CONTINGENT INCREASE IN CASH DIVIDENDS UPON THE 2003 DIVIDEND TAX CUT

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ABSTRACT

Utilizing a natural experiment setting of the 2003 Dividend Tax Cut, this study documents that as the tax rate on dividends drops, corporate payout policy is contingent on firm's growth opportunity, shareholder rights, and their interactions. The study confirms that firms with high shareholder rights act in the interest of the shareholders. It also provides evidence that the 2003 Dividend Tax Cut helps move the cash flow out of the firms with low growth.

INTRODUCTION

The Job and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) has significantly dropped the tax rate on dividends. Instead of taxing dividends as ordinary income with the highest progressive tax rate of 35%, the JGTRRA dropped tax rates on qualified dividends to 15% or 5% for the years 2003 to 2007, depending on shareholders' taxable income. Besides significantly dropping the dividend tax rate, the legislation also decreased the tax rate on capital gains. Under the prior law, long-term capital gains were taxed at a maximum rate of either 20% or 10%, depending on taxable income level. The JGTRRA reduced the old 20% rate to 15% and the old 10% rate to 5%, respectively. The JGTRRA dropped the tax rates on both dividends and capital gains. However, the drop is much more dramatic for the dividends than for capital gains.

Intuitively, the decrease in dividend taxes should give shareholders incentives to demand more cash dividend from the firm for the tax savings. Management of a firm may treat such demand more seriously when their shareholders are more powerful. Jiraporn, Kim and Kim (2011) find that shareholders with stronger rights force managers to disgorge more cash in the format of a cash dividend. For the firm, the decrease in the dividend tax rate is not only factor to consider when it sets dividend payout policy. Future needs for cash flow, the historic level of dividends, and the availability of profitable investments are also important (Brav, Graham, Harvey and Michaely (2008)). Then it would be interesting to see how these factors interact.

There are no prior studies empirically examining how the change of the dividend tax rate from the 2003 Dividend Tax Cut, shareholder rights, and the firm's growth potential interact with each other in association with cash dividends. This study will use the 2003 Dividend Tax Cut as a natural experiment setting to address this gap in the literature.[1]

The passage of the JGTRRA is an exogenous event to corporations. It is a good natural experiment for testing relations in corporate finance research, which are often complicated by the endogenous issues (Wintoki, Linck and Netter (2012)). If the dividend tax rate, shareholder rights, and firm growth interact with each other in affecting cash dividends, then dividend payout is a

[1] Major tax reforms offer natural experiments for evaluating firms' responses. See . Christie and Nanda (1994) studied the relationship between free cash flow and shareholder value due to the undistributed profits tax of 1936 and 1937.

rather complicated matter. It may call for the combination of many different theories on dividends to provide complete explanations to firms' dividend policy.

In this study, we test whether the firm's shareholder rights, growth opportunities, and the 2003 Dividend Tax Cut interact with each other in affecting the firm's dividend payout. The study contributes to the literature in several respects. First, it documents the contingent nature of firms' dividend payout. With the drop of the tax rate on dividends, whether the firm will pay out cash dividends is contingent on the firm's growth and shareholder rights. Firms with good governance (measured by stronger shareholders rights) do not always pay more dividends. The growth plays a role as well. Likewise, firms with low growth do not necessarily pay high dividends, since the shareholder rights are important too. The study shows that dividend payout is a result of multiple factors, and a rather complicated matter. Secondly, utilizing a natural experiment setting, our study shows that firms with high shareholder rights act in the interest of shareholders. The literature has remained mixed on whether shareholder rights really serve shareholders' interests. Bebchuk, Cohen and Ferrell (2009), Masulis, Wang and Xie (2007), and Gompers, Ishii and Metrick (2003) show that entrenched managers (weak shareholder rights) are associated with lower firm values. However, Bates, Becher and Lemmon (2008) challenge the idea that the classified board, one of the most important anti-takeover devices, facilitates managerial entrenchment, and leads to poor firm performance.[2] Using the 2003 Dividend Tax Cut as a natural experimental setting exogenous to firms, we add clear evidence that shareholder rights do serve shareholders' interest. Thirdly, we find that firms with weak shareholders right pay less amount of dividend in response to the tax cut. This supports the free cash flow theory of Jensen (1986), and is at odds with the argument that poor governance and dividend payout are substitutes for each other. Lastly, our study provides evidence that the 2003 Dividend Tax Cut helped move cash flow out of firms with low growth. This shows some positive impact of the 2003 Dividend Tax Cut on the economy.

LITERATURE REVIEW AND DIVIDEND TAX CUT

Relevant theories

Since Miller and Modigliani (1961)'s dividend irrelevance theory, many new theories were developed to explain the dividend puzzle. The transaction cost theory states that when it is more costly for shareholders to cash in stocks in the stock market, they may prefer cash dividends. The uncertainty resolution theory (Gordon (1962)) says that shareholders prefer dividends when future capital gains are highly uncertain. Similarly, Bird-in-hand theory states that when the future of a firm in uncertain, investors wants dividends now. The tax-clientele hypothesis (Elton and Gruber (1970)) holds that investors select their stock holdings to minimize the tax bite of dividends. It follows that a high-dividend tax-rate investor would avoid holding dividend-paying stocks, while a low/zero-dividend-tax-rate investor would prefer doing so. Life cycle theory (Fama and French (2001); Grullon, Michaely and Swaminathan (2002) DeAngelo, DeAngelo and Stulz (2006)) predicts that mature firms are more likely to pay dividends due to their shrinking investment opportunity set, declining growth rate, and decreasing cost of raising external capital. The agent's free cash flow theory (Jensen (1986)) states that managers like to keep the cash flow and reinvest it in the firm, even in projects with negative NPV, in pursuit of their own benefits. The catering theory (Baker and Wurgler (2004)) implies that managers cater to investors by paying dividends

[2]The Classified board, defined as a board structure in which a portion of the directors serve for different term lengths, is an important aspect that weakens shareholders' rights.

when investors put a stock price premium on dividend payers, and by not paying dividend when investors prefer non-payers. The essence of the catering theory on dividends is that managers opportunistically modify corporate payout policies and give investors what they prefer currently.

The 2003 Dividend Tax Cut and firm dividend paying behaviors

The JGTRRA of 2003 introduced favorable treatment for an individual's dividend income. Essentially, it dropped tax rates on qualified dividends to 15% or 5% for the years 2003 through 2007 (depending on a tax payer's marginal tax rate of higher or lower than 15%). With this reform, investors would not face the regular progressive individual income tax schedule with a top rate of 35 percent for income from dividends. The JGRRRA also decreased the tax rate on capital gains. Under the prior law, long-term capital gains were taxed at a maximum rate of either 20% or 10%, depending on income level. The JGTRRA reduced the old 20% rate to 15%, and the old 10% rate to 5%. The eminent change that the JGTRRA brings in is on the dividend tax rate. It has a large decrease, compared with tax rate change on capital gains. The reform was officially signed into law on May 28, 2003. At the end of year 2003, all shareholders should enjoy the tax cut according to this legislature.

Due to the tax rate cut on the dividend, for the same amount of cash dividend from a firm, the shareholders receive a higher amount of after-tax dividend due to the tax savings. This gives the taxable shareholders incentive to demand higher dividend payouts from their firm. The 2003 Dividend Tax Cut has reversed the trend of the disappearing dividend in the U.S. to some extent. After its implementation, many firms either increase the amount of their dividend or initiate dividends (Chetty and Saez (2005)). Brav, Graham, Harvey and Michaely (2008) report similar findings after surveying 328 financial executives. The 2003 Dividend Tax Cut also has some spillover effect. Edgerton (2010) finds that REIT's dividends also increase, even though their dividends did not qualify for the rate cut.

DEVELOPMENT OF HYPOTHESES

Interaction between the 2003 Dividend Tax Cut and shareholder rights on dividend payout

In respect to the exogenous shock in dividend tax rates due to the 2003 Dividend Tax Cut, the free cash flow theory and the catering theory may be the most relevant among many dividend theories and work complementarily in predicting firms' responses. Both theories consider managers' role in making dividend decisions, but have different focuses: the demand of the shareholders is the focus of the catering theory, and the needs of managers are that of free cash flow theory.

Shareholders may have different tax preferences. However, the cut in the dividend tax rate gives the tax savings to taxable shareholders without negatively affecting dividend neutral shareholders. In other words, no shareholders are worse off due to the tax rate drop. Thus, upon the rate cut, shareholders, especially those taxable, should demand high cash dividends. Gadarowski, Meric, Welsh and Meric (2007) find that firms with higher dividend yields earned higher returns around the proposal for JAGTRRA and its formal passage. That is, market associates a dividend premium with stocks paying higher dividend upon the event. If the catering theory works, we should observe that firms pay more cash dividends after the 2003 Dividend Tax Cut. If the free cash flow theory works, we should observe that in the firms with the most serious

agency problems, the cash dividend should be less. If both theories work simultaneously and complementarily, we may expect the cash dividend to increase upon the 2003 Dividend Tax Cut, but the increase will be less for firms with serious agency problems.

The literature remains mixed on the relations between agency problems and dividend payout. Christie and Nanda (1994) find that the actual growth in dividends responding to the undistributed profits tax of 1936 and 1937 was lower among firms judged more likely to be subject to higher agency cost. Jiraporn, Kim and Kim (2011) find that firms with stronger governance exhibit a higher propensity to pay dividends. They conclude that shareholders of firms with better governance quality are able to force managers to disgorge more cash through dividends, therefore reducing what is left for expropriation by opportunistic managers.[3] In contrast with Jiraporn, Kim and Kim (2011), several other studies show that dividend is a substitute for weak governance. Knyazeva (2007) finds that weak governance has a positive effect on dividend changes, mainly in response to large cash flow increases. Weakly governed managers make fewer dividend cuts, and are more likely to raise dividends through regular small increases. Total payout adjustments made by weakly governed managers support the dividend commitment. Officer (2006) provides evidence that the dividend policy is a substitute for weak internal and external governance by focusing on a sample of firms that should pay dividends. For those studies that find that the dividend is a substitute for weak governance, it is unclear what the underlying forces are that make these firms pay shareholders. Due to the 2003 Tax Cut, shareholders demand more dividends for the tax savings. However, do firms respond to such demands? The answer may depend on whether managers listen to their shareholders. In this case, the rights of shareholders on firm governance should become important.

Shareholder rights, a proxy for how much shareholders can say in firm governance and whether shareholders can discipline managers if they do not act in the interest of shareholders, may be underlying forces. Shareholders with strong rights should interact with the tax rate via their board to affect the dividend payout. According to the free cash flow hypothesis, managers may invest free cash flow in the project with negative NPV in pursuing the interest of their own. Black (1976) argues that paying dividends can mitigate the potential overinvestment problem by reducing the amount of free cash flow. The 2003 Dividend Tax Cut on dividends gives taxable shareholders an incentive to ask for more cash dividends. This has the potential to reduce the free cash flow issue. However, in each firm, shareholders have different levels of rights. The shareholders' rights may affect whether firms respond positively to shareholders' call for dividends. When shareholders have weak rights, managers will be able to keep more cash under their discretion, incurring Jensen's free cash flow problem (Jensen, 1986). When shareholders have strong rights, through their board, they can demand the managers use the cash in the interest of shareholders, and effectively discipline managers if them do otherwise. If shareholders have weak rights relative to firm managers, then managers may try to keep more cash. In this case, the drop in the tax rate from the 2003 Dividend Tax Cut will not matter much, and the dividend payout amount will be low. Thus, we have the following hypothesis:

[3] Jiraporn, Kim and Kim (2011) do not find a significant impact of the 2003 Dividend Tax Cut on the relationship between governance quality and the dividend policy. They used Gov-score to proxy for governance quality, regress dividend payout on the interaction between Gov-score and dummy variable for the 2003 Dividend Tax Cut after year 2003, and the obtained insignificant coefficient of the interaction item. Their study seemingly adds to the evidence that the 2003 Dividend Tax Cut does not matter in affecting the dividend payout associated with governance.

H1: Firms with weak shareholders rights will exhibit low cash dividends post the 2003 Dividend Tax Cut.

Interaction between the 2003 Dividend Tax Cut and firm growth on dividend payout

The impact of tax cut on the dividend payout may differ depending on the level of firm growth, which is often measured as forecasted sales growth as in Chetty and Saez (2005) and Gadarowski, Meric, Welsh and Meric (2007) or Tobin's Q (firm's market value divided by its book value). Frankfurter, Kosedag, Wood Jr and Kim (2008); Gadarowski, Meric, Welsh and Meric (2007) find that for both traditional (predisposed to paying dividends) and growth-oriented (paying dividends only to satisfy stockholders' demands) firms, dividend payouts increased before the Job Growth and Taxpayer Relief Reconciliation Act of 2003. Chetty and Saez (2005) show that the number of firms initiating regular dividend payment increases and the firms raise their dividends significantly in 2003. They find that the tax response was confined to firms with lower levels of forecasted growth, as well as in the firms whose executives have high levels of stock holdings. Gadarowski, Meric, Welsh and Meric (2007) find that high-dividend stocks outperform low-dividend stocks with a reduction in dividend taxation. They find that firms that were currently not paying dividends, have high cash holdings, low debt ratio, and low Tobin's Q, were winners under the 2003 Dividend Tax Cut.

The 2003 Dividend Tax Cut may affect firms differently, dependent on their level of growth. The impact also reflects the economic contribution of the 2003 Dividend Tax Cut from a new perspective other than consumption. The contribution of the tax rate cut to the economy is unclear in the literature. Through surveying individual shareholders, Dong, Robinson and Veld (2005) find that investors have a strong preference to receive dividends; these investors do not tend to consume a large part of their dividends. As a result, they cast doubt on whether a reduction or elimination of the dividend tax stimulates the economy. If a firm's growth affects cash payout upon the 2003 Dividend Tax Cut, for instance, upon the tax cut, firms with low growth pay higher cash dividends than those with high growth do. Then, at the aggregate level, the funds will be channeled into more efficient uses, supporting firms with high growth. This will benefit the economy.

In summary, the tax cut should give shareholders incentives to take the cash out of the firms through cash dividends. However, the amount of the payout should be reduced when the firm has good growth, even with the drop of the dividend tax rate. Our second hypothesis is as follows:

H2: firms with good growth opportunity reduce cash dividend post 2003 Dividend Tax Cut.

DATA AND EMPIRICAL MODEL

Sample construction and data description

The sample firms are firms covered in the Governance index dataset described as in Gompers, Ishii and Metrick (2003)). The sample years are from 1998 to 2006.[4] For each firm

[4] There are two reasons that we focus on this period. First, initially the JGTRRA dropped tax rates on qualified dividends to 15% or 5% only for the years from 2003 to 2007. Companies are clear with this and are able to budget the dividend payout clearly. The cut was later extended by the Congress. But from year 2007, the financial crisis may affect firm's dividend policy.

year in the governance index dataset, we obtain information on board characteristics and executive pay from RiskMetrics and ExecuComp, respectively, using the following process.

First, we compress the director data from the individual director level to the firm level using a firm identifier (CUSIP) and the shareholder meeting date. This step develops the *director* dataset and provides board characteristics. Second, from ExecuComp, we obtain the total number of options and the total percentage of shares held by the top executives by CUSIP for each fiscal year.[5] Then, we merge this dataset with the governance index data compiled by Gompers, Ishii and Metrick (2003) based on CUSIP and fiscal year. The merger at this second step produces the *governance* dataset. Third, the firm's beginning calendar date and ending calendar date for each fiscal year from Compustat are added to the *governance* dataset. Fourth, we merge the *director* and the *governance* datasets by CUSIP, meeting date and the firm's ending calendar date for a fiscal year. The *director* dataset only provides the annual meeting date, while the *governance* dataset includes fiscal year. However, for each fiscal year we have beginning and ending calendar dates. We merge the files and ensure that the ending calendar date of each firm's fiscal year is immediately preceding its annual meeting date, but has the shortest distance.

After the mergers mentioned above, for every fiscal year of each firm in the dataset, we obtain its financial information from Compustat. We exclude both utility firms (SIC code from 4000 to 4999) and financial firms (SIC code from 6000 to 6999). Our final sample consists of 7,272 firm-year observations.

Key measures

Shareholders rights

Gompers, Ishii and Metrick (2003) construct a governance index to proxy shareholder rights. The index is a sum of twenty four anti-takeover provisions (ATPs). In general, ATPs in the index serve to entrench managers and directors, Bebchuk, Cohen and Ferrell (2009) highlight that some provisions may be irrelevant or even may be beneficial to firms. To address this concern, they focus on six provisions that have systematically drawn considerable opposition from institutional investors. Four of these six provisions limit shareholder voting, which is the primary power of shareholders. They include staggered boards, limits to shareholder amendments of the bylaws, supermajority requirements for mergers, and supermajority requirements for charter amendments. The remaining two provisions are the most prominent in preventing a hostile offer: poison pills and golden parachute arrangements. Bebchuk, Cohen and Ferrell (2009) show that these six provisions drive the negative relationship between ATPs and firm performance, and they code them as entrenchment index (E-index). In this study, we use the E-Index as the proxy for shareholder rights to capture managerial agency problems.

Firm growth

Following Lehn and Poulsen (1989), Chetty and Saez (2005) , Gadarowski, Meric, Welsh and Meric (2007), Aslan and Kumar (2011), we used sales growth as a to measure for firm growth. This measure is easy to understand for shareholders, is not affected by the volatilities in the stock

[5] I compress the ExecuComp data from the option granting level to the individual executive level and then to the firm level. Many firms make multiple option grants during a year.

market, and is comparable across industries. We also use the Price-to-book ratio to measure firm growth in the robustness analyses, and the results are qualitatively the same.

Cash dividend payer and an amount of cash dividend

Cash dividend payer is a dummy variable. Following Grullon, Paye, Underwood and Weston (2011) and Fama and French (2001), this variable has a value of 1, if the total amount of cash dividends paid to common shareholders by the firm during a given fiscal year (Compustat item 21) is greater than 0, and 0 otherwise. The second variable is the amount of the cash dividend payout to common shareholders (Compustat item 21). The drop of the tax rate on dividends is more dramatic than the reduction in the capital gains tax rate due to the 2003 Dividend Tax Cut. We expect the cash dividend will be affected more by the legislation. So we mainly use the amount of cash dividends as the key variable to test the hypotheses.

The 2003 Dividend Tax Cut

Our sample fiscal years are from 1998 to 2006. To capture the impact of the 2003 Bush tax cut, we create a dummy variable Bush, which has value of 1 for fiscal years no earlier than 2003, and 0 otherwise. This variable is associated with the drop in the dividend tax rate and an increase of tax savings on cash dividends. Gadarowski, Meric, Welsh and Meric (2007) (2007) find high-dividend stocks gain more value than low-dividend stocks after the reduction of dividend taxation from the JAGTRRA. There is about a 20% increase in dividend payments by nonfinancial, nonutility, publicly traded corporations following the JAGRRA (Chetty and Saez (2005)). Thus, the 2003 Dividend Tax Cut dummy variable should be a good proxy for taxable shareholders' demand for cash dividends, with all other variables equal.

Models

Since dividend paying firms may systematically differ from dividend non-paying firms, we first run Probit models to test the firms' dividend paying behaviors as they respond to the 2003 Dividend Tax Cut. We obtain the reverse mills ratio from a Probit model and add it to the regression with the amount of the cash dividend as a dependent variable to address the sample selection issue. Specifically, we estimate the following two models:

Probit model (model 1):

$$CDD = \beta_0 + \beta_i \sum (Bush, SalesGrowth, EIndex) + \beta_i \sum Interactions + \beta_i \sum Controls + \mu_i$$

Regression model (model 2):

$$CD = \beta_0 + \beta_i \sum (Bush, SalesGrowth, EIndex) + \beta_i \sum Interactions + \beta_i \sum Controls + \mu_i$$

In both models (1) and (2), CDD is Dummy variable taking a value of 1 if the firm pays the cash dividend in a fiscal year, and 0 otherwise. CD is the amount of the cash dividend the firm pays in

the fiscal year (in millions). SalesGrowth is a 3 year compound annual sales growth rate as reported in Compustat. The EIndex is the entrenchment index. A high value of index indicates weak shareholder rights. Bush is the dummy variable, with a value of 1 for the firm's fiscal year for no earlier than 2003, and 0 otherwise. The control variables include BoardSize, OutsideDirector, NumOptions, ExeShare, Institutions, FirmSize, FCF, RER, CAR, EPS, Leverage, MTB, and Tobin's Q. Their detailed definitions are in Appendix.

BoardSize is the number directors. OutsideDirector is the percentage of outside directors on the board is % Outsider Directors. NumOptions is the natural logarithm of the number of options held by the top executives, as reported in ExecuComp. The number of options held by firms' executives may affect firms paying dividend as paying dividend may drop the stock price and subsequently the value of options. ExeShare represents the total percentage of shareholdings by the top executives. Chetty and Saez (2005) find that firms whose executives have high levels of stock holdings raise the dividend significantly in 2003. Brown, Liang and Weisbenner (2007) find that executives with higher ownership were more likely to increase dividends after the tax cut in 2003. RER is defined as the percentage of a firm's retained earnings divided by its non-retained earnings in its total equity. This variable is added based on life-cycle theories (DeAngelo, DeAngelo and Stulz (2006); Denis and Osobov (2008)). More mature firms, with a higher potion of equity from accumulated retained earnings, are more likely to pay dividends. Liquidity is how often a company's stock was traded. It is computed as the average of monthly traded stock shares divided by the number of shares outstanding. Banerjee, Gatchev and Spindt (2007) find that firms with more liquid shares pay lower dividends. That is, the dividend and the stock liquidity substitute for each other. Industry dummy variables are coded following the Fama-French classification. The reverse mills ratio in Model 2 is computed from Model 1 to control for the sample selection issue. In both models, we also control for institutional share holdings.[6] Institutional shareholders can be tax-exempt/tax-deferred. The literature is mixed when discussing the relationship between institutional investors and their preference of dividends. Michaely, Thaler and Womack (1995) fail to find a significant change in institutional ownership after dividend omission. Del Guercio (1996) finds that dividend yield has no power in explaining the portfolio choice of banks and mutual funds Brav, Graham, Harvey and Michaely (2005) survey the literature and conclude that institutional investors as a whole do not show a clear preference for dividends over repurchase. Jain (2007) finds that institutional investors prefer low-dividend-yield stocks.

ANALYSIS OF RESULTS

Descriptive statistics

Descriptive statistics are provided in Table 1. The mean of Cash Dividend Dummy (CDD) is 0.562, indicating that 56.2% firms pay cash dividend. The average amount of cash dividend (CD) paid by firms is $110.935 million. The mean E-Index is 2.227. The average board includes 9.110 directors, with median of 9.000 and a maximum of 21.000. The average proportion of independent directors is 68.2 percent.

[6] The institutional holdings data is from the CDA/Spectrum 13F institutional investors holding database. As pointed out by Desai and Jin (2011) a number of institutions are improperly classified in 1998 and beyond. Therefore, the results for institutional investor holdings need to be treated with caution.

Table 1
SUMMARY OF DESCRIPTIVE STATISTICS

Variable	N	Mean	Median	Minimum	Maximum
CDD	7272	0.562	1.000	0.000	1.000
CD ($mil)	7222	110.935	4.204	0.000	36112.000
E-index (Shareholder rights)	7272	2.227	2.000	0.000	6.000
Sales Growth	7270	11.565	8.802	-84.294	960.805
BoardSize	7272	9.110	9.000	3.000	21.000
OutDirector	7272	0.682	0.714	0.000	1.000
Bush	7272	0.451	0.000	0.000	1.000
NumOptions	7138	6.767	6.802	-1.609	11.483
ExeShare	7033	0.059	0.006	0.000	94.500
Leverage	7252	1.951	1.062	-396.000	4564.580
FirmSize	7271	7.424	7.271	3.461	13.529
EPS	7272	1.103	0.998	-2042.500	2622.490
FCF ($mil)	7254	582.454	125.157	-50579	46383
CAR	7051	0.073	0.027	0.000	0.938
RER	6656	2.131	0.332	-380.705	2353.210
Liquidity	4937	0.118	0.079	0.006	1.366
Institution	6504	0.634	0.660	0.000	0.956

Table 2 reports the evolution of payouts to shareholders in the sample period. Before year 2003, the percentage had been slowly decreasing. This pattern is consistent with Fama and French (2001) who document that the dividend is disappearing. After the 2003 Dividend Tax Cut, the trend seemingly reversed. The percentage of firms paying cash dividends increases dramatically in year 2003, compared with year 2002. The change is consistent with prior findings: more firms initiated dividend payout due to the 2003 Dividend Tax Cut. For the amount of the cash dividend paid, there is a clear jump before and after the year 2003. These results are consistent with prior studies documenting the cash dividend increase due to the 2003 Dividend Tax Cut.

Table 2
TIME TREND OF CASH DIVIDEND

Year	CDD(Percentage)	CD ($mil)
1998	59.80%	89.764
1999	58.80%	91.800
2000	55.90%	97.130
2001	56.90%	107.599
2002	49.60%	85.758
2003	55.30%	115.353
2004	54.50%	110.824
2005	58.60%	176.868
2006	55.50%	122.350

The likelihood of the firm paying the cash dividend

Table 3 reports the testing results of the Probit model. The results from all models are similar. In all models, the E-index has positive coefficients, for instance, 0.087 and 0.069, significant at the 5% and the 10% level in models (1) and (2), respectively. This indicates that firms with high managerial rights relative to the shareholders are more likely to pay cash dividends. The interaction between the E-index and the Bush dummy has negative coefficients, -0.066 in model (1) and -0.096 in model (2), significant at 10% and 5% level, respectively. However, the coefficients are not significant in model (3) and (4). The negative coefficients indicate that firms with high managerial rights are less likely to pay a cash dividend after the 2003 Dividend Tax Cut. Such relations disappear when we control for other variables such as institutional investor holdings, which is negatively associated with the likelihood of paying cash dividends.

Sales Growth has negative and significant coefficients in first two models, indicating that firms with good sales growth are less likely to pay a cash dividend than firms with low sales growth. This is consistent with findings in previous literature. Firms with good growth are more likely to retain cash flow to support growth. The Bush dummy variables have positive and significant coefficients in last three models (2), (3) and (4). Again, the results are consistent with the prior finding that after the 2003 Dividend Tax Cut more firms initiate cash dividends.

Several other control variables significantly affect the likelihood of firms paying cash dividends. The number of options that top executives hold is negatively associated with the

likelihood of these firms paying cash dividends. Firm size, board size, percentage of outside directors on the board, and firm's free cash flows are positively associated with the likelihood. These results are not surprisingly.

Table 3
PROBIT REGRESSION-THE LIKELIHOOD FOR FIRM TO PAY CASH DIVIDENDS

Cash Dividend Dummy	(1)	(2)*	(3)	(4)
E-index	0.087** (2.320)	0.069* (1.770)	0.101** (2.500)	0.109*** (2.680)
E-index*Sales Growth	-0.001 (-0.490)	-0.001 (-0.420)	-0.002 (-1.430)	-0.002 (-1.310)
E-index*Bush	-0.066* (-1.610)	-0.096** (-2.280)	-0.065 (-1.430)	-0.066 (-1.430)
Sales Growth*Bush	-0.007 (-1.040)	-0.013* (-1.880)	-0.010 (-1.240)	-0.010 (-1.190)
E-index*Sales Growth*Bush	0.001 (0.460)	0.003 (1.070)	0.002 (0.570)	0.002 (0.490)
Sales Growth	-0.009** (-2.420)	-0.006* (-1.770)	-0.003 (-0.720)	-0.003 (-0.770)
Bush	0.119 (1.080)	0.254** (2.240)	0.264** (2.130)	0.264* (2.110)
NumOption	-0.278*** (-7.990)	-0.237*** (-6.630)	-0.227*** (-6.040)	-0.230*** (-6.130)
ExeShare	-0.098 (-0.870)	-0.105 (-0.940)	-0.233 (-0.670)	-0.226 (-0.660)
FirmSize	0.314*** (8.160)	0.349*** (8.380)	0.375*** (8.640)	0.334*** (6.870)
BoardSize	0.088*** (4.120)	0.069*** (3.150)	0.047** (2.030)	0.046** (1.960)
OutDirector	0.785*** (3.380)	0.646** (2.580)	0.784*** (2.950)	0.740*** (2.770)
EPS	0.002 (0.540)	0.002 (0.640)	0.002 (0.540)	0.000 (0.090)
FCF				0.000** (2.530)
Leverage	0.000 (-0.200)	0.000 (-0.490)	0.000 (-0.610)	0.000 (-0.620)
CAR	-0.421 (-1.030)	0.346 (0.810)	0.249 (0.560)	0.156 (0.340)
RER	0.001** (2.170)	0.001** (2.520)	0.001*** (2.920)	0.001*** (2.860)
Liquidity	-4.427*** (-6.100)	-4.149*** (-5.720)	-4.037*** (-5.460)	-3.979*** (-5.380)
Institution			-0.736*** (-3.940)	-0.684*** (-3.620)
Intercept	-1.111*** (-3.530)	-1.580*** (-3.280)	-1.264** (-2.22)	-1.010* (-1.70)
Control for industry	No	Yes	Yes	Yes
N	4553	4553	4077	4064
Pseudo R-square	0.267	0.318	0.326	0.324

Amount of the cash dividend

Table 4 reports the results of the regression model. Model (1) use all observations while Models (2), (3), and (4) only use the firm quarters, in which firms pay non-zero cash dividends, that is, these models focus on firms, which actually pay cash dividends. We add the reverse mills ratios in these models to control for sample selection bias.

Table 4
REGRESSION ANALYSIS: AMOUNT OF CASH DIVIDEND

Amount of Cash Dividend	(1)	(2)	(3)	(4)
E-index	-31.924** (-2.360)	-24.285** (-2.070)	-15.841 (-1.580)	4.406 (0.650)
E-index*Sales Growth	-0.092 (-0.370)	0.494 (0.950)	-0.043 (-0.080)	0.212 (0.660)
E-index*Bush	-44.365** (-2.070)	-38.125** (-2.130)	-54.807** (-2.490)	-22.077* (-1.880)
Sales Growth*Bush	-1.493 (-0.990)	-4.319 (-1.330)	-5.194 (-1.320)	-4.029* (-1.780)
E-index*Sales Growth*Bush	0.348 (0.620)	1.164 (1.010)	1.844 (1.470)	0.899 (1.160)
Sales Growth	-0.739* (-1.610)	-5.886*** (-4.750)	-4.619*** (-3.830)	-3.470*** (-3.080)
Bush	156.884** (2.450)	129.152** (2.330)	202.037*** (2.790)	65.119* (1.670)
NumOption		-45.722*** (-2.140)	-44.403*** (3.040)	-30.073*** (-3.110)
ExeShare		-500.813 (-1.090)	-706.297 (-1.380)	-236.231 (-1.200)
FirmSize		227.785*** (6.360)	226.207*** (6.000)	63.643*** (3.160)
BoardSize		40.400*** (3.220)	26.492*** (3.380)	13.801*** (3.000)
OutDirector		159.051* (1.660)	130.253 (1.480)	76.038 (1.550)
EPS		0.783 (0.50)	-0.093 (-0.090)	-2.885* (-1.760)
FCF				0.190*** (6.96)
Leverage		0.007 (0.01)	0.077 (0.180)	0.198 (0.780)
CAR		763.379*** (4.870)	611.359*** (4.460)	103.352 (1.100)
RER		0.166** (2.120)	0.115 (1.070)	0.018 (0.038)
Liquidity		-2476.023*** (-5.050)	-2606.817*** (-4.000)	-1517.986*** (-3.750)
Institution			-325.769*** (-3.950)	-5.686 (-1.400)
Intercept	1120.393 (1.150)	-517.431 (-0.490)	-93.324 (-0.090)	52.319 (0.13)
Control for industry	Yes	Yes	Yes	Yes
Reverse mills ratio		435.734*** (4.280)	385.325*** (4.010)	226.430*** (4.090)
N	7189	2579	2354	2348
R-square	0.090	0.467	0.449	0.789

E-index carries negative and significant coefficients in the model (2), but the significance disappears in models (3) and (4) when more control variables are added in. The results overall are consistent with Francis, Hasan, John and Song (2011)), who find that dividend payout ratios fall when managers are insulated from takeover. It seems that firms with high E-index are more likely to pay dividend but they pay less amount than firms with low E-index. The Bush dummy has positive and significant coefficients. As the tax rate drops due to 2003 Dividend Tax Cut, shareholders like to have more cash dividends to take advantage of tax savings.

The interaction between the E-index and the Bush dummy is negative and significant at the 10% level or better, this shows that firms with high E-index pay less cash dividends after the 2003 Dividend Tax Cut than other firms do. These results indicate the 2003 Dividend Tax Cut does not cause firms with a high E-index, that is, firms with low shareholder rights, to pay more dividends. These results confirm hypothesis 1: for a firm with weak shareholder rights (high E-index), the cash dividend is lower upon the 2003 Dividend Tax Cut. Even with the increased demand from shareholders, firms with weak shareholder rights still payout less cash dividends. The managers in these firms probably like to hold onto more cash for managerial interests, as the free cash flow theory implies.

The interaction between the Sales Growth and the Bush dummy has negative coefficients, significant at 10% level in model (4). This indicates that firms with high sales growth pay fewer cash dividends after the 2003 Dividend Tax Cut. This confirms hypothesis 2: when the firm has good growth, the payout should be reduced upon the tax cut. The negative coefficient of the interaction between the Sales Growth and the Bush dummy indicates that firms with low sales growth pay more cash dividends upon the 2003 Dividend Tax Cut. These results show the some positive economic implications of the 2003 Dividend Tax Cut. It helps move the cash flow out of firms with low growth. To some extent, this will help redistribute cash flow into more efficient use. Not surprisingly, the Sales Growth carries negative coefficients, significant at the 1% level. Firms with high sales growth need more cash to support the growth. Therefore, they are associated with less cash dividend payouts. In model (4), we add the firm's free cash flow as another control variable. The similar results still hold. When controlling for the firm's free cash flow, firms with high an E-index, and firms with good growth still pay less cash dividends upon the 2003 Dividend Tax Cut.

Several other control variables are also significantly associated with the amount of the cash dividend. Both the number of options and the shares held by the top executives are negatively associated with the amount of the cash dividend. Firm size and board size are positively associated with the amount of the cash dividend. CAR has positive coefficients, indicating that firms have more cash and are more likely to pay cash dividends.

RER has a positive coefficient in model (2). This is consistent with what the life cycle theory implies: firms with more accumulated retained earnings in its equity pay more cash dividends. Liquidity has negative and significant coefficients. The results are consistent with Banerjee, Gatchev and Spindt (2007), who find that shareholders substitute stock liquidity for dividends. When shareholders easily home-make dividend on the stock market, they demand less dividend from the firm.

The coefficients of the institutional investors' holdings have a significant, negative sign in model (3). This indicates that the more institutional investors hold a firm's shares, the less the firm pays in cash dividends. This is consistent with some prior studies, which find that institutional investors can be dividend averse. Besides using a cluster-adjusted error robust OLS regression, we

also run a Tobit regression since the dependent variable is the cash dividend, which is non-negative. The results are consistent with those from the OLS.

CONCLUSION

Using the 2003 Dividend Tax Cut as a natural experimental setting, we find that firms with weak shareholder rights are more like to pay cash dividends, but pay a smaller amount than firms with strong shareholder rights. The firms with weak shareholder rights cannot achieve as much tax savings from the 2003 Dividend Tax Cut for their shareholders as the firms with strong shareholder rights. This evidence shows the firms with weak shareholder rights do not act in the interest of shareholders. We find that firms with weak shareholders right pay less amount of dividend in response to the tax cut. This supports the free cash flow theory of Jensen (1986), and does not support the argument that poor governance and dividend payout are substitutes to each other. The study also indicates that the 2003 Dividend Tax Cut facilitates the cash flow to move out of the firms with low sales growth. This finding indicates the some positive impact of the 2003 Dividend Tax Cut on the economy. The study first documents that the firm's shareholder rights, sales growth and dividend tax rate interactively affect whether the firms pay cash dividends and the amount of the payout. It shows that dividend payout is a result of multiple factors, and a rather complicated matter.

The changes in the U.S. tax law are more often driven by politics rather than corporation's business need. This makes them exogenous to the corporations, an ideal arena to test economic theories on corporate behaviors. As a switch of American president's party affiliation between the republicans and democrats occurs, the changes in the tax law are often warranted. Whether corporations change their behaviors responding to the changes in tax law can be good topics for future research. More research work on these aspects, taking advantage of the natural experimental settings, without doubt, will generate more informative and robust findings.

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Appendix: Variable Definition

	Variables	Definitions
Key Variables		
	CDD	Dummy variable taking a value of 1 if the firm pays the cash dividend in a fiscal year, and 0 otherwise
	CD	Amount of the cash dividend the firm pays in the fiscal year (in millions)
	SalesGrowth	3 year compound annual sales growth rate as reported in Compustat
	E-Index	Entrenchment index created by Bebchuk, Cohen and Ferrell (2009)
	Bush	Dummy variable with a value of 1 for the firm's fiscal year for no earlier than 2003, and 0 otherwise
Governance Variables		
	BoardSize	Total number of board of directors in a given year
	NumOptions	Natural logarithm of the number of options held by top executives, as reported in ExecuComp
	OutsideDirector	Percentage of outside directors on the board
	ExeShare	Total percentage of shareholdings by top executives
	Institution	Percentage of shares held by institutional investors.
Financial Variables		
	FirmSize	Natural logarithm of firm's total assets
	FCF	Net income plus depreciation and amortization
	RER	Firm's accumulated retained earnings divided by the total equity of excluding retained earnings
	CAR	Firm's cash divided by the firm's total assets
	EPS	Earnings per share reported in Compustat
	Leverage	Total liability of the firm, divided by firm's total equity.
	MTB *Tobin's Q*	Market value divided by book value Market value of assets divided by book value of assets [(PRCC_F*CSHO + at - CEQ)/at)]