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ABSTRACT

The Jobs and Growth Tax Relief Reconciliation Act of 2003 reduces the maximum statutory personal tax rate on dividends from 38.1 percent to 15 percent. This study analyzes dividend declarations in the quarter following passage. Aggregate dividends rose by 9 percent when boards of directors first met following enactment. Consistent with the dividend changes being tax-motivated, they are increasing in the percentage of the firm held by individuals. Dividend changes also increased with insider ownership, consistent with managers acting in their own interests. However, these results are limited primarily to firms that made large, special dividends. We find little evidence of an increase in regular, quarterly dividend payments.

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The Initial Impact of the 2003 Reduction in the Dividend Tax Rate

1. Introduction

On May 28, 2003, President George W. Bush signed the Jobs and Growth Tax Relief Reconciliation Act of 2003 (2003 Act). Among other provisions, the legislation reduces the maximum statutory personal tax rate on dividends from 38.1 percent to 15 percent, the largest decrease in the dividend tax rate in U.S. history. Proponents of the legislation asserted that dividend taxes were a binding constraint on dividend payments and that reducing the rate would boost dividends. Dividends, however, have been in long decline, and the temporary nature of this legislation (it expires in 2009) raises doubts about its efficacy in reversing this trend. The purpose of this paper is to determine the impact of the legislation on dividend payments.

Understanding the extent to which dividend taxes impede corporate distributions is central to our understanding of the firm.¹ Scholars have long contended that the tax asymmetry accorded dividends (i.e., shareholders pay tax on non-deductible corporate distributions) affects capital structure, investments, and security valuations (Modigliani and Miller, 1958, 1963; Miller, 1977; Miller and Modigliani 1961; Scholes et al. 2002; among many others). Recently, this asymmetry has been linked to optimal debt levels (Graham 2000, 2003, Kemsley and Nissim, 2002), pension assets, (Frank 2002), trust-preferred stock (Engel, Erickson, and Maydew, 1999), the growth in employee stock option compensation (Lambert, Lanen and Larcker 1989), organizational structure (Guenther 1992, Gentry 1994) and corporate governance (La Porta et al. 2000).

However, despite the importance of dividend taxation, little is known about the elasticity of dividends payments to shareholder taxes. The reason is that at least three identification problems have thwarted empirical tests. One, major changes in dividend tax rates are unusual. Two, changes in

¹ Some might consider a test of the impact of individual taxes on dividend policy premature, given the lack of consensus in the literature about the reasons why companies pay dividends (see discussions in Easterbrook 1984 and Bhattacharya 1979, among many others). However, as we wait for a resolution of the dividend puzzle, it seems prudent to examine the 2003 Act for any possible insights into our understanding of firms and their investors.

dividend taxes usually have coincided with other major tax policy changes. Three, dividend tax rates have always been identical to the rates on other sources of ordinary income, such as interest, rents, royalties and, since 1981, wages.² The last two problems have made it particularly difficult to isolate the effects of dividend tax rate changes on corporate distributions.

The 2003 Act at least partially overcomes all three of these limitations. First, the magnitude of the dividend tax rate change in the 2003 Act is unprecedented. Second, the 2003 Act does not undertake fundamental reform that widely affects the tax code. Its genesis was dividend tax reduction and remained so throughout legislative deliberations. Third, dividends are no longer taxed at the same rate as other forms of ordinary income, facilitating isolation of the economic impact of a change in dividend tax rates. Consequently, the 2003 legislation provides an opportunity for scholars to test the impact of dividend taxes and thus address questions of capital structure, organizational structure (e.g., corporate versus flow-through entity), corporate governance, and investor clienteles.

This paper begins this investigation of the 2003 Act by asking whether boards of directors increased dividends when they had their first opportunities following enactment, specifically during the first six months following passage. Although more quarters of data will be needed before we can fully understand the total impact of the 2003 dividend tax rate reduction on corporate distributions, our analysis of the first two quarters following enactment is not an unreasonably short period to anticipate a response.

The reason is that we would anticipate a more rapid response to this legislation than normally observed with tax changes.³ Unlike most legislative changes, which are permanent, the dividend tax reduction is temporary, reverting to 35 percent in 2009. Moreover, the reversion could be as early as

² None of the seven changes in dividend tax rates over the last quarter-century provides favorable conditions for isolating the responsiveness of dividends to dividend tax rates. In 1982, as part of a broad tax reduction during the first Reagan Administration, the tax rate on dividends, as well as all other ordinary income, fell from 70 percent to 50 percent. During the sweeping 1986 tax reform, ordinary rates tumbled to 38.5 percent in 1987 and 28 percent in 1988. In 1991, the rate for dividends and all other ordinary income rose 3 percentage points to 31 percent. Two years later the tax rate on all ordinary income increased to 39.6 percent. Recently, all ordinary income tax rates have slipped slightly with a 0.5 percent decline to 39.1 percent in 2001 and another 0.5 percent reduction to 38.6 percent in 2002.

³ Besides the urgency created by the temporary nature of the legislation, the purported purpose of the legislation (economic stimulus) depended critically on an immediate response to the rate reduction. If dividend policy did not change during 2003 that does not rule out the possibility that dividend payments may increase eventually, but it does raise doubts about the efficacy of dividend tax relief as a means of immediate economic stimulus.

2005 for many shareholders. Senator John Kerry has promised to restore the higher dividend tax rate for individuals in the two highest tax brackets if he is elected President in November 2004. Consequently, procrastination may cost shareholders the opportunity to extract dividends from corporations at a historically low tax cost.

The proposition that the largest decrease ever in dividend tax rates would substantially boost dividend payments is relatively straightforward.⁴ It assumes that dividend taxes have been a binding constraint on shareholder distributions. Freed of the constraint, dividends rise to a new equilibrium. This “old view” logic underlies President Bush’s assertion at the signing that “The bill also allows for dividend income to be taxed at a lower rate. This will encourage more companies to pay dividends...” The U.S. House of Representatives Ways and Means Committee’s *Report on Jobs and Growth Tax Relief Reconciliation Act of 2003* adds that the dividend tax reduction will decrease the tax incentive to retain earnings, implying that the 2003 Act would boost dividend payments.

Concurrent research by Chetty and Saez (2004) provides preliminary support for these claims. Examining longitudinal data from 1980 to the first quarter of 2004, Chetty and Saez (2004) report that the fraction of firms paying regular and special dividends rose after enactment. They also claim that many firms that were already paying dividends substantially increased their payments. Unfortunately, Chetty and Saez (2004) are unable to reject at conventional levels that the amount of the dividend increases occurred by chance, a failure they attribute to the volatility of the aggregate dividends series and outliers in their analysis.

Moreover, as they acknowledge, their study cannot rule out a spurious relation between dividends and taxes. This concern is heightened because they report that the increase in the percentage of firms paying and initiating regular dividends began as early as January 2003. Although it is possible that changes in dividend policy were tax-motivated in early 2003, it seems unlikely. President Bush first

⁴ An alternative scenario would predict that dividend payments would actually fall after a rate reduction. This alternative assumes that shareholders demand the same after-tax dividends from their shareholdings, regardless of their dividend taxes. Thus, a cut in dividend taxes reduces the amount of dividends needed to produce the required after-tax cash.

proposed exempting dividends from taxation (as opposed to a rate reduction) in January. Controversial deliberations raged for five months, and several times it appeared likely that no bill would pass. Finally, five months after the President's original proposal, Congress chose to lower dividend taxes, not eliminate them. Given the uncertainty about whether the bill would pass and, if so, the effective date of any changes, non-tax factors (e.g., an improving economy and corporate governance pressure to distribute excess cash) likely contributed more to early 2003 dividend increases than changes in expectations about future dividend tax rates. If so, these same non-tax factors may have been the reason that dividends increased in the second half of 2003 following enactment.

Employing an alternative approach, this paper corroborates many of the findings in Chetty and Saez (2004). After examining the dividend declarations of 1,477 firms around enactment, we too conclude that more firms are issuing regular and special dividends after tax rates fell. However, we can demonstrate a statistically significant increase in both regular and special dividend payments following enactment. We also show that share repurchases declined after enactment, consistent with buybacks being a substitute for dividends, which became more attractive with a rate reduction.

To rule out the possibility that nontax factors are driving the recent rise in dividends, we attempt to provide direct evidence linking the 2003 changes in tax rates and dividend increases. The logic behind these tests is simple: If reductions in personal taxes caused dividends to surge, then we should expect to find a positive correlation between dividend increases and the extent to which the firms are owned by individuals, the only beneficiaries of the legislation. Unfortunately, we fail to find such a relation.

However, we do find some evidence of a positive association between insider ownership and dividend increases. This would suggest that the mere presence of large number of individual investors in the shareholder group was insufficient to alter dividend policy. Rather having the firm owned heavily by managers and other key insiders, who benefited from the lower tax rates, was needed to boost dividends.

Although we recognize that these tests suffer from the usual measurement problems facing empirical archival work, without this compelling link between dividend changes and shareholder tax benefits, we are hesitant to conclude that tax rates cut caused dividends to increase. We are particularly

cautious because the economy improved during the same period that the legislation took effect and the business press was regularly reporting that the market was looking to dividends, rather than earnings, to assess firm quality. In short, it appears possible that the increases in dividends that we observe reflect business fundamentals and changes in investor sentiment more than tax cuts for individual investors. Moreover, as detailed in the next section, there are a several reasons why dividends might not increase in response to the reduction in the dividend tax rate.

The paper develops as follows: The next section develops the study's testable hypotheses. Sections 3 and 4 discuss tests of the impact of the legislation on regular, quarterly dividends. Section 5 investigates the impact on special, one-time dividends. Section 6 reports results from tests of share repurchases. Concluding remarks follow.

2. Hypothesis Development

This section begins by detailing seven reasons why the 2003 Act might not have resulted in increased dividend payments. Some of them lead directly to testable hypotheses. Most do not, but are discussed here to provide a complete picture of the impediments faced by firms considering whether to increase their dividend payout following enactment of the 2003 Act.

The first reason is that dividends have fallen into disfavor. Fama and French (2001) document that the number of dividend payers has been halved over the last two decades. In fact, only 70 percent of the Standard and Poor's 500 were paying dividends at the end of 2002, down from 94 percent in 1980 (Opdyke, J., *Wall Street Journal*, October 7, 2003). DeAngelo, et al. (2003) add that dividends are largely concentrated among a few firms, with just 25 companies accounting for over half of the total dollar amount of dividends in the U.S. in 2000.

Moreover, it is unclear the extent to which dividend taxes account for the declining popularity of dividends. Both the dividend tax rate and the relative tax advantage of long-term capital gains (i.e., the spread between long-term capital gains tax rates and dividend tax rates) were less before the 2003 rate

reductions than they were 20-50 years ago when dividend yields were much greater. Therefore, it is not obvious that reducing the dividend tax would suddenly result in a surge in dividend payments.

Furthermore, even if firms were inclined to reconsider dividends in light of their individual shareholders' enhanced demand for dividends, it is not clear that companies would initiate or increase their dividends. Unprofitable, overleveraged, and cash-constrained firms are in no position to pay dividends, regardless of the dividend tax rate. Likewise, growth firms, a large sector of the economy, have always been unlikely to pay dividends (Lintner, 1956).

Moreover, nowadays, many stable, profitable firms with substantial cash balances pay no dividends (e.g., Intel, Dell, Cisco and, until January 2003, Microsoft). Managers at these firms apparently have believed that shareholder value is maximized by retaining cash within the firm or using it to buy back stock, rather than distributing cash to shareholders in the form of dividends. As a result, it is unclear that changing dividend tax policy is a lever that will affect corporate distributions to their shareholders.

In fact, many corporations claim that dividend taxes are irrelevant in their dividend policy. In a survey of corporate payout policy, Brav et al. (2003) report that 69 percent of CFOs state that the elimination of dividend taxation would definitely not or probably not affect their firms' dividend decisions. For example, in response to President Bush's original dividend exclusion proposal in January 2003 (which would have eliminated any dividend taxes for many companies' shareholders), International Paper's CEO, John Dillon, said that even if dividends were tax-exempt, it would "not change our behavior with respect to dividends." (McKinnon, J., *Wall Street Journal*, January 17, 2003).

The second reason that the 2003 Act might not materially increase dividends is that changes in dividends alter employee stock option compensation. Dividends reduce the value of stock options because the distribution of cash reduces the net assets, and thus share price, of the firm; however, those dividends are not distributed to option holders. Thus, increasing dividends may require granting additional stock options to employees and/or shifting to other forms of compensation. The costs of restructuring existing compensation arrangements and increasing potential principal-agent problems by

undermining the incentives provided by stock options may exceed the benefits of lower dividend taxes on individuals. If so, some firms may opt to leave their dividend policy unaltered.

The third reason we might not observe a large response to the 2003 Act relates to the alternative minimum tax (AMT), which taxpayers pay if it exceeds their regular tax. Because the AMT applies to individuals with reasonably high levels of income (typically taxable income between \$100,000 and \$500,000), the AMT is most likely the relevant tax for many individual shareholders. The legislation reduced the maximum statutory tax rate on dividends to 15 percent for both regular and alternative minimum tax purposes. However, since the maximum statutory tax rate on dividends was already capped at 28 percent for the AMT, shareholders facing the AMT enjoy less benefit from the 2003 Act than individuals facing the regular tax, who may have been taxed at Federal rates as high as 38.1 percent on their dividends.

Furthermore, since the regular tax reduction for dividends exceeds the AMT tax reduction for dividends (because of the differences in statutory rates), the 2003 Act will cause some individuals, who have avoided the AMT in the past, to face the AMT in the future (because it exceeds their now-reduced regular tax). As a result of facing the AMT (the calculation of which is beyond the scope of this paper), these individuals will now lose some non-dividend tax preferences. Consequently, their marginal tax rates on dividends can exceed 15 percent. In other words, because the AMT disallows the exclusion or deductibility of various tax preferences permitted under the regular tax, the net effect of a shift from regular tax to AMT can be marginal tax rates on dividends that exceed 15 percent. Thus, the benefits of the 2003 Act are further mitigated, lessening any demand for increased dividends.

The fourth reason that the dividend tax cut may not affect corporate payouts is that the dividend tax rate reduction only benefits shares held by individuals or flow-through entities, e.g., mutual funds, partnerships, trusts, S corporations, or limited liability corporations that pass dividend income through to investors' personal tax returns. Moreover, these shareholders must hold shares for at least 60 days in the 120-day period beginning 60 days before the ex-dividend date for the reduced rates to apply.

Shareholders with shorter trading horizons, tax-exempt organizations, tax-deferred accounts (e.g.,

qualified retirement plans, including IRAs and 401(k)), corporations and foreigners are unaffected by the legislation. Thus, companies held by unaffected shareholders have no incentive to alter their dividend policy.

Stated in alternative form, the first hypothesis predicts that:

H₁: Increases in dividend payments following the 2003 Act were increasing in the percentage of the payer's stock held by individual investors.

Rejecting the null hypothesis that changes in dividend payments are unrelated to individual ownership would provide strong evidence that corporations took shareholder tax preferences into account when they set their dividend policy following the 2003 Act. This evidence would be particularly compelling because it is difficult to construct an alternative non-tax explanation of why firms with heavy individual stock ownership increased their dividend declarations following the dividend tax rate reduction more than companies with large institutional ownership.

On the other hand, we will fail to reject the null if firms ignore their shareholders' tax preferences in setting dividend policy. Prior literature is mixed on this question. Barclay, Holderness and Sheehan (2003) report that dividends seldom change following the substitution of a new large blockholder with different tax status. Conversely, Perez-Gonzalez' (2003) reports that dividend policy is heavily influenced by the tax status of the largest shareholder. Lie and Lie's (1999) add that managers consider shareholders' tax considerations when deciding between dividends and share repurchases. Furthermore, concurrent work by Hsich and Wang (2004) show that tax incentives of insiders affect corporate payout choices, corroborating the findings in this study.

The next two reasons motivate the second hypothesis, which concerns the type of dividend paid—regular, quarterly dividends versus special dividends. One, firms are reluctant to increase their regular, quarterly dividends since the increase likely will have to be rescinded (Healy and Palepu, 1988). By increasing their quarterly dividends in response to the 2003 tax change, firms greatly increase the probability that they will have to cut their quarterly dividends in the future (or accept a suboptimal distribution policy) because the rate reduction is temporary.

The dividend tax rate will revert to 35 percent on January 1, 2009.⁵ Furthermore, John Kerry has promised to rescind the 2003 dividend tax rate reduction for individuals in the highest two tax brackets, if he is elected President in November, 2004.⁶ Since many individual shareholders fall in these upper brackets, restoration of the higher tax rates for them likely would substantially undermine the support for corporate distributions in the form of dividends. Given this uncertainty about future dividend tax rates and because the market is known to respond negatively to reductions and omissions of dividend payments (Brav et al. 2003), it seems reasonable that many companies would forgo the opportunity provided by the 2003 Act to increase their regular, quarterly dividends to avoid the probable rescission.

Two, regular, quarterly dividends may alleviate asymmetric information costs by conveying information about future earnings to the market. If so, tax-motivated adjustments in the quarterly dividends could distort the intended signal. The information costs associated with investors' inability to distinguish between increases that are tax-induced and increases that are profitability-induced may exceed the benefits of reduced shareholder taxes under the new law. Thus, it is possible that managers would intentionally not alter their regular, quarterly dividend policy to maintain credibility with the market.

These two reasons—costs associated with rescission and asymmetric information—can be avoided by declaring a special dividend rather than altering the firm's regular quarterly distribution. This leads to the second hypothesis:

H₂: Firms increased their special dividends following the 2003 Act.

The final reason that firms may not increase dividends is that among the profitable companies who could distribute profits to shareholders and would consider their shareholders' tax preferences in those distributions, the tax-efficient distribution continues to be share repurchases. Although the

⁵ Some may assume that sunset provisions, such as the reversion of the dividend tax rate to 35 percent, will be automatically extended before they take effect. Gale (2003), however, makes a compelling case that the costs of extending all the various sunset provisions currently in the law is probably fiscally impracticable. He estimates that removing all the sunsets in the tax code would reduce government revenue by almost \$2 trillion over the next decade.

⁶ Individuals in the highest two brackets (maximum statutory rates of 33 percent and 35 percent) receive 38 percent of all the dividend income reported in the United States.

maximum statutory tax rate on dividends now equals the top rate on long-term capital gains (which was reduced from 20 percent to 15 percent in the 2003 Act), dividends continue to be taxed disadvantageously compared with capital gains for at least four reasons. One, dividends accelerate the tax payment that could be deferred until the stock is sold (or fully avoided if held until the shareholder dies). Two, unlike dividends, shareholders can time the sale of an investment and thus pay the resulting capital gain tax when the shareholder's marginal tax rate is lowest. Three, with capital gains a portion of the proceeds is treated as a return of basis and thus goes untaxed. Conversely, basis cannot be used to avoid dividend income.⁷ Four, since only \$3,000 of capital losses (net of capital gains) can be deducted each year, capital gains, unlike dividends, enable individuals to accelerate utilization of their pool of capital losses, an important consideration for many individuals following the downturn in the equity markets from 2000 to 2002.

However, it is possible that the rate changes in the 2003 Act shifted the balance toward dividends, i.e., share repurchases continue to dominate dividends, but not by as much as they did before the legislation. If so, because dividends have been found to be substitutes for share repurchases (see Miller and Modigliani, 1961; Grullon and Michaely, 2002; among others), we predict a decline in share repurchases following enactment. This leads to the third hypothesis:

H₃: Firms decreased their share repurchases following the 2003 Act.

3. Empirical Approach

This section of the paper describes the selection of our sample of 1,463 regular dividend-paying companies. It then details the tests conducted on these companies to determine whether corporate distributions increased following enactment of the 2003 Act. Further tests are conducted to determine whether the changes are correlated with the mix of individual and institutional shareholders.

⁷ As an example, suppose a shareholder faces a choice between receiving \$100 in dividends and selling an investment, which he purchased for \$25, for \$100. In both cases, the shareholder has \$100 before taxes. With dividends, however, he pays \$15 in taxes (100*15 percent), leaving \$85 after-tax. With the sale, he pays \$11.25 [(100-25)*15 percent] in taxes, leaving 88.75 after-tax. The \$3.75 (\$88.75-85) difference is one of timing. When the stock is finally sold, the basis will be recovered.

A. Sample

The sample selection is designed to identify corporations that declared regular dividends during the first six months following the Congressional passage of the bill on May 23, 2003 or (for purposes of constructing a control sample) during the same period in 2002. We draw the initial sample from the 14,258 dividend declarations representing 3,101 firms from the Center for Research in Security Prices (CRSP) between May 23, 2003 and November 22, 2003 and/or the same period in 2002. To exclude non-corporate distributions on common stock, we require firms to have CRSP share code 11 (eliminates 1,151 firms).⁸ Since we are examining changes in firm payout policy over time, we require our firms to be in existence from October 1, 2001 through December 31, 2003 (eliminates 195 firms). We limit our sample to regular quarterly cash dividends (CRSP distribution code 1232) for firms that did not change fiscal year-ends during the period (eliminates 226 firms). Firms also must have Compustat earnings information available for the quarter immediately preceding the dividend declaration date as well as our proxies for individual holdings (eliminates 66 firms). This leaves a final sample of 1,463 companies.

Table 1 provides descriptive information for the 1,463 sample firms. The mean (median) company has a market capitalization of \$4.8 (\$0.6) billion with total assets of \$12.5 (\$1.3) billion. Its mean (median) sales are \$1.0 (\$0.1) billion, on which it earns \$73 (\$7) million.

The 1,463 sample firms are concentrated in financial services and manufacturing. 615 firms (42 percent of the sample) are in SIC 6 (finance, insurance and real estate); 459 companies (31 percent) are manufacturers (SIC 2 and 3). The remaining companies are mostly in SIC 4 (transportation and utilities) with 137 firms (9 percent) and SIC 5 (trade) with 115 corporations (8 percent).

B. Comparing Regular, Quarterly Dividend Payments Before and After the 2003 Act

To determine the initial impact of the 2003 Act on regular, quarterly dividend payments, we compare dividends declarations during the first two quarters following passage of the bill with previous

⁸ Share code 11 indicates that dividends are declared on ordinary common shares. This restriction results in the exclusion of ADRs, REITS, closed-end funds and partnership units that face dividend taxation unaffected by the 2003 Act.

quarters. (Assuming boards of directors meet at least once every three months to declare dividends, this investigation period ensures that we captured the boards' first two opportunities to alter dividends following the rate reduction.) Specifically, we compare the dividends declared from May 23, 2003 (the first working day following Congressional approval of the 2003 Act) to November 22, 2003 with the dividend payments declared during the five quarters ending May 22, 2003. Since Congressional passage occurred late at night on May 22, 2003, corporate boards meeting on the 23rd would have known that their shareholders would face a maximum statutory rate of only 15 percent and presumably could have confidently adjusted dividends upward beginning on that date. Thus, although the bill did not become law until the President signed it on May 28, 2003, it should have been clear to corporate officials, beginning on May 23, 2003, that the bill would become law because the President had strongly supported dividend tax relief throughout the legislative process.

Table 2, Panel A provides summary statistics for the regular, quarterly dividend declarations of the 1,463 sample firms. We find that 1,402 firms declared dividends during the quarter immediately following passage of the bill (May 23-August 22, 2003). In the subsequent quarter (August 23, 2003-November 22, 2003) 18 more firms declared dividends for an average of 1,411 firms during the two quarters following enactment. This compares with an average of 1,310 firms in the same two quarters a year earlier. We can reject at the 0.01 level that this 8 percent increase in frequency is by chance.

Over the seven-quarter period, total dividends rose from \$36.0 billion to \$41.6 billion, a 16 percent increase. Total dividend declarations rose every quarter with the largest jump around enactment, swelling \$2.9 billion increase (8 percent) from the quarter ended May 22, 2003 to the quarter ended August 22, 2003. This compares with a \$1.8 billion cumulative increase (5 percent) over the five quarters before enactment and a \$0.9 billion rise (2 percent) in the second quarter following enactment.

The mean (median) dividend declaration rose from 14.5 (11.0) cents per share in the quarter ended May 22, 2002 to 15.3 (12.0) cents per share in the quarter ended November 22, 2003. The mean (median) dividend payment across the two quarters comprising the post-enactment period is 15.2 (0.120) cents per share, compared with 14.6 (11.4) cents per share in the five quarters comprising the pre-

enactment period. This aggregate pre/post mean (median) difference is significant at the 0.05 (0.01) level.

We further test whether dividend declarations increased over the investigation period by comparing within-firm dividend changes. For example, when we subtract each firm's dividend declaration in the quarter ended May 22, 2003 (the quarter before enactment) from its dividend announcement in the quarter ended August 22, 2003 (the first quarter after enactment), we find that the mean increase is 0.7 cents per share, which is significant at the 0.001 level. As seen in the last column of Panel A, this mean difference exceeds the mean difference for all other adjacent quarters. Two other increases are highly significant: 0.4 cents per share (between the two quarters immediately after enactment) and 0.3 cents per share (between the two quarters immediately before enactment).

Table 2, Panel B repeats this analysis for the 1,280 firms that paid regular dividends in each of the seven quarters. These 1,280 firms paid almost all of the dividends in the U.S. For example, in the quarter ended November 22, 2003, these 1,280 firms paid all, but \$1 billion, (98 percent) of the dividends in the full sample of 1,463 firms. Not surprisingly, we find that the inferences drawn from Panel A above hold with this sample of continual dividend payers. Briefly, declarations rose every quarter with the largest increase (\$2.5 billion or 7 percent) around enactment. The mean (median) dividend payment across the two quarters comprising the post-enactment period is 15.7 (13.0) cents per share, compared with 14.8 (12.0) cents per share in the five quarters comprising the pre-enactment period. We can reject that this mean (median) difference is random at the 0.01 (0.01) level. The last column of Panel B confirms that mean of the within-firm differences in dividend declarations is greatest around enactment (0.5 cents per share) although significantly positive as early as the quarter ending February 22, 2003.

We conclude from Table 2 that the largest dividend increases were immediately following enactment. However, dividends were rising before enactment and continued rising in the second quarter after enactment. This leaves us to conclude that non-tax factors (such as an improving economy) likely played a role in boosting dividends. The unresolved question is the extent to which taxes assisted in the dividend increases.

These initial findings are consistent with more firms paying dividends as well as more dividends being paid after the passage of the 2003 Act. Although this implies that the tax rate reduction boosted dividend payments, we cannot rule out the possibility that dividends have been on an upward trend or that dividends increased in this period for reasons unrelated to taxes, such as improved earnings, stronger cash flow, or reduced growth opportunities.

Table 3 reports summary statistics from a regression intended to control for these possible non-tax effects. The analysis is conducted on the full sample of 1,463 firms at the firm-quarter level. Not all firms declared dividends every quarter. Thus, we are left with 9,448 regular dividend declarations across the seven quarters. We have missing data for 277 declarations, leaving us with 9,171 firm-quarters to examine.

The dependent variable is the dividends per share declared in the quarter (*DPS*). The explanatory variables are earnings per share (*EPS*), intended to capture the firm's profitability; free cash flow (*FCF*), a measure of the firm's payout capacity; and the market-to-book ratio (*MTB*), designed to control for growth opportunities for which firms might employ excess cash. Both *EPS* and *FCF* are lagged one quarter. We add a categorical variable (*POST*), which equals one for declarations after enactment. We will interpret a positive coefficient on *POST* as consistent with dividends increasing following enactment.

Panel A provides descriptive statistics. The mean (median) dividend per share is 15 (12) cents. Mean (median) *EPS* is 39 (35) cents per share. Mean and median *FCF* are negative. Mean (median) *MTB* is 2.23 (1.82).

Panel B presents the regression results.⁹ The first column shows the results from an ordinary least squares approach. The coefficient on *EPS* is positive, as expected, consistent with dividends rising with firms' profits. No other control variables are significantly different from zero. The coefficient on *POST* is positive and significant at conventional levels. This finding is consistent with regular, quarterly

⁹ Conclusions are unaltered when the equations are estimated using firm fixed effects. The *POST* coefficient is always positive and significant at the 0.001 level.

dividends being greater after enactment than they were before, conditional on several possible non-tax effects.

The second column repeats the process using rank regressions. Results hold. The *POST* coefficient is positive and significant at the 0.01 level. The next two columns report the results from repeating the first two estimations using the reduced sample of 1,280 firms that paid dividends in every quarter. Inferences are qualitatively unchanged. The *POST* coefficient remains positive and highly significant.

The final column uses a logistic estimation process. It expands the sample to include quarters in which no dividends were declared and redefines the dependent variable as a categorical variable which equals one if a dividend is paid in the period. The *POST* coefficient is positive and highly significant, consistent with an increased frequency in dividend payments after enactment.

We infer from these results that regular, quarterly dividends increased in both amounts and frequency following enactment of the 2003 dividend tax rate reduction. This conclusion holds even after taking into account the apparent boost to dividends arising from increased profitability.

C. Linking Dividends to Shareholders

We continue our regression analysis to test the hypothesis that dividend increases are greatest in those companies whose shareholders benefit most from the rate reduction. That is, companies held predominantly by individuals directly through their own taxable accounts or through conduits where the taxation of the dividends lands ultimately on an individual tax return. These conduits include partnerships, S corporations, limited liability corporations, and some trusts.

Documenting a link between dividend increases and the individual ownership (as broadly defined above) would provide particularly compelling evidence that the dividend increases are attributable to tax changes because it is difficult to construct a non-tax reason why dividends surged in the second half of

2003 for companies held disproportionately by individuals.¹⁰ Conversely, if we fail to find a link between declarations and individual ownership, it remains feasible that the increase in dividend declarations is caused by omitted correlated variables (such as changes in expectations about future profitability).

The dependent variable is the dividends declared in period t (DIV_t), where period t includes dates before and after enactment. The first control variable, which is designed to capture any stickiness in dividends, is the dividends declared in the prior period (DIV_{t-1} or $LAGDIV_t$). To capture variability in the source of dividends, we include earnings from the prior period $t-1$ (EPS_{t-1}).¹¹ All three variables are expressed in per share amounts.¹²

Ideally, the key explanatory variable of interest would measure the change in dividend taxes experienced by the marginal investor as a result of the 2003 Act. If the marginal investor is an individual whose tax rate fell from 38.1 percent to 15 percent, then the measure would capture this 23.1 percentage point decline in dividend tax rates. If the marginal investor is a tax-deferred entity or a tax-exempt entity, then the 2003 rate reduction would have no effect on its dividend taxes.

Unfortunately, the marginal investor and his tax return are unobservable. Thus, the literature has turned to less precise measures to estimate the extent to which a firm's marginal investor is affected by personal tax changes. No one method has emerged as the standard. Perez-Gonzalez' (2003) uses the largest single shareholder to proxy for the dividend tax treatment of the marginal investor. Jin (2004) measures the extent to which the institutional investors are conduits that pass the taxation of the dividends to individuals. Ayers, et al. (2002, 2003), Blouin, et al. (2003), and Dhaliwal, et al. (2003) use 13-F filings to develop measures of the percentage of the firm held by individual shareholders.

¹⁰ As an illustration of the difficulty of constructing an alternative hypothesis, imagine one based on stories in the business press that investors have become more focused on cash dividends than accounting earnings after Enron, WorldCom and similar debacles. If this is true, the shift to cash from profits should be greatest in companies with the most asymmetric information between managers and investors. One possible set of such companies are those with many, small individual shareholders. If so, it is feasible that a positive correlation could be detected between individual ownership and dividend increases, as predicted in this paper. However, since Enron, WorldCom and most of the financial collapses occurred in 2001 and early 2002, it is unclear why this shift in preferences to dividends did not occur until the summer of 2003. Also, we find some evidence that dividend hikes are increasing in insider ownership, which is contrary to the asymmetric information story. Also, it is unclear how paying a one-time, special dividend allays long-term concerns about information asymmetries.

¹¹ Conclusions are qualitatively unaltered if we use earnings from the current period, i.e., (EPS_t).

¹² Inferences are robust to scaling by total assets or share price.

We follow this last group in developing two measures of individual ownership. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum, as of June 30, 2002.¹³ *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial’s Insider Filing Data. Obviously, this study’s ability to link dividend changes to shareholder tax preferences rests critically on the usefulness of these measures to discriminate across firms.

The explanatory variables include the firm’s dividend for the six months immediately preceding enactment divided by its stock price (*DYIELD*). This measure is designed to capture the capacity for dividend increases. Firms with high dividend yields presumably had less capacity to increase their dividends after enactment than firms paying little or no dividends.

We interact *IND*, *INSIDE* and *DYIELD* with a categorical variable (*POST*), which is one if the dividend was declared after enactment and zero otherwise. This recognizes the possibility that *IND*, *INSIDE* and *DYIELD* may have had different impacts on dividend declarations after enactment. A positive estimated regression coefficient on *POST*IND* will be interpreted as evidence that dividend declarations after enactment of the 2003 Act were increasing in the level of individual ownership in the company. Since we are unaware of any non-tax reason that dividends should have risen with the percentage of stock held by individual investors during the summer of 2003, we will interpret a positive coefficient on *POST*IND* as strong evidence that the 2003 rate reductions increased dividends. Likewise, a positive estimated regression on *POST*INSIDE* will be interpreted as evidence that dividends increases were rising in the percentage of the firm owned by insiders.

$$\begin{aligned}
 DIV_{i,t} = & \beta_0 + \beta_1 LAGDIV_{i,t} + \beta_2 EPS_{i,t-1} + \beta_{3n} (1 + POST) * [\alpha_0 + \alpha_1 IND_i + \alpha_2 INSIDE_i + \alpha_3 \\
 & DYIELD_i] + CONTROLS + \varepsilon_{i,t}
 \end{aligned}
 \tag{1}$$

¹³ We intentionally chose individual ownership data from a date before Bush’s original dividend exclusion proposal in January 2003 to avoid the possibility that clienteles began to shift in anticipation of a reduction in dividend tax burden. If we use post tax relief measures of individual ownership, we could erroneously infer that high individual ownership firms responded to the legislation by increasing dividends, when in actuality individuals simply bought disproportionately large numbers of shares in companies that were increasing their dividends.

CONTROLS are intended in the model to capture other possible determinants of the level of dividends, such as industry, growth, risk, and size, which are presumed not to vary systematically with the change in dividend tax rates (and thus are not interacted with *POST*).

Rather than tabulate the results from estimating equation (1), we convert the levels expression in equation (1) to a changes model. Equation (1) produces two observations for every firm in the sample, one observation from before enactment and another from after enactment. Below in equation (2), we employ a changes model that yields one observation per firm. In short, we regress the change in a firm's dividends around enactment, while controlling for its changes in dividends around a similar period when tax rates did not change.

$$\Delta DIV_i = \beta_0 + \beta_1 LAG\Delta DIV_i + \beta_2 \Delta EPS_i + \beta_3 IND_i + \beta_4 INSIDE_i + \beta_5 DYIELD_i + \varepsilon_{i,t} \quad (2)$$

ΔDIV_i is the difference between the dependent variables in firm *i*'s post-enactment equation and firm *i*'s pre-enactment equation. Similarly, $LAG\Delta DIV_i$ is the difference between firm *i*'s post and pre-enactment measures of $LAGDIV$, and ΔEPS_i is the difference between earnings per share after and before the rate reduction. The other possible control variables (*CONTROLS*), which are constant before and after the legislative change (e.g., industry), drop from the regression model when the differences are taken. So does *POST*, since all observations now include data from both before and after enactment. This leaves the coefficient on *IND* (*INSIDE*) to capture the impact of individual (insider) ownership on changes in dividend payments and the coefficient on *DYIELD* to capture differential effects of capacity on dividend payments. A positive estimated regression coefficient on *IND* (*INSIDE*) will be interpreted as evidence that the increase in dividends following passage of the 2003 Act was increasing in the percentage of a firm owned by individuals (insiders).

D. *Descriptive Statistics and Univariate Results*

To estimate equation (2), we must define the pre and post enactment periods. We begin by defining the post-enactment period as the six months following enactment (May 23-November 22, 2003)

and the pre-enactment period as the six months preceding enactment. (Below we repeat the analysis with a variety of pre and post periods.) Consequently, ΔDIV is dividends per share as declared from 5/23/03 to 11/22/03 less dividends per share as declared from 11/23/02 to 5/22/03. $LAG\Delta DIV$ is dividends per share as declared from 11/23/02 to 5/22/03 less dividends per share as declared from 5/23/02 to 11/22/02. ΔEPS is earnings per share as reported over the two quarters, 11/23/03 to 5/22/03, less earnings per share as reported over the two quarters, 5/23/02 to 11/22/02.

Table 4, Panel A provides descriptive statistics for the regression variables. The dependent variable (ΔDIV) ranges from a 85-cent decline in dividends per share to a 73-cent increase in dividends per share with a mean increase of 2.2 cents per share. $LAG\Delta DIV$ has a mean value of 0.8 cents per share. Mean (median) lagged earnings (ΔEPS) are 9.2 (3.0) cents per share. The mean and median quarterly dividend yields ($DYIELD$) are 1.2 (1.1) percent.

IND and $INSIDE$ are the two key explanatory variables for testing the hypothesis that shareholder mix affects dividends. Our estimate of individual ownership varies widely with the intraquartile ranging from 28.5 percent to 82.5 percent. Mean (median) IND is 52.4 (52.5) percent. Mean (median) $INSIDE$ is 7.1 (2.6) percent.

Table 4, Panel B provides Pearson's and Spearman's rank correlation matrices for the regression variables. As expected, both correlations indicate that ΔDIV moves directly with lagged changes in dividends ($LAG\Delta DIV$) and inversely with the correlated dividend yield ($DYIELD$). However, only one correlation involving the dependent variable and the two measures of individual ownership is significantly greater than zero. The Pearson correlation between ΔDIV and $INSIDE$ is 0.07.

4. Regression Results

A. Primary Tests

Table 5 reports the summary statistics from ordinary least squares estimation using the 1,463 sample firms. The first column reports the estimation results with IND in the regression; the second

column with *INSIDE* in the regression; and the third with both measures of individual ownership. In all three columns, the coefficient on *LAG Δ DIV* is positive, as expected, consistent with dividends being sticky. The coefficient on *AEPS* is not significantly different from zero. Consistent with the univariate analysis, the coefficient on *DYIELD* is negative and highly significant, implying that firms with a high dividend yield before enactment responded with smaller increase in dividends.

The estimated regression coefficient on *IND* in the first column enables us to test whether dividends increased during the quarter following enactment of the 2003 Act (compared with the same period in 2002) in proportion to the percentage of the company held by individuals. Contrary to expectations, we find a negative estimated regression coefficient on *IND*, though not significantly different from zero.

The second column tests whether dividend increases are linked to insider ownership. Here we find a positive and significant coefficient on *INSIDE*. The coefficient yields an economic interpretation. For example, the product of the *INSIDE* coefficient of 0.031 and the mean *INSIDE* of 0.071 is 0.2 cents of increased dividends per share or 10 percent of the mean value of *Δ DIV*. Similarly, a firm moving within the intraquartile range (from 0.6 percent insider ownership to 8.1 percent insider ownership) would experience an increase in dividends of 0.2 cents per share or 10 percent of the mean value of *Δ DIV*.

The third column includes both measures of individual ownership. Inferences are unchanged. The *IND* coefficient remains insignificant. The *INSIDE* coefficient increases to 0.036 with a *t*-statistic of 2.3.

B. Alternative Periods

The inferences drawn above concerning the lack of relation between *IND* and changes in dividends is robust to alternative specifications of the pre and post-enactment periods. However, results are not robust for our finding of a positive relation between *INSIDE* and dividend increases.

Table 6 reports the coefficients and t-statistics for *IND* and *INSIDE* under five different period specifications. Although not tabulated, the model contains the same control variables as above. *IND* and *INSIDE* are evaluated separately, i.e., the same estimates as the first two columns in Table 5. Contrary to expectations, the *IND* coefficient is always negative, though never significant.

The *INSIDE* coefficient is always positive. However, it is highly significant in only one specification (column 6), when the post-enactment period is the second quarter following enactment and the pre-enactment period is the last quarter before enactment. It is marginally significant (column 4), when the post-enactment period is the second quarter following enactment and the pre-enactment period is the first quarter after enactment. It is not significant in the other three specifications. We infer from these findings that including the second quarter after enactment is critical to finding a significant coefficient on *INSIDE*. This implies that it may have taken firms until the second quarter following enactment to begin adjusting their dividend policy to reflect the interest of insiders with large holdings.

We conclude that the evidence is mixed concerning whether dividend increases were greatest in those companies whose shareholders most benefited from the dividend tax rate reduction. We find no evidence that disproportionately large ownership by individual shareholders contributed to an increase in regular, quarterly dividends. We find conflicting evidence about the influence of insiders on changes to the firm's dividend policy. If we had detected a strong relation between changes in dividend payouts and individual and insider ownership, we would have interpreted such a result as providing strong evidence that the dividend increases were related to the tax rate reductions. Since we do not detect a strong relation, these results give us some pause.

5. Special Dividends

Regular, quarterly dividends may not have been the sole (or even primary) mechanism by which firms increased their distributions to shareholders following the rate reduction. If managers are concerned about the temporary nature of the rate reduction or the deleterious effects on signaling of a tax-motivated change in dividends, then firms may have opted for one-time, special dividends to distribute profits to

shareholders while dividend tax rates were at a historical low. The next section reports results from tests designed to determine whether special dividends increased following enactment of the 2003 Act.

To assess whether special dividends rose after the dividend tax rate reduction, we repeated the procedures that were used to select the sample of regular, quarterly dividends in Section 3, but instead of regular dividends, we selected special, one-time dividends (CRSP distribution code 1272). Not surprisingly, special dividends occur much less often than regular, quarterly dividends with 62 firms declaring 84 special dividends over the seven-quarter investigation period (February 23, 2002 to November 22, 2003).

Table 7 shows the frequency of the special dividends across the seven quarters examined in the study. Fifty-three (63 percent) special dividends were paid in the two quarters after enactment. Using the non-parametric binomial test, we can reject at the 0.001 level that the increased frequency of special dividends following enactment occurred by chance.

To control for the possibility that the increase is attributable to non-tax factors, we analyze the 62 firms using a logistic estimation approach. The dependent variable is one in the firm-month when special dividends are paid and zero in all other months. The explanatory variables are the same as in Table 3: earnings per share (*EPS*), free cash flow (*FCF*), the market-to-book ratio (*MTB*) and a categorical variable (*POST*) that equals one if the distribution is one of the 53 special dividends declared in the six months following enactment. Table 8, Panel A provides descriptive statistics for the explanatory variables. The first column in Table 8, Panel B shows that the coefficient on *POST* is positive and highly significant, consistent with the frequency of special dividends increasing after enactment (and the univariate test results reported above).

Next, we attempt to assess whether the amount paid per special dividend increased after enactment using regression analysis. Here the explanatory variables remain the same, while the dependent variable changes to special dividends per share (*SD*), which ranges from one penny to \$1.46 with a mean (median) value of 58 (25) cents (reported in Table 8, Panel A). The second (third) column in Table 8, Panel B reports summary statistics using ordinary least squares (rank regressions). The variable

of interest (*POST*) is not significantly different from zero in either regression, consistent with the amount of special dividends remaining constant after enactment. To summarize, the frequency of special dividends increased after enactment, but the amount paid per special dividend did not change.

Lastly, we investigate the extent to which individuals and insiders own the firms that pay special dividends. If special dividends dominate regular, quarterly dividends as an efficient means of distributing profits during a temporary reduction in tax rates, then individual shareholders, the sole beneficiaries of the rate reduction, should hold disproportionate interests in firms that issued special dividends after enactment. Table 9 reports the individual and insider ownership of firms paying special dividends before enactment, during the first quarter following enactment and during the subsequent quarter. It also lists the same measure for the 1,463 firms in the study that paid regular, quarterly dividends.

We find that individuals hold a greater percentage of the shares in companies that pay special dividends than they do in companies that pay regular, quarterly dividends. For example, individuals held 75 percent, on average, of the 22 firms that paid special dividends in the quarter immediately following enactment. This compares with 54 percent for firms paying regular, quarterly dividends. Reductions in the dividend tax rate, however, do not appear to account for the differences between individual investors in special dividend firms and individuals in regular, quarterly dividend firms. The reason is that individuals held large proportions of special dividend firms, both before and after enactment. For example, Table 9 shows that individuals held 86 percent of the 31 firms paying special dividends before enactment. In short, it appears that firms that pay special dividends have been and remain disproportionately owned by individual investors.

Insider ownership is greater in post-enactment special dividend-paying firms than pre-enactment special dividend-paying firms, though not significantly greater.¹⁴ In the two quarters after enactment, the

¹⁴ Sun Hydraulics Corporation, which is held 38 percent by insiders, provides an example of an insider influencing a special dividend after enactment. In their July 10, 2003 announcement of a special dividend of \$2.00 per share, they specifically attributed the idea of the special dividend to their largest shareholder, Robert E. Koski, former chairman and current board member. Chairman Clyde Nixon said, “This distribution was proposed to the board of directors by the company’s largest shareholder, as a way to provide a measure of liquidity and a return to the company’s shareholders, in light of the stagnant market price of the company’s stock over the past four years. Several factors

mean (median) inside ownership of the special dividend-paying firms was 13.4 (8.4) percent. In the five quarters before enactment, the mean (median) inside ownership was 10.6 (3.1) percent of the outstanding shares. However, neither difference is significant, which may be attributable to the small sample size. Using a t-test of the means (a median test), we reject at the 22 (8) percent level that the inside ownership of special dividend-paying firms remained the same or fell following enactment.

6. Share Repurchases

We conclude this study with an initial analysis of the impact of the dividend tax legislation on share repurchases. Among others, Miller and Modigliani (1961), and Grullon and Michaely (2002) report that share repurchases are substitutes for dividends. If so, a tax-induced boost in dividend payments after enactment should have resulted in a reduction in share repurchases. This is true even though the capital gains tax rate, which applies to individuals who sell their shares in share buybacks, fell from 20 percent to 15 percent. The reason is that the dividend tax rate fell further than the capital gains tax rate.

To explore the possibility that share repurchases declined after enactment, we review the repurchase activity of the 1,477 different companies evaluated in the regular and special dividend analyses above. To avoid the possibility that firms delayed share repurchases once the President proposed dividend exemption in January 2003, we define the pre-enactment period as the seven months ending in December 2002 (i.e., June—December 2002). The post-enactment period is the same seven months one year later (i.e., June—December 2003). We find that share repurchases accounted for 29 percent of total distributions (defined as regular and special dividends plus repurchases) in the 2002 period, but only 19 percent in the 2003 period. We can reject at the 0.001 level that this slump in share repurchases after enactment occurred by chance. Furthermore, we find that 800 firms repurchased shares before enactment, but only 646 firms following enactment, a 19 percent decline. This decline in frequency is also significant at the 0.001 level.

influenced the board's decision: the recent reduction in the dividend tax rate to 15 percent, current low borrowing costs, and Sun's strong balance sheet and cash flow."

To determine whether firms shifted from share repurchases to dividends, we further examined the 718 firms that changed both their regular dividends per share and their repurchases per share between 2002 and 2003. Of these firms, 93 percent increased their dividends. This is consistent with both an aversion to reducing dividends and a dramatic increase in regular dividends between 2002 and 2003. Conversely, only 36 percent increased their share repurchases. This is consistent with dividends following enactment partly substituting for share repurchases.

These initial findings suggest that the cut in the dividend tax rate reduced the need for share repurchases. However, there is an alternative explanation, which is beyond the scope of this paper. During 2003, many firms began to shift away from stock option compensation, slackening the demand for share repurchases. Thus, it is possible that nontax considerations contributed heavily to the observed decline in share repurchases.

7. Conclusion

The 2003 Act reduces the maximum statutory personal tax rate on dividend income from 38.1 percent to 15 percent, the largest reduction ever. Because dividend taxes are fundamental to capital and organizational structure, we anticipate this legislation providing a rich setting for studies in accounting, finance, and economics. We begin that inquiry by asking whether the legislation led to an immediate increase in dividend declarations. Many have long assumed that dividend taxes are an important binding constraint on corporate distributions. If so, we would expect at least some companies to avail themselves of the first opportunities to adjust their dividends upward to a new optimal level.

We find evidence that the legislation boosted regular and special dividends and dampened share repurchases. The firms in this study had increased their total regular dividends by \$3.8 billion (10 percent) six months after passage of the legislation. In those same six months, their special dividends were three-fold (\$1.2 billion) the amount during the previous five quarters. Meanwhile, share repurchases were 25 percent less in the final seven months of 2003, compared with the same period a year earlier. In

short, this paper presents strong evidence that regular and special dividends rose and share repurchases fell after Congress reduced the dividend tax rate.

However, it remains possible that the changes in distribution patterns relate to nontax influences, such as an expanding economy. Our attempts to rule out alternative explanations by linking changes in distributions to ownership in the companies by individuals, the sole beneficiaries of the 2003 tax legislation, is less compelling. In general, we find no evidence that companies held predominantly by individual investors, the only shareholders who benefited from the tax savings, were the ones changing their distribution patterns following enactment. However, we do find some evidence that companies held heavily by insiders were more likely to increase both regular and special dividends.

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TABLE 1

Firm Characteristics for 1,463 Sample Firms Who Declared Dividends in the Six Months Following Enactment of the Jobs and Growth Tax Relief Reconciliation Act of 2003

This table reports descriptive statistics for a sample of 1,463 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: *ADIV*, *LAGADIV*, *AEPS*, *IND*, and *INSIDE*. *ADIV* is dividends per share as declared from 5/23/03 to 11/22/03 less dividends per share as declared from 11/23/02 to 5/22/03. *LAGADIV* is dividends per share as declared from 11/23/02 to 5/22/03 less dividends per share as declared from 5/23/02 to 11/22/02. *AEPS* is quarterly earnings per share as reported during the period, 11/23/02 to 5/22/03 less quarterly earnings per share as reported during the period, 5/23/02 to 11/22/02 (Compustat item 69). *DYIELD* is annualized dividends in two quarters preceding 5/23/03, as a percentage of its share price on the declaration date. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum. *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial's Insider Filing Data. Market value of equity is the market value of common stock (Compustat item 14 times Compustat item 61). Total assets is the book value of assets (Compustat item 44). Sales is net sales (Compustat item 2). Net income is total net income (Compustat item 69). Debt-to-asset is the ratio of book value of debt (Compustat item 54) and total assets. Return on assets is the ratio of annualized net income in the quarter preceding 5/23/2003 divided by total assets in the same period. Return on equity is the ratio of annualized net income in the quarter preceding 5/23/2003 divided by book equity (Compustat item 60) in the same period. Share price is the closing share price (Compustat item 14) in dollars. Shares outstanding is (Compustat item 61) in millions. Except where noted all dollar figures are in millions and are as of the end of the first quarter in fiscal year ending 2003.

	Mean	Median	Std Dev	Min	25th	75th	Max
<i>Market Value of Equity</i>	4,836	578	17,857	3	134	2,384	246,677
<i>Total Assets</i>	12,534	1,280	62,260	7	459	4,510	1,187,035
<i>Sales</i>	1,022	144	3,450	0	22	618	57,224
<i>Net Income</i>	73	7	280	-480	1	39	4,324
<i>Debt-to-Asset</i>	0.68	0.72	0.24	0.04	0.52	0.90	1.33
<i>Return on Assets</i>	0.04	0.02	0.06	-0.46	0.01	0.06	0.56
<i>Return on Equity</i>	0.12	0.12	0.81	-21.06	0.07	0.17	17.15
<i>Share Price</i>	28	24	32	0	16	34	727
<i>Shares Outstanding</i>	140	26	478	1	7	84	7,894

TABLE 2
Regular Quarterly Dividends Per Share Declared

This table reports dividend per share descriptive statistics for a sample of 1,463 U.S. firms, described in Table 1. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003.

Panel A
Dividend Declarations by Quarter for the full Sample of 1,463 Firms (expressed in cents)

<i>Declaration Periods</i>	N	Total \$ (billions)	Mean	Median	Std Dev	Min	25th	75th	Max	Mean of Within-Firm Increases
<i>August 23, 2003—November 22, 2003</i>	1,420	41.6	15.3	12.0	12.7	0.5	6.7	20.0	145.0	0.4 *
<i>May 23, 2003—August 22, 2003</i>	1,402	40.7	15.0	12.0	12.9	0.5	6.3	20.0	145.0	0.7 *
<i>February 23, 2003—May 22, 2003</i>	1,358	37.8	14.7	12.0	12.7	0.5	6.0	19.1	145.0	0.3 *
<i>November 23, 2002—February 22, 2003</i>	1,324	36.9	14.8	12.0	12.8	0.5	6.0	19.0	145.0	0.1
<i>August 23, 2002—November 22, 2002</i>	1,289	36.3	14.7	12.0	12.7	0.5	6.0	19.0	140.0	0.1
<i>May 23, 2002—August 22, 2002</i>	1,330	36.2	14.5	11.3	12.7	0.5	6.0	19.0	140.0	0.1
<i>February 23, 2002—May 22, 2002</i>	1,325	36.0	14.5	11.0	12.7	0.4	6.0	18.8	140.0	

Panel B
The 1,280 Firms that Declared Regular Dividends in All Seven Quarters

<i>Declaration Periods</i>	N	Total \$	Mean	Median	Std Dev	Min	25th	75th	Max	Mean of Within-Firm Increases
<i>August 23, 2003—November 22, 2003</i>	1,280	40.6	16.0	13.0	13.0	0.5	7.5	20.0	145.0	0.3 *
<i>May 23, 2003—August 22, 2003</i>	1,280	40.0	15.6	12.7	13.0	0.5	7.0	20.0	145.0	0.5 *
<i>February 23, 2003—May 22, 2003</i>	1,280	37.5	15.1	12.0	12.7	0.5	6.8	20.0	145.0	0.2 *
<i>November 23, 2002—February 22, 2003</i>	1,280	36.8	15.0	12.0	12.8	0.5	6.6	19.5	145.0	0.2 *
<i>August 23, 2002—November 22, 2002</i>	1,280	36.3	14.7	12.0	12.7	0.5	6.3	19.0	140.0	0.1
<i>May 23, 2002—August 22, 2002</i>	1,280	35.9	14.6	11.7	12.7	0.5	6.1	19.0	140.0	0.1
<i>February 23, 2002—May 22, 2002</i>	1,280	35.6	14.5	11.3	12.7	0.4	6.0	19.0	140.0	

* significant at the 0.001 level

TABLE 3
Regression Analysis of the Change in Regular Dividends Following Enactment

This table reports dividend per share descriptive statistics for a sample of 1,463 U.S. firms, described in Table 1. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: *DPS*, *EPS*, *FCF* and *MTB*. *DPS* is regular quarterly dividends per share as declared from 2/23/02 to 11/22/03. *EPS* is quarterly earnings per share as reported during the period, 11/22/01 to 8/22/03 (Compustat item 69). *FCF* is free cash flow reported during the period 11/22/01 to 8/22/03, which is defined as cash and short-term securities (Compustat Item 36) less accounts payable (Compustat Item 46) less other current liabilities (Compustat 48) per share. *MTB* is the market to book ratio flow reported during the period 11/22/01 to 8/22/03, defined as the market value of equity (Compustat Item 14 x Compustat Item 61) scaled by net book value (Compustat Item 61). *POST* is a categorical variable that equals 1 if the special dividend was declared between 5/23/03 and 11/23/03; zero, otherwise.

Panel A
Descriptive Statistics (n=9171)

	Mean	Med	SD	Min	25 th	75th	Max
<i>DPS</i>	0.15	0.12	0.13	0.00	0.06	0.19	1.45
<i>EPS</i>	0.39	0.35	0.74	-41.31	0.19	0.55	10.14
<i>FCF</i>	-0.05	-0.01	0.08	-1.00	-0.09	-0.00	0.29
<i>MTB</i>	2.23	1.82	12.64	-741.57	1.32	2.55	367.31
<i>POST</i>	0.30						

Panel B
Estimated Coefficient (p-value) from Regressions of the Regular Dividends Per Share Declared on a Categorical Variable Indicating a Quarter after Enactment of the 2003 Act (POST) and Control Variables for the Regular Dividends Declared from February 23, 2002 to November 22, 2003

		(1)	(2)	(3)	(4)	(5)
	pred	OLS	Rank	OLS	Rank	Logit
<i>Intercept</i>		0.127**	3309.99**	0.129**	3102.29**	1.821**
<i>EPS</i>	(+)	0.038**	0.36**	0.035**	0.35**	0.264**
<i>FCF</i>	(+)	-0.086	-0.15	-0.009	-0.14	-0.012
<i>MTB</i>	(-)	-0.000	0.06	-0.000	0.05	0.002
<i>POST</i>	(+)	0.005*	124.95**	0.009**	202.61**	1.085**
n		9,171	9,171	8,670	8,670	9,952
adjusted R²		0.05	0.18	0.05	0.17	

* (**) significant at the 0.05 (0.01) level

- Columns (1), (2) and (5) report results from estimates using the full sample of 1,463 firms that paid dividends during at least one quarter from February 23, 2002 to November 22, 2003.
- Columns (3) and (4) report results from estimates using the reduced sample of 1,280 firms that paid dividends every quarter from February 23, 2002 to November 22, 2003.

TABLE 4
Statistical Information for the Regression Variables Testing a Link Between Dividend Increases and Individual Ownership

This table reports descriptive statistics for a sample of 1,463 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: *ADIV*, *LAGADIV*, *ΔEPS*, *IND*, and *INSIDE*. *ADIV* is dividends per share as declared from 5/23/03 to 11/22/03 less dividends per share as declared from 11/23/02 to 5/22/03. *LAGADIV* is dividends per share as declared from 11/23/02 to 5/22/03 less dividends per share as declared from 5/23/02 to 11/22/02. *ΔEPS* is quarterly earnings per share as reported during the period, 11/23/02 to 5/22/03 less quarterly earnings per share as reported during the period, 5/23/02 to 11/22/02 (Compustat item 69). *DYIELD* is annualized dividends in two quarters preceding 5/23/03, as a percentage of its share price on the declaration date. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum. *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial's Insider Filing Data.

Panel A: Descriptive Statistics

	N	Mean	Median	Std Dev	Min	25 th	75 th	Max
<i>ADIV</i>	1,463	0.022	0	0.068	-0.850	0	0.020	0.730
<i>LAGADIV</i>	1,463	0.008	0	0.049	-0.500	0	0.020	0.740
<i>ΔEPS</i>	1,463	0.092	0.030	1.031	-15.010	-0.100	0.190	16.990
<i>DYIELD</i>	1,463	0.012	0.011	0.008	0	0.006	0.016	0.062
<i>IND</i>	1,463	0.542	0.525	0.292	0.008	0.285	0.825	1
<i>INSIDE</i>	1,463	0.071	0.026	0.116	0	0.006	0.081	0.834

Panel B: Pearson's (Spearman's Rank) Correlation Coefficients over (under) the Diagonal (probability that the coefficient equals zero) for 1,463 observations

	<i>ADIV</i>	<i>LAGADIV</i>	<i>ΔEPS</i>	<i>DYIELD</i>	<i>IND</i>	<i>INSIDE</i>
<i>ADIV</i>	1.00	0.08 *	-0.00	-0.25 *	-0.06	0.07 *
<i>LAGADIV</i>	0.24 *	1.00	0.00	0.01	0.03	0.01
<i>ΔEPS</i>	0.08 *	0.04	1.00	-0.01	-0.06	-0.08 *
<i>DYIELD</i>	-0.25 *	0.12 *	-0.03	1.00	0.22 *	-0.07 *
<i>IND</i>	0.00	0.12 *	-0.02	0.27 *	1.00	0.28 *
<i>INSIDE</i>	0.06	0.08 *	0.03	-0.07 *	0.35 *	1.00

* significant at the 0.01 level

TABLE 5
Estimated Coefficient (*t*-statistic) from Regressions of the Change in Regular Quarterly Dividends Per Share Declared (ΔDIV) on Individual (*IND*) and Insider (*INSIDE*) Ownership of Stocks and Control Variables

This table reports multivariate analyses for a sample of 1,463 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: ΔDIV , $LAG\Delta DIV$, ΔEPS , *IND*, and *INSIDE*. ΔDIV is dividends per share as declared from 5/23/03 to 11/22/03 less dividends per share as declared from 11/23/02 to 5/22/03. $LAG\Delta DIV$ is dividends per share as declared from 11/23/02 to 5/22/03 less dividends per share as declared from 5/23/02 to 11/22/02. ΔEPS is quarterly earnings per share as reported during the period, 11/23/02 to 5/22/03 less quarterly earnings per share as reported during the period, 5/23/02 to 11/22/02 (Compustat item 69). $DYIELD$ is annualized dividends in two quarters preceding 5/23/03, as a percentage of its share price on the declaration date. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum. *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial's Insider Filing Data.

		(1)	(2)	(3)
<i>Intercept</i>		0.046 (11.5)	0.043 (13.4)	0.045 (11.2)
<i>LAGADIV</i>		0.114 (3.3)	0.113 (3.3)	0.115 (3.3)
ΔEPS		0.000 (-0.3)	-0.000 (-0.1)	-0.000 (-0.1)
<i>DYIELD</i>		-2.000 (-9.7)	-1.988 (-9.8)	-1.935 (-9.3)
<i>IND</i>	(+)	-0.002 (-0.4)		-0.007 (-1.0)
<i>INSIDE</i>	(+)		0.031 (2.1)	0.036 (2.3)
adjusted R²		0.07	0.07	0.07

TABLE 6

Estimated Coefficient (*t*-statistic) from Regressions of the Change in Regular Quarterly Dividends Per Share Declared (ΔDIV) on Individual (*IND*) and Insider (*INSIDE*) Ownership of Stocks and Control Variables Under Various Specifications of the Pre- and Post-Enactment Quarters

This table reports multivariate analyses for a sample of 1,463 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a regular quarterly dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: ΔDIV , $LAG\Delta DIV$, ΔEPS , *IND*, and *INSIDE*. ΔDIV and $LAG\Delta DIV$ are defined below. ΔEPS is quarterly earnings per share over the same period as $LAG\Delta DIV$. $DYIELD$ is annualized dividends in two quarters preceding 5/23/03, as a percentage of its share price on the declaration date. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum. *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial's Insider Filing Data.

		(1)	(2)	(3)	(4)	(5)	(6)
Define:		5/23/03—8/22/03	5/23/03—8/22/03	5/23/03—11/22/03	8/23/03—11/22/03	8/23/03—11/22/03	8/23/03—11/22/03
ΔDIV		less 2/23/03—5/22/03	less 5/23/02—8/22/03	less 5/23/02—11/22/02	less 5/23/03—8/22/03	less 8/23/02—11/22/02	less 2/23/03—5/22/03
Define:		2/23/03—5/22/03	2/23/03—5/22/03	11/23/02—5/22/03	5/23/03—8/22/03	5/23/03—8/22/03	2/23/03—5/22/03
$LAG\Delta DIV$		less 11/23/02—2/22/03	less 2/23/02—5/22/03	less 11/23/01—5/22/02	less 2/23/03—5/22/03	less 5/23/02—8/22/02	less 8/23/02—11/22/02
<i>IND</i>	(+)	-0.002 (-0.6)	-0.002 (-0.8)	-0.007 (-0.9)	-0.000 (-0.0)	-0.003 (-0.9)	-0.005 (-1.5)
<i>INSIDE</i>	(+)	0.005 (0.8)	0.004 (0.5)	0.017 (1.0)	0.014 (1.8)	0.011 (1.3)	0.028 (3.3)

TABLE 7

Summary Statistics for the 84 Special Dividends Declared by 62 Firms from February 23, 2002 to November 22, 2003

This table reports dividend descriptive statistics, expressed in cents, for a sample of 62 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a special dividend between February 23, 2002 and November 22, 2003.

<i>Declaration Periods</i>	Obs > 0	Total \$ billions	Mean	Median	Std Dev	Min	25th	75th	Max
<i>August 23, 2003—November 22, 2003</i>	31	0.644	51	25	78	1	10	68	400
<i>May 23, 2003—August 22, 2003</i>	22	0.555	81	28	115	2	10	100	500
<i>February 23, 2003—May 22, 2003</i>	8	0.230	71	53	86	4	5	100	250
<i>November 23, 2002—February 22, 2003</i>	2	0.001	20	20	0	20	20	20	020
<i>August 23, 2002—November 22, 2002</i>	14	0.161	44	17	62	2	5	36	200
<i>May 23, 2002—August 22, 2002</i>	6	0.003	17	5	22	2	3	30	56
<i>February 23, 2002—May 22, 2002</i>	1	0.000	10	10	0	10	10	10	10

TABLE 8
Regression Analysis of the Change in Special Dividends Following Enactment

This table reports descriptive statistics for a sample of 62 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a special dividend between February 23, 2002 and November 22, 2003 that have available information on the following variables: *SD*, *EPS*, *FCF* and *MTB*. *SD* is dividends per share as declared from 2/23/02 to 11/22/03. *EPS* is quarterly earnings per share as reported during the period, 11/22/01 to 8/22/03 (Compustat item 69). *FCF* is free cash flow reported during the period 11/22/01 to 8/22/03, which is defined as cash and short-term securities (Compustat Item 36) less accounts payable (Compustat Item 46) less other current liabilities (Compustat 48) per share. *MTB* is the market to book ratio flow reported during the period 11/22/01 to 8/22/03, defined as the market value of equity (Compustat Item 14 x Compustat Item 61) scaled by net book value (Compustat Item 61). *POST* is a categorical variable that equals 1 if the special dividend was declared between 5/23/03 and 11/23/03; zero, otherwise.

Panel A: Descriptive Statistics (n=82)

	Mean	Med	S D	Min	25th	75th	Max
<i>SD</i>	0.57	0.25	0.86	0.01	0.07	1.00	5.00
<i>EPS</i>	0.31	0.32	0.29	-0.23	0.12	0.42	1.52
<i>FCF</i>	-0.44	-0.05	0.75	-4.86	-0.75	0.00	0.29
<i>MTB</i>	1.75	1.59	0.94	0.61	1.15	1.97	6.99
<i>POST</i>	0.63						

Panel B: Estimated Coefficient (p-value) from Regressions of the Special Dividends Per Share Declared on a Categorical Variable Indicating a Quarter after Enactment of the 2003 Act (POST) and Control Variables for the 82 Special Dividends Declared from February 23, 2002 to November 22, 2003

	Logit	OLS	Rank
<i>Intercept</i>	-2.42 (0.01)	1.00 (0.01)	33.44 (0.01)
<i>EPS</i>	0.90 (0.03)	-0.36 (0.87)	0.07 (0.27)
<i>FCF</i>	-0.09 (0.69)	0.23 (0.04)	0.33 (0.01)
<i>MTB</i>	-0.05 (0.34)	-0.19 (0.03)	-0.32 (0.01)
<i>POST</i>	1.95 (0.01)	0.18 (0.18)	7.55 (0.07)
n	422	82	82
adjusted R²		0.08	0.20

TABLE 9
Individual and Insider Ownership of the Firms Paying Special Dividends

This table reports individual and insider holdings for a sample of 62 U.S. firms. The data sample consists of all corporations reported by CRSP as declaring a special dividend between February 23, 2002 and November 22, 2003. *IND* is one less the percentage of shares that are held by institutional investors as reported in 13-F filings and collected by CDA/Spectrum. *INSIDE* is the percentage of shares held by insiders as measured by holdings of officers and directors as reported in Thomson Financial's Insider Filing Data.

Panel A: Individual Ownership (IND) of Firms Paying Special Dividends (n=84)

<i>Declaration Periods</i>	Obs	Mean	Median	Std Dev	Min	25th	75th	Max
<i>August 23, 2003—November 22, 2003</i>	31	0.79	0.84	0.22	0.29	0.72	0.96	1
<i>May 23, 2003—August 22, 2003</i>	22	0.75	0.78	0.20	0.17	0.64	0.89	1
<i>February 23, 2002—May 22, 2003</i>	31	0.86	0.88	0.14	0.51	0.75	0.98	1
<i>IND for firms paying regular quarterly dividends</i>	1,463	0.54	0.52	0.29	0	0.29	0.82	1

Panel B: Insider Ownership (INSIDE) of Firms Paying Special Dividends (n=84)

<i>Declaration Periods</i>	Obs	Mean	Median	Std Dev	Min	25th	75th	Max
<i>August 23, 2003—November 22, 2003</i>	31	0.12	0.11	0.12	0	0.02	0.17	0.53
<i>May 23, 2003—August 22, 2003</i>	22	0.15	0.08	0.20	0	0.02	0.17	0.68
<i>February 23, 2002—May 22, 2003</i>	31	0.11	0.03	0.15	0	0.01	0.12	0.59
<i>INSIDE for firms paying regular quarterly dividends</i>	1,463	0.07	0.03	0.12	0	0.01	0.08	0.83