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Abstract

We examine the impact of the May 2003 dividend tax cut and managerial stock holdings on corporate dividend initiation decision. We find that managers who hold sizable stakes in their companies are more likely to initiate dividends following this tax cut. This positive relation is stronger for firms with higher growth opportunities. These results are consistent with the hypothesis that managers initiate dividends to maximize their own wealth. Moreover, the market reacts negatively (most positively) to dividend initiation announcements by firms with higher (lower) growth opportunities and higher (lower) managerial share holdings.

Keywords: Dividend tax cut, managerial stock holdings, dividend payout.

JEL classification: G30, G3

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The Impact of the Dividend Tax Cut and Managerial Stock Holdings on Corporate Dividend Policy

Financial economists have long been interested in the relation between dividend taxes and corporate dividend policy. Before 2003, dividends were tax disadvantageous to U.S. investors relative to capital gains. This era of higher dividend taxes ended in May 2003, when Present Bush signed the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA 2003 Act). The legislation slashed the highest dividend tax rate from 38.6% to 15%. This tax cut, the largest reduction in the dividend tax rate in U.S history, significantly affected corporate dividend policy. According to Standard & Poor's, 1,101 firms raised their payouts or paid a dividend for the first time during the first eight months in 2003, a significantly greater number than during the same period of previous year. In our sample, we find that 7.1% of 761 non-dividend-paying firms initiated dividends in 2003, but before 2003, an average of only 1.8% of non-dividend-paying firms initiated dividends.

One explanation for this increased number of dividend initiations could be that firms wish to reward shareholders. Although all shareholders benefit from higher dividends at the lower tax rate, the rewards are also lucrative for senior executives who hold sizable stakes in their companies. For example, Lester May, chairman of Clear Channel Communications Inc, received additional $1.1 million after the company announced its first dividend in 2003. This example provides anecdotal evidence of the direct benefit that senior executives receive due to large share holdings after the tax cut.

What we do in this study is to test if managers tend to initiate dividends when they can receive more benefits from the dividend initiation at the lower tax rate. We

argue that when dividend income is subject to a higher tax rate than capital gains, managers have less incentive to pay out dividends. Managers can create "home-made" dividends by selling some of their shares, and this method provides better tax efficiency for managers. But after the tax cut, the dividends and capital gains are taxed at the same rate. Although home-made dividends are still more tax efficient, this tax cut greatly reduces the tax disadvantage associated with issuing dividends.

Furthermore, managers might prefer dividends for several other reasons, particularly when compared to capital gains. Dividends may provide much less uncertainty in terms of how much cash managers can realize. Therefore, even when dividends are subject to higher tax rate, some managers may consider dividends as a better way of distributing firm's profits for their own benefits. Their preference for dividend income and for raising dividends will be much greater after the dividend tax cut, since managers receive substantially larger after-tax income under the new tax system. Once dividends are raised, corporations rarely reduce this level. This stability means that managers can add another stable source of income, along with their cash compensation. Again, at the lower dividend tax rate, we should find that the managerial incentive of initiating dividends is much greater when they prefer more stable income. Therefore, the tax cut in 2003 provides a unique opportunity to examine our managerial incentive hypothesis that managers' equity holdings impact their decisions to initiate dividends.

We focus on managerial stock holdings because the incremental after-tax benefit depends mainly on the total number of shares. Managers who hold sizable stakes in their companies have a strong incentive to increase dividends as a way to maximize their own wealth. Thus, the question that we ask here is whether managers direct their corporations

to modify dividend payment decisions for their own benefits. We use two proxies for managers' stock portfolio, the log of the total number of shares held by CEOs and by top executives, respectively.

We find that managerial stock holdings have a significant, positive effect on the likelihood of dividend initialization in year 2003. However, we find no such relation before 2003. Similar to previous studies, we find that managerial stock options are negatively related to dividend initialization both before and after the dividend tax cut.[1] We next investigate the claim that after the tax cut, firms switch from stock repurchase payouts to dividend payouts. The empirical evidence supports this claim. Our results show that the ratio of dividend over total payout is positively related to managerial stock holdings. This relation provides additional support for our hypothesis that stock holdings motivate managers to pay more dividends.

However, initializing dividends as a way of maximizing managers' own wealth may or may not be at the expense of shareholders' wealth, because both managers and shareholders can benefit from higher dividends at the lower tax rate. To further investigate managerial incentives to initiate dividends, we first examine the concurrent effect of growth opportunities with managerial shareholdings on firm's dividend initiation decision. Because external financing is costly, firms with higher growth opportunities are expected to retain more earnings for future investment. If managers act in the best interests of shareholders, they will be less likely to initiate dividends when the

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[1] Fenn and Liang (2001) find a strong negative relation between management stock options and dividends, as predicted by Lambert, Lanen, and Larker (1989). For studies of tax effect on corporate dividend policy, see, for example, Feldstein (1970), Miller (1977), Miller and Scholes (1982), Poterba and Summers (1985), Poterba (1987), Graham (2000, 2003). Another stream of dividend literature focuses on how dividend tax affects shareholder's wealth, see Gentry, Kemsley, and Mayer (2003), Bell and Jenkinson (2002), and Dhaliwal, Li, and Trezevant (2003).

firm has higher growth opportunities. On the other hand, if managers were to maximize their own wealth, they will induce firms with growth opportunities to initiate dividends. Secondly, we study the market reaction around announcement dates of new dividend initiation by firms with different levels of growth opportunities and managerial shareholdings. As shown by Asquith and Mullins (1983) and Healy and Palepu (1988), the market reactions to dividend initiation announcements are positive. However, when dividend initiation is announced by firms with high growth opportunities and high managerial shareholdings, the market may view such dividend initiations as driven by managerial incentives. Therefore these companies are expected to have less positive, or even negative, announcement effects.

We find stronger relation between managerial share holdings and dividend initiations for firms having higher growth opportunities. This result holds even after we control for the ownership of individual shareholders. We also find that the market reacts negatively to dividend initiation announcements by firms with both higher growth opportunities and managerial share holdings. However, market reacts most positively to dividend initiation announcements by firms with both lower growth opportunities and shareholdings. These results provide further evidence of our hypothesis that managers tend to maximize their own wealth by initializing dividend at the lower dividend tax environment.

Our work is related to other studies that investigate corporate payout policy with managerial stock incentives. Weisbenner (2000) and Fenn and Liang (2001) investigate the effect of employee or management stock options on a firm's decision to increase dividends and/or repurchase stocks. They find a positive association of stock options and

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stock repurchase. Rozeff (1982) and Fenn and Liang (2001) examine how dividend payouts are related to insider or management stock ownership. Their results are mixed. While Rozeff (1982) finds that dividend payouts are negatively associated with insider stock ownership, Fenn and Liang (2001) show that management stock ownership is associated with higher total payouts (but not dividend payouts) by firms with potentially greater agency problems. Given the large tax disadvantage of dividend income, it is not surprising that they do not find a positive relation between managerial stock incentives and dividend payouts. In support of their results, we do not find any such relation before 2003. However, after the tax cut in 2003, we show that stock holdings have a significant positive effect on the decision of initiating dividends. Our results show that managers will pay dividends if they hold a lot of stock and if the tax rate for dividends is favorable.

The paper is organized as follows: Section I describes the sample and variables used in our tests. Section II presents the results of the tests. Section III concludes.

I. Data Extraction and Method

We obtain data on stocks and options held by chief executive officers (CEOs) and other top executives from the Compustat Execucomp database, and extract firm characteristics from the Compustat annual database. We extract dividend data from the CRSP database. We exclude utility firms because they are heavily regulated. We also exclude real estate investment trusts (REITs) because they are required by law to pay out most of their earnings as dividends and their dividends do not receive the favorable treatment under JGTRRA. We also exclude firms for which data are unavailable on either the Executive Compensation database or Compustat.

We form a subsample of 761 firms that do not pay dividends in 2002. Of these 761 firms, 54 firms initiate a dividend in 2003, and the remaining 707 firms do not.[2] We extend this subsample to each of the previous years. Taking year 2002 as an example, we first locate firms that do not pay dividends in 2001. We define firms that initiate dividends in 2002 as dividend-initiating firms and the remaining firms as non-dividend-initiating firms. Using the same method of identifying dividend-initiating firms, we obtain a total of 7,833 firm-years, comprising 7,697 firm-years for firms that do not initiate dividends and 136 dividend-initiating firm-years.

Fig. 1 shows the percentage of firms that pay dividends for the first time over the sample period. The figure shows that 7.1% of non-dividend-paying firms initiate dividends for the first time in 2003, but an average of only 1.8% of firms do the same in the period from 1993 to 2002.

We perform logistic regressions to estimate the likelihood of a firm initiating dividends. The dependent variable is a dummy variable that is equal to one if a firm pays a dividend for the first time, and zero otherwise. Proxies we use for managerial stock incentives are the log of total number of shares held by CEOs (LSHRCEO) and top executives (LSHRALL) respectively. We focus on managerial stock holdings because the after-tax benefit for managers depends mainly on the total number of shares. Managerial ownership, which is defined as the percentage of shares owned by managers, has less effect on the after-tax benefit managers receive from dividend initiation or increase.

As to control variables for option holdings, we use LOPTCEO and LOPTALL, which are logarithms of total number of options held by CEOs and top executives,

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[2] We exclude four firms that paid special dividends in 2003 from our sample. Our results are robust to the inclusion of these firms.

respectively. We include managerial option holdings because options are not dividend-protected and give managers a disincentive to increase dividends. DEBT is the ratio of a firm's long-term debt to total assets as of fiscal year-end 2002. We include DEBT as a proxy for an alternative mechanism to constrain managers. LSIZE is the log of the sum of the book value of debt and preferred stock plus the market value of common equity as of fiscal year-end 2002. We include LSIZE as a proxy for financing costs. MKTBK is the ratio of the market value of the firm's assets to the book value of assets as of fiscal year-end 2002. MKTBK is our proxy for investment opportunities. NETCF is the net operating cash flows divided by total assets; and serves as a proxy for free cash flow. CASH is the cash plus short-term investment scaled by total assets. CASH is a proxy for assets available to pay dividends.

The model we use in the logistic regression estimation of the likelihood of dividend initialization is:

$Dividend\ Initialization_t = \beta_0 + \beta_1\ LSHRCEO_{t-1} + \beta_2\ LOPTCEO_{t-1}$

$+ \beta_3\ DEBT_{t-1} + \beta_4\ LSIZE_{t-1} + \beta_5\ NETCF_{t-1} + \beta_6\ CASH_{t-1} + \beta_7\ MKTBK_{t-1} + \varepsilon_t$ (1)

We also investigate the dividend payout as a percentage of firm total payout in our sample. To construct the total dollar payout of stock repurchase, we follow the approach used by Stephens and Weisbach (1998). We count the monthly decrease in shares outstanding from CRSP as shares repurchased by the firm. To derive the dollar amount of repurchase, we first multiply the number of shares repurchased by the average

of stock prices at the beginning and end of the month,[3] and then accumulate over 12 months gives us the dollar amount that the firm spends on repurchase. This method of calculating repurchase underestimates the repurchase, but the other way of using Compustat data item 115 overstates the repurchase.

To obtain the total dollar dividend payout, we multiply each dividend payment by the corresponding outstanding shares of the frim from the CRSP monthly files and accumulate them over a year. We choose these methods of computing repurchase and dividend payout due to the availability of Compustat data for 2003. To be consistent, we apply the same methods to the data before 2003. When we compare the repurchase and dividend payout obtained from CRSP with the ones on Compustat for years before 2003, the correlations are very high.

Now that we have both dividend payout and repurchase payout, we can study how dividend payout ratio is related to managerial stock holdings after the tax cut. For firms that have positive payout in both 2002 and 2003, we compute the percentage of dividend from the total payout. We investigate whether this percentage in 2003 is related to managerial stock holdings. A positive relation between stock holdings and the dividend percentage from total payout would support our hypothesis that managers with large holdings are motivated to pay extra dividends. In addition to managerial stock holdings, we also include managerial option holdings and the same other control variables in the logistic regression of dividend initiation decision. Since for firms that do not pay dividends, this dividend percentage is always 0, we use Tobit regression in this case. In summary, we use following regression:

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[3] We also use the lower price of these two to compute dollar amount of repurchase. The results remain the same.

$Div_t / (Div_t + Repurchase_t) = \beta_0 + \beta_1\ LSHRCEO_{t-1} + \beta_2\ LOPTCEO_{t-1}$

$+ \beta_3\ DEBT_{t-1} + \beta_4\ LSIZE_{t-1} + \beta_5\ NETCF_{t-1} + \beta_6\ CASH_{t-1} + \beta_7\ MKTBK_{t-1} + \varepsilon_t$ (2)

II. Empirical Results

A. Univariate tests

Table I provides descriptive statistics for stock and option holdings for CEOs and all top executives, and also shows the differences between means and medians of these variables for non-dividend-initiating and dividend-initiating firms respectively. For the 2003 sample, CEOs and top executives of dividend-initiating firms hold more shares than do executives in non-dividend-initiating firms. The mean (median) number of stock holdings by CEO and top executives for dividend-initiating firms is 8.204 (0.545) million and 21.822 (1.101) million, respectively. This compares to the holdings of 4.202 (0.220) million and 5.304 (0.551) million for non-dividend initiating firms. There are significant differences between the median stock holdings in the two samples. CEOs and top executives for dividend-initiating firms hold fewer options than do executives in dividend-initiating firms, although this result is not statistically significant.

For the sample of prior years, both CEOs and top executives for non-dividend-initiating firms hold more shares of both stock and stock options, relative to executives in dividend-initiating firms. We note that option holdings by CEOs and top executives for non-dividend initiating firms are significantly greater than for executives of dividend-initiating firms. This result suggests that when managers hold more stock options, they tend not to initiate dividends because of the negative relation between the value of stock

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options and dividends. Table II presents summary statistics for managerial share/option holdings and firms' financial characteristics for the sample of non-dividend-initiating and dividend-initiating firms. The mean (median) log share holdings by CEOs (LSHRCEO) and all top executives (LSHRALL) are 3.091 (4.974) and 6.305 (6.302), respectively. For the option holdings, the mean (median) by CEOs (LOPTCEO) and all top executives are 3.122 (5.772) and 6.520 (6.833). The mean (median) debt-to-asset ratio (DEBT) and market-to-book ratio (MKTBK) are 0.175 (0.126) and 2.469 (1.705), respectively.

Table III presents the Pearson correlation coefficients between the independent variables. As expected, the variables for managerial stock and option holdings are highly correlated. For example, the correlation between LSHRCEO and LOPTCEO is 0.671 and statistically significant at the 1% level.

B. Multivariate tests

The univariate results in the previous section provide partial evidence of an association between managerial stock holdings and dividend initiation. However, this effect may only capture systematic variations in the firms' financial characteristics (such as firm size, the level of cash flows, or firm's growth opportunities) that are the true drivers of dividend initialization. We address this possibility by extending our analysis to a multivariate framework. By including control variables for these characteristics, we capture the direct marginal effect of managerial stock holdings on firm's dividend increases after dividend tax cut. We examine whether the likelihood of dividend initiation is associated with increased levels of managerial stock holdings after the dividend tax cut in May 2003.

We estimate logistic regressions to distinguish among the possible explanations for dividend initialization. Table IV provides the results of six logistic regressions, which we base on CEOs' and top executives' stock holdings for three different sample periods. These sample periods are 2003, 1993 through 2002, and 1993 through 2003. To control for macroeconomic effects, we include year-level fixed effects in the regressions when the sample period is more than one year. In the regressions for the 1993 through 2003 sample period, we include an interaction dummy that represents the product of LSHRCEO (LSHRALL) and the year dummy for 2003. This variable captures the marginal effect of managerial stock holdings under the lower dividend tax rate. The year dummy controls for the overall effect of dividend tax cut on the corporate dividend payments.

Table IV shows that the variable for the CEOs' shareholdings, LSHRCEO, is significant and positive for the sample year 2003. The effect is also economically significant. Based on marginal effects calculated at the median values of independent variables, a one standard deviation change of LSHRCEO will increase the probability of initiating dividends by 0.025. In comparison, the probability of initiating dividends at the median values is 0.048 and the largest marginal effect of one standard deviation change is NETCF, which stands at 0.05.

However, there is no statistically significant association between CEOs' stock holdings and dividend initialization during the periods prior to the dividend tax cut. But for the full sample period (1993 through 2003), the interaction dummy variable has a coefficient of 0.119, which is statistically significant at the 5% level. These results suggest that managers are more likely to initiate dividends when they hold a sizable

number of shares and their dividend incomes are taxed at the lower rate. The results based on top executives also provide the supporting evidence of our hypothesis. LSHRALL is positively associated with the likelihood of dividend initialization for year 2003, and is statistically significant at the 5% level. Also, the interaction dummy variable shows that the marginal effect of managerial stock holdings on firm's dividend initialization after the tax cut is significant and positive. Before the dividend tax cut, managerial stock holdings had virtually no effect on dividend initiation.

We find that both CEOs' and top executives' stock options are negatively related to the likelihood of dividend initialization for all three different sample periods. This result is consistent with the hypothesis suggested by Lambert, Lannen, and Larker (1989), showing that managerial stock options provide managers with disincentives to initiate dividends.

Our results for other control variables are consistent with those of previous studies. We find that dividend initialization is negatively associated with DEBT and positively with LSIZE. This relation suggests that firms with alternative mechanisms, such as debt, to constrain managers have less need to use dividends for reducing free cash flows. The positive relation between size and the likelihood of dividend initiation indicates that large firms are more likely to pay dividends. Growth opportunities also affect the decision of dividend increases. For all regressions, the proxy for growth opportunities (MKTBK) is negatively related to dividend initiation, while net cash flow (NETCF) is always positively related. This effect indicates that firms with high net cash flows are more likely to initiate dividends. The relation between cash level and dividend initiation is negative in general. This result is consistent with the findings of DeAngelo,

DeAngelo, and Stultz (2004), where they argue that a firm's high cash balances may come from a recent equity offering to raise money for new investment.

C. Shift from repurchase to dividend payout

We show that managerial stock holdings increase the likelihood of dividend initiation after the 2003 dividend tax cut. But we also want to know if managers change the composition of payout to shareholders in 2003. That is, we are interested in the dividend payout ratio – dividend as a percentage of total payout. If managers who have large stock holdings of their companies switch more from repurchase to dividend payout in 2003, we have further evidence to support our hypothesis.

Table V reports results for six Tobit regressions of dividend payout ratios on share holdings of CEOs and top executives. The table shows that managerial share holdings have significant positive effects on the composition of payout in 2003. For example, the coefficient of LSHRCEO is 0.059, which is statistically significant at 5% level. But there is no such relation in the prior years when dividends were taxed at higher rates. This result suggests that stock holdings do not affect the composition of payout until 2003, when managers with big shares try to switch more toward dividend payout. After the tax cut, personal stock holdings may motivate managers to use dividend as a preferred method of payout.

The coefficients of option holdings are all negative and statistically significant. This result is consistent with the fact that options are not dividend-protected and that they provide a negative incentive for dividend payout. The other coefficients are consistent with early results from logistic regressions. Size and net cash flows have positive effects

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on dividend payout ratio. Debt, market-to-book ratio, and cash holding have negative effects on dividend payout ratio.

C. Ownership of individual investors

One argument is that, managers increase dividend after dividend tax cut as a way to maximize shareholders' wealth. That is, managers find it more beneficial to raise dividend for shareholders. Along this line of view, Blouin, Raedy, and Shackelford (2003) find the evidence that dividend increase is positively associated with the level of individual shareholder ownership. However, after further review of dividend changes, they conclude that this positive correlation is mainly driven by largest special dividends for a few firms.

To check whether managers initiate or increase dividends to benefit all individual shareholders or only to themselves after the tax cut, we include individual shareholder ownership, INDOWN, in our regressions for 2003. We define INDOWN as one minus the sum of institutional holdings divided by total shares outstanding.[4] We include this variable to control for the effect of shareholder ownership on corporate dividend policy.

Table VI presents the regression results of the decision to initiate dividends after controlling for the stock ownership of individual investors. Including INDOWN does not change our main result, that managerial stock holdings are positively associated with dividend initiation and increase. For the decision on dividend initialization, we find that CEOs' shareholdings, LSHRCEO, are still positively associated with the likelihood of dividend initialization after the dividend tax cut. The same relation holds for shareholdings of all top executives. On the other hand, the ownership of individual

investors is negatively related to the likelihood of dividend initiation, and the coefficients are statistically significant at 10% level. This result is contrary to the suggestion that managers initiate dividends to benefit individual shareholders. For other control variables, the results are similar to those presented in earlier tests. Overall, these results show that when they initiate dividends after the tax cut, managers are more concerned about their own benefits rather than shareholders'.

D. More evidence on agency motivation for dividend initiation

If a firm has high growth opportunity, it is generally beneficial for the firm not to pay or to pay less dividend because the cash is needed for future investment. If managers initiate dividends to take advantage of low dividend tax for themselves, they may pay less consideration to the growth opportunity of the firm. We further investigate the decision to initiate dividends from two areas. First, we include an interaction variable between managerial stock holdings and an indicator variable for high growth firms. If the coefficient on this interaction is positive, then managers in firms with high growth opportunities are more likely to initiate dividends if they hold more stocks. In this case, the initiation of dividends hurts the company, but benefits managers. Second, we study the market reaction around announcement dates of new dividend initiation. If this initiation of dividends hurts firms with high growth opportunities, we expect to see a negative reaction to these announcement events.

We define high growth firms as firms with Tobin's Q higher than the industry median, where industry is defined as firms with the same two-digit SIC codes. Using this definition, we can classify each firm in our sample as with high growth firm or low

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[4] We obtain the data for institutional ownership from Thompson Financial Institutional Holdings database.

growth firm. Then we include the interaction variable between managerial stock holdings and high growth firm in the logistic regressions. Table VI reports the results. The coefficients of the interaction variable are positive and significant at 1% level, while the coefficients on CEO stock holdings or top managers' stock holdings are not significantly different from 0. These results imply that managers in growth firms display the tendency to initiate dividends if they have large stock holdings. This relation does not exist for managers in low growth firms. Hence we have further evidence that managers initiate dividends for their own benefits, not shareholders' benefits.

Finally, we study the market reaction to the announcement of dividend initiation. We measure market reaction as the Cumulative Abnormal Return (CAR) over a three-day window starting from one day before the announcement and ending at one day after the announcement. The abnormal return is calculated as the excess return over the normal return of a stock, where the normal return are calculated using the market model regressions. We estimate the market model using 255 days of stock returns ending 45 days before the event and value-weighted market returns.

Table VII reports the summary statistics of the market reaction. For the sample of 54 firms that initiate dividends in 2003, the average market reaction is positive at 0.0057. But it is not statistically significant. Then we study subsamples by splitting the sample by CEO stock holdings and by market-to-book ratio. When we split the sample into two subsamples by CEO share holdings, we find that the average market reaction to firms with lower (higher) CEO shareholdings is positive (negative). This result suggests that the market likes those firms that initiate dividend not for the benefits of CEO and executives. When we split the sample into two by market-to-book ratios, we again find

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that the average market reaction to firms with above median market-to-book ratios is negative.[5] When we combine two criteria and split the sample into four groups, the market reaction to dividend initiation announcement is positive to firms with low CEO share-holdings and low market-to-book ratios, and negative to firms with high CEO share-holdings and high market-to-book ratios. The difference between the two subsamples is significant. This suggests that the market recognizes that firms with high managerial stock holdings and high growth opportunities are not initiating dividends for the benefits of shareholders, and thus reacts negatively to these announcement events. Based on the market reaction to dividend initiation by different firms, we have more evidence that agency consideration explains much of the dividend initiation decision.

III. Conclusion

In this paper we examine the effect of managerial stock holdings on corporate dividend initiation under the new dividend tax environment. We utilize the rare dividend tax rate cut associated with the Jobs and Growth Tax Relief Reconciliation Act of 2003. The legislation slashed the tax rate on dividends from 38.6% to the top rate of 15%. As the largest tax cut in the dividend tax rate in U.S history, this change seems to have prompted many corporations to initiate their dividends to reward their shareholders.

However, although all shareholders benefit from higher dividends at the lower tax rate, rewards for the senior executives who hold sizable stakes in their companies are considerable. Also, dividend income taxed at the same rate as capital gains can be more

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[5] We also split the sample based on median Tobin's Q by industry and the results do not change qualitatively.

attractive for risk-averse managers seeking more stable income. Therefore, their preference for dividend income should be much greater after the dividend tax cut.

Our results show that managerial stock holdings have a significant, positive effect on the likelihood of dividend initialization in 2003. However, there is no such relation before 2003, when dividends were taxed at a higher rate. These results provide evidence of agency-cost based motivation that explains the recent surge of dividend payments by some companies. Similar to previous studies, managerial stock options are negatively related to dividend initialization both before and after a dividend tax cut. In addition, managers appear to shift from repurchase toward dividend in 2003. This shift is also positively related to managerial stock holdings. Our work has implications in structuring managerial compensation. If shareholders prefer managers to distribute free cash flows as dividends, then compensating managers in stocks rather than options provides the right incentive.

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Table I: Comparison of Dividend-Initiating Firms and Non-Dividend-Initiating Firms

This table presents the mean, standard deviation, and median of managerial stock holding variables for two samples, firms that initiate dividends in the year and firms that do not. Stock holding variables include stock holdings by CEOs and all top executives, and option holdings by CEOs and all top executives. All variables are in thousands. The *t*-statistic tests whether the means between two samples are significantly different. The *z*-statistic is a Wilcoxon test statistic on whether the medians between two samples are significantly different. *** and ** indicate significance at 1% and 5% level, respectively.

	Non-dividend-initiating sample			Dividend-initiating sample				
	Mean	Std	Median	Mean	Std	Median	t-stat	z-stat
Panel A. 2003								
	N=707			N=54				
Stock holdings by CEOs	4202.80	51411.83	219.66	8204.14	32262.03	544.65	0.56	2.41***
Stock holdings by all top executives	5304.13	51763.78	551.34	21822.33	117144.85	1101.02	1.99**	2.71***
Option holdings by CEOs	1756.07	4470.48	750.00	1259.25	1461.83	740.80	-0.81	-0.22
Option holdings by all top executives	3665.50	7512.06	1753.26	2890.26	3257.55	1641.45	-0.75	0.00
Panel B. 1993-2002								
	N=7697			N=136				
Stock holdings by CEOs	2486.85	27450.18	138.19	1178.78	3115.92	61.16	-0.56	-2.31**
Stock holdings by all top executives	3834.11	32787.92	541.30	2623.32	4643.97	547.35	-0.43	0.43
Option holdings by CEOs	751.96	2380.19	293.35	539.01	1484.62	122.34	-1.04	-3.28***
Option holdings by all top executives	1753.79	4088.17	868.30	1345.69	2558.00	603.28	-1.16	-3.11***

Table II. Summary Statistics of Managerial Stock/Option Holdings and Firms' Financial Characteristics

This table presents summary statistics of all independent variables from 1993 to 2003. Variables include log of stock holdings by CEOs (LSHRCEO) and all top executives (LSHRALL), log of option holdings by CEOs (LOPTCEO) and all top executives (LOPTALL), debt (DEBT), log of firm size (LSIZE), cash holding (CASH), net cash flow (NETCF), market-to-book ratio (MKTBK). Options are sums of exercisable options and unexercisable options. DEBT is long-term debt (#9) divided by total assets (#6). Firm size is total assets (#6) plus market value of equity (#24 * #25) minus book value of equity (#60). Cash holding is cash and short-term investments (#1) divided by assets (#6). Net cash flow is the difference between operation income before depreciation (#13) and capital expenditures (#128) divided by assets (#6). Market-to-book ratio is firm size divided by assets. We winsorize all variables at the 1st and 99th percentiles.

Variable	Mean	Std.	Q1	Median	Q3
LSHRCEO	3.091	5.375	2.236	4.974	6.661
LSHRALL	3.122	5.630	3.410	5.772	6.685
LOPTCEO	6.305	1.915	5.126	6.302	7.638
LOPTALL	6.520	2.380	6.086	6.833	7.537
DEBT	0.175	0.182	0.007	0.126	0.291
LSIZE	7.197	1.474	6.140	7.019	8.091
CASH	0.179	0.200	0.025	0.095	0.275
NETCF	0.061	0.121	0.017	0.071	0.126
MKTBK	2.469	2.157	1.204	1.705	2.782

Table III. Pearson Correlation of Managerial Stock/Option Holdings and Firms' Financial Characteristics

This table presents Pearson correlations of all variables for the period of 1993 to 2003. Variables include log of stock holdings by CEOs (LSHRCEO) and all top executives (LSHRALL), log of option holdings by CEOs (LOPTCEO) and all top executives (LOPTALL), debt (DEBT), log of firm size (LSIZE), cash holding (CASH), net cash flow (NETCF), market-to-book ratio (MKTBK). Options are sums of exercisable options and unexercisable options. DEBT is long-term debt divided by total assets. Firm size is total assets plus market value of equity minus book value of equity. Cash holding is cash and short-term investments divided by assets. Net cash flow is the difference between operation income before depreciation and capital expenditures divided by assets. Market-to-book ratio is firm size divided by assets. *** and ** indicate that the correlation is significantly different from zero at the 1% and 5% levels, respectively.

	LOPTCEO	LSHRALL	LOPTALL	DEBT	LSIZE	CASH	NETCF	MKTBK
LSHRCEO	0.671^{***}	0.416^{***}	0.178^{***}	0.072^{***}	0.244^{***}	-0.064^{***}	0.030^{***}	-0.007
LOPTCEO		-0.008	0.471^{***}	0.079^{***}	0.249^{***}	-0.039^{***}	-0.021^{**}	-0.067^{***}
LSHRALL			0.055^{***}	0.033^{***}	0.164^{***}	-0.004	0.063^{***}	0.131^{***}
LOPTALL				0.052^{***}	0.213^{***}	0.065^{***}	-0.031^{***}	0.056^{***}
DEBT					0.140^{***}	-0.369^{***}	-0.088^{***}	-0.244^{***}
LSIZE						-0.132^{***}	0.139^{***}	0.121^{***}
CASH							-0.101^{***}	0.455^{***}
NETCF								0.161^{***}

Table IV. Logistic Regressions of the Decision to Initiate Dividends

This table presents results of logistic regressions of dividend initiation on managerial stock holdings and other control variables. We include year dummies in multiyear regressions but do not report them. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively.

	Decision to Initiate Dividends					
	2003	1993-2002	1993-2003	2003	1993-2002	1993-2003
Intercept	-5.367***	-4.758***	-5.287***	-5.580***	-4.313***	-4.828***
	(-6.05)	(-8.33)	(-10.2)	(-5.91)	(-6.78)	(-8.14)
$LSHRCEO_{t-1}$	0.100*	-0.010	-0.012			
	(1.87)	(-0.48)	(-0.60)			
$LSHRCEO_{t-1} * I(2003)$			0.119**			
			(2.10)			
$LSHRALL_{t-1}$				0.203**	0.023	0.016
				(2.44)	(0.48)	(0.34)
$LSHRALL_{t-1} * I(2003)$						0.185**
						(2.02)
$LOPTCEO_{t-1}$	-0.064*	-0.059***	-0.058***			
	(-1.82)	(-2.98)	(-3.37)			
$LOPTALL_{t-1}$				-0.122**	-0.086***	-0.091***
				(-2.28)	(-3.65)	(-4.27)
$DEBT_{t-1}$	-0.043	-2.024***	-1.372***	-0.004	-2.007***	-1.331***
	(-0.05)	(-3.32)	(-2.78)	(-0.00)	(-3.26)	(-2.68)
$LSIZE_{t-1}$	0.317***	0.230***	0.261***	0.297***	0.181***	0.219***
	(2.91)	(3.98)	(5.17)	(2.66)	(3.26)	(4.44)
$CASH_{t-1}$	1.060	-2.743***	-1.291**	1.135	-2.646***	-1.227**
	(1.22)	(-3.46)	(-2.27)	(1.30)	(-3.35)	(-2.17)
$NETCF_{t-1}$	9.029***	4.278***	5.465***	8.947***	4.138***	5.356***
	(4.36)	(3.71)	(5.44)	(4.32)	(3.60)	(5.33)
$MKTBK_{t-1}$	-0.422**	-0.204***	-0.258***	-0.400**	-0.191**	-0.240***
	(-2.27)	(-2.64)	(-3.59)	(-2.20)	(-2.44)	(-3.33)
Nobs	761	7833	8594	761	7833	8594
% of Div. Increase	7.10%	1.74%	2.21%	7.10%	1.74%	2.21%

Table V. Tobit Regressions of the Dividend Payout Ratio

This table presents results of tobit regressions of dividend payout ratio on managerial stock holdings and other control variables. Dividend payout ratio is defined as the percentage of dividend payout from total payout. We include year dummies in multiyear regressions but do not report them. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively.

	Dividend Payout Ratio					
	2003	1993-2002	1993-2003	2003	1993-2002	1993-2003
Intercept	-3.291***	-4.800***	-4.623***	-3.358***	-4.336***	-4.123***
	(5.04)	(9.37)	(10.64)	(4.96)	(8.30)	(9.20)
$LSHRCEO_{t-1}$	0.059**	-0.009	-0.005			
	(2.05)	(0.66)	(0.38)			
$LSHRCEO_{t-1} * I(2003)$			0.069*			
			(1.86)			
$LSHRALL_{t-1}$				0.123***	-0.022	-0.024
				(2.63)	(0.75)	(0.89)
$LSHRALL_{t-1} * I(2003)$						0.140**
						(2.30)
$LOPTCEO_{t-1}$	-0.057**	-0.026*	-0.029**			
	(2.51)	(1.96)	(2.57)			
$LOPTALL_{t-1}$				-0.106***	-0.056***	-0.062***
				(2.89)	(3.08)	(3.90)
$DEBT_{t-1}$	-0.168	-1.804***	-1.354***	-0.169	-1.723***	-1.276***
	(0.33)	(4.38)	(4.12)	(0.33)	(4.20)	(3.91)
$LSIZE_{t-1}$	0.207***	0.344***	0.316***	0.206***	0.326***	0.301***
	(2.92)	(7.06)	(7.79)	(2.83)	(6.94)	(7.62)
$CASH_{t-1}$	0.544	-2.517***	-1.494***	0.612	-2.466***	-1.445***
	(1.05)	(4.79)	(4.02)	(1.19)	(4.71)	(3.91)
$NETCF_{t-1}$	5.399***	3.169***	3.493***	5.287***	3.223***	3.523***
	(3.96)	(4.20)	(5.38)	(3.93)	(4.27)	(5.44)
$MKTBK_{t-1}$	-0.266**	-0.209***	-0.223***	-0.252**	-0.197***	-0.208***
	(2.31)	(4.15)	(4.93)	(2.26)	(3.92)	(4.63)

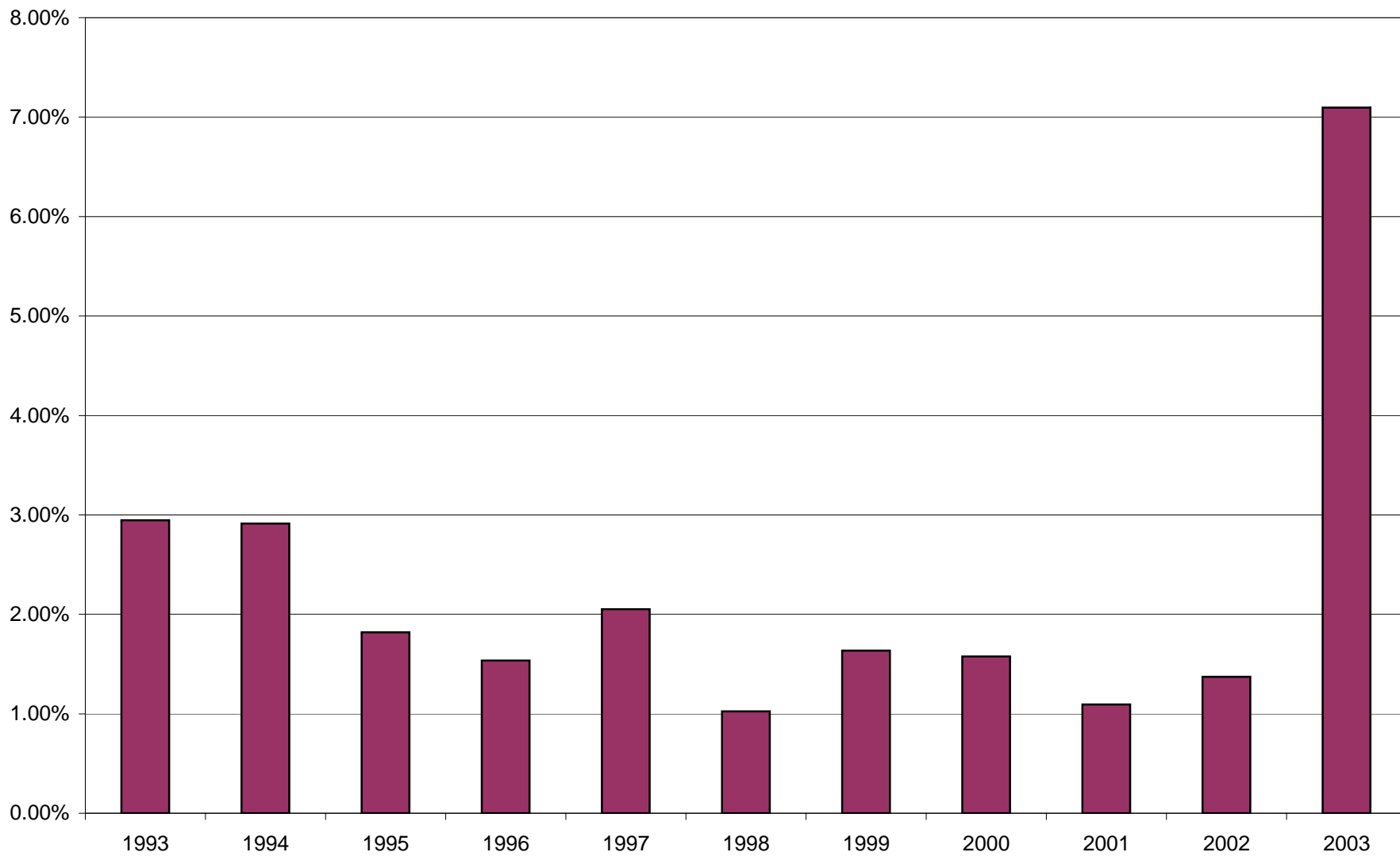**Table VI. Regression Results after Controlling for Individual Investors' Ownership and High Growth**

This table presents regression results when we control for ownership of individual investors and high growth. Columns 1 and 2 show the results from logistic regression of firms' decision to initiate dividends in 2003 while controlling for individual investors' ownership. We define ownership of individual investors (INDOWN) as one minus the sum of institution holdings dividend by total shares outstanding. Columns 3 and 4 are the results for logistic regressions of firms' decision to increase dividends in 2003 while including the interaction variable between managerial shareholding and indicator of high growth firm. High growth firms are defined as firms with Tobin's q higher than the industry median of the same two-digit SIC code. *t*-statistics are in parentheses. ***, ** and * indicate significance at 1%, 5%, and 10% levels, respectively.

	Decision to Initiate Dividends			
Intercept	-4.865***	-4.972***	-5.012***	-5.082***
	(-4.93)	(-4.70)	(-5.50)	(-5.13)
$LSHRCEO_{t-1}$	0.095*		-0.018	
	(1.72)		(-0.28)	
$LSHRCEO_{t-1}$ * I(high growth)			0.180***	
			(2.92)	
$LSHRALL_{t-1}$		0.191**		0.078
		(2.25)		(0.80)
$LSHRALL_{t-1}$* I(high growth)				0.152***
				(2.73)
$INDOWN_{t-1}$	-1.792*	-1.852*		
	(-1.67)	(-1.72)		
$LOPTCEO_{t-1}$	-0.081**		-0.050	
	(-2.17)		(-1.37)	
$LOPTALL_{t-1}$		-0.163***		-0.114**
		(-2.69)		(-2.07)
$DEBT_{t-1}$	-0.181	-0.168	0.122	0.125
	(-0.21)	(-0.19)	(0.14)	(0.14)
$LSIZE_{t-1}$	0.362***	0.365***	0.291***	0.288**
	(3.02)	(2.93)	(2.59)	(2.48)
$CASH_{t-1}$	0.963	1.098	0.954	1.056(1.20)
	(1.11)	(1.25)	(1.10)	
$NETCF_{t-1}$	8.377***	8.291***	8.473***	8.338***
	(3.89)	(3.82)	(4.08)	(4.02)
$MKTBK_{t-1}$	-0.470**	-0.456**	-0.575***	-0.572***
	(-2.38)	(-2.34)	(-2.76)	(-2.73)
No. of Obs.	687	696	761	761
% of Div. Increase	7.57%	7.57%	7.10%	7.10%

Table VII. Market Reaction to Dividend Initiations in 2003

This table presents summary statistics of the mean abnormal market reaction (or CAR). CAR is defined as the mean three-day return above expected return starting on the day before the announcement.

Sample	N	Mean	Std.	Median	t-stat	% Positive
ALL	54	0.0057	0.0615	0.0087	0.69	57.4
CEO Shareholding < sample median	27	0.0140	0.0641	0.0161	1.13	66.7
CEO Shareholding > sample median	27	-0.0025	0.0588	-0.0076	-0.22	48.1
Market-to-book < sample median	27	0.0171	0.0563	0.0103	1.58	63.0
Market-to-book > sample median	27	-0.0056	0.0653	0.0035	-0.44	51.9
CEO Shareholding < sample median and Market-to-book < sample median	14	0.0217	0.0456	0.0158	1.78	71.4
CEO Shareholding < sample median and Market-to-book > sample median	13	0.0057	0.0807	0.0161	0.26	61.5
CEO Shareholding > sample median and Market-to-book < sample median	13	0.0121	0.0676	0.0077	0.65	53.8
CEO Shareholding > sample median and Market-to-book > sample median	14	-0.0161	0.0476	-0.0116	-1.27	42.9

Fig. 1. Percentage of Firms that Pay Dividends for the First Time