

**Executive Stock-Based Compensation and Firms' Cash Payout:
The Role of Shareholders' Tax-Related Payout Preferences**

David Aboody
Anderson Graduate School of Management
University of California at Los Angeles
Los Angeles, CA 90095
Tel: (310) 825-3393
david.aboody@anderson.ucla.edu

and

Ron Kasznik
Graduate School of Business
Stanford University
Stanford, CA 94305
Tel: (650) 725-9740
kasznik_ron@gsb.stanford.edu

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ABSTRACT

This study investigates the extent to which the structure of executive stock-based compensation helps to align managers' cash payout choices with shareholders' tax-related payout preferences. Specifically, shareholders' preferences between dividends, which are taxed as ordinary income, and stock repurchases, which can result in gains taxed as long-term capital gains, can depend on the relative magnitudes of their tax consequences. Similarly, to the extent that executives make payout choices that increase their compensation, stock options, which are not dividend-protected, can induce managers to favor repurchases over dividends as a form of payout. In contrast, compensation in the form of restricted stock, which is dividend-protected, is more likely to induce the use of dividends. To test our hypothesis that the structure of executive stock-based compensation aligns managers' payout choices with shareholders' payout preferences, we investigate whether exogenous changes in shareholders' tax-related payout preferences following the recent dividend tax rate reduction result in predictable shifts in executive stock-based compensation and in managers' payout choices. Consistent with our predictions, we find that, for firms with a greater percentage ownership by individual investors, firms with stronger shareholder rights, and firms with lower financial reporting costs associated with substituting restricted stock for stock options, there is a significantly positive relation between changes in the use of restricted stock in executive compensation and changes in the use of dividends in firms' payout. The findings for changes in the use of stock options are consistent with, albeit somewhat weaker than, the findings for changes in the use of restricted stock. Our hypothesis and empirical findings that shareholders' tax-related payout preferences play a role in the design of executive stock-based compensation extend the prior literature that has largely focused on the role of incentive contracts in inducing managerial effort and retention.

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I. INTRODUCTION

This study investigates the role of shareholders' cash payout preferences in the design of executive compensation. Specifically, we examine the relation between stock-based compensation and managers' payout choices in the context of shareholders' tax-related payout preferences. Because most stock options are not dividend-protected and, therefore, their expected value decreases with the payment of dividends, it has been argued in prior research that stock option compensation induces managers to favor repurchases over dividends as a form of cash payout. However, prior research does not explore the underlying rationale for shareholders to design executive compensation plans that induce self-interest payout choices. The objective of our study is to link the structure of executive stock-based compensation to shareholders' tax-related payout preferences.

Shareholders likely have a preference for a form of payout that minimizes their income taxes. Thus, differences between the tax rates on ordinary income and long-term capital gains can affect individual investors' preferences between dividends, which are taxed as ordinary income, and stock repurchases, which can result in gains taxed as long-term capital gains. Similarly, the structure of executive stock-based compensation can induce self-interested executives to favor the form of payout that increases their compensation. Specifically, stock options, which generally are not dividend-protected, can induce executives to favor repurchases over dividends.¹ In contrast, restricted stock is dividend-protected; executives receive dividends

¹ Although one could, in principal, design stock option plans with dividend protection, empirical evidence indicates that such cases are rare (see, e.g., Murphy [1999]). Under U.S. GAAP, conditioning the option exercise price on

on restricted stock and do not refund them even if they fail to achieve the performance criteria. Thus, compensation in the form of restricted stock is more likely than compensation in the form of stock options to induce executives to use dividends as a form of cash payout.

Accordingly, we hypothesize that the structure of executive stock-based compensation, particularly the choice between restricted stock and stock options, helps to align managers' cash payout choices with the underlying preferences of shareholders seeking to minimize their taxes. To test this hypothesis, we investigate the effects of an exogenous change in shareholders' tax-related payout preferences on the interaction between changes in stock-based compensation and in firms' cash payouts. To the extent that shareholders' payout preferences, executive stock-based compensation, and managers' payout choices are in equilibrium, we predict that an exogenous shock to shareholders' payout preferences would lead to a shift in the structure of executive stock-based compensation and, consequently, to a shift in managers' payout choices.

Until recently, tax rates on long-term capital gains have been substantially lower than those on ordinary income. As a result, many individual investors favored share repurchases, which resulted in long-term capital gains, over dividends, which had been taxed as ordinary income. Hence, the use of stock options in executive compensation had been consistent with inducing executives to favor repurchases over dividends, allowing individual investors to minimize their income taxes. However, the recent enactment of the Jobs and Growth Tax Relief Reconciliation Act of 2003 has reduced the personal tax rate on dividend income from 38.1 percent to 15 percent, the same rate as the new tax rate on long-term capital gains. This dividend tax rate reduction has likely changed shareholders' tax-related payout preferences. Therefore,

dividend payments results in classifying the options as performance-based compensation, which is recorded as an expense in net income. Conversely, prior to 2006, firms were not required to record an expense related to stock options with a fixed exercise price.

we predict that following the reduction in the tax rate on dividend income, there will be an increased (decreased) use of restricted stock (stock options) in executive compensation, leading to an increased use of dividends in firms' cash payouts.²

Because tax rate differences between dividend income and long-term capital gains only affect individual shareholders, we predict that the shifts in stock-based compensation and in managers' payout choices following the changes in shareholders' tax-related payout preferences will be more pronounced for firms with a greater percentage of equity ownership by individuals. We also predict that these shifts will be more pronounced for firms with corporate governance structures that provide shareholders with stronger rights. We presume that such shareholders can more effectively alter the form of executive stock-based compensation from non-dividend-protected stock options to dividend-protected restricted stock, enabling them to extract the tax-related benefits associated with changes in firms' cash payout.

The choice between stock options and restricted stock in executive compensation might also be affected by the desire to minimize firms' financial reporting costs. Unlike for all other forms of compensation, including restricted stock, which are expensed as incurred, accounting rules have allowed firms to either recognize the cost of their stock options as an expense in net income or disclose it in notes to the financial statements. While most firms used the disclosure-only treatment, many firms have adopted expense recognition. To the extent that expense recognition makes the financial reporting cost of stock options more similar to that of restricted

² Stock-based compensation plans are designed primarily to induce a desired level of managerial effort. Thus, we do not argue that shareholders' tax-related payout preferences are the primary drive in the construction of executive compensation plans. However, to the extent that stock options and restricted stock can be used as substitutes in inducing a desired level of managerial effort (see, e.g., Feltham and Wu [2001]), we predict that changes in shareholders' tax-related payout preferences will affect the mix of these two forms of stock-based compensation without altering the underlying incentive attributes of the compensation plan. Our prediction presumes that firms attempt to maintain some pre-determined level of equity compensation to top executives, and, therefore, when the level of stock option compensation is reduced, it will be substituted at least partially by restricted stock.

stock, we predict that following the dividend tax rate reduction, shareholders and managers of expense recognition firms will be more inclined to shift to restricted stock as a form of stock-based compensation.

Consistent with our predictions, we find that there are predictable changes in the structure of executives stock-based compensation and in managers' payout choices following the dividend tax rate reduction. Specifically, for firms with a greater percentage ownership by individual investors and for firms with stronger shareholder rights, there is a significantly positive relation between changes in the use of restricted stock in executive compensation and changes in the use of dividends in firms' cash payouts. Our findings for changes in the use of stock options are consistent with, albeit somewhat weaker than, our findings for changes in the use of restricted stock. Furthermore, consistent with our prediction, for firms that recognize stock option expense in net income, we find a significantly positive (negative) relation between changes in the use of restricted stock (stock options) in executive compensation and changes in the use of dividends in firms' payout. Taken together, our findings are consistent with shareholders' tax-related payout preferences influencing the structure of executive stock-based compensation.

Results from additional analyses reveal corroborating inferences. First, we find that our findings of a positive relation between changes in grants of restricted stock and changes in dividends is particularly pronounced for firms where the value of executives' stock option holdings is less sensitive to changes in dividends, and where the increase in dividends has a positive net effect on executives' wealth. Second, we find that for firms with zero cash payout, changes in shareholders' tax-related payout preferences have no effect on the relation between stock-based compensation and managers' dividend choices, indicating that these firms' decision to not pay any cash to shareholders more likely was attributable to other fundamental economic

factors. Third, we find identical inferences when we use various alternative specifications to investigate the effect of changes in shareholders' tax-related payout preferences on the relation between the structure of executive stock-based compensation and cash dividends. Finally, we find evidence consistent with the notion that the shifts in the structure of stock-based compensation following the change in shareholders' payout preferences are associated with a substitution of dividends for repurchases.

Our paper makes several contributions to the literature. First, and most importantly, our study hypothesizes and empirically tests the role of shareholders' payout preferences in the design of management incentive contracts. Although prior research has documented that managers make payout choices that increase the value of their compensation, our findings cast a different light on this managerial self-interest behavior as a phenomenon that both shareholders and managers anticipate in configuring the form as well as the level of incentive compensation. Also, our investigation of the role of shareholders' tax-related payout preferences in the design of executive stock-based compensation contributes to prior executive compensation literature that has largely focused on the role of incentive contracts in inducing managerial effort and retention.

Second, we contribute to the corporate governance literature by providing evidence that stronger governance mechanisms, particularly those that strengthen shareholders' rights, enable shareholders to rearrange the incentives provided to executives, thereby extracting a larger share of the gains associated with recent tax rate reductions. Finally, we contribute to the literature on the accounting for stock options by providing evidence that expense recognition in place of footnote disclosure enhances the prospect of aligning managers' payout choices with shareholders' payout preferences.

The paper is organized as follows. Section II discusses the motivation and outlines the research questions. Section III describes the sample and data. Section IV outlines the research design, and Section V reports the primary findings and additional tests. Section VI concludes.

II. MOTIVATION AND RESEARCH QUESTIONS

There is a large stream of literature on firms' cash payouts that examines the effects of free-cash flow, signaling, asymmetric information, and taxes on payout policies in general, and on the choice between dividends and repurchases in particular (see, e.g., Miller and Scholes [1978], Asquith and Mullins [1983], Bagwell and Shoven [1989], and Allen and Michaely [1995]). More related to our study, several studies have attempted to link firms' cash payouts to executive stock option compensation. In particular, because most stock options are not dividend-protected and, consequently, their expected value decreases with the payment of dividends, it has been argued in prior research that stock option compensation induces managers to reduce the level of cash dividends in their firms' payout. In particular, several prior studies have found that when managers have more stock option compensation they tend to use dividends to a lesser extent (see, Lambert, Larcker, and Larcker [1989], Jolls [1998], Fenn and Liang [2001], and Kahle [2002]). More recently, Brown, Liang, and Weisbenner [2004] and Chetty and Saez [2005] complement this cross-sectional evidence by documenting that firms with larger holdings of stock options are less likely to increase their dividends following the tax rate reduction on dividend income. However, this literature implicitly assumes that executive compensation is exogenously determined, and does not consider the possibility that the structure of stock-based compensation is set optimally by shareholders desiring a particular form of payout.

The objective of our study is to investigate the underlying rationale for structuring stock-based compensation plans that induce managers to make payout choices that increase the value

of their compensation. In particular, we consider the interaction between shareholders' tax-related payout preferences and the use of two forms of stock-based compensation, stock options and restricted stock. Unlike stock options, restricted stock is dividend-protected and therefore more likely than stock options to induce executives to use dividends as a form of cash payout. We hypothesize that shareholders' tax-related payout preferences affect the extent to which stock options and restricted stock are used in executive compensation, inducing managers to make payout choices that are aligned with the underlying preferences of shareholders seeking to minimize their taxes.

Because dividends received by individual investors are considered as ordinary income whereas share repurchases can result in long-term capital gains, shareholders' preference for a particular form of payout can depend on the relative magnitudes of the tax rates on ordinary income and long-term capital gains.³ Until recently, tax rates on long-term capital gains have been lower than those on ordinary income.⁴ As a result, many individual investors favored share repurchases over dividends as form of cash payout. Hence, the use of stock options in executive compensation was consistent with aligning managers' and shareholders' payout preferences. However, the recent enactment of the Jobs and Growth Tax Relief Reconciliation Act of 2003

³ This argument has led to "dividend clientele" models where firms that pay lower (higher) dividends attract investors who dislike (like) dividend income (see, e.g., Miller and Modigliani [1961] and Allen, Bernardo and Welch [2000]). Several empirical studies have investigated whether shareholders' tax-related preferences affect firms' payout choices. For example, Barclay, Holderness, and Sheehan [2003] find no evidence that dividends change systematically following the substitution of a new large blockholder with different tax status. In contrast, Perez-Gonzalez [2003] finds that dividend payout increased in years when dividend income was less tax-disadvantaged relative to capital gains, and decreased as this tendency was reverted, but only for firms whose large shareholders were affected by these tax reforms, i.e., individual investors. Furthermore, Brav, Graham, Harvey, and Michaely [2005] provide survey evidence that financial executives believe that making changes to their payout policy can alter the company's investor base. Graham and Kumar [2005] provide evidence consistent with tax-induced dividend clienteles even within retail investors. For example, retail investor stock holdings indicate a preference for dividend income that decreases with the retail investor marginal tax rate.

⁴ This relation holds for most of the history of the income tax. The only time period where the tax rates an ordinary income and long-term capital gains have been the same is between 1986-1991 (see, Burman and Kobes [2004] for a summary).

has cut the personal tax rate on dividend income from 38.1 percent to 15 percent, and has reduced the top rate on long-term capital gains from 20 percent to 15 percent.⁵ To the extent that shareholders' payout preferences, executive stock-based compensation, and managers' payout choices are in equilibrium, we predict that this exogenous shock to shareholders' tax-related payout preferences would lead to a new equilibrium in terms of the executive compensation and cash payout choices. Specifically, we predict that there will be an increased (decreased) use of restricted stock (stock options) in executive compensation, thereby realigning the incentives of executives with shareholders' new tax-related preferences for an increased use of dividends in firms' payouts.⁶

Because the reduction in the tax rate on dividend income can only benefit shareholders who are taxed as individual investors, we predict that the shifts in the structure of executive stock-based compensation and in managers' payout choices are more pronounced for firms with a greater percentage of ownership by individual investors. We also predict that the changes to stock-based compensation and payout choices are more pronounced for firms with corporate governance structures that provide shareholders with stronger rights. We presume that following the change to their payout preferences, such shareholders can more effectively alter the form of executive stock-based compensation from non-dividend-protected stock options to dividend-

⁵ The Act was signed into law in May 2003, and was made retroactive to January 1, 2003. The plans for a dividend tax cut were first announced by President Bush during a speech to the Economic Club of Chicago in January 2003. Recent event studies (e.g., Auerbach and Hassett [2004]) indicate that there was very little information about the dividend tax cut prior to the January 2003 announcement. Moreover, the Act did not undertake major tax policy changes other than the dividend tax rate reduction. Thus, it represents a largely unanticipated and exogenous change to shareholders' tax-related payout preferences.

⁶ The notion that the dividend tax rate reduction would lead to increased dividend payments is based on an underlying assumption that dividend taxes have a binding constraint on dividend payout, and that repurchases are not a perfect substitution for dividends (see, e.g., Guay and Harford [2000] and Jagannathan, Stephens, and Weisbach [2000]). Consistent with that, Blouin, Raedy, and Shackelford [2004] and Hsich and Wang [2004] find a significant increase in the number of dividend-paying firms following the enactment of the Act. Blouin et al. [2004] further document an increase in both regular and special dividends, and a decline in repurchases. These studies,

protected restricted stock, enabling them to extract the tax-related benefits associated with the resulting changes in their firms' payouts.

We also consider the possibility that the extent to which firms use stock options and restricted stock in executive compensation is influenced by their desire to minimize financial reporting costs. Many capital market observers argue that the dominance of stock options over restricted stock as a form of stock-based compensation is largely attributable to the preferential accounting treatment of stock options. Specifically, unlike for all other forms of compensation, including restricted stock, accounting rules have allowed firms to disclose the cost of their stock options rather than recognize it as an expense in net income.⁷ Thus, to the extent that firms with lower levels of reported earnings face higher implicit and explicit costs due to their earnings-based contracts (see, e.g., Watts and Zimmerman [1986]), firms that do not recognize the cost of their stock options as an expense in net income may have an incentive to favor stock options over other forms of compensation, including restricted stock, in their compensation plans.⁸ In contrast, for firms that do recognize a stock option expense, the financial reporting costs of using stock options in compensation plans are more similar to those of using restricted stock. Thus, we predict that shareholders and managers of expense recognition firms would be more inclined to

however, do not investigate the role of executive stock-based compensation in aligning shareholders' and managers' payout preferences, which is the focus of our study.

⁷ Accounting for stock-based compensation is specified in Accounting Principles Board Opinion (APB) No. 25 (APB [1973]) and Statement of Financial Accounting Standards (SFAS) No. 123 (SFAS 123). Under APB 25, stock-based compensation expense is recognized over the vesting period based on the difference between the share price and option exercise price. Because most companies grant options at-the-money, stock-based compensation expense under APB 25 typically equals zero. Under SFAS 123, stock-based compensation expense is based on grant-date option fair values, recognized over the vesting period. However, SFAS 123 permits firms to recognize the expense in determining net income or to disclose in notes to the financial statements what net income would have been had the expense been recognized. In December 2004, the Financial Accounting Standards Board (FASB) issued Statement No. 123(R), requiring all companies to expense the fair value of their stock options beginning in 2006.

⁸ The prior literature provides mixed evidence on the effect of the preferential accounting treatment of stock options on their use in compensation plans (see, e.g., Matsunaga [1995], Yermack [1995], Core and Guay [1999], Bryan, Hwang, and Lilien [2000], Aboody, Barth, and Kasznik [2004], and Carter, Lynch, and Tuna [2004]).

shift to restricted stock as a form of stock-based compensation following the change to shareholders' tax-related payout preferences.

III. SAMPLE AND DESCRIPTIVE STATISTICS

Our primary tests investigate the relation between changes in the use of restricted stock and stock options in executive compensation and changes in firms' cash payouts following the dividend tax rate reduction. These tests require that sample firms have complete executive compensation and cash payout data for fiscal years 2002 and 2003. We collect data on executive stock options and restricted stock from the Standard & Poor's ExecuComp database.

ExecuComp provides detailed executive compensation data for firms in the S&P 500, S&P 400 MidCap, and S&P 600 SmallCap indices. Our analyses focus on CEO compensation because we presume CEOs have considerable influence over their firms' payout choices. Using the COMPUSTAT Merged Annual Industrials, Full Coverage and Primary-Supplementary-Tertiary files, we collect data on cash payout for these firms. In particular, our measure of dividends is based on all cash dividends paid during the year (data item # 21), and our measure of share repurchases is based on the dollar amount of repurchased stock, as reported in the statement of cash flows (data item # 115).⁹

We also require proxies for the heterogeneity in shareholders' tax-related payout preferences and for the extent of shareholder rights. Our proxy for shareholders' tax-related payout preferences is the percentage ownership of common stock by individual investors. Unlike institutional investors, for individual investors dividend income prior to the 2003 tax rate

⁹ Our measure of dividends includes both regular and special dividends; our findings are robust to excluding special dividends. Our measure of repurchases includes both open-market and self-tender repurchases of common stock.

reduction was tax-disadvantaged relative to long-term capital gains.¹⁰ Consistent with the prior literature (see, e.g., Dhaliwal, Erickson, and Trezevant [1999] and Dhaliwal and Li [2005]), we measure percentage ownership by individuals as one minus the percentage institutional holding, based on the CDA/Spectrum Institutional (13-F) holding database.¹¹ Our measure of shareholders' rights is based on the index compiled by the Investor Responsibility Research Center (IRRC), which comprises 23 corporate governance provisions that measure shareholder rights (see Gompers, Metrick, and Ishii [2003]).

After incorporating all these data requirements, we identify 948 firms with complete executive compensation and firms' payout data for fiscal years 2002 and 2003. We exclude 303 firms with zero cash payout (i.e., firms that did not pay any dividends and did not repurchase their stock in 2002) from the sample that is used in our primary tests.¹² Thus, our final sample is comprised of 645 firms. In testing the effects of financial reporting costs on the use of stock options and restricted stock in compensation plans, we use the Bear Stearns Equity Research report to identify firms that have announced their intention to recognize the cost of stock options

¹⁰ It can be argued that although the tax rate on dividend income now equals the top rate on long-term capital gains, dividends continue to be taxed disadvantageously compared to long-term capital gains (see Bluin et al. [2004] for a discussion). However, it is clear that the extent of this tax-disadvantage has reduced substantially after the 2003 Act.

¹¹ Institutional investors include corporate investors, pension funds, brokerage firms, banks, and insurance companies. We compute the firm-specific percentage institutional holding as the total number of shares held by institutional investors divided by the total number of shares outstanding. As noted in the prior literature, the aggregate level of institutional ownership is an imperfect measure of heterogeneity in tax-related payout preferences because some institutional investors, particularly mutual funds, indirectly hold equity for fully taxable individual investors (see, e.g., Dhaliwal and Li [2005]). However, to the extent that the proportion of such institutions among all institutional investors is small (see, e.g., Gompers and Metrick [2001]), this should not pose a serious problem in our analyses.

¹² We exclude these firms because we do not believe that shareholders' tax considerations play a considerable role in these firms' payout choices. These firms' decision to have a zero cash payout more likely is attributable to some other fundamental economic factors (e.g., cash flow considerations, growth opportunities, etc.). To the extent that tax considerations are less likely to impose a binding constraint on these firms' payout policy, we expect a weaker effect of the dividend tax cut on executive stock-based compensation and on managers' payout choices for these firms. We investigate this conjecture in the sensitivity analyses reported below.

as an expense in net income. Of the 645 sample firms, we identify 91 that began to recognize stock option expense prior to the enactment of the Act in 2003.¹³

Table 1 presents industry frequency distribution for our final sample and reveals that sample firms' industry membership percentage is fairly similar to the COMPUSTAT population percentage, although our sample includes more (less) utilities (Business Services) firms than what would be expected based on the COMPUSTAT population. Table 2 presents univariate descriptive statistics for the cash payout and stock-based compensation variables, along with additional firm characteristics. Regarding firms' cash payouts, consistent with our prediction, we find that the mean (median) cash dividends as a percentage of equity market value increased from 1.69% (1.28%) in 2002 to 2.56% (1.44%) in 2003; untabulated tests indicate the *p*-value for the mean (median) increase is 0.039 (0.001).¹⁴ We also find that the mean (median) repurchases as a percentage of equity market value decreased from 1.75% (0.63%) in 2002 to 1.09% (0.56%) in 2003; *p*-value for the mean (median) decrease is 0.058 (0.296). Consistent with a substitution of dividends for repurchases following the dividend tax rate reduction, the mean ratio of dividends to total cash payout (i.e., dividends plus repurchases) has increased from 54.25% in 2002 to 55.63% in 2003 (*p*-value 0.060), while the median has increased from 56.36% in 2002 to 61.61% in 2003 (*p*-value 0.002).

Relating to CEO stock-based compensation, we document significant changes that are consistent with our predictions. Specifically, the mean (median) value of stock option grants as a

¹³ We focus on firms that have decided to expense stock options prior to the dividend tax rate reduction because these firms' decision to recognize stock option expense likely is independent of the subsequent shift in their shareholders' tax-related payout preferences.

¹⁴ Untabulated statistics also indicate that the number of dividend paying firms in our sample has increased from 499 in 2002 to 501 in 2003. Thus, the increase in dividend payments among sample firms largely is attributable to increased dividend yields among dividend paying firms rather than to dividend initiations by non payers. This also is consistent with the notion that the decision to not pay any dividends more likely is attributable to some fundamental firm characteristics rather than to shareholders' tax considerations.

percentage of equity market value has decreased from 0.09% (0.04%) in 2002 to 0.06% (0.03%) in 2003; untabulated test indicates that the p -value for the mean (median) decrease is 0.001 (0.001). The mean (median) value of restricted stock grants as a percentage of equity market value has increased from 0.02% (0.00%) in 2002 to 0.03% (0.00%) in 2003; untabulated test indicates that the p -value for the mean (median) increase is 0.002 (0.001). Moreover, untabulated statistics reveal that the number of sample firms that use restricted stock in CEO compensation has increased from 404 in 2002 to 439 in 2003, whereas the number of firms that grant stock options to their CEOs has decreased from 522 in 2002 to 484 in 2003. Taken together, these findings reveal that, consistent with our prediction, there is an increased (decreased) reliance on restricted stock (stock options) in executive stock-based compensation following the dividend tax rate reduction. However, the testing of our predictions is based on the interaction of changes in the use of restricted stock and stock options in executive compensation with changes in shareholders' tax-related payout preferences. Hence, our primary inferences are based on the multivariate analyses detailed in the next section.

IV. RESEARCH DESIGN

Our primary hypothesis is that shareholders' tax-related payout preferences affect the use of stock options and restricted stock in executive stock-based compensation, thereby inducing managers to make payout choices that are aligned with the underlying preferences of shareholders. To test this hypothesis we investigate the effects of the exogenous change in shareholders' tax-related payout preferences following the 2003 reduction in the tax rate on dividend income. We predict that there will be an increased (decreased) use of restricted stock (stock options) in executive compensation, thereby realigning managers' payout choices with

individual investors' preferences for more dividends in their firms' payouts. We test these predictions using the following specification:

$$\begin{aligned}
\Delta DIVIDENDS = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\
& + \beta_3 SHRIGHTS * \Delta RSTKGR + \beta_4 SHRIGHTS * \Delta OPTGR \\
& + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\
& + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRIGHTS + \beta_{11} EXPENSE \\
& + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_1
\end{aligned} \tag{1}$$

The dependent variable, $\Delta DIVIDENDS$, is the difference between the total dollar amount of dividends in 2003 and the total dollar amount of dividends in 2002, deflated by market value of equity at the beginning of 2002. Our stock-based compensation variables, $\Delta RSTKGR$ and $\Delta OPTGR$, are the changes between 2003 and 2002 in the use of restricted stock and stock options in executive compensation. Specifically, $\Delta RSTKGR$ is the difference between the value of CEO restricted stock grants in 2003 and the value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. Similarly, $\Delta OPTGR$ is the difference between the value of CEO stock option grants in 2003 and the value of stock option grants in 2002, deflated by market value of equity at the beginning of 2002. We base our inferences on the interactions of $\Delta OPTGR$ and $\Delta RSTKGR$ with our proxies for shareholders' tax-related payout preferences, $INDIVIDUAL$, the extent of shareholders' rights, $SHRIGHTS$, and the financial reporting costs associated with substituting restricted stock for stock options in compensation plans, $EXPENSE$.

Specifically, $INDIVIDUAL$ is the percentage ownership of common stock by individual investors. It is measured as one minus the percentage institutional holding, based on the CDA/Spectrum Institutional (13-F) holding database. Because the reduction in the tax rate on

dividend income only benefits shareholders who are taxed as individual investors, we predict that changes in the structure of executive stock-based compensation and in managers' payout choices are more pronounced for firms with a greater percentage ownership by individual investors.

Thus, we predict that the coefficient estimate on the interactive term $INDIVIDUAL * \Delta RSTKGR$ ($INDIVIDUAL * \Delta OPTGR$) is positive (negative). The focus on the interaction between changes in shareholders' tax-related payout preferences and changes in the use of restricted stock and stock options mitigates the possibility that the association between the shifts in executive stock-based compensation and in managers' payout choices is attributable to non tax-related factors.¹⁵

$SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the IRRC (i.e., firms with the strongest shareholder rights), and zero otherwise. We predict that changes in the structure of stock-based compensation and in managers' payout choices are more pronounced for firms with corporate governance structures that provide shareholders with stronger rights. We presume that such shareholders can more effectively alter the form of executive stock-based compensation from non-dividend-protected stock options to dividend-protected restricted stock, enabling them to extract the tax-related benefits associated with changes to their firms' cash payout policies. Thus, we predict that the coefficient estimate on the interactive term $SHRIGHTS * \Delta RSTKGR$ ($SHRIGHTS * \Delta OPTGR$) is positive (negative).

$EXPENSE$ is an indicator variable taking the value of one for the 91 sample firms that have recognized stock option expense prior to 2003, and zero for all other firms. Firms that do not recognize stock option expense may have an incentive to favor stock options over other

¹⁵ Specifically, if firms increased dividend payments and also increased (decreased) the use of restricted stock (stock options) in executive compensation for reasons other than the change to shareholders' tax-related payout

forms of compensation, including restricted stock, for compensation purposes. In contrast, for firms that do recognize the cost of their stock options as an expense in net income, the financial reporting costs associated with substituting restricted stock for stock options likely are lower. Thus, we predict that shareholders and managers of expense recognition firms would be more inclined to shift to restricted stock as a form of compensation following the shift in shareholders' tax-related payout preferences. Specifically, we predict that the coefficient estimate on the interactive term $EXPENSE * \Delta RSTKGR$ ($EXPENSE * \Delta OPTGR$) is positive (negative).

Our estimation equation also controls for additional firm characteristics that have been suggested in the prior literature as being associated with firms' payout policies. Specifically, we control for firm size, growth opportunities, firm performance, and CEO ownership. Our measure of firm size is the logarithm of market value of equity at fiscal year end, $SIZE$, and our measure of the firm's growth opportunities is the ratio of year-end market value of equity to book value of equity, MB . Our measures of firm performance are lagged annual stock return, RET , and net income deflated by total assets, ROA . Our measure of CEO ownership is the number of shares held by the CEO at year-end as a percentage of shares outstanding, OWN . To control for potential industry variation with respect to firms' payouts we also include controls for industry effects. Specifically, based on the industry classification reported in Table 1, $INDUSRY_I$ equals one for firms in industry I , and zero otherwise. We estimate Eq. (1) using a robust regression.¹⁶

Our investigation of the effects of shareholders' tax-related payout preferences on the structure of executive stock-based compensation and on managers' payout choices is based on

preferences, this effect will be captured by the coefficients on the non-interactive variables $\Delta RSTKGR$ and $\Delta OPTGR$.

¹⁶ The robust regression estimation procedure begins by calculating Cook's D statistic and excluding observations with $D > 1$. Then, the regression is re-estimated, weights for each observation are calculated based on absolute residuals, and the estimation is repeated using the weighted observations (Berk [1990]). Our inferences are

the premise that stock-based compensation induces self-interest executives to favor the particular form of payout that increases the value of their compensation. Thus, our first step is to empirically validate the link between managers' payout choices and the use of restricted stock and stock options in their compensation plans. To the extent that top executives make payout choices that increase the value of their compensation, we predict that the use of restricted stock (stock options) in executive compensation increases (decreases) the use of dividends in firms' payout. To test this prediction, we estimate the following equation:

$$\begin{aligned}
 DIVIDENDS = & \sum_{Y=1993}^{2003} \alpha_{0Y} YEAR_Y + \sum_{I=1}^{65} \alpha_{0I} INDUSTRY_I + \alpha_1 OPTIONS + \alpha_2 RSTSTOCK \\
 & \alpha_3 SIZE + \alpha_4 MB + \alpha_5 RET + \alpha_6 ROA + \alpha_7 SHROWN + \varepsilon_2
 \end{aligned} \tag{2}$$

As in Eq. (1) above, our measure of dividends, *DIVIDENDS*, is the total dollar amount of dividends paid during the year deflated by equity market value. *RSTSTOCK* is the value of restricted stock held by the CEO at year-end deflated by equity market value, and *OPTIONS* is the number of stock options held by the CEO at year-end deflated by shares outstanding.¹⁷

Based on the evidence in the prior literature, we predict a negative relation between *DIVIDENDS* and *OPTIONS*. To the extent that compensation in the form of restricted stock increases the inclination of managers to pay dividends, we predict a positive relation between *DIVIDENDS* and *RSTSTOCK*. We estimate Eq. (2) based on a sample of 10,281 firm-year observations

unaffected by using ordinary least squares estimation. All significance tests are based on White [1980] heteroskedasticity-consistent standard errors.

¹⁷ The prior literature (see, e.g., Fenn and Liang [2001] and Kahle [2002]) focuses on the number of CEO stock option holdings at year-end. Thus, for the purpose of comparison with these prior studies, our analysis in Eq. (2) is based on year-end holdings of restricted stock and stock options. Moreover, unlike for holdings of restricted stock, firms do not disclose in their proxy statements the year-end value of stock option holdings.

between 1993 and 2003, consisting of the 2,225 firms with a positive cash payout (i.e., with dividends and/or repurchases) and with data on CEO compensation from ExecuComp.¹⁸

Untabulated findings from the estimation of Eq. (2) provide evidence consistent with our predictions. Specifically, the coefficient estimate on *RSTSTOCK* is 0.031 (t-statistic 2.31) and the coefficient estimate on *OPTIONS* is -0.097 (t-statistic -16.52).¹⁹ The negative coefficient estimate on *OPTIONS* is consistent with the evidence in the prior literature. More importantly, the positive coefficient estimate on *RSTSTOCK* is consistent with our prediction that restricted stock is more likely than stock options to induce executives to use dividends as a form of cash payout. Although there is evidence in the prior literature consistent with a negative relation between executive stock option holdings and firms' dividends, we are unaware of similar evidence for restricted stock. Moreover, the comparison of these two forms of stock-based compensation enables us to more directly link managers' payout choices to the structure of their compensation and to control for some of the underlying economic determinants of stock-based compensation.

V. EMPIRICAL FINDINGS

Primary Findings

In this section we test our primary hypothesis that shareholders' tax-related payout preferences affect the use of restricted stock and stock options in executive compensation, thereby inducing managers to make payout choices that are aligned with the underlying

¹⁸ The objective of estimating Eq. (2) is to establish the cross-sectional relation between managers' payout choices and the use of restricted stock and stock options in executive compensation. Thus, for the purpose of this test and to increase the generalizability of our findings, we employ a larger sample and longer time period than those we use in our primary tests.

¹⁹ The findings are robust to measuring *DIVIDENDS* as the ratio of cash dividends to total cash payouts (i.e., dividends plus repurchases). Specifically, the coefficient estimate on *RSTSTOCK* is 2.393 (t-statistic 3.57) and the coefficient estimate on *OPTIONS* is -5.273 (t-statistic -19.55).

preferences of shareholders. To do this, we investigate the effects of the shift in shareholders' tax-related payout preferences following the dividend tax rate reduction. We predict that following the tax rate reduction, there will be an increased (decreased) use of restricted stock (stock options) in executive compensation that is associated with an increased use of dividends in firms' payout.

Table 3 presents summary statistics from estimating Eq. (1). Most importantly for our research question, the coefficient estimates on most of the interactive terms have the predicted sign and are statistically significant. Specifically, relating to changes in grants of restricted stock, the interactive terms *INDIVIDUAL*ΔRSTKGR* and *SHRIGHTS*ΔRSTKGR* are significantly positively associated with changes in dividends (coefficient estimates 0.579 and 0.608; t-statistics 3.90 and 7.46).²⁰ However, *EXPENSE*ΔRSTKGR* is not statistically significant (coefficient estimate 0.044; t-statistic 0.44). Relating to changes in stock option grants, the coefficient estimate on *INDIVIDUAL*ΔOPTGR* is significantly negative, although only marginally so (coefficient estimate -0.104; t-statistic -1.67), and the coefficient estimate on *SHRIGHTS*ΔOPTGR* is not statistically significant (coefficient estimate 0.008; t-statistic 0.15). Consistent with our prediction, the coefficient estimate on *EXPENSE*ΔOPTGR* is significantly negative (coefficient estimate -0.634; t-statistic -6.68).

In untabulated tests we examine alternative measures of changes in dividends between 2002 and 2003. In particular, we measure *ΔDIVIDENDS* as the difference between the ratio of dividends to total cash payouts (i.e., dividends plus repurchases) in 2003 and the ratio of dividends to total cash payouts in 2002. We use this measure to assess whether the increase in

²⁰ In sensitivity analyses we interact *INDIVIDUAL* and *SHRIGHTS*. Untabulated findings reveal that the coefficient estimate on *INDIVIDUAL*SHRIGHTS*ΔRSTKGR* is significantly positive (t-statistic 3.90), indicating that the

dividends following the dividend tax rate reduction reflects a substitution of dividends for repurchases. Overall, our inferences from this specification are consistent with those obtained from the estimation reported in Table 3. Specifically, relating to changes in restricted stock grants, consistent with our predictions, all the interactive terms, *INDIVIDUAL*ΔRSTKGR*, *SHRIGHTS*ΔRSTKGR*, and *EXPENSE*ΔRSTKGR* are significantly positively associated with changes in the ratio of dividends to total payout (coefficient estimates 38.074, 30.541, and 45.771, respectively; t-statistics 10.33, 8.45, and 21.06, respectively). Relating to changes in stock option grants, the coefficient estimates on *INDIVIDUAL*ΔOPTGR* and *SHRIGHTS*ΔOPTGR* are not statistically significant (coefficient estimates -0.923 and 1.193 ; t-statistics -0.44 and 0.62), whereas the coefficient estimate on *EXPENSE*ΔOPTGR* is significantly negative (coefficient estimate -15.327 ; t-statistic -5.79).

Overall, our findings indicate that for firms with a greater percentage ownership by individual investors, with stronger shareholder rights, and with lower financial reporting costs associated with substituting restricted stock for stock options, the increase in dividends following the tax rate reduction is more strongly related to a contemporaneous increase in the use of restricted stock in executive compensation. Our findings for the relation between changes in dividends and changes in the use of stock options are consistent with, albeit somewhat weaker than, our findings for changes in the use of restricted stock. Taken together, our findings indicate that changes in shareholders' tax-related payout preferences are associated with changes in the use of restricted stock and stock options in executive compensation, which, in turn, induce an increase in the use of dividends in firms' cash payouts.

increase in dividends following the tax rate reduction is more strongly related to the increase in the use of restricted stock for firms with a greater percentage ownership by individual investors and with stronger shareholder rights.

Additional Analyses and Robustness Tests

Sensitivity of the Value of Option and Stock Holdings to Dividend Changes

Our primary analyses focus on the relation between changes in grants of restricted stock and stock options and changes in firms' cash dividends following the reduction in the tax rate on dividend income. However, this focus on new grants of restricted stock and stock options does not take into consideration the potential incentive effects of the current holdings of stock options due to grants made in prior years. Such option holdings could affect the extent to which new grants of restricted stock and stock options would align CEOs' dividend choices with shareholders' new tax-related payout preferences. We predict that the positive relation we document between changes in the use of restricted stock and changes in firms' dividends is more pronounced when the value of the CEO's option holdings is less sensitive to increases in dividends.

To measure the sensitivity of the value of option holdings to changes in dividends, we first collect all layers of option holdings from Form 8 filings for fiscal year 2002. Form 8 reports the number of options held by top executives at yearend, their exercise (strike) prices, and expiration dates.²¹ We then calculate the value of each stock option using the Black-Scholes model (modified to account for dividends following Merton [1973]) with the following inputs: share price as of December 31, 2002, exercise price, expected life to expiration, historical stock price volatility measured over the most recent period similar to expected option life, historical dividend yield for the most recent year, and the average yield on zero coupon Treasury Bills. Each calculated option value is then multiplied by the number of options outstanding for that

²¹ We collect Form 8 filings from Thomson Financial. We do not have Form 8 for 108 sample firms. Thus, for these firms we examine the sequence of options granted and exercised between 1996 and 2002, and use these amounts to construct a measure of option holdings at the end of fiscal year 2002.

layer, resulting in total value of CEO options outstanding as of December 31, 2002 for a sample of 575 firms with all necessary data.²² For each of these firms, we compute the sensitivity of the value of CEO option holdings to a 1% change in dividend yield.

To test our prediction that the positive relation between changes in the use of restricted stock and changes in dividends is more pronounced when the value of the CEO's stock option holdings is less sensitive to increases in dividends, we estimate the following equation:

$$\begin{aligned}
 \Delta DIVIDENDS = & \sum_{I=1}^{26} \theta_{0I} INDUSTRY_I \\
 & + \theta_1 INDIVIDUAL * \Delta RSTKGR * SENSITIVITY + \theta_2 INDIVIDUAL * \Delta OPTGR * SENSITIVITY \\
 & + \theta_3 SHRIGHTS * \Delta RSTKGR * SENSITIVITY + \theta_4 SHRIGHTS * \Delta OPTGR * SENSITIVITY \\
 & + \theta_5 EXPENSE * \Delta RSTKGR * SENSITIVITY + \theta_6 EXPENSE * \Delta OPTGR * SENSITIVITY \\
 & + \theta_7 INDIVIDUAL * \Delta RSTKGR + \theta_8 INDIVIDUAL * \Delta OPTGR \\
 & + \theta_9 SHRIGHTS * \Delta RSTKGR + \theta_{10} SHRIGHTS * \Delta OPTGR \\
 & + \theta_{11} EXPENSE * \Delta RSTKGR + \theta_{12} EXPENSE * \Delta OPTGR \\
 & + \theta_{13} \Delta RSTKGR + \theta_{14} \Delta OPTGR + \theta_{15} INDIVIDUAL + \theta_{16} SHRIGHTS + \theta_{17} EXPENSE \\
 & + \theta_{18} SIZE + \theta_{19} MB + \theta_{20} RET + \theta_{21} ROA + \theta_{22} SHROWN + \theta_{23} SENSITIVITY + \varepsilon_3
 \end{aligned} \tag{3}$$

where *SENSITIVITY* is an indicator variable equal to one (zero) when the sensitivity of the value of the CEO's option holdings is below (above) the sample median. All other experimental variables are as defined above.

Table 4 presents summary statistics from estimating Eq. (3). Consistent with our predictions, the coefficient estimates on all the interactive terms associated with $\Delta RSTKGR * SENSITIVITY$ have the predicted sign and are statistically significant. Specifically, $INDIVIDUAL * \Delta RSTKGR * SENSITIVITY$, $SHRIGHTS * \Delta RSTKGR * SENSITIVITY$, and $EXPENSE * \Delta RSTKGR * SENSITIVITY$ are significantly positively associated with changes in

²² We exclude from these tests 70 sample firms for which we could not calculate the sensitivity of the value of option holdings to dividend changes.

dividends (coefficient estimates 0.673, 0.435 and 2.375; t-statistics 2.50, 2.58 and 3.14). These findings indicate that when the value of the CEO's option holdings is less adversely affected by dividend increases, there is a more pronounced relation between new grants of restricted stock and dividend increases for firms with a greater percentage ownership by individual investors, with stronger shareholder rights, and with lower financial reporting costs associated with substituting restricted stock for stock options. Thus, the effectiveness of using new grants of restricted stock to align executives' payout choices with shareholders' new tax-related payout preferences can be affected to a great extent by the current holdings of stock options. We do not document a similar effect for the new grants of stock options.

We next measure the monetary impact on firms' CEOs of changing their firms' dividends following the reduction in the tax rate on dividend income. Specifically, we compute the net effect of changes in dividends between fiscal years 2002 and 2003 on the value of CEOs' holdings of stock options and restricted stock. Whereas increases in dividends have a negative effect on the value of CEO option holdings, they have a positive monetary effect related to the holdings of restricted stock, which, unlike stock options, are dividend protected. Untabulated tests indicate that the dividend changes between 2002 and 2003 resulted in positive net effect on CEO wealth for about 73% of our sample firms.²³

We also use this measure of wealth effect to examine whether the positive relation between changes in the use of restricted stock and changes in dividends is more pronounced when CEOs' wealth is positively affected by dividend increases. Specifically, we estimate a model similar to Eq. (3) using *CEO_BENEFIT* in lieu of *SENSITIVITY*; *CEO_BENEFIT* is an indicator variable taking the value of one (zero) when the net wealth effect positive (negative).

Untabulated findings corroborate our inferences from Table 4. Specifically, $INDIVIDUAL * \Delta RSTKGR * CEO_BENEFIT$, $SHRIGTHS * \Delta RSTKGR * CEO_BENEFIT$, and $EXPENSE * \Delta RSTKGR * CEO_BENEFIT$ are significantly positively associated with changes in dividends (coefficient estimates 0.512, 0.522 and 17.63; t-statistics 1.81, 3.13 and 6.65). As in Table 4, the interactive terms associated with $\Delta OPTGR * CEO_BENEFIT$ are insignificant. Overall, these findings indicate that the effectiveness of using new grants of restricted stock to align executives' payout choices with shareholders' new tax-related payout preferences increases with the monetary gain to firms' executives.

Incorporating Firms With Zero Cash Payout

Our primary sample comprises 645 firms with a positive cash payout in fiscal year 2002. We excluded 303 firms with zero payouts (i.e., firms that did not pay any dividends and did not repurchase their stock) from our primary tests because we believe that tax considerations are less likely to play an important role in these firms' payout choices. The decision to not pay any cash to shareholders is more likely attributable to other fundamental economic factors. Thus, because tax considerations are less likely to impose a binding constraint on these firms' payout choices, we expect changes in shareholders' tax-related payout preferences to have a weaker effect on executive stock-based compensation and on managers' payout choices for these firms. To examine this conjecture, we incorporate these firms in sensitivity analyses.

Table 5 presents summary statistics from estimating Eq. (1) after incorporating the 303 firms with zero cash payouts. Consistent with our prediction, most of the interactive terms are insignificantly associated with changes in dividends; the t-statistics for the coefficient estimates

²³ The average one-year gain to CEOs' of sample firms from changes to dividends is \$80,529. Yet, this estimate is biased downward because it does not include the monetary gains made in subsequent years.

on $INDIVIDUAL*\Delta RSTKGR$ and $INDIVIDUAL*\Delta OPTGR$ are -0.17 and -0.52 , and the t-statistics for the coefficient estimates on $SHRIGHTS*\Delta RSTKGR$ and $SHRIGHTS*\Delta OPTGR$ are 0.92 and -1.38 . However, the coefficient estimate for $EXPENSE*\Delta RSTKGR$ is significantly positive (t-statistic 25.02) and the coefficient estimate for $EXPENSE*\Delta OPTGR$ is significantly negative (t-statistic -29.62). Overall, these findings are consistent with the notion that shareholders' tax-related payout preferences have a weaker effect on the relation between executive stock-based compensation and payout choices for firms with zero payout.

Alternative Time Periods

Our primary tests above are based on a comparison of the amounts of dividends paid in 2003 and 2002. This approach was based on the notion that, although the reduction in the tax rate on dividend income was signed into law only in May 2003, it appeared likely throughout the first few months of 2003 that this tax change would indeed be implemented. Moreover, the tax rate reduction was applied retroactively to the beginning of January 2003. Nonetheless, as a sensitivity test, we consider the 12 month period beginning June 1, 2003 (i.e., between July 1, 2003 and June 30, 2004) as an alternative post-Act period, and compare the dividends paid during that period to those paid during the 12 month period ending December 31, 2002 (i.e., between January 1, 2002 and December 31, 2002).

Table 6 presents summary statistics from estimating Eq. (1) using this alternative specification of $\Delta DIVIDENDS$. Overall, our inferences are robust to this alternative specification. Specifically, relating to changes in restricted stock, all the interactive terms are significantly positively associated with changes in dividends; the t-statistics for the coefficient estimates for $INDIVIDUAL*\Delta RSTKGR$, $SHRIGHTS*\Delta RSTKGR$, and $EXPENSE*\Delta RSTKGR$ are 2.42 , 2.99 , and 2.36 . Relating to changes in stock option grants, the coefficient estimates on

*INDIVIDUAL** Δ *OPTGR* and *SHRIGHTS** Δ *OPTGR* are not statistically significant (t-statistics 0.91 and -1.30), whereas the coefficient estimate on *EXPENSE** Δ *OPTGR* is significantly negative (t-statistic -4.14).

As an additional sensitivity test, we also investigate whether our primary findings of a relation between changes in executive stock-based compensation and changes in managers' payout choices is indeed attributable to the shift in shareholders' tax-related payout preferences. To do that, we estimate Eq. (1) using data taken from a time period which precedes the tax rate reduction on dividend income. Specifically, for all sample firms with available data, we compute the change in dividends, Δ *DIVIDENDS*, and changes in the use of restricted stock and stock options in executive compensation, Δ *RSTKGR* and Δ *OPTGR*, using data for fiscal years 2001 and 2000. All other experimental variables are based on data for fiscal year 2001. Untabulated findings provide evidence consistent with our inferences. Specifically, none of the coefficient estimates on the interactive terms is statistically significant at conventional levels, indicating that the relation between the increased use of dividends in firms' payouts and the increased (decreased) use of restricted stock (stock options) in executive compensation during our sample period is attributable to the exogenous change in shareholders' tax-related payout preferences following the enactment of the Growth Tax Relief Reconciliation Act of 2003.

Two-Stage Least Squared Approach

Our primary tests above relate changes in the use of dividends in firms' payout to changes in the use of restricted stock and stock options in executive stock-based compensation following the shift in shareholders' tax-related payout preferences. Our findings indicate that, consistent with our prediction, the positive relation between the increased dividends and the increased use of restricted stock are more pronounced for firms with a greater percentage

ownership by individual investors, with stronger shareholder rights, and with lower financial reporting costs associated with substituting restricted stock for stock options. In additional tests we seek to more directly relate the increased dividends to the increased use of restricted stock associated with these firms' incentives. To do that, we estimate a Two-Stage Least Squared model. In the first regression we estimate the following equation:

$$\Delta RSTKGR = \gamma_0 + \gamma_1 \Delta OPTGR + \gamma_2 INDIVIDUAL + \gamma_3 SHRIGHTS + \gamma_4 EXPENSE + \varepsilon_{4a} \quad (4a)$$

The explanatory variables in (4a) are as defined above.²⁴ In the second regression, we include the predicted value from the first-stage regression, $\Delta RSTKGR_PRED$, and estimate the following equation:

$$\Delta DIVIDENDS = \sum_{I=1}^{65} \lambda_{0I} INDUSTRY_I + \lambda_1 \Delta RSTKGR_PRED + \lambda_2 SIZE + \lambda_3 MB + \lambda_4 RET + \lambda_5 ROA + \lambda_6 SHROWN + \varepsilon_{4b} \quad (4b)$$

Table 7 presents summary statistics from estimating the Two-Stage Least Squared model. Panel A reports the findings from the first-stage regression. Consistent with our prediction, the percentage ownership by individual investors, *INDIVIDUAL*, is significantly positively associated with changes in the use of restricted stock in executive compensation following the dividend tax rate reduction (t-statistic 2.22). However, the coefficient estimates on the extent of shareholder rights, *SHRIGHTS*, and financial reporting costs, *EXPENSE*, are statistically indistinguishable from zero. This finding suggests that changes in shareholders' tax-related payout preferences seem to be driving the increased use of restricted stock in executive compensation. More importantly, findings from the second-stage regression reported in Panel B reveal that, consistent with our prediction, the predicted value from the first-stage regression,

$\Delta RSTKGR_PRED$, is significantly positively associated with changes in dividends between 2002 and 2003, $\Delta DIVIDENDS$ (coefficient estimate 0.115; t-statistic 2.55). This finding corroborates our inferences that shareholders' tax-related payout preferences are important in determining firms' dividends choices through the structure of executive stock-based compensation.

Changes in Share Repurchases

Evidence in the prior literature indicates that stock option compensation induces managers to substitute repurchases for dividends in firm payouts (see, Jolls [1998], Fenn and Liang [2001], and Kahle [2002]). Thus, we next investigate whether the increase in dividends that is associated with the increased use of restricted stock and the decreased use of stock options following the dividend tax rate reduction reflects a substitution of dividends for repurchases. To do that, we estimate the following equation:

$$\begin{aligned}
 \Delta REPURCHASES = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\
 & + \beta_3 SHRRIGHTS * \Delta RSTKGR + \beta_4 SHRRIGHTS * \Delta OPTGR \\
 & + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\
 & + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRRIGHTS + \beta_{11} EXPENSE \\
 & + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_5
 \end{aligned} \tag{5}$$

The dependent variable, $\Delta REPURCHASES$, is the difference between the total dollar amount of share repurchases in 2003 and the total amount of repurchases in 2002, deflated by market value of equity at the beginning of 2002. Table 8 presents summary statistics from estimating Eq. (5) using a robust regression. Overall, our inferences from this estimation are consistent with the notion that the shifts in the structure of stock-based compensation are associated with a substitution of dividends for repurchases.

²⁴ Our inferences are robust to the removal of $\Delta OPTGR$ and the inclusion of the industry indicators in Eq. (4a).

Specifically, relating to changes in restricted stock grants, consistent with our predictions, the interactive terms, $SHRIGHTS * \Delta RSTKGR$ and $EXPENSE * \Delta RSTKGR$ are significantly negatively associated with changes in repurchases (coefficient estimates -5.053 and -5.309 ; t-statistics -9.83 and -6.88). These findings indicate that, for firms with stronger shareholder rights and with lower financial reporting costs, the decrease in repurchases following the dividend tax rate reduction is more strongly related to the increased use of restricted stock in executive compensation. However, the coefficient estimate on $INDIVIDUAL * \Delta RSTKGR$ is negative, as predicted, but not significantly so (coefficient estimate -1.494 ; t-statistic -1.16). This finding suggests that the changes in shareholders' tax-related payout preferences had a limited effect on the substitution of dividends for repurchases.

Relating to changes in stock option grants, the coefficient estimates on $INDIVIDUAL * \Delta OPTGR$, $SHRIGHTS * \Delta RSTKGR$, and $EXPENSE * \Delta RSTKGR$ are all positive, as predicted, but not significantly so (coefficient estimates 1.223 , 0.668 , and 0.070 ; t-statistics 1.05 , 1.58 , and 0.11). Thus, consistent with the pattern observed for changes in the use of dividends in firms' payouts, these findings indicate that the relation between changes in repurchases and changes in the use of stock options in executive compensation is somewhat weaker than that for changes in the use of restricted stock.

VI. SUMMARY AND CONCLUSIONS

We investigate the relation between the structure of executive stock-based compensation and firms' cash payouts in the context of shareholders' tax-related payout preferences. We find that the recent reduction in the personal tax rate on dividend income is associated with changes in the structure of executive compensation, thereby realigning the incentives of executives with shareholders' new tax-related payout preferences. In particular, we find that, for firms with a

greater percentage ownership by individual investors, with stronger shareholders' rights, and with lower financial reporting costs, the increased use of dividends in firms' payouts is more strongly related to an increase in the use of dividend-protected restricted stock, and, to a lesser extent, to a decrease in the use of non-dividend-protected stock options.

Our findings also suggest that the increase in dividends following the change in shareholders' tax-related payout preferences is induced primarily by the increased grants of restricted stock. We interpret this finding as evidence that changes in the use of restricted stock align the cash payout preferences of top executives with the tax-related payout preferences of shareholders to a greater extent than do changes in the use of stock options. Thus, altering the structure of executive compensation by reducing the levels of stock option grants in and of itself might not lead to increased dividends in managers' payout choices.

Overall, our findings provide evidence consistent with our hypothesis that the structure of executive stock-based compensation, particularly the choice between stock options and restricted stock, helps to align managers' cash payout choices with the underlying preferences of shareholders seeking to minimize their taxes. To our knowledge, our study is the first to provide evidence on the role of shareholders' payout preferences in the design of executive compensation plans, contributing to the understanding of the determinants of management incentive contracts.

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TABLE 1
 Industry classification for sample of 645 firms with
 executive compensation and cash payout data for fiscal years 2002 and 2003.

Industry	Sample Firms		Compustat
	N	%	%
Agriculture, Mining	28	4.3	4.8
Construction	12	1.9	0.8
Food, Tobacco	20	3.1	1.8
Textile, Apparel	12	1.9	1.0
Lumber, Furniture	9	1.4	0.8
Paper	15	2.3	0.7
Printing	18	2.8	0.9
Chemicals	56	8.7	7.9
Rubber, Plastics	15	2.3	1.5
Metal	25	3.9	1.8
Machinery	39	6.1	4.9
Electrical Equipment	40	6.2	6.6
Transportation Equipment	21	3.3	1.8
Transportation Services	16	2.5	2.2
Communications	10	1.6	3.4
Utilities	58	9.0	4.3
Durables – Wholesale	9	1.4	1.9
Nondurables - Wholesale	9	1.4	1.1
Retail	17	2.6	0.9
Eating and Drinking	14	2.2	1.3
Misc. Retail	12	1.9	1.6
Banks	60	9.3	12.5
Insurance Services	48	7.4	3.0
Lodging	8	1.2	0.7
Business Services	52	8.1	12.2
Other	22	3.2	8.4
Total	645	100.0	100.0

TABLE 2
Univariate descriptive statistics for sample of 645 firms with
executive compensation and cash payout data for fiscal years 2002 and 2003.

	Mean	Median	Std dev.
Payouts in fiscal year 2002 (as a % of market value)			
Cash dividends	1.69%	1.28%	1.73%
Share repurchases	1.75%	0.63%	3.05%
Total cash payout (dividends and repurchases)	3.44%	2.76%	3.30%
Dividends as a % of total payout	54.25%	56.36%	41.26%
Payouts in fiscal year 2003 (as a % of market value)			
Cash dividends	2.56%	1.44%	1.67%
Share repurchases	1.09%	0.56%	2.23%
Total cash payout (dividends and repurchases)	3.31%	2.00%	1.82%
Dividends as a % of total payout	55.63%	61.61%	41.50%
Change in payouts (as a % of market value)			
Cash dividends	0.87%	0.03%	1.78%
Share repurchases	-0.25%	0.00%	1.99%
Total cash payout (dividends and repurchases)	1.12%	0.07%	1.82%
Dividends as a % of total payout	1.39%	0.00%	24.55%
CEO compensation in 2002 (as a % of market value)			
Stock option grant values	0.09%	0.04%	0.18%
Restricted stock grant values	0.02%	0.00%	0.08%
CEO compensation in 2003 (as a % of market value)			
Stock option grant values	0.06%	0.03%	0.11%
Restricted stock grant values	0.03%	0.00%	0.11%
Change in compensation (as a % of market value)			
Stock option grant values	-0.03%	-0.00%	0.18%
Restricted stock grant values	0.01%	0.00%	0.10%
Firm Characteristics			
Market value of equity (in \$ billion)	11.69	2.41	33.95
Market-to-book ratio	3.08	2.22	3.28
Lagged annual stock return (in %)	35.23	28.49	39.71
Return-on-assets	0.04	0.04	0.08
CEO stock ownership (% of shares outstanding)	1.79	0.25	4.86
Individual investor ownership (% shares outstanding)	38.01	37.55	17.61
Shareholder rights index	8.69	9.00	2.82
Stock option expense recognition	0.14	0.00	0.34

TABLE 2
(Continued)

Cash dividends are based on the total dollar amount of dividends paid on common stock during the year (COMPUSTAT data item # 21). Share repurchases are based on the total dollar amount of repurchased stock during the year, as reported in the statement of cash flows (COMPUSTAT data item # 115). The total dollar value of stock option grants to the firm's CEO are based on the values computed by ExecuComp. The total dollar value of grants of restricted stock are disclosed in firms' proxy statements and compiled by ExecuComp.

Individual investor ownership percentage is measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. The shareholder rights index is compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights. Stock option expense recognition firms are the firms that recognize the cost of stock options as an expense in net income. These firms have announced their intention to recognize stock option expense prior to the enactment of the Act in 2003, based on the Bear Stearns Equity Research report.

TABLE 3

The association between changes in the use of dividends in firms' payout and changes in the use of restricted stock and stock options in CEO compensation following the dividend tax rate reduction. Sample of 645 firms with executive compensation and payout data for fiscal years 2002 and 2003. Summary statistics from a robust regression of the following equation:

$$\begin{aligned} \Delta DIVIDENDS = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\ & + \beta_3 SHRIGHTS * \Delta RSTKGR + \beta_4 SHRIGHTS * \Delta OPTGR \\ & + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\ & + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRIGHTS + \beta_{11} EXPENSE \\ & + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_1 \end{aligned}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>INDIVIDUAL*ΔRSTKGR</i>	+	0.579	3.90
<i>INDIVIDUAL*ΔOPTGR</i>	-	-0.104	-1.67
<i>SHRIGHTS*ΔRSTKGR</i>	+	0.608	7.46
<i>SHRIGHTS*ΔOPTGR</i>	-	0.008	0.15
<i>EXPENSE*ΔRSTKGR</i>	+	0.044	0.44
<i>EXPENSE*ΔOPTGR</i>	-	-0.634	-6.68
<i>ΔRSTKGR</i>		-0.164	-5.91
<i>ΔOPTGR</i>		0.073	2.14
<i>INDIVIDUAL</i>		0.001	0.81
<i>SHRIGHTS</i>		-0.001	-3.15
<i>EXPENSE</i>		0.001	2.12
<i>SIZE</i>		0.001	2.66
<i>MB</i>		0.001	0.20
<i>RET</i>		-0.001	-0.19
<i>ROA</i>		0.001	1.99
<i>SHROWN</i>		-0.001	-0.28
<i>N</i>		645	
Pseudo <i>R</i> ²		0.438	

TABLE 3
(Continued)

The dependent variable, $\Delta DIVIDENDS$, is the difference between the total amount of dividends paid in 2003 and the total amount paid in 2002, deflated by market value of equity at the beginning of 2002.

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002.

$INDIVIDUAL$ is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. $SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. $EXPENSE$ is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$SIZE$ is the logarithm of market value of equity at fiscal year end. MB is the ratio of market value of equity to book value of equity at fiscal year-end. RET is lagged annual stock return. ROA is net income deflated by total assets. $SHROWN$ is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry I , and zero otherwise. $INDUSRY$ is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.

TABLE 4

The effect of the sensitivity of the value of CEOs' option holdings to changes in dividends.

Summary statistics from a robust regression of the following equation:

$$\begin{aligned} \Delta DIVIDENDS = & \sum_{I=1}^{26} \theta_{0I} INDUSTRY_I \\ & + \theta_1 INDIVIDUAL * \Delta RSTKGR * SENSITIVITY + \theta_2 INDIVIDUAL * \Delta OPTGR * SENSITIVITY \\ & + \theta_3 SHRIGHTS * \Delta RSTKGR * SENSITIVITY + \theta_4 SHRIGHTS * \Delta OPTGR * SENSITIVITY \\ & + \theta_5 EXPENSE * \Delta RSTKGR * SENSITIVITY + \theta_6 EXPENSE * \Delta OPTGR * SENSITIVITY \\ & + \theta_7 INDIVIDUAL * \Delta RSTKGR + \theta_8 INDIVIDUAL * \Delta OPTGR \\ & + \theta_9 SHRIGHTS * \Delta RSTKGR + \theta_{10} SHRIGHTS * \Delta OPTGR \\ & + \theta_{11} EXPENSE * \Delta RSTKGR + \theta_{12} EXPENSE * \Delta OPTGR \\ & + \theta_{13} \Delta RSTKGR + \theta_{14} \Delta OPTGR + \theta_{15} INDIVIDUAL + \theta_{16} SHRIGHTS + \theta_{17} EXPENSE \\ & + \theta_{18} SIZE + \theta_{19} MB + \theta_{20} RET + \theta_{21} ROA + \theta_{22} SHROWN + \theta_{23} SENSITIVITY + \varepsilon_3 \end{aligned}$$

Variable	Pred. Sign	Coeff. Est.	t-stat
<i>INDIVIDUAL*ΔRSTKGR*SENSITIVITY</i>	+	0.673	2.50
<i>INDIVIDUAL*ΔOPTGR*SENSITIVITY</i>	-	0.039	0.89
<i>SHRIGHTS*ΔRSTKGR*SENSITIVITY</i>	+	0.435	2.58
<i>SHRIGHTS*ΔOPTGR*SENSITIVITY</i>	-	0.025	0.50
<i>EXPENSE*ΔRSTKGR*SENSITIVITY</i>	+	2.375	3.14
<i>EXPENSE*ΔOPTGR*SENSITIVITY</i>	-	-0.038	-0.16
<i>INDIVIDUAL*ΔRSTKGR</i>		0.530	3.39
<i>INDIVIDUAL*ΔOPTGR</i>		-0.158	-1.83
<i>SHRIGHTS*ΔRSTKGR</i>		0.032	0.28
<i>SHRIGHTS*ΔOPTGR</i>		0.011	0.29
<i>EXPENSE*ΔRSTKGR</i>		3.386	4.58
<i>EXPENSE*ΔOPTGR</i>		-1.317	-7.44
<i>ΔRSTKGR</i>		-0.195	-4.58
<i>ΔOPTGR</i>		0.081	1.71
<i>INDIVIDUAL</i>		0.001	1.57
<i>SHRIGHTS</i>		-0.001	-1.50
<i>EXPENSE</i>		0.001	3.36
<i>SIZE</i>		0.001	1.42
<i>MB</i>		0.001	0.05
<i>RET</i>		-0.001	-0.65
<i>ROA</i>		0.002	2.32
<i>SHROWN</i>		-0.001	-1.19
<i>SENSITIVITY</i>		0.001	0.15
<i>N</i>		575	
Pseudo R ²		0.563	

TABLE 4
(Continued)

The dependent variable, $\Delta DIVIDENDS$, is the difference between the total amount of dividends paid in 2003 and the total amount paid in 2002, deflated by market value of equity at the beginning of 2002.

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002.

$SENSITIVITY$ is an indicator variable equal to one (zero) when the sensitivity of the value of the CEO's option holdings to a 1% change in dividend yield is below (above) the sample median. The value of option holdings is calculated using the Black-Scholes model (modified to account for dividend payouts following Merton [1973]) with the following inputs: share price as of December 31, 2002, exercise price, expected life to expiration, historical stock price volatility measured over the most recent period similar to expected option life, historical dividend yield for the most recent year, and the average yield on zero coupon Treasury Bills. Each calculated option value is then multiplied by the number of options outstanding for that layer, resulting in total value of CEO options outstanding as of December 31, 2002.

$INDIVIDUAL$ is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. $SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. $EXPENSE$ is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$SIZE$ is the logarithm of market value of equity at fiscal year end. MB is the ratio of market value of equity to book value of equity at fiscal year-end. RET is lagged annual stock return. ROA is net income deflated by total assets. $SHROWN$ is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry I , and zero otherwise. $INDUSRY$ is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.

TABLE 5

The effects of incorporating firms with zero cash payout. Summary statistics from a robust regression estimation of the following equation for the sample of 645 firms with positive cash payout and the 303 firms with zero cash payout:

$$\begin{aligned} \Delta DIVIDENDS = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\ & + \beta_3 SHRIGHTS * \Delta RSTKGR + \beta_4 SHRIGHTS * \Delta OPTGR \\ & + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\ & + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRIGHTS + \beta_{11} EXPENSE \\ & + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_1 \end{aligned}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>INDIVIDUAL*ΔRSTKGR</i>	+	-0.002	-0.17
<i>INDIVIDUAL*ΔOPTGR</i>	-	-0.004	-0.52
<i>SHRIGHTS*ΔRSTKGR</i>	+	0.009	0.92
<i>SHRIGHTS*ΔOPTGR</i>	-	-0.004	-1.38
<i>EXPENSE*ΔRSTKGR</i>	+	0.331	25.02
<i>EXPENSE*ΔOPTGR</i>	-	-0.528	-29.62
<i>ΔRSTKGR</i>		0.008	0.01
<i>ΔOPTGR</i>		0.004	0.91
<i>INDIVIDUAL</i>		0.001	3.13
<i>SHRIGHTS</i>		-0.006	-0.37
<i>EXPENSE</i>		0.001	6.98
<i>SIZE</i>		0.001	5.86
<i>MB</i>		0.001	0.80
<i>RET</i>		-0.001	-2.63
<i>ROA</i>		0.001	1.94
<i>SHROWN</i>		-0.001	-2.55
<i>N</i>		948	
Pseudo <i>R</i> ²		0.795	

TABLE 5
(Continued)

The dependent variable, $\Delta DIVIDENDS$, is the difference between the total amount of dividends paid in 2003 and the total amount paid in 2002, deflated by market value of equity at the beginning of 2002.

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002.

$INDIVIDUAL$ is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. $SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. $EXPENSE$ is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$SIZE$ is the logarithm of market value of equity at fiscal year end. MB is the ratio of market value of equity to book value of equity at fiscal year-end. RET is lagged annual stock return. ROA is net income deflated by total assets. $SHROWN$ is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry I , and zero otherwise. $INDUSRY$ is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.

TABLE 6

The association between changes in the use of dividends in firms' payout and changes in the use of restricted stock and stock options in CEO compensation following the dividend tax rate reduction. Sample of 645 firms with executive compensation and cash payout data for fiscal years 2002 and July 1, 2003 to June 30, 2004. Summary statistics from a robust regression estimation of the following equation:

$$\begin{aligned} \Delta DIVIDENDS = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\ & + \beta_3 SHRIGHTS * \Delta RSTKGR + \beta_4 SHRIGHTS * \Delta OPTGR \\ & + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\ & + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRIGHTS + \beta_{11} EXPENSE \\ & + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_1 \end{aligned}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>INDIVIDUAL * ΔRSTKGR</i>	+	0.951	2.42
<i>INDIVIDUAL * ΔOPTGR</i>	-	0.168	0.91
<i>SHRIGHTS * ΔRSTKGR</i>	+	0.509	2.99
<i>SHRIGHTS * ΔOPTGR</i>	-	-0.128	-1.30
<i>EXPENSE * ΔRSTKGR</i>	+	1.719	2.36
<i>EXPENSE * ΔOPTGR</i>	-	-0.768	-4.14
<i>ΔRSTKGR</i>		-0.296	-2.59
<i>ΔOPTGR</i>		-0.022	-0.23
<i>INDIVIDUAL</i>		0.005	1.26
<i>SHRIGHTS</i>		-0.005	-2.81
<i>EXPENSE</i>		0.001	0.42
<i>SIZE</i>		0.002	2.97
<i>MB</i>		0.001	0.50
<i>RET</i>		-0.001	-1.94
<i>ROA</i>		0.001	2.75
<i>SHROWN</i>		0.001	1.98
<i>N</i>		645	
Pseudo <i>R</i> ²		0.335	

TABLE 6
(Continued)

The dependent variable, $\Delta DIVIDENDS$, is the difference between the total amount of dividends paid between July 1, 2003 and June 30, 2004 and the total amount of dividends paid between January 1, 2002 and December 31, 2002, deflated by market value of equity at the beginning of 2002.

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002.

$INDIVIDUAL$ is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. $SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. $EXPENSE$ is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$SIZE$ is the logarithm of market value of equity at fiscal year end. MB is the ratio of market value of equity to book value of equity at fiscal year-end. RET is lagged annual stock return. ROA is net income deflated by total assets. $SHROWN$ is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry I , and zero otherwise. $INDUSRY$ is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.

TABLE 7

The association between changes in the use of dividends in firms' payout and changes in the use of restricted stock in CEO compensation using a Two-Stage Least Squared approach.

Panel A: First stage regression:

$$\Delta RSTKGR = \gamma_0 + \gamma_1 \Delta OPTGR + \gamma_2 INDIVIDUAL + \gamma_3 SHRIGTHS + \gamma_4 EXPENSE + \varepsilon_{4a}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>Intercept</i>		-0.001	-0.91
<i>ΔOPTGR</i>	-	0.002	0.21
<i>INDIVIDUAL</i>	+	0.001	2.22
<i>SHRIGTHS</i>	+	-0.001	-0.15
<i>EXPENSE</i>	+	-0.001	-0.04
<i>N</i>		645	
<i>Adjusted R²</i>		0.01	

Panel B: Second stage regression:

$$\Delta DIVIDENDS = \sum_{I=1}^{65} \lambda_{0I} INDUSTRY_I + \lambda_1 \Delta RSTKGR_PRED + \lambda_2 SIZE + \lambda_3 MB + \lambda_4 RET + \lambda_5 ROA + \lambda_6 SHROWN + \varepsilon_{4b}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>ΔRSTKGR_PRED</i>	+	0.115	2.55
<i>SIZE</i>		0.001	5.69
<i>MB</i>		0.001	0.37
<i>RET</i>		-0.001	-2.64
<i>ROA</i>		0.001	1.53
<i>SHROWN</i>		-0.001	-1.87
<i>N</i>		645	
<i>Pseudo R²</i>		0.762	

TABLE 7
(Continued)

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta RSTKGR_PRED$ is the predicted value from the first-stage regression.

INDIVIDUAL is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. *SHRIGHTS* is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. *EXPENSE* is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$\Delta DIVIDENDS$ is the difference between the total amount of dividends paid in 2003 and the total amount paid in 2002, deflated by market value of equity at the beginning of 2002.

SIZE is the logarithm of market value of equity at fiscal year end. *MB* is the ratio of market value of equity to book value of equity at fiscal year-end. *RET* is lagged annual stock return. *ROA* is net income deflated by total assets. *SHROWN* is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry *I*, and zero otherwise. *INDUSRY* is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.

TABLE 8

The association between changes in the use of share repurchases in firms' payouts and changes in the use of restricted stock and stock options in CEO compensation following the dividend tax rate reduction. Sample of 645 firms with executive compensation and cash payout data for fiscal years 2002 and 2003. Summary statistics from a robust regression of the following equation:

$$\begin{aligned} \Delta REPURCHASES = & \sum_{I=1}^{26} \beta_{0I} INDUSTRY_I + \beta_1 INDIVIDUAL * \Delta RSTKGR + \beta_2 INDIVIDUAL * \Delta OPTGR \\ & + \beta_3 SHRIGHTS * \Delta RSTKGR + \beta_4 SHRIGHTS * \Delta OPTGR \\ & + \beta_5 EXPENSE * \Delta RSTKGR + \beta_6 EXPENSE * \Delta OPTGR \\ & + \beta_7 \Delta RSTKGR + \beta_8 \Delta OPTGR + \beta_9 INDIVIDUAL + \beta_{10} SHRIGHTS + \beta_{11} EXPENSE \\ & + \beta_{12} SIZE + \beta_{13} MB + \beta_{14} RET + \beta_{15} ROA + \beta_{16} SHROWN + \varepsilon_5 \end{aligned}$$

Variable	Pred. Sign	Coefficient Estimate	t-statistic
<i>INDIVIDUAL*ΔRSTKGR</i>	-	-1.493	-1.16
<i>INDIVIDUAL*ΔOPTGR</i>	+	1.223	1.05
<i>SHRIGHTS*ΔRSTKGR</i>	-	-5.053	-9.83
<i>SHRIGHTS*ΔOPTGR</i>	+	0.668	1.58
<i>EXPENSE*ΔRSTKGR</i>	-	-5.309	-6.88
<i>EXPENSE*ΔOPTGR</i>	+	0.070	0.11
<i>ΔRSTKGR</i>		1.747	6.06
<i>ΔOPTGR</i>		-0.861	-1.57
<i>INDIVIDUAL</i>		0.002	1.87
<i>SHRIGHTS</i>		0.002	2.10
<i>EXPENSE</i>		-0.001	-1.53
<i>SIZE</i>		-0.001	-2.70
<i>MB</i>		-0.001	-0.55
<i>RET</i>		-0.001	-0.48
<i>ROA</i>		0.006	2.01
<i>SHROWN</i>		-0.012	-2.56
<i>N</i>		645	
Pseudo <i>R</i> ²		0.264	

TABLE 8
(Continued)

The dependent variable, $\Delta REPURCHASES$, is the net dollar amount of share repurchases during fiscal year 2003 less the amount of repurchases in fiscal year 2002, deflated by market value of equity at the beginning of fiscal year 2002.

$\Delta RSTKGR$ is the dollar value of restricted stock grants to the firm's CEO in 2003 minus the dollar value of restricted stock grants in 2002, deflated by market value of equity at the beginning of 2002. $\Delta OPTGR$ is the Black-Scholes value of option grants to the firm's CEO in 2003 minus the Black-Scholes value of option grants in 2002, deflated by market value of equity at the beginning of 2002.

$INDIVIDUAL$ is a proxy for the percentage ownership of individual investors, measured as one minus the percentage institutional holding reported on the CDA/Spectrum Institutional (13-F) holding database. $SHRIGHTS$ is an indicator variable taking the value of one for firms in the first quartile of the distribution of the index compiled by the Investor Responsibility Research Center (IRRC), based on 23 corporate governance provisions that measure shareholders' rights, and zero otherwise. $EXPENSE$ is an indicator variable taking the value of one for firms that recognize the cost of their stock options as an expense in net income prior to 2003, and zero otherwise.

$SIZE$ is the logarithm of market value of equity at fiscal year end. MB is the ratio of market value of equity to book value of equity at fiscal year-end. RET is lagged annual stock return. ROA is net income deflated by total assets. $SHROWN$ is the number of shares held by the CEO at fiscal year-end, deflated by number of shares outstanding. $INDUSRY_I$ is an indicator that equals one for firms in industry I , and zero otherwise. $INDUSRY$ is based on the 26 industry classifications in Table 1. Industry-specific intercepts are untabulated.