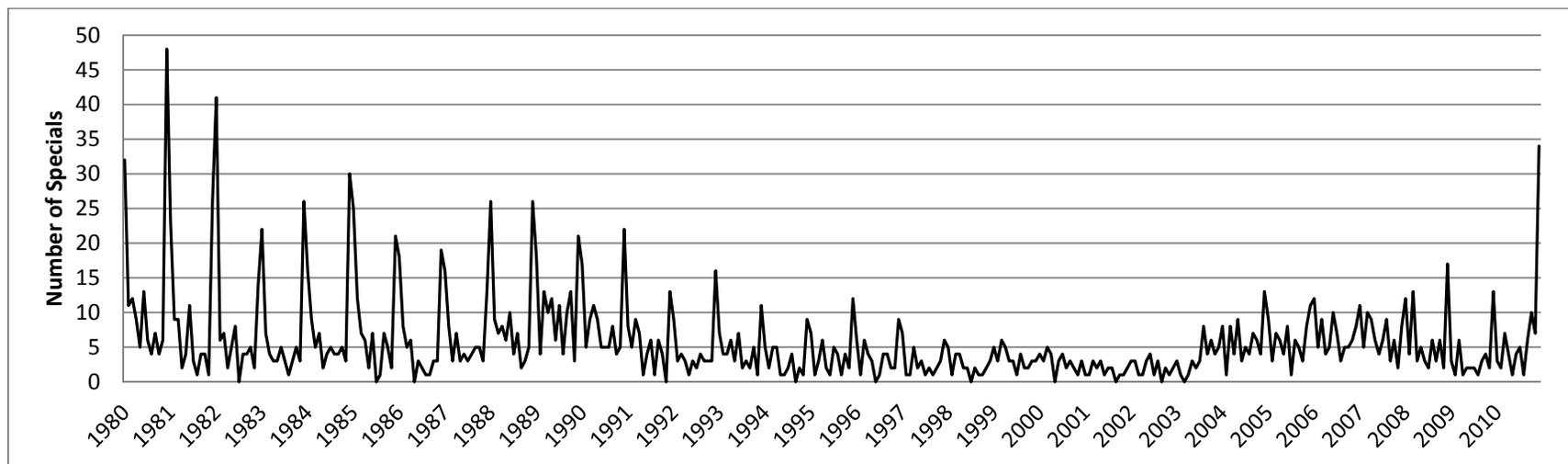
0 (which is December of 1990 and 1992, and January of 1982, 1987 and 1988). In the figure, we see a sharp increase in the number of abnormal dividends paid in period 0, consistent with firms issuing special dividends in response to changes in the tax rate applicable to individual investors. It is important to note that there appears to be a negative number of abnormal dividends in periods -1 and 1, suggesting that there may be some amount of dividend shifting taking place (i.e., these were not additional special dividends being paid, but rather, specials accelerated from January to December, or delayed from December to January). This evidence suggests that the documented reaction of corporations to the expected 2010 tax increase was not anomalous—corporations have responded to other tax rate changes with a change in their special dividend payments.

Figure Appendix – 1



Notes: This figure graphs the number of abnormal dividends centered on the December in the year before a tax rate increase (December of 1990 and 1992), or January of the year of a tax rate decrease (January of 1982, 1987 and 1988). Abnormal special dividends are the aggregated number of special dividends issued in a month for all firms in the sample, less the average number of special dividends issued in that month for year t-1 and t+1.

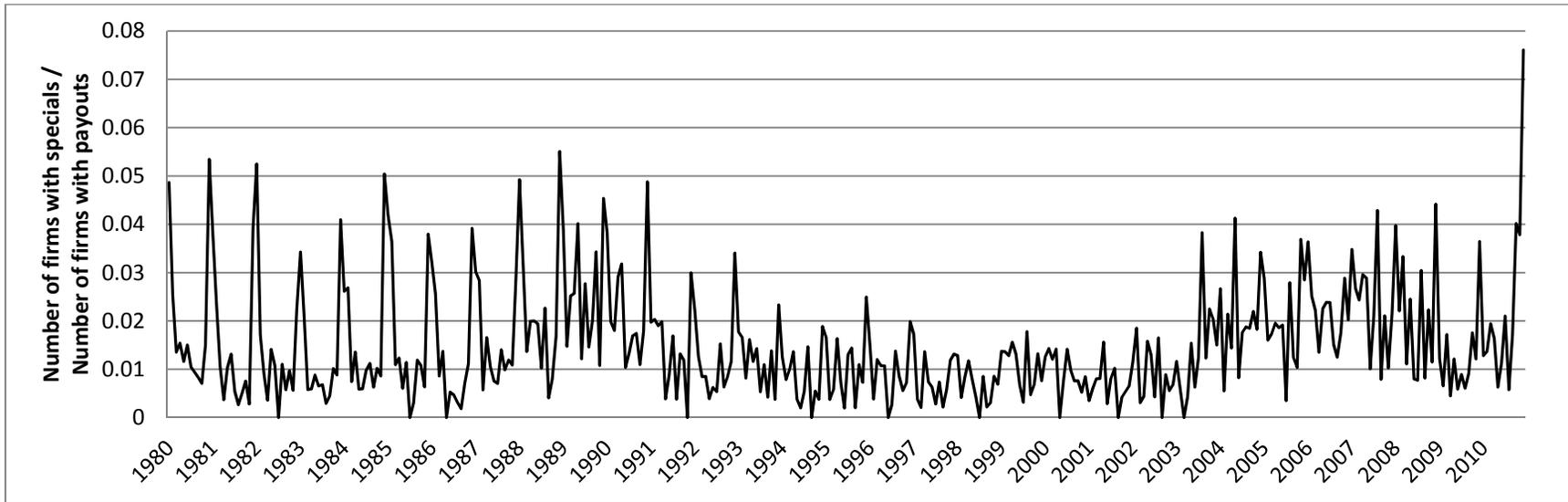
Figure 1
The Number of Special Dividends in each Month



Notes: This graph shows the total number of special dividends for each month, Jan 1980-Dec 2010, for all U.S. firms covered by the CRSP Dividend database, and which are not financial (final year SIC between 6000 and 6999) or utilities (final year SIC between 4900 and 4949) firms, with sharecodes equal to 10 or 11.

Figure 2

The Number of Special Dividends each Month Divided by the Number of Dividend Payments (Special plus Regular Payouts) in the Same Month



Notes: This graph shows the total number of specials in each month divided by the number of firms with a payout (special or regular) each month, Jan 1980-Dec 2010, for all U.S. firms covered by both the CRSP Dividend database, and which are not financial (final year SIC between 6000 and 6999) or utilities (final year SIC between 4900 and 4949) firms.

Figure 3
The Dollar Value of Special Dividends

Panel A: The dollar value of special dividends each month divided by the total dollar value of all dividends (special plus regular) in that month

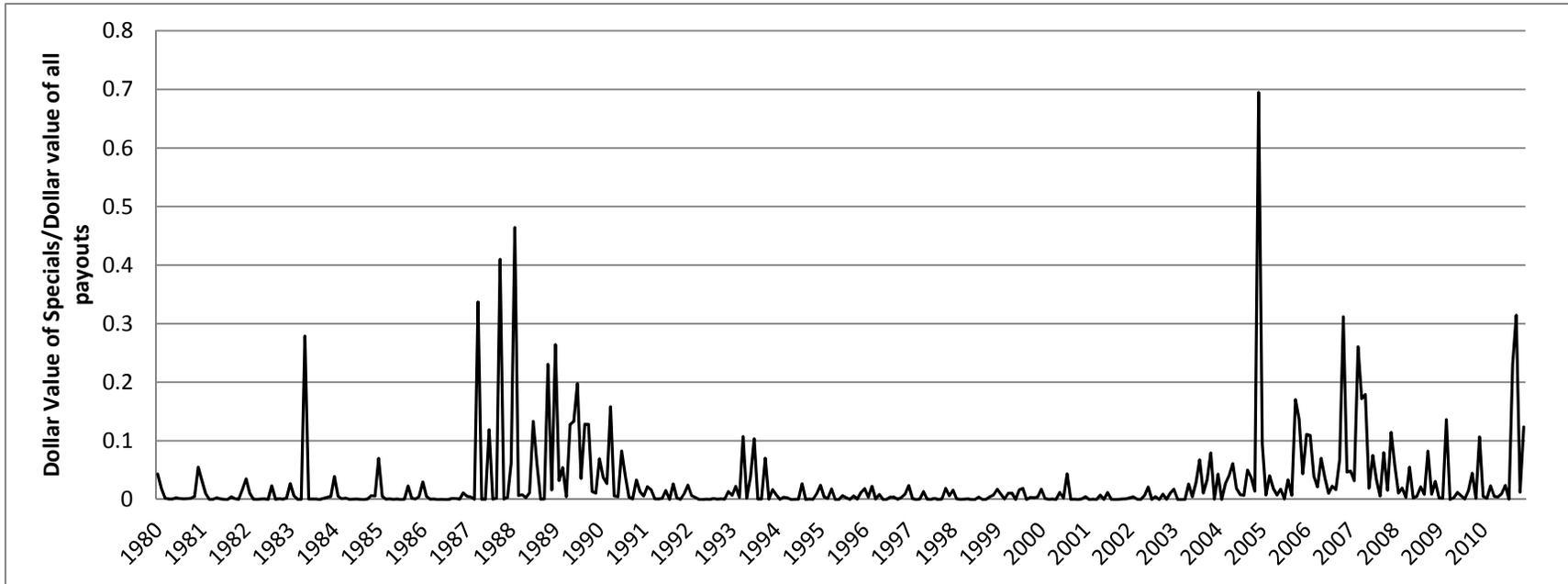
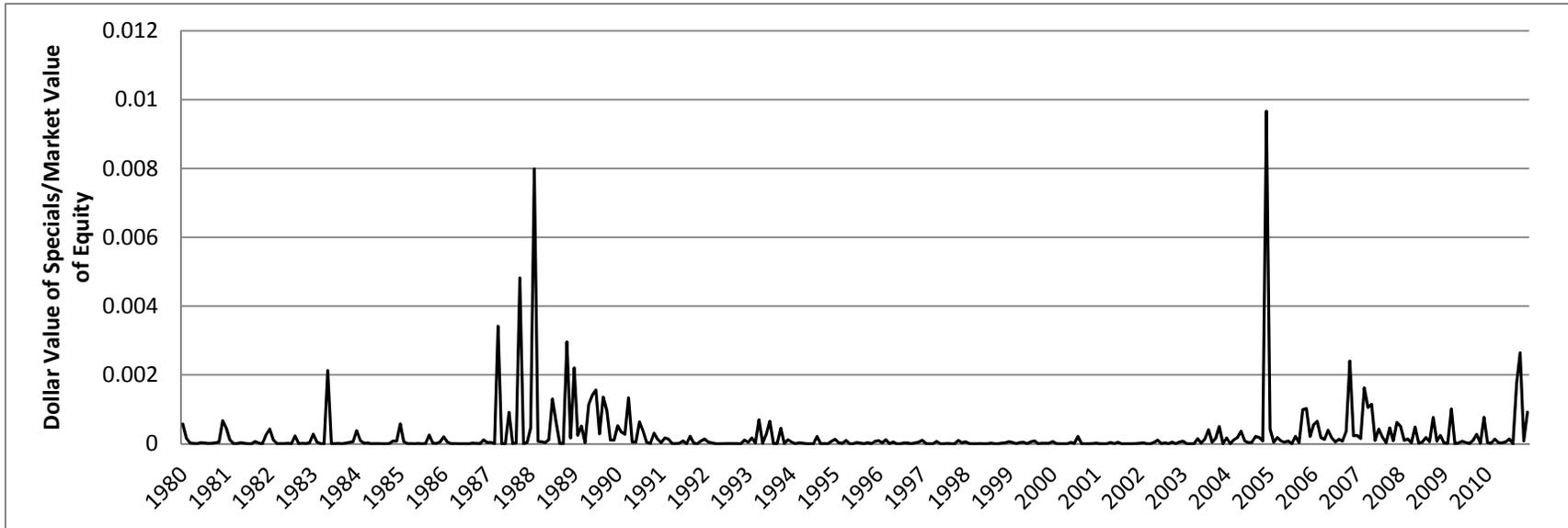


Figure 3 (continued)
The Dollar Value of Special Dividends

Panel B: The dollar value of special dividends each month divided by the total market value for all firms in the sample that month



Notes: These graphs show the total dollar value of specials in each month first scaled by the dollar value of all dividends each month and in Panel B scaled by total market value for all firms in the sample. The time period examined is Jan 1980-Dec 2010 and the sample includes all U.S. firms covered by both the CRSP Dividend database, and which are not financial (final year SIC between 6000 and 6999) or utilities (final year SIC between 4900 and 4949) firms. The spike in December of 2004 is a result of Microsoft's issuing a \$32 billion special dividend.

Figure 4
The Effect of Inside Ownership on the Number of Special Dividends

Panel A. The number of special dividends each month divided by the total number of dividend payments (regular plus specials) in that month – partitioned by level of inside ownership

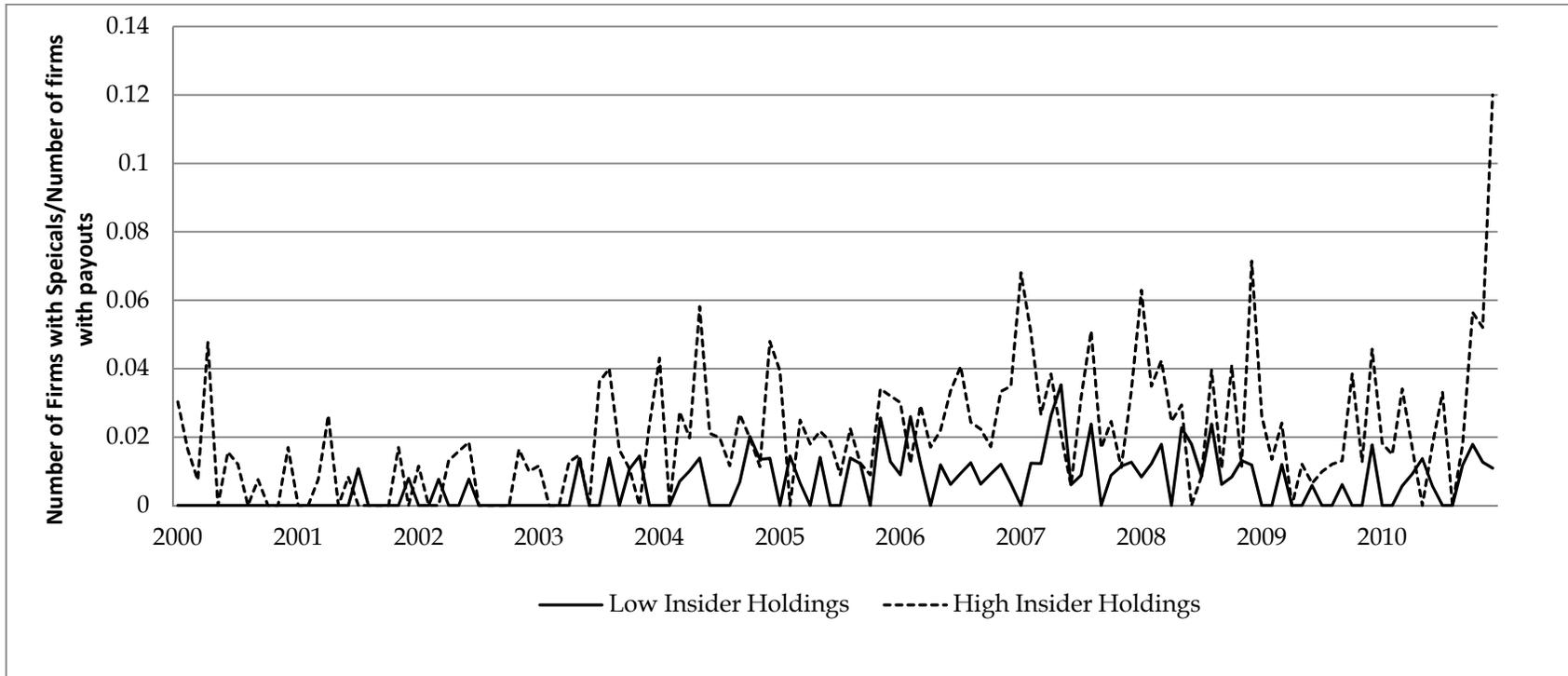
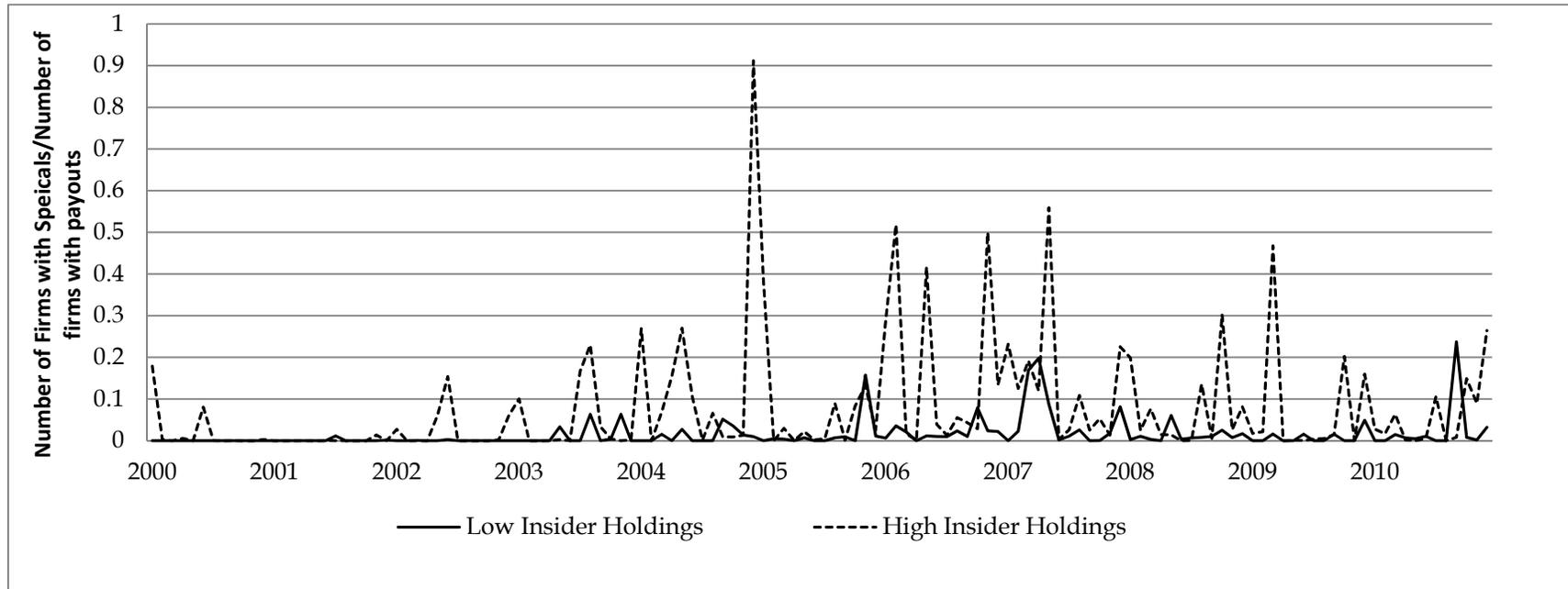


Figure 4 (continued)
The Effect of Inside Ownership on the Number of Special Dividends

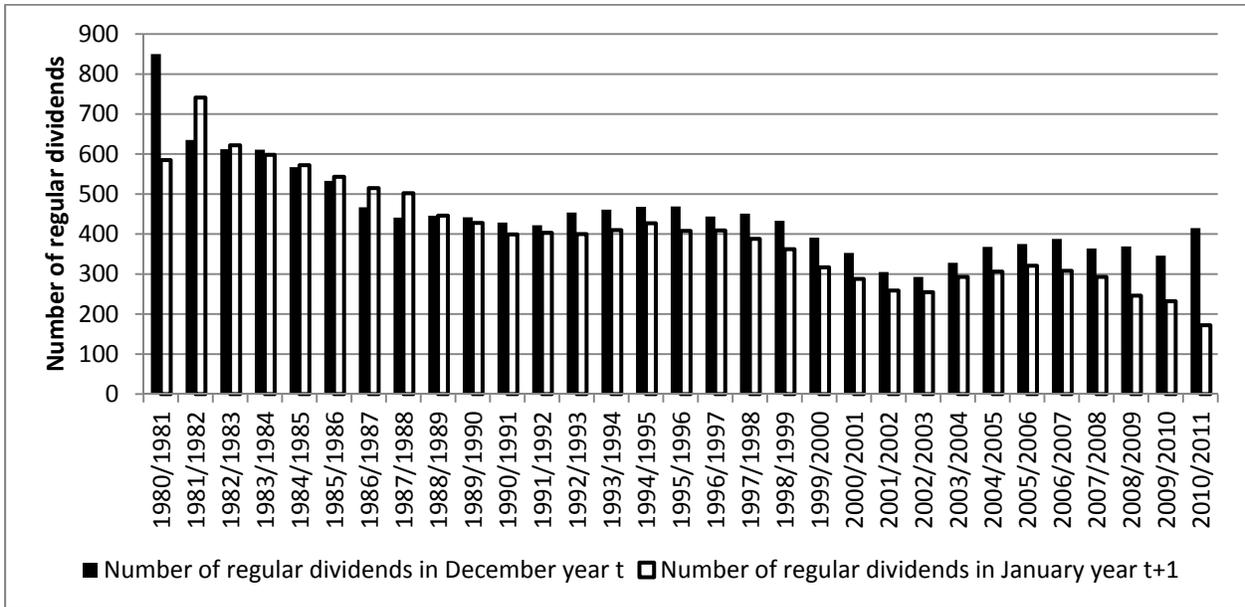
Panel B. The dollar value of special dividends each month divided by the total dollar value of all dividends, partitioned by level of inside ownership



Notes: Panel A shows the total number of specials in each month divided by the number of firms with a payout (special or regular) each month, Jan 2000-Dec 2010, for all U.S. firms covered by both the CRSP Dividend database and Factset Lionshares database, excluding financial firms and utilities, split by Inside Holdings. It is analogous to Figure 2, but graphed by Insider Holdings. High (Low) Insider Holdings Firms are firms whose Inside Holdings is above (below) the sample median. Inside Ownership is percentage of the firm held by insiders as of December 15, 2010, as provided by Factset’s Lionshares database. Panel B is the analog to Figure 3, and is the total dollar value of specials in each month divided by the dollar value of all dividends (specials and regulars) each month, divided between high and low insider holdings. The spike in December of 2004 is a result of Microsoft’s issuing a \$32 billion special dividend.

Figure 5
Intertemporal Shifting of Regular Dividends

Panel A. The number of regular dividends in December and January – 1980-2011



Panel B. The number of December regular dividends divided by the number of January regular dividends

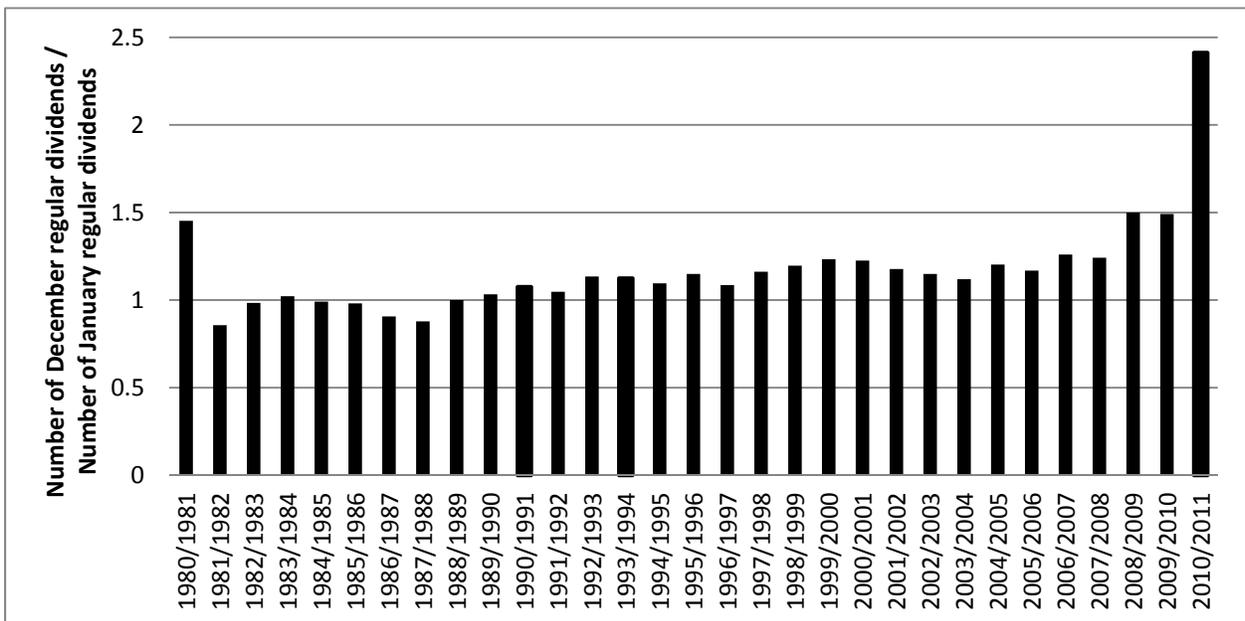
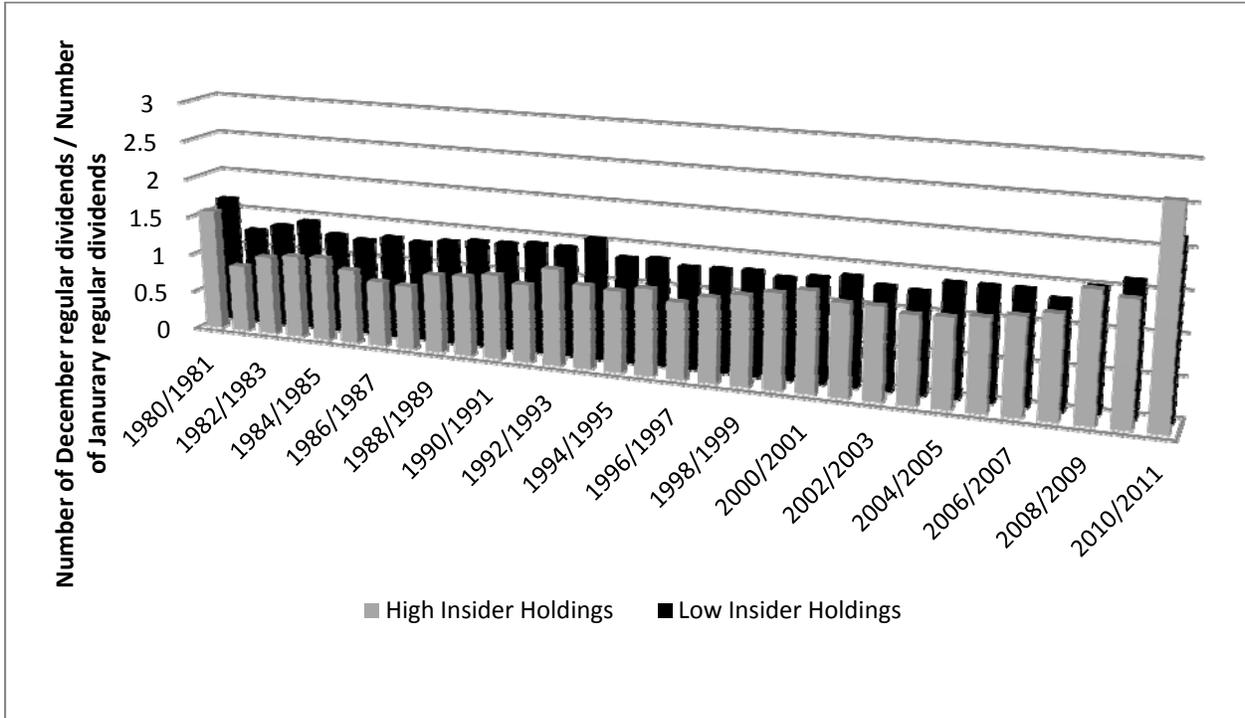


Figure 5 (continued)
Intertemporal Shifting of Regular Dividends

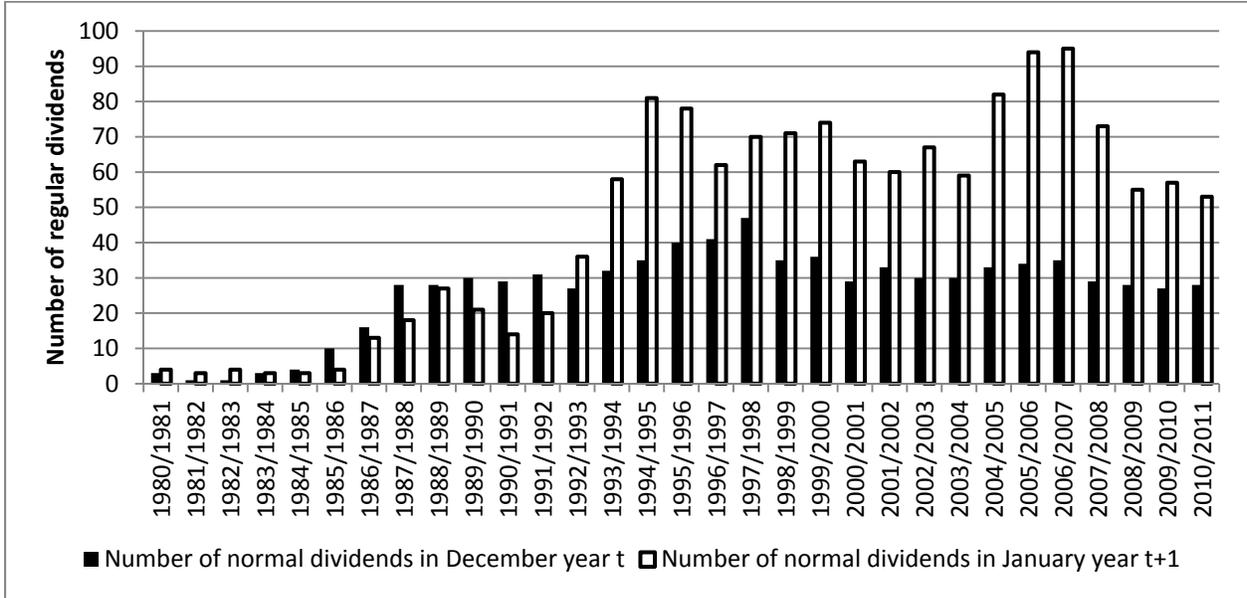
Panel C. The number of December regular dividends divided by the number of January regular dividends – partitioned by insider holdings



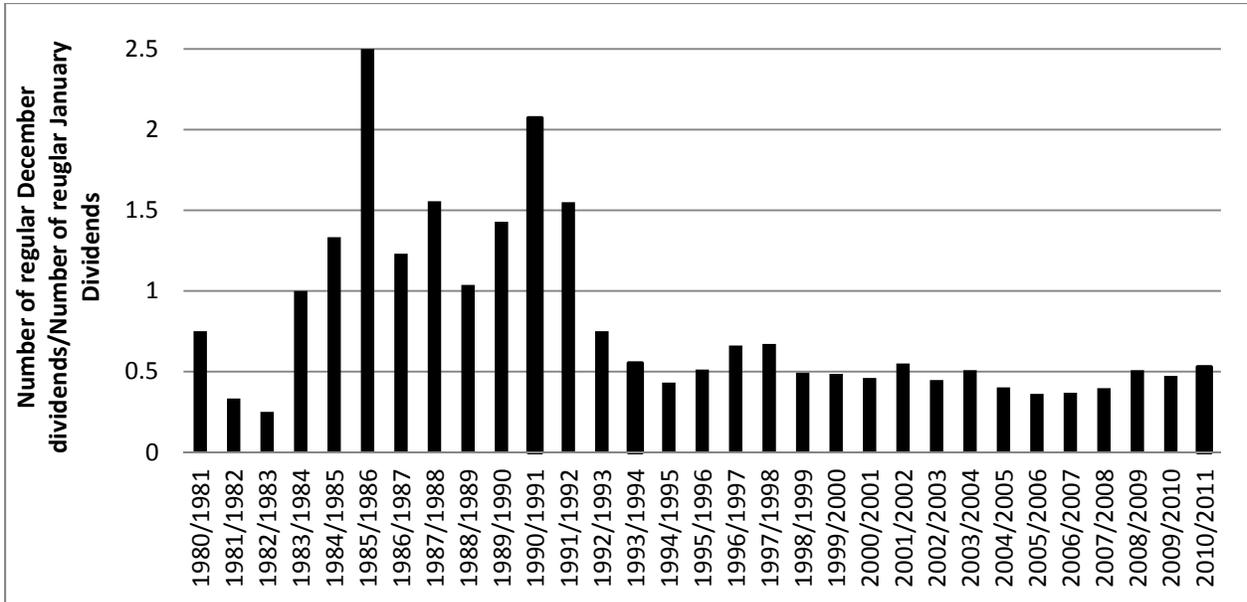
Notes: Panel A graphs the total number of regular dividends issued in December of year t , and the total number of regular dividends issued in January of year $t+1$. Panel B graphs the ratio of the total number of regular dividends issued in December of year t , to the total number of regular dividends issued in January $t+1$, for 1995-2010. Panel C replicates Panel B in graphing the ratio of December year t regular dividends to January $t+1$ regular dividends, but separates firms which have a below the median (above the median) amounts of insider ownership, as calculated using Factset.

Figure 6
Intertemporal Shifting of Regular Dividends by REITs

Panel A. The Number of Regular Dividends in December and January for REITs



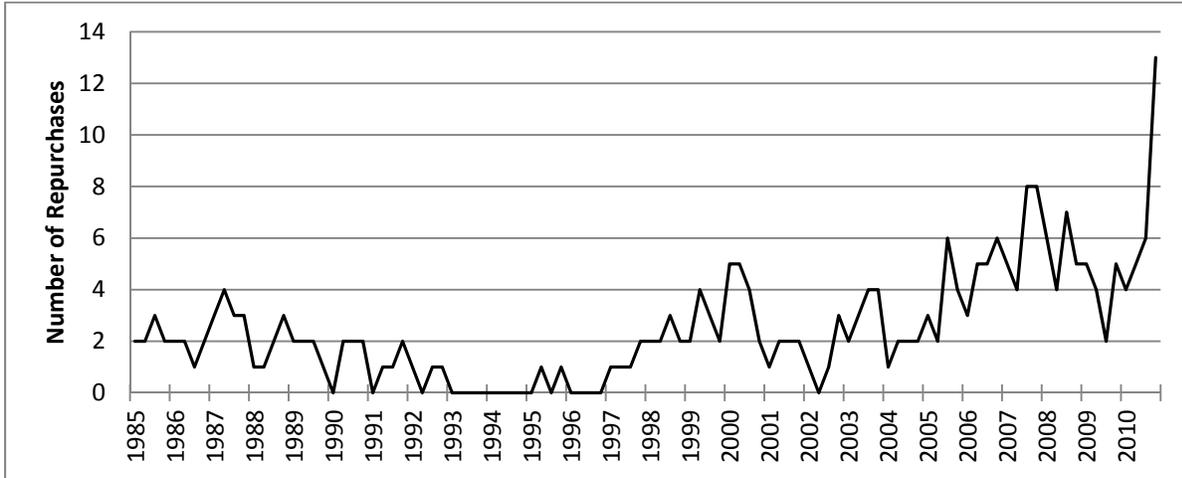
Panel B. The Ratio of the Number of December and January Regular Dividends for REITs



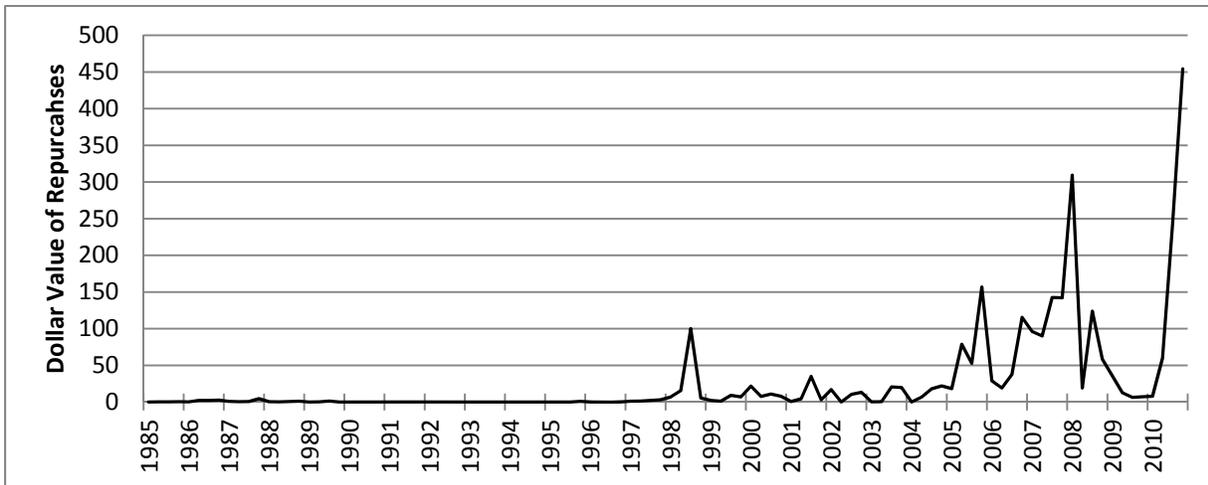
Notes: Panel A graphs the total number of regular dividends issued in December of year t, and January of year t+1, for Real Estate Investment Trusts. Panel B graphs the ratio of the total number of regular dividends issued in December of year t, and January of year t+1, for 1980-2010, for Real Estate Investment Trusts.

Figure 7
Share Repurchases by Firms that Issued Specials in November or December 2010

Panel A: The Number of Share Repurchases by Firms that Issued Specials in November or December 2010



Panel B: The Dollar Value of Share Repurchases by Firms that Issued Specials in November or December 2010



Notes: Panel A (B) graphs the number (dollar value) of share repurchases for firms in our sample that issued a special dividend in November or December of 2010. Repurchases are calculated on a quarterly basis, based on Blouin et al (2011), which is the change in treasure stock (Compustat Item TSTKQ), or, if that value is 0, the difference between stock sales and stock repurchases (PRSTKCY-SSTKY). Share repurchases are constrained to be positive.

Table 1
Sample Selection

	Observations
All Normal and Special Dividends on CRSP	456,568
Distributions from 1980-2010	237,977
Excluding Distributions of Financial and Utility firms	136,977
Distributions with Execucomp Insider Holdings Data	23,911
Distributions with Factset Data	74,497
Notes: This table outlines the sample selection procedure used in obtaining the sample used in our test. All Distributions on CRSP is the number of firm/month observations identified on the CRSP monthly distribution file which have a sharecode equal to 10 or 11, and have distribution codes equal to 1232, 1212, 1222, 1242, 1272 and 1262.	

Table 2
Descriptive Statistics

	Entire Sample				Paid Special anytime during sample period				Paid a special in November or December of 2010			
	Obs	mean	std	p50	Obs	mean	std	p50	Obs	mean	std	p50
Specials	136,977	0.016	0.124	0.000	60,897	0.035	0.184	0.000	864	0.107	0.309	0.000
Magnitude of Special Dividend	124,840	0.000	0.001	0.000	55,326	0.000	0.001	0.000	859	0.001	0.002	0.000
Assets	125,097	3,900	19,000	493	55,425	5,600	27,000	582	859	681	1,200	178
Market Value of Equity	124,874	4,000	18,000	418	55,333	5,500	23,000	464	859	1,100	2,500	112
Sales	125,040	3,600	13,000	600	55,396	4,800	16,000	721	855	718	955	229
Return on Assets	125,010	0.099	0.106	0.094	55,376	0.104	0.108	0.094	855	0.108	0.111	0.090
Execucomp Insider Holdings	23,911	0.064	0.108	0.016	8,557	0.075	0.116	0.019	161	0.099	0.122	0.013
Largest Insider's Holdings	23,911	0.053	0.088	0.013	8,557	0.061	0.096	0.016	161	0.058	0.078	0.008
Factset Insider Holdings	74,497	0.132	0.195	0.037	33,991	0.131	0.202	0.035	842	0.396	0.278	0.347

Notes: *Specials* is an indicator variable coded 1 if the firm paid a special dividend in the firm-month. *Magnitude of Special Dividends* is the dollar value of the special dividend issued by the firm, scaled by the firms market value. *Assets* (Compustat variable AT) is the assets of the firm. *Market Value of Equity* (csho*PRCC_F) is the total market capitalization of the firm. *Sales* (Sale) is the sales of the firm. *Return on Assets* (pi/at) is the return on assets of the firm. *Execucomp Insider Holdings* (Execucomp variable SHROWN_EXCL_OPTS, aggregated by year) is the percentage of the firm held by all executives covered by the Execucomp database, varying by firm/year. *Largest Insider's Holdings* (Execucomp variable SHROWN_EXCL_OPTS, maximum value for the year) is the percentage of the firm held by the insider with the largest shareholdings covered on the Execucomp database, varying by firm/year. *Factset Insider Holdings* (Factset variable EntityInsid/Stk ShsOut Pct) is the percentage of the firm held by insiders, as reported by the Factset database, as of December 15, 2010, varying by firm. The sample, *Entire Sample*, are all firm/month observations in our sample. *Paid Special anytime during sample period* are firm/month observations for which the firm paid a special dividend anytime during the sample period. *Paid a special in November or December of 2010* is all firm/month observations where the firm also paid a special dividend in November or December of 2010.

Table 3
The Effects of Decreased Dividend Tax Rates on Special Dividends

Dependent Variable:	Prediction	(1)	(2)
		Presence of Special Dividend	Magnitude of Special Dividend
NOVDEC2010	+	0.0395*** (3.67)	0.0003*** (3.94)
Constant	?	0.0356*** (9.31)	0.0002*** (8.49)
Firm Clustering		Yes	Yes
Year Fixed Effects		Yes	Yes
Month Fixed Effects		Yes	Yes
Observations		136,977	124,840
Rsquared		0.01	0.01

Notes: The dependent variable in Column 1 is an indicator variable coded 1 if the firm paid a special dividend in that month. The dependent variable in Column 2 is the dollar value of the special dividend (if any) issued by the firm, scaled by a firm's market value in year *t*. NOVDEC2010 is equal to one for all firm/month observations in November and December of 2010. Standard errors are clustered by firm, and are robust to heteroskedasticity. The superscripts asterisks ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-sided (one-sided) tests where we make no prediction (make a prediction) as to the sign of the effect.

Table 4
The Effect of Dividend Tax Rates and Insider Ownership on Special Dividends

		(1)	(2)	(3)	(4)	(5)	(6)
	Prediction	Dependent Variable: Indicator for Presence of Special in Firm/Month			Dependent Variable: Magnitude of Special Dividend		
NOVDEC2010		-0.0047 (-0.53)	0.0010 (0.11)	0.0042 (0.44)	-0.0000 (-0.25)	0.0000 (0.42)	0.0001 (1.03)
Execucomp Insider Holdings	?	0.0431** (2.52)			0.0003** (2.44)		
Execucomp Insider Holdings X NOVDEC2010	+	0.7990*** (2.50)			0.0060*** (2.51)		
Largest Insider's Holdings	?		0.0494*** (2.60)			0.0003*** (2.63)	
Largest Insider's Holdings X NOVDEC2010	+		0.7472** (2.22)			0.0056*** (2.23)	
Factset Insider Holdings	?			0.0270*** (4.73)			0.0002*** (5.10)
Factset Holdings X NOVDEC2010	+			0.2700*** (3.63)			0.0018*** (3.43)
Constant	?	0.0131 (1.45)	0.0133 (1.48)	0.0257*** (4.27)	0.0001 (1.02)	0.0001 (1.03)	0.0002*** (3.82)
Firm Clustering		Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		23,911	23,911	74,497	23,737	23,737	71,048
Pseudo-Rsquared		0.02	0.01	0.01	0.02	0.01	0.01