The Estate Tax and the Payout Policy in Family Firms

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Abstract

I examine how family owners' incentives to minimize estate taxes affect payout policies in family firms. To address endogeneity, I use several exogenous shocks: the Tax Reform 2001, the Tax Reform 2010, a family owner's sudden diagnose of a fatal disease, and his death. I find that the abolition announcement of federal estate taxes in 2001 lead to increasing payouts while the reactivation in 2010 is associated with decreasing payouts. Since state estate tax is closely related to the federal estate tax, family firms located in states where state estate tax was expected to be repealed provide higher payouts than other family firms and non-family firms after the Tax Reform 2001. In the event study, after family owners are suddenly diagnosed with fatal diseases, they reduce share repurchases for the purpose of minimizing the estate tax, but increase dividends after their death to pay the estate tax. I also find that family firms with young CEOs and family CEOs without any other estate tax saving techniques distribute more payouts after the Tax Reform 2001 than other family firms and non-family firms.

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I. Introduction

When a company makes net profits, some of them are distributed to shareholders through dividends or share repurchases. Therefore, payouts are a certain way of getting financial gains for shareholders. From the perspective of corporate governance, dividends play a role to relieve agency costs by reducing the resources under managers' control and preventing them from spending free cash flow investing in money-losing capacity (Jensen (1986)). It generally applies to most firms, but how about family firms?

Family firms differ from other firms in that the owners tend to have both ownership and control. That means the benefits of receiving distributed firms' profits are the biggest among shareholders, and the concern about agency costs related to the free cash flow is less than other companies. Demsetz and Lehn (1985) also suggest that combining ownership and control might relieve the agency problem, and this is one reason why many authors assert outperformance of family firms (Anderson and Reeb (2003), Davis et al.(1997), Kandel and Lazear (1992)). Our study focuses on the former part, the financial benefits of payouts for family owners. Specifically, I examine whether family owners take advantage of payout policy to reduce the estate tax and analyze what other characteristics can make this more likely.

Though the estate tax is a personal tax, it can be closely related to the corporate succession. People only think of succession as deciding the next manager. However, whether family owners can retain family ownership after family owner's death is more important for them, especially if the next leader is not a family member. If family members do not have money to pay estate taxes, they have to sell their shares, resulting in losing family control. Brunetti

(2006) empirically shows the estate tax forces business owners to sell their firms in San Francisco and Tsoutsoura (2015) reports the reduction in inheritance taxes lead to increasing family successions in Greece. Therefore, family owners have an obvious incentive to minimize the estate tax.

To illustrate the impact of the estate taxes, Fleenor and Foster (1994) compare two scenarios of wealth accumulation: individual tax, corporate tax, and estate tax law are imposed on the entire lifetime wealth in the first scenario while the estate tax is eliminated in the second scenario. They raise individual tax and corporate tax in the first scenario until after-tax bequest level is same in both scenarios. It turns out that the estate tax has the same effect as a doubling the individual and corporate tax rates, emphasizing the importance of the estate tax.

In spite of the huge influence of the estate tax, it has not received much attention in the corporate finance literature. One exception is Ellur et al. (2010), which verifies a negative relation between the existence of inheritance law and investment with international data. It supports the idea that the estate tax can be an obstacle to firm investment. Another study provides succession taxes negatively influence investment around family successions using limited liability company data around 2002 policy change (Tsoutsoura (2015)). Our paper is different from these papers, 1) I investigates the effects of the estate tax on payout policy, while two papers concentrate on investment 2) our data is based on the largest 2,000 U.S. public firms.

Payout policy in family firms also has been studied by only a few scholars. While Chen et al. (2005) claim little relationship between family ownership and dividend payout ratio in Hong Kong, positive relation is found by Setia-Atmaja et al. (2009) in Australia, by Yoshikawa and Rasheed (2010) in Japan, by Pindado et al. (2012) in nine Eurozone countries, by Schmid et

al. (2010) in German, and by Isakob and Weisskopf (2015) in Swiss. Our paper is meaningful in that it suggests payout policy in family firms may not be one direction, but depends on the family owner's personal incentives.

I hypothesize the estate tax can make family owners change payout policy. It is plausible for three reasons. First, most family owners should pay the estate tax, especially people in our sample who own at least 5% stakes in one of the largest 2,000 companies. Second, family owners care a lot about how much they can leave to heirs, so try to find ways to minimize the estate tax. Third, payout policy can be used because distributions received from the company are enormous for family owners, given their ownership and they want to keep their equity. Fourth, unlike non-family member executives who have limited tenure, family member executives can execute a long-term policy if they maintain control over the firm. Therefore, increased or decreased payouts can be easily changed later, serving the purpose. I explain in detail with an example in section Ⅱ

One related concern is that people can transfer ownership to descendants before death to reduce the estate tax burden. Patriarch Sam Walton, who founded Wal-Mart in Bentonville, wrote his autobiography, "The best way to reduce paying estate taxes is to give your assets away before they appreciate". He actually started arranging his infancy-stage business by giving 20 percent stake to each of his children whose oldest age was nine, keeping 20 percent for himself and his wife. Nevertheless, the proportion of inter vivos giving to inheritance has not exceeded 20% statistically since 1976.[1] This may be partly because most family owners want to hold control as long as possible. It corroborates our opinion that the estate tax can be

[1] The ratio of the gift tax amounts to the estate tax amounts was 0.19 at 1997, 0.19 at 2003, 0.17 at 2004, 0.20 at 2005, and 0.18 at 2006.

a strong motivation for family owners to use payout policies which do not require giving up control.

Another concern is about endogeneity which many studies about family firms are struggling for. In this paper, other unobservable heterogeneity that may affect both family ownership and payout policies can influence the effects, or payout policies can affect family ownership reversely. To control the problem, I use natural experiments based on several exogenous shocks.

Our main results come from two United States tax reforms: Economic Growth and Tax Relief Reconciliation Act of 2001 (Tax Reform 2001) and Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (Tax Reform 2010). Tax Reform 2001 announced the repeal of the estate tax in 2010, while Tax Reform 2010 reinstated it. Therefore, it provides a great laboratory environment to test and confirm the hypothesis. When managers feel that they do not need to pay the estate tax anymore, or at least pay much lower tax than before, they stop reducing payouts, especially family firm executives who have done this consistently. On the other hand, reintroduction of the estate tax causes executives to decrease payouts again, same as before Tax Reform 2001. Furthermore, I divide samples with CEO's age and the existence of family trusts to compare groups.

In addition to the federal estate tax, each state levies state estate tax and state inheritance. Therefore, examining the impact of state-level estate tax and inheritance tax also provide evidence that the existence of the estate tax can actually change payout policies. All 50 states have imposed state estate tax up to the limit of the federal credit until 2001. However, Tax Reform 2001 changed state-level law differently from state to state. Our results suggest that payouts of family firms which headquartered in states without estate tax anymore are

significantly higher after Tax Reform 2001 than those of other companies.

I also design an event study which compares executives who are diagnosed with a serious disease to those who are not. The results show that executives in family firms who realize that death is close are more likely to reduce corporate payouts before their death for the purpose of reducing estate tax payments. On the contrary, the direction of payout policy turns the opposite after their death to pay for the estate tax.

I can summarize family owners' incentives as follows. First, family firm executives, the expected estate tax payers, try to reduce the amount of the estate tax. Second, they prepare the financial source for paying the estate tax in the future. Finally, they do not want to sell firm equity, which can dilute their control. By adjusting the time when payouts are distributed, family owners can achieve all these goals. Specifically, if one receives payouts before death, it will increase the estate tax value and he should pay not only payout taxes but also estate taxes after death. On the contrary, if part of dividends or share repurchases were accumulated in the company and will be distributed after his death, he can pay only dividend or capital gains taxes without the estate tax.

This paper contributes to the literature in three ways. First, it provides an opportunity to study family firms' distinctive policy decisions derived from family owners' personal incentives. This is possible because of family members' enormous power in the firm. Second, it suggests the estate tax can decide family firms' policy. Even though the estate tax seems to be very private and personal, it can be closely related to the corporate policies in family firms because paying the estate tax is an important issue in succession. Third, I try to relieve edogeneity problem that all papers about family firms contain by introducing several exogenous tax reforms and events.

The rest of the paper is organized as follows. I explain our hypothesis development and information about the estate tax system in the United States in section Ⅱ, and provide our data in section Ⅲ. Main results about two tax reforms are analyzed in section Ⅳ and the impacts of state-level estate taxes are presented in section Ⅴ as a cross-section study. I discuss event study results in section Ⅵ and I also examine whether other characteristics within family firms, CEO age and family trusts, lead to payout policy changes more significantly in section Ⅶ and section Ⅷ Finally, I conclude in the section Ⅸ.

II. Hypothesis and Background

A. Hypothesis Development

Dividends are a way for a company to distribute profits to its shareholders. If an executive receives payouts before he dies, either cash or capital gains will compose his property, so the estate tax will apply after he dies. However, if he postpones payouts and his heirs can get dividends or capital gains, family members can avoid the estate tax, inheriting more fortunes. Therefore, for executives who have the estate tax in mind, it is better not to provide a lot of payouts before death. Moreover, saved earnings can be used to pay future estate taxes. For these reasons, executives who have to pay the estate tax tend to distribute low level of dividends and share repurchase before death.

Let’s take examples to make it clear. Suppose that the founder-CEO owns $100 of shares, 50% ownership, in his company of which total market capitalization is $200. The company has $20 in cash. The CEO is old, so wants to prepare his death. Assume that the dividend tax

rate is 35%, the capital gains tax rate is 15%, and the estate tax rate is 50%.

If nothing happens, his descendants will inherit \$100 * (1 – 0.5) = \$50 after his death. If the company immediately pays \$20 in dividends, the CEO receives \$10, owes \$3.50 in dividend taxes, retains \$6.50 in cash, and owns \$90 in shares. Then the CEO dies and his heirs receive \$96.50 * (1 – 0.5) = \$48.25, continuing to own 50% of the company.

When the CEO dies without dividends, the company can pay \$20 in dividends after death. The estate is estimated by either fair market value at death date or alternate valuation method. The alternate valuation method evaluates assets either at six months after death or with the price at the selling point if the estate is sold before six months. I assume that executives choose the alternate valuation method. Since dividends are not included in the estate value if the valuation date is before the record date, the dividends under the alternate valuation are only imposed to dividend tax. Then the heirs receive \$90 * (1 – 0.5) = \$45 in shares after paying the estate tax and \$10 * (1 – 0.35) = \$6.5 after dividend tax. Total inheritance after taxes is \$51.5, which is more than both distributing nothing case (\$50) and paying dividends before death case (\$48.25). I summarize this example in the Figure 1.

Same with share repurchases. If the company immediately buys back \$20 in shares, the CEO receives \$10 (1 – 0.15) = \$8.5 in cash after paying capital gain tax, and retains \$90 in shares. Eventually, the inheritance after the estate tax is \$98.50 * (1 – 0.5) = \$49.25, with 50% ownership.

On the contrary, if the shares are bought back after death, the heirs inherit \$90 * (1 – 0.5) = \$45 in shares and \$10 * (1 – 0.5) = \$5 after paying the estate tax under the alternate valuation method. Even though the total inheritance after taxes of distributing nothing case and share

repurchase after death case is same as $50, there is an important difference. The heirs now have cash to pay estate taxes. Of course it is possible that the family of the deceased can just sell some of their shares in the open market, but in that case, they will lose their control of their firms, not to mention, pay capital gain tax again. Since maintaining control and allowing descendants to succeed to positions of power in the firm are relatively important for family firms, it is more likely to be found in the family firm.

To test these hypotheses, I use the changes in payout policies around two exogenous estate tax changes which eased the tax burden first and then raised it again. For better understanding, I look over the U.S. estate tax systems and two tax reforms.

B. Estate Tax Background

The United States has adopted federal estate tax since 1916 and federal gift tax since 1924, and these two tax rates were incorporated by tax reform act of 1976 to prevent tax evasion through giving before death. Since then, the estate tax rates have gradually dropped and the exemptions have increased consistently. Therefore, I can say that the federal government implemented estate tax reforms in the direction of relieving tax burden. This is because of a lot of opponents who claim double-taxation of estate tax and possibility of disturbing economic growth.[2] Figure 2 shows the long history of federal estate and gift taxes from 1916 to 2011.

The reason I focus on Tax Reform 2001 and Tax Reform 2010 in this paper is that it announced the most drastic changes in the estate tax history: Tax Reform 2001 announced a

[2] Economic Recovery Tax Act of 1981 increased exemption and reduced rates, Deficit Reduction Act of 1984 set maximum rate and Taxpayer Relief Act of 1997 increased exemption.

gradual reduction and phase-out of the estate tax in the end. Actually, it was really repealed in 2010. However, the estate tax has been reintroduced in December 2010 by Tax Reform 2010. If it is true that family owners utilize corporate payout policies to minimize the estate level and to pay the estate tax amounts, reactions to the two tax reforms will be found in the opposite direction.

The detailed way of imposing the estate tax is following. When a person passes away, the federal government levies the estate tax to the benefactor. The executor or the administrator of their estate should complete evaluation and pay the estate tax within 9 months after death, which can be postponed until 12 months with permission. The estimation method can be either fair market value at death date or alternate valuation method, as I already mention in the previous section.

In addition to federal level taxes, many states impose state estate tax, inheritance tax, and gift tax. The difference of state estate tax and inheritance tax is the former are calculated on the aggregate decedent's property while the later are levied on the asset transfers, so decided by the number and the relationship of heirs and benefactors.

In 2001, all 50 states had state estate taxes up to the limit of the federal credit because state estate taxes can reduce federal taxes as a federal revenue-sharing provision for states. Only 12 state estate taxes exceeded the federal credit and 2 states planned to reduction. Therefore, I do not need to consider state estate tax separately at this time. After the announcement of Tax Reform 2001, however, many states behaved in various ways. Some of them made their taxes expired along with federal estate tax abolition, while others continued imposing taxes by detaching them from federal taxes. As a result, only 14 states and District of Columbia imposed estate taxes on 2012 deaths.

As for the state inheritance taxes, the number of states which imposed the taxes decreased from 11 to 7 after 2001 tax reform: Connecticut, Indiana, Louisiana, and New Hampshire repealed the taxes. Tennessee is also increasing the exemption to fully phase out in 2016. However, according to this rule, transfers to lineal families are usually not taxed except for Pennsylvania and Nebraska. Since lineal transfers are the most common one, the state inheritance taxes cannot be a big consideration. Therefore, I concentrate on how executives behave differently from states to states depending on the existence of state estate taxes.

Ⅲ. Sample and Summary Statistics

Following Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012), I collect data about family ownership and management. They pull all firms from Compustat for data-year 2001 with information available for total assets and then exclude regulated public utilities (SIC codes 4812, 4813, and 4911 through 4991), financial firms (SIC codes 6020 through 6799), foreign firms, firms listed as master limited partnerships (21-firms), and firms with share price less than $0.25. They use the 2,000 largest firms based on total assets for data-year 2001 as the sample and then collect family firm ownership data (founder and/or heir ownership) from corporate proxy statements and 10-k's. Corporate histories (family lineage) are taken from ReferenceforBusiness.com, FundingUniverse.com, and individual company websites. To control for survivorship bias, they allow firms to exit and re-enter the sample.

Family firms are not defined in the same way, but two essential factors deciding family firms are ownership and management. Some authors only use ownership to classify firms as

family firms while others put emphasis on whether founders or their families serve on the board of directors. The threshold of ownership percentages are also various. In this paper, I require both criteria to be family firms, because the benefits of changed payout policy should be significant and family owners should be able to alter payouts easily. However, I do not restrict family firms as founding family firms. That is, even though family owners do not found the firm, it can be a family firm if ownership and management conditions are fulfilled. Therefore, when the family owns (or votes) a 5% or larger stake and the family takes CEO position, an indicator variable for family firm equals 1.

I merge the necessary firm characteristics, stock data from Compustat and CRSP. The final sample consists of 2,000 largest firms for 2001 and spans from 1998 to 2002 for Tax Reform 2001. As I explain previously, there was no estate tax in 2010 but was reintroduced in the end of December 2010. For a symmetric comparison, the sample period for Tax Reform 2010 is from 2008 to 2012.[3]

Table 1 Panel A reports summary statistics for our sample and Panel B shows univariate comparison for family and non-family firms. As can be seen in Panel A, family firms account for 34.4% during the period from 1998 to 2002, but the percentage drops to 18.2% during the period from 2008 to 2012. This is because some family owners in 2001 lose their ownership or voting rights, or they do not serve as CEO anymore, so the stake turns less than 5%, classified as non-family firms. It is consistent with the assertion in Franks et al. (2012) that family firms turn into widely held corporation as they age in countries with strong investor protection, developed financial markets, and active markets for corporate control. Compared to former period around Tax Reform 2001, the latter period around Tax Reform 2010 shows

[3] The results are similar when we extend the sample periods.

increased payout policy, both dividends and share repurchases. One of the reasons can be our argument in a sense that estate tax cut encourages distributing more dividends and buying more shares because the burden of estate taxes to large shareholders is quite reduced.

Panel B compares family firms and non-family firms. Even though most of control variables are not substantially different except firm size and firm age, the differences of dividends and share repurchases are statistically significant. This posits the possibility that executives of family firms, large shareholders at the same time, are more reluctant to pay dividends or buy back shares because not only these can increase their estate tax value but they also want to secure finances for the future when they have to pay estate taxes. Of course, just contrasting two periods and two groups cannot guarantee these differences are caused by estate tax changes. Therefore, I analyze these two periods with two exogenous shocks, Tax Reform 2001 and Tax Reform 2010, in the next section.

Ⅳ. Empirical Results of Estate Tax Reform

A. Results: Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA)

The EGTRRA is an ideal experimental setting to examine the effect of the estate tax on corporate decisions for several reasons. First, it was a dramatic change in estate taxes: the Bush administration reduced the maximum rate from 55% to 50% in 2001 with an additional reduction of 1% each year until 2006. Not only the tax rate but they also increase the tax exemption from $67,500 in 2001 to $1,000,000 in 2002, $1,500,000 in 2004, 2,000,000 in 2006, and 3,500,000 in 2009. In the end, they proclaimed a phase-out of estate

in 2010. There has never been 10% reduction within five years since the federal estate tax was created in 1916. And if I consider the abolition of estate tax, the reduction rate is even 55% within ten years.[4] Second, other clauses of EGTRRA are irrelevant of payout policy: individual income tax rate reductions, child tax credit increase, marriage penalty abatement, child and dependent care tax credit increase, education credit and deduction expansions are stated.

Dividend tax rate can affect our results, so I should pay attention to its changes. Dividend tax rate had been same with ordinary income tax rate for a long time. However, Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of May 2003 reduced the top marginal tax rate on dividends over 20 percentage points. As a results, dividends substitute for share repurchases as several studies show (Brown et al. (2007), Fama and French (2001), Grullon and Michaely (2002)). Since this legislation was determined in early January 2003 and our sample ends in 2002, I can avoid the dividend tax cut effects.

In Table 2, I use a difference-in-difference approach to explore whether family firms react differently to the Tax Reform 2001 from non-family firms. The sums of dividends and repurchases normalized by market value and total assets are used as our dependent variable as a proxy for payout policy. I also analyze the effects by separating dividends and repurchases because firms are reluctant to pay one-time dividends rather than using share repurchases for non-recurring cash payments to shareholders. *After2001* is a dummy that is equal to one if the fiscal year is 2001 and 2002, and *Family* dummy equals to one if the family owns (or votes) a 5% or larger stake and family CEO exists. Following Brown,

[4] Exceptionally, there was 20% reduction in 1926 and 25% increase in 1932 because of gift tax institution and 7% reduction in 1976 due to unification of estate tax and gift taxes. However, since tax evasion through gift was prevalent at that time, the impact of EGTRRA may be more influential.

Liang, and Weisbenner (2007), I include control variables which can affect the payout policy, such as firm market-to-book ratio (a proxy for growth opportunities), cash on hand-to-assets, free cash flow-to-assets, leverage, past firm stock market performance, stock volatility, firm size, firm age, industry effects, and year effects.

Table 2 shows that the coefficient on *Family* dummy is negative and statistically significant in almost all three dependent variables; the coefficient of –0.717 in column (1) and -0.820 in column (4) indicate that family firms tend to provide less payouts than non-family firms by 0.717% points and 0.820% points. When I consider the mean of total payouts normalized by market value is 3.107% and the mean of total payouts normalized by total assets is 2.953, family firms distribute 23% and 27% less than non-family firms. When I look at dividends alone, dividends of family firms are less than non-family firms by 0.281% points and 0.230% points in column (2) and (5). The means of normalized dividends are 0.865% and 0.770%, so family firms pay dividends less than non-family firms by 32% and 29% respectively. The results about share repurchases are similar. The coefficient in column (6) is -0.583, meaning that family firms buy back shares 27% less than non-family firms based on the mean of dividends normalized by total asset is 2.138%. This is partly because family firms are often growing firms, so want to retain cash for expansion.

The year dummies absorb the direct effect of *After2001*, so our main interest is the coefficient on the interaction term of *Family* dummy and *After2001* dummy. Consistent with our prediction, the results are significantly positive in all columns, which means that preparations for the estate tax payment are more prominent in family firms. The coefficients columns are interpreted as 26% and 29% more total payouts, 12% and 23%

more dividends, and 32% and 32% more share repurchases in family firms than in non-family firms after Tax Reform 2001, estimated with the mean of dividends normalized by market value and total assets, respectively. The effects are strong in share repurchases because the repeal of estate tax was not confirmed yet.

Overall, our results indicate that the Tax Reform 2001 which relieves the burden of the estate tax changes corporate payout policy in family firms. It supports that family owners have used dividends and/or repurchases to prepare for the estate tax payment after their deaths. However, I cannot exclude the possibility that the results are just a coincidence. Other factors which I do not control can affect payout policy. To verify the estate tax is a significant factor, I also investigate the opposite effect of tax reform which announced reactivation of the estate tax from 2011.

B. Results: Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010

I can say that Tax Reform 2010 also provides a reliable laboratory to verify the effect of estate tax on corporate payout policy decisions. First, the maximum estate tax rate was changed from 0% to 35%. This is as drastic as Tax Reform 2001, but in the opposite direction. Therefore, I can get robust results which are caused by the change in estate tax regime. Second, most of other laws were just extensions of previous tax reforms and irrelevant: extending the EGTRRA 2001 individual income tax rate reductions and child tax credit increase, extending JGTRRA 2003 dividends and capital gain rates, extending ARRA's treatment of the Earned Income Tax Credit and American opportunity tax credit. Thus, I can exclude the possibility that other clause affect the payout policy.

Similar to Table 2, a difference-in-difference analysis is used to examine the policy changes in family firms. Our dependent variables are same as previous analysis, dividends and/or repurchases normalized by market value and total assets. *After2010* is a dummy that is equal to one if the fiscal year is 2011 and 2012, and *Family* dummy equals to one if the family owns (or votes) a 5% or larger stake and family CEO exists. In the same way, I include control variables which can affect the payout policy.

As can be seen at the Table 3, the coefficient of *Family* dummy is significant at dividends positively. According to Brown et al. (2007), firms with more executive stock holdings increase dividends after the 2003 dividend tax cut. Our results are consistent with this claim. Firms with more executive stock holdings correspond to the family firms and as can be seen at column (2) and (4), family firms pay dividends 0.390% point and 0.873% point more than non-family firms. This refers to 33% and 64% of the mean of dividends normalized by market value and total assets.

Meanwhile, the interaction term of *Family* dummy and *After2010* dummy is mainly significant at column (2) and (4). Family firms distribute dividends 0.369% point and 0.774% point less than non-family firms after Tax Reform 2010, so 31% and 56% compared to the mean of dividends normalized by market value and total assets. We observe that family members mostly reduce the amount of dividends because it is important to maintain dividend level consistently at the low level after the existence of the estate tax is confirmed. Considering the dividends increasing trend after 2003 tax reform, we can attribute this results to the exogenous estate tax change.

To sum up, tax reform 2010 which reactivated the estate tax has a huge impact on the corporate payout policy, specifically dividends. Since the effects are exactly the opposite of

those of tax reform 2001, we can conclude that the executives actually use payout policy for their own benefits. I further analyze two tax reform effects later by splitting family firms with CEO age and family trusts.

Ⅴ. State-level Analysis

State estate taxes have been changed differently from states to states since Tax Reform 2001. Before 2001, 37 states and the District of Columbia used “pick-up tax”, meaning that the state death amount is same as the maximum amount of state death tax credit allowed under federal law. Even though the amount that a state imposed varied depending on the state estate tax laws, the overall estate tax bill was not relevant of the pick-up tax. The state death tax credit of remaining 13 states (Connecticut, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, New Hampshire, New Jersey, Ohio, Oklahoma, Pennsylvania and Tennessee) acted as a minimum tax for a stand-alone death tax (inheritance or estate tax) or as a supplemental state death tax, but still was tied to the federal code on an automatic or rolling basis.

Due to the possibility of federal estate tax phase-out under the provisions of Tax Reform 2001, however, the state death tax can disappear without state legislations. Therefore, 10 states (D.C. Massachusetts Minnesota Nebraska New York Rhode Island Vermont Virginia Washington Wisconsin) preserved their pick-up tax, 5 states (Kansas, Maryland, New Jersey, Ohio and Pennsylvania) had a stand-alone state death tax that incorporates the death tax credit (with a fixed conformity date) as a minimum tax or a supplemental tax, 6 other states (Connecticut, Indiana, Iowa, Kentucky, Oklahoma and Tennessee) had a stand-alone state

death tax that does not include any reference to the state death tax credit. The remaining 30 states did nothing and therefore decided to have no death tax.

The federal estate tax was reintroduced under Tax Reform 2010, so the pick-up tax was supposed to reappear in 2011. However, Tax Reform 2010 did not bring back the pick-up tax until its expiration date, December 31, 2012. For this reason, many states change state estate tax laws: Delaware and Virginia enacted the state estate within a certain period of time, Rhode Island and Connecticut increased exemption, Nebraska, Kansas and Oklahoma abolished state estate tax and Ohio announced the elimination of state estate tax in June 2011. President Obama passed the American Taxpayer Relief Act in early 2013, which made the rules about federal estate taxes permanent, confirming no resurrection the pick-up tax.

I originally plan to investigate cross-sectional effects using two tax reforms. The problem is different timings of each state's regulating after the Tax Reform 2010. A few states announced the abolition or reintroduction of the state estate tax, but the sample size is too small to estimate the effects. Therefore, I decide to look at how family firms located in the state where state estate taxes was supposed to be abolished under the Tax Reform 2001. There are 30 states (Alabama, Alaska, Arkansas, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Louisiana, Maine, Michigan, Minnesota, Missouri, Mississippi, Montana, New Hampshire, Nevada, New Mexico, North Carolina, Oregon, South Carolina, South Dakota, Texas, Utah, West Virginia, Wyoming) which did nothing after the Tax Reform 2001, thus have no death tax.

I use the same sample when I investigate the effects of Tax Reform 2001. The *State* indicator equals one for firms headquartered in 30 states, and zero for other firms. 57.59% of our observations belong to the 30 states and 22.4% of our sample is family firms in these

states. I also include various interaction terms, such as state and family, state and after2001, family and after2001, and state, family, and after2001 for more accurate comparison. The dependent variable and control variables are all same as previous.

Table 4 reports the results. It indicates the possible repeal of state estate tax determines payout policy of family firms in 30 states. What we are interested in is three interaction term, *State*Family*After2001*. Even though all other terms do not show any significant coefficients, this term is positively significant in column (1), (3), (4) and (6), meaning that family firms located in 30 states increase total payouts 42% and 28%, especially share repurchases 63% and 37% after the Tax Reform 2001. Therefore, we can conclude that the estate tax change has a huge impact on family firms when we consider not only federal estate taxes but also state estate taxes. In the next section, we observe how each family owner reacts to the event that is closely related with the estate tax.

Ⅵ. Event Study

When one has a serious disease and receives hospital treatment, no matter how healthy he was before, he thinks about his death. Therefore, it can be an exogenous shock for executives to consider preparing for their death. As we discuss, the payout policy can be one way to minimize the estate tax payment. To investigate this on the individual level, I collect data in *The Wall Street Journal* and *New York Times* by using senior executive-related key words and disease-related key words. I search with senior executives-related key words because they have power to decide company's policies for their personal benefits. I also consider whether the executives are family owners or not because they can have power continuously, even after

their death. On the contrary, non-family member executives hardly change company policy after retirement. Even before retirement, they may do nothing if sick leaves are long and resignation is earlier than expected because of serious illness. I verify these hypotheses with our hand collecting samples.

1. Sample Selection

Several prior studies use “sudden deaths” in their research design; Johnson et al. (1985) investigate the value of executives’ continued employment with their sudden deaths; Slovin and Sushka (1993) find that the death of an inside blockholder results in value increasing; Hayes and Schaefer (1999) emphasize managerial ability by showing that firms whose managers move to another firm experience negative abnormal returns, whereas firms whose managers die suddenly have positive abnormal returns; Nguyen and Nielsen (2010) test the importance of independent directors by examining stock option reaction to directors’ sudden death. The advantage of using “sudden deaths” is eliminating the endogeneity concerns. Even though we live in the cutting edge technological era, we do not know and cannot decide when we will finish our lives. In this sense, “sudden deaths” provide a suitable natural experiment setting for researches.

Nevertheless, previous studies only focus on the incidents after deaths. Of course we can see how investors react to the deaths and find whether someone’s sudden deaths can lead to value increasing or decreasing to the firms. From the perspective of corporate policy, however, sudden deaths themselves cannot change anything until successors are elected and settle in: executives cannot prepare their sudden death and interim executives are passive, only concentrating on the succession issue. My design is different from previous ones in that I pay attention to the firm policy changing before and after executives’ deaths. Specifically, I

try to concentrate on “sudden diagnoses” of fatal diseases and figure out what is going on from the time executives know about their health condition for the first time to the time when they die, and what happens after the deaths. As far as I know, this is the first study which uses “sudden diagnoses” in the research design. Since it is easy for diagnosed senior executives to change firm policy, they may try to use firms to minimize the estate tax and finance the tax payment.

Prior literatures collect “sudden deaths” data in different ways. While Hayes and Schaefer (1999) search the articles only with sudden deaths related terms, others use general terms to increase the sample size. For the purpose of identifying real sudden deaths, Johnson et al. (1985) exclude deaths attributed to “prolonged illness,” “complications following surgery,” or “indeterminate,” and Nguyen and Nielsen (2010) refer medical literature for sudden death causes. Our research chooses cases by only including samples which provide when they know about the disease for the first time. Even though it decreases the sample size, I can get reliable results. In addition, our focus is the first diagnosis and I use quarterly basis data, so I do not separate diagnosis and death if the period between two events is within three months. That is, if an executive diagnosed with a cancer and died after two months, I only look at the after-death policy changes because there is little chance for him to change firm policies.

Our sample consists of 48 sudden diagnoses and deaths of senior corporate executives between January 1, 1992 and May 31, 2015. Following Nguyen and Nielsen (2010), I search Factiva, Lexis-Nexis, and Edgar Online, using key words about senior executives (“chairman”, “CEO”, “president” and “founder”) and terms about diagnoses (“accident”, “cancer”, “disease”, “heart attack”, “hospital”, “illness”, “surgery”, “stroke” and so on). Panel A of Table 5 shows the reported causes of diagnoses and deaths. As can be seen, out of

the 48 cases, 21 (43.7%) got cancer, 13 were diagnosed various specified diseases, such as coronary disease or congenital aortic disorder, 9 had heart attacks, 4 had sudden accidents, and 1 suffered from a stroke.

Once I get the information about diagnosed executives' positions, medical records, company names, and whether the firms are listed on Amex, NASDAQ, and NYSE, I try to find the first time they know about their illness. And then I search their death dates using both the company names and executives' names. I also distinguish between family firms and non-family firms by reading the newspaper articles, company homepages, and Wikipedia, based on ownership requirement (5%) and management requirement. Even if a firm is classified as a family firm, I check whether the diagnosed senior executive is a member of the family. If he is a hired executive, I regard it as a non-family firm. I exclude subsidiary companies because parent companies' control is so huge in those companies.

Panel B of Table 2 shows characteristics of samples. Of all 10877 observations, family firms account for 22.1%. While our previous sample about tax reforms starts from the largest 2,000 firms, event study sample is based on the events, so a lot of big and small firms are mixed. Thus, the difference between mean and median of cash dividends and share repurchases is big. To control this, I include several firm characteristics. I also use quarterly data in this study to estimate more direct effects.

2. Regression Results

Table 6 reports the regression results of event study which use 48 cases. The event window is four quarters after the event quarter, because the federal government requires maximum 12 months after death to complete the estate payment. Therefore, *Diagnosis* dummy equals one

if the quarter of the firm is four quarters after the diagnosis and *Death* dummy equals one if the quarter of the firm is four quarters after the executive's death. *Family* dummy equals to one if the firm meets family firm definition and the diagnosed senior executive is a family firm member. Interacting terms of *Family* dummy with *Diagnosis* dummy and *Family* dummy with *Death* dummy are also included in the regression to examine the different reaction of family firms and non-family firms.

It seems that sudden diagnosis has a bigger impact on the total payouts. In column (4), the coefficient of *Diagnosis*Family* is -3.527, meaning that when family executives are diagnosed with fatal disease, they decrease 111% more of total payouts, while non-family firms decrease 56% of total payouts. When I only look at the dividends, all firms significantly reduce dividends 0.817% point after executives' deaths or significantly decrease dividends 0.461% point after executives' diagnosis, while family firms with death of senior executives significantly increase dividends 1.207% point or 1.768% point more than other firms after deaths in column (2) and (5). Calculated with the means, family firms distribute dividends 90.48% or 140% more than non-family firms after deaths. This is consistent with our hypothesis that family owners utilize firms to finance the estate tax payments. As can be seen in column (3) and (6), the interacting terms of *Family* dummy with *Diagnosis* dummy are significantly negative, which means family firms with diagnosed senior executives provide share repurchases 89% or 136% less than other firms after sudden diagnoses. It can be interpreted that when family owners are diagnosed with fatal diseases, they want to minimize the estate tax level to prepare their deaths. Using share repurchases can be an easier way to do this than using dividends, because the former is more suitable for a temporary distributing measure than the later.

In short, we find that family owners tend to decrease share repurchases to inherit more fortunes when they know about their diseases and increase dividends to pay the estate tax after their deaths with 48 cases. Even though it is a direct method of verifying our hypothesis, it still has limitation because of its small sample size. Therefore, we generalize this logic to apply to more data in the next section.

Ⅶ. The Effects of CEOs' Age

As an additional test, I consider one more characteristic in our tax reform samples. The basic assumption is that when people get old, their probability of death increases, so they prepare for their deaths. Although firm policies are not decided solely by one person, a chief executive officer, who usually takes a chairman as well, has the final say. This is more likely if a CEO is a family owner in the family firm. For this reason, I analyze this section with CEO ages.

Even though the Tax Reform 2001 announced the possibility of the estate tax abolition in 2010, old CEOs still care about the estate tax, because the tax will be imposed at least until 2009 and they cannot exclude the possibility of their deaths during this period. Therefore, old CEOs will see if the estate tax will be actually repealed for good in 2010 rather than changing payout policies immediately. On the contrary, young CEOs do not need to worry about their deaths yet, and so their payout decisions are not constrained by estate taxes.

To verify this hypothesis, I merge the sample when I examine the Tax Reform 2001 effects with Execucomp. Since Execucomp provides not only CEO age, but also stock options held

by executives, I can also control the effects of holding stock options in this section. Thus, I add options held by CEOs normalized by shares outstanding in the regression. I define “Old CEO” as a CEO who is elder than 65 which is top 10% of the CEOs’ age and “Young CEO” as a CEO who is younger than 44 which is bottom 10% of the CEOs’ age. Other method of analysis is same as previous sections.

Table 7 Panel A reports the investigations about Old CEOs. As can be seen, all Old CEO interacted terms are insignificant. This indicates that old CEOs are reluctant to change payout policies both in family firms and non-family firms. On the contrary, in the Panel B which is about Young CEOs, the most principal interaction term, *Young CEO*Family*After2001*, shows significantly positive coefficients in column (1), (3), (4) and (6). This is consistent with our expectation that young CEOs in family firms are sensitive to the Tax Reform 2001. Calculated with the means, the economic meaning is that young CEOs in family firms provide 61% or 62% higher total payouts after 2001, especially buy back shares 88% or 71% more than other family firms and non-family firms. To sum up, family owner CEOs’ personal incentive to decrease the estate tax is more prominent when the CEOs are old, so they are careful of changing payout policy until things are confirmed.

Ⅷ. Other Estate Tax Saving Techniques

Family owners devise various ways to rule the company without direct ownership to save costs including family owners’ own tax amounts. It also includes the estate tax, so I focus on whether firms governed by family owners with estate tax saving techniques behave differently regarding to the estate tax changes from other family firms and non-family firms.

The widely used techniques are following: Intentional Defective Grantor Trust (IDGT), grantor Retained Annuity Trust (GRAT), non-grantor irrevocable family trusts, family Limited Liability Company (LLC), Family Limited Partnership (FLP), and family foundations. The details are explained in appendix.

These tools have in common in transferring assets, which has the advantage of avoiding future asset appreciation. However, grantor still should pay gift taxes because it is inheriting property before death. I already mention the statistics that the proportion of inter vivos giving to inheritance has not exceeded 20% since 1976. Therefore, we can say that using these techniques can help reduce the estate tax, but not all of assets are put in the trusts or partnership.

I can hypothesize that family owners who put their shares in various family trusts or partnerships are more concerned about inheriting, so prepare more than family owners who do not use those tools. Therefore, family owners who use estate tax saving techniques are not affected by the estate tax reform, but maintain companies' original payout policy. On the contrary, family owners without any of these techniques react more to the tax reform. From the same point of view, the incentive of increasing payouts after the announcement of estate tax abolition will be stronger in family firms without the estate tax saving tools than family firms with those tools.

To divide family firms into family firms, I manually collect data about whether firm shares are in the family trusts or partnerships from 10-k's and other definitive proxy statements at U.S. Securities and Exchange Commission. Of all family firms which account for 34.42% in our sample, 70% of family owners have estate tax saving techniques and the rest of them have nothing. It shows that most family owners really care about the estate tax. The

indicator variable for *Family Firm with Trust* equals 1 if family CEOs' shares are held in other estate tax saving techniques, and 0 otherwise. In the same way, the indicator variable for *Family Firm without Trust* equals 1 if family owners do not have those tools and 0 otherwise. The dependent variables and control variables are same as previous.

Table 8 presents the results. Both family firms tend to have lower level of payouts than non-family firms before the Tax Reform 2001. After the tax reform, however, family firms increase the payouts, as I show before. In this table, the coefficients of *family firms without trusts* are significantly positive while those of *family firms with trusts* are almost not, indicating that most of the increased payouts come from family firms without trusts. Calculate with means, family firms without family trusts distribute total payouts 29% or 55% more than non-family firms after the 2001 Tax Reform, specifically 29% or 42% more dividends and 27% or 58% more share repurchases.

In summary, family owners who are interested in inheriting use a variety of estate tax savings, so they have many substitutes for payout policies. Therefore, they do not need to change optimized payout policies to minimize the estate tax. However, family firms without these techniques may have only relied on the payout policy, so they can immediately change the payout policy that is irrelevant to the estate tax.

Ⅸ. Conclusion

Even though inheritance is one of the most important decisions in family firms, few has directly related to the firm decisions because it was thought of a private matter. Our

experiments using the estate tax reforms and the event study show that inheriting can alter payout policy because the timing of receiving payouts can minimize the amounts of the estate tax. When a person gets dividends or buys back shares before death, it will increase the estate level, resulting in more estate taxes. On the contrary, if a person can distribute payouts after death, they will be inherited to heirs without the estate tax, helping them to pay the estate taxes. Since paying huge amounts of money can lead to lose controls through selling equites, minimizing the estate tax is more significant in family firms than in non-family firms.

To verify the hypotheses, I develop several experiments. First of all, I focus on company's reaction to two tax reforms, Tax Reform 2001 and Tax Reform 2010, which contain drastic estate tax changes, but other clauses have nothing to do with the payout policy. Results show that Tax Reform 2001 which announced the repeal of the estate tax causes payout increasing and Tax Reform 2010 which reactivate the estate tax results in payout decreasing in family firms. This indicates that family owners have the estate taxes in mind before their deaths.

We also look at the effects of tax reforms cross-sectionally by focusing on state estate tax which is closely related to the federal estate tax. It turns out that family firms located in states where state estate tax was expected to be repealed provide payouts more than other family firms and non-family firms after the Tax Reform 2001.

For investigating more direct effects, I examine whether family owners who are diagnosed with fatal diseases actually use the payout policies. Consistent with our hypotheses, family owners decrease share repurchases when they know about their symptoms, and increase dividends after their deaths.

Furthermore, I examine the effects of Tax reform 2001 by dividing family firms with

CEOs' age and the existence of other estate tax saving techniques. The results indicate that family owners who are less sensitive to the estate tax, such as young family CEOs and family CEOs who do not have any estate tax saving tools, react more to the estate tax reform change than family owners who are conservative.

All evidences illustrate family owners decide payout policies in the direction of minimizing their estate tax level. It can be generalized that personal incentives can decide payout policy in family firms. Even though this may not hurt other shareholders, it is problematic because it can be far from the firm's optimization.

This study is meaningful in that it proves a hidden selfishness of family owners empirically, pointing out negative characteristics of family firms. Though firm policies should be decided by shareholders' interests, we observe payout policy is affected by family owners' private interests, minimizing the amount of estate tax. I also try to exclude endogeneity as much as possible by using several exogenous shocks. There may be other policies which family owners utilize for their interests. I hope future studies also find out this behavior and show interesting results.

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<Appendix>

An Intentional Defective Grantor Trust (IDGT) is a grantor trust which is considered as a grantor's property, so there is no taxable gain when assets are sold to the trust. Assets are frozen at the time of setting up an IDGT. A grantor sells this trust in exchange for a fair market value note with arms-length interest rate, not incurring gift tax. Later, assets will be passed on to the beneficiaries after paying off the note without being taxed on asset appreciation.

A grantor Retained Annuity Trust, (GRAT) is also used when an income-producing asset is transferred and the asset is expected to grow rapidly during GRAT term. The assets will go to the beneficiaries of the trust and be subject to the gift tax when the trust ends or be subject to the estate tax when grantor dies before the trust ends. By equating the cash flow from the trust's asset (an annuity) and the trust's asset plus an assumed growth rate provided by the Treasury Department, the annuity cash stream is frozen when it is placed in the trust. Furthermore, the trust's asset is discounted because the grantor still holds the annuity cash stream, minimizing gift tax. If the value of the asset increases more than the expected growth at the end of trust term, the appreciation will not be taxed. This technique is famous for the Walton family.

Non-grantor irrevocable family trusts can make the best use of tax exemptions and liabilities by allocating the collective taxable income to beneficiaries who have low income from other sources. Moreover, non-grantor irrevocable family trusts can avoid estate taxes because the trust is treated as an independent legal entity. Instead, transfers to the trust during lifetime are levied gift taxes to the trust beneficiaries. However, as its name stands, irrevocable trusts have severe limitation of freely amending or revoking it, leading to loss

of a grantor’s control.

A family owner can remove value from taxable estate by transferring assets to LLC or FLP, keeping complete control as a manager or a general partner. Then only the value of the settler’s interests at the time assets were placed is included in his estate. Moreover, the value of two structures is far lower than fair market value (often up to 40%), because they are not permitted to be sold without approval and there is no market for these. It also lowers gift taxes when the interests are transferred to descendants. However, two structures incur a large amount of expenses and gifted assets do not receive the step-up basis, resulting in huge capital gains liabilities when they are sold later. In addition, the Internal Revenue Service scrutinize whether the reason of setting up those structures is about the purpose of avoiding the estate tax. For instance, if FLP is created closely before the founder’s death or putting all assets in the LLC will draw the IRS audit and full, undiscounted value of the assets will be eventually included in taxable estates.

Figure 1 Examples

Company	Distributing nothing
$200	$100 (50%)
----------death----------	
Estate Tax	$100*0.5=$50
Total Inheritance after taxes	$50

Company	1) Paying dividends before death		2) Paying dividends after death
$200	$100 (50%)		$100 (50%)
1)(cash $20) -> pay	$10(1-0.35) + $90=$96.5		-
----------death----------			
Estate Tax	$96.5*0.5=$48.25		$90*0.5=$45 (alternative valuation method)
2)(cash $20) -> pay	-		$10(1-0.35) = $6.5
Total Inheritance after taxes	$48.25	<	$45 + $6.5 = $51.5

Company	1) Share Repurchase before death		2) Share Repurchase after death
$200	$100 (50%)		$100 (50%)
1)(cash $20) -> buy	$10(1-0.15) + $90=$98.5		-
----------death----------			
Estate Tax	$98.5*0.5=$49.25		$90*0.5=$45 (alternative valuation method)
2)(cash $20) -> buy	-		$10*0.5 = $5
Total Inheritance after taxes	$49.25	<	$45 + $5 = $50

Figure 2 The Long History of Federal Estate and Gift Taxes 1916 – 2011

This table comes from Special Report - Tax Foundation of Andrew, Prante, and Fleenor. Since the report was published in May 2006, it only reflected until EGTRRA. Therefore, the information of 2011 in the table is prediction at that time. According to Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, the estate tax exemption is $5 million and the maximum estate tax rate is 35%.

Year	Estate Tax Exemption	Lifetime Gift Tax Exemption	Annual Gift Tax Exclusion	Maximum Estate Tax Rate	Maximum Gift Tax Rate
1916	$50,000	None	None	10%	0%
1917-23	$50,000	None	None	25%	0%
1924-25	$50,000	$50,000	$500	40%	25%
1926-31	$100,000	None	None	20%	0%
1932-33	$50,000	$50,000	$5,000	45%	34%
1934	$50,000	$50,000	$5,000	60%	45%
1935-37	$40,000	$40,000	$5,000	70%	53%
1938-40	$40,000	$40,000	$4,000	70%	53%
1941	$40,000	$40,000	$4,000	77%	58%
1942-76	$60,000	$30,000	$3,000	77%	58%
1977	$120,000	$120,000	$3,000	70%	70%
1978	$134,000	$134,000	$3,000	70%	70%
1979	$147,000	$147,000	$3,000	70%	70%
1980	$161,000	$161,000	$3,000	70%	70%
1981	$175,000	$175,000	$3,000	70%	70%
1982	$225,000	$225,000	$10,000	65%	65%
1983	$275,000	$275,000	$10,000	60%	60%
1984	$325,000	$325,000	$10,000	55%	55%
1985	$400,000	$400,000	$10,000	55%	55%
1986	$500,000	$500,000	$10,000	55%	55%
1987-97	$600,000	$600,000	$10,000	55%	55%
1998	$625,000	$625,000	$10,000	55%	55%
1999	$650,000	$650,000	$10,000	55%	55%
2000-01	$675,000	$675,000	$10,000	55%	55%
2002	$1,000,000	$1,000,000	$11,000	50%	50%
2003	$1,000,000	$1,000,000	$11,000	49%	49%
2004	$1,500,000	$1,000,000	$11,000	48%	48%
2005	$1,500,000	$1,000,000	$11,000	47%	47%
2006	$2,000,000	$1,000,000	$12,000	46%	46%
2007-08	$2,000,000	$1,000,000	$12,000	45%	45%
2009	$3,500,000	$1,000,000	$12,000	45%	45%
2010	None	$1,000,000	$12,000	0%	35%
2011+	$1,000,000	$1,000,000	$11,000	55%	55%

Source: Internal Revenue Service; CCH Inc.

Table 1 Summary Statistics

The sample period ranges from 1998 to 2002 for Tax Reform 2001, from 2008 to 2012 for Tax reform 2010. We collect family firm data following Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012). They use the 2,000 largest firms based on total assets for date-year 2001 excluding regulated public utilities (SIC codes 4812, 4813, and 4911 through 4991), financial firms (SIC codes 6020 through 6799), foreign firms, firms listed as master limited partnerships (21-firms), and firms with share price less than $0.25. Family firms are defined as firms where a person or a group related by family ties holes (or votes) a 5% or larger stake and family CEO exists. An indicator variable for family firms equals 1.

Panel A. Summary Statistics

	Tax Reform 2001			Tax Reform 2010		
	N	Mean	Median	N	Mean	Median
Family dummy	9,033	0.344	0	5,708	0.182	0
Cash Dividends	9,010	46.473	0	5,707	150.476	0.79
Purchase of Common and Preferred Stock	8,122	75.394	0.4	5,425	275.593	6.047
Market-to-book ratio	8,775	3.041	1.974	5,500	0.001	0.002
Cash/Assets	8,914	0.093	0.044	5,658	0.123	0.091
Free cash flow/assets	8,835	0.054	0.073	5,684	0.083	0.088
Debt/assets	8,995	0.225	0.198	5,682	0.205	0.175
Five-year stock return	8,214	0.001	0.002	5,633	0.011	0.011
Monthly stock return volatility (past 24 months)	8,312	0.158	0.137	5,676	0.132	0.113
Log(market value)	8,986	6.667	6.553	5,689	7.489	7.446
Firm Age	9033	16.952	10	5,708	27.828	21

Panel B. Univariate

	Non-family	Family	p-value	Non-family	Family	p-value
Cash Dividends	66.407	8.525	0	173.682	46.609	0
Purchase of Common and Preferred Stock	96.945	34.699	0	315.533	96.398	0
Market-to-book ratio	0.003	0.002	0.673	0.003	0.001	0.029
Cash/Assets	0.092	0.097	0.047	0.126	0.107	0.002
Free cash flow/assets	0.055	0.053	0.435	0.083	0.080	0.644
Debt/assets	0.227	0.222	0.218	0.205	0.206	0.910
Five-year stock return	-0.000	0.002	0.002	0.011	0.012	0.241
Monthly stock return volatility (past 24 months)	0.158	0.159	0.636	0.130	0.141	0.010
Log(market value)	6.913	6.194	0	7.658	6.720	0
Firm Age	18.891	13.257	0	28.539	24.648	0

Table 2 The Effect of 2001 EGTRRA on Payout Policy

This table presents OLS regression results around 2001 EGTRRA enactment. The sample period ranges from 1998 to 2002. The dependent variables are dividends and (or) repurchases normalized by market value and total assets. After2001 is a dummy that is equal to one if the fiscal year is 2001 and 2002, and family firm dummy equals to one if the family owns (or votes) a 5% or larger stake and family CEO exists. Based on previous literature, we include several control variables which can affect payout policy: firm market-to-book ratio, cash on hand-to-assets, free cash flow-to-assets (where free cash flow is defined as operating income before depreciation minus capital expenditures), debt-to-assets (where debt is long-term debt), past 5-year stock return, monthly stock volatility (based on the past 24 months), log of market value, firm age, 2 digit industry indicator variables, and year dummies. Robust standard errors reported in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) (Dividends + Share Repurchases) / Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Family	-0.717**	-0.281***	-0.410	-0.820***	-0.230**	-0.583**
	(0.313)	(0.094)	(0.362)	(0.258)	(0.094)	(0.234)
Family*After 2001	0.814**	0.110*	0.705**	0.880***	0.182**	0.693***
	(0.378)	(0.109)	(0.356)	(0.261)	(0.082)	(0.243)
Market-to-book ratio	-3.199	-0.595	-3.139*	-1.997	-0.653	-1.920
	(3.043)	(0.754)	(3.034)	(1.839)	(0.760)	(1.823)
Cash/Assets	1.794*	-0.199	2.054**	4.977***	0.219	4.840***
	(0.983)	(0.332)	(0.899)	(1.188)	(0.415)	(0.921)
Free cash flow/Assets	3.015***	0.307	2.831***	5.040***	1.406***	8.567***
	(0.781)	(0.205)	(0.736)	(0.836)	(0.258)	(1.504)
Debt/Assets	-0.717*	-0.448***	-0.231	-1.483***	-0.765***	-0.656
	(0.430)	(0.169)	(0.375)	(0.563)	(0.141)	(0.532)
Past 5-year stock return	-0.105***	-0.061***	-0.042	-0.110***	-0.063***	-0.046**
	(0.040)	(0.021)	(0.033)	(0.030)	(0.018)	(0.023)
Monthly stock volatility	-3.601***	-1.786***	-1.722**	-2.792***	-1.450***	-1.285
	(1.082)	(0.504)	(0.847)	(1.053)	(0.377)	(0.904)
Log(market value)	-0.016	-0.005	-0.006	0.441***	0.098***	0.344***
	(0.077)	(0.025)	(0.071)	(0.058)	(0.018)	(0.054)
Firm Age	0.015**	0.019***	-0.002	0.016***	0.019***	-0.003
	(0.006)	(0.002)	(0.006)	(0.005)	(0.002)	(0.004)
Constant	1.922***	0.517*	1.315*	-2.106***	-0.593***	-1.630**
	(0.724)	(0.294)	(0.708)	(0.708)	(0.223)	(0.673)
Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.035	0.109	0.023	0.130	0.131	0.099
Number of observations	6,896	7,615	6,903	6,910	7,644	6,918

Table 3 The Effect of 2010 Tax Relief on Payout Policy

This table presents OLS regression results around 2010 Tax Relief enactment. The sample period spans from 2008 to 2012. The dependent variables are dividends and (or) repurchases normalized by market value. Since the act was signed in December 2010, after2010 is a dummy that is equal to one if fiscal year is 2011 and 2012, and family firm dummy equals to one if the family owns (or votes) a 5% or larger stake and family CEO exists. Based on previous literature, we include several control variables which can affect payout policy: firm market-to-book ratio, cash on hand-to-assets, free cash flow-to-assets (where free cash flow is defined as operating income before depreciation minus capital expenditures), debt-to-assets (where debt is long-term debt), past 5-year stock return, monthly stock volatility (based on the past 24 months), log of market value, firm age, 2 digit industry indicator variables, and year dummies. Robust standard errors reported in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) (Dividends+ Share Repurchases) / Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Family	0.978**	0.390**	0.587	0.484	0.873**	-0.328
	(0.460)	(0.183)	(0.428)	(0.469)	(0.356)	(0.338)
Family*After 2010	-0.681	-0.369**	-0.379	-1.086**	-0.774**	-0.387
	(0.705)	(0.177)	(0.674)	(0.528)	(0.349)	(0.400)
Market-to-book ratio	0.950***	0.159	0.682**	-0.312	-0.086	-0.454
	(0.346)	(0.154)	(0.324)	(0.507)	(0.338)	(0.399)
Cash/Assets	5.243**	2.434*	2.583*	6.345***	2.597***	3.576***
	(2.370)	(1.452)	(1.374)	(1.263)	(0.933)	(0.951)
Free cash flow/Assets	5.612***	1.551*	3.748**	10.529***	3.927***	6.364***
	(1.412)	(0.950)	(1.636)	(1.867)	(1.348)	(1.819)
Debt/Assets	3.546***	0.091	3.047**	0.668	0.186	-0.030
	(1.255)	(0.437)	(1.636)	(1.118)	(0.951)	(1.109)
Past 5-year stock return	-0.184***	-0.064***	-0.140***	-0.153**	-0.063**	-0.107*
	(0.056)	(0.020)	(0.052)	(0.059)	(0.029)	(0.056)
Monthly stock volatility	-7.678**	-3.982***	-3.995	-8.693**	-3.915***	-5.110*
	(3.021)	(0.867)	(2.715)	(4.000)	(1.369)	(2.851)
Log(market value)	0.323***	0.015	0.298***	0.704***	0.076	0.625***
	(0.105)	(0.050)	(0.090)	(0.161)	(0.085)	(0.128)
Firm Age	0.016**	0.019***	-0.005	-0.009	0.011***	-0.023***
	(0.006)	(0.002)	(0.006)	(0.007)	(0.003)	(0.007)
Constant	-2.107*	0.220	-1.851**	-5.291***	-0.990	-3.934***
	(1.189)	(0.599)	(1.010)	(2.051)	(0.840)	(0.007)
Industry and Quarter effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.154	0.122	0.129	0.2352	0.203	0.244
Number of observations	5,112	5,368	5,113	5,112	5,368	5,113

Table 4 State-Level Analysis

This table reports the results of the Tax Reform 2001 on the payout policy in family firms located in the state where state estate taxes was supposed to be abolished in 2010 under the Tax Reform 2001. The state indicator is one for firms headquartered in 30 states (AL, AK, AR, AZ, CA, CO, DE, FL, GA, HI, ID, IL, LA, ME, MI, MN, MO, MS, MT, NC, NH, NV, NM, OR, SC, SD, TX, UT, WV, WY) which did nothing after the Tax Reform 2001, thus have no death tax, and zero for other firms. Same with the previous analysis, we include several control variables which can affect payout policy: firm market-to-book ratio, cash on hand-to-assets, free cash flow-to-assets (where free cash flow is defined as operating income before depreciation minus capital expenditures), debt-to-assets (where debt is long-term debt), past 5-year stock return, monthly stock volatility (based on the past 24 months), log of market value, firm age, 2 digit industry indicator variables, and year dummies. Robust standard errors reported in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) (Dividends + Share Repurchases)/ Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
State	0.737*	-0.118	0.822**	-0.018	-0.231*	0.192
	(0.444)	(0.151)	(0.414)	(0.344)	(0.129)	(0.303)
Family	-0.323	-0.383**	0.055	-1.084***	-0.445***	-0.653**
	(0.386)	(0.164)	(0.339)	(0.341)	(0.131)	(0.295)
State*Family	-0.500	0.177	-0.633	0.419	0.321*	0.128
	(0.623)	(0.185)	(0.587)	(0.483)	(0.172)	(0.431)
State* After2001	-0.663	0.208	-0.883**	-0.300	0.055	-0.321
	(0.441)	(0.164)	(0.405)	(0.369)	(0.110)	(0.341)
Family* After2001	-0.157	0.118	-0.254	0.320	0.199**	0.167
	(0.448)	(0.154)	(0.409)	(0.384)	(0.093)	(0.356)
State*Family *After2001	1.331**	0.057	1.356**	0.852*	-0.023	0.799*
	(0.680)	(0.183)	(0.642)	(0.511)	(0.151)	(0.471)
Market-to-book ratio	-3.213	-0.591	-3.153	-2.007	-0.639	-1.929
	(3.083)	(0.767)	(3.030)	(1.836)	(0.805)	(1.821)
Free cash flow/Assets	2.940***	0.307	2.757***	5.025***	1.409***	4.267***
	(0.775)	(0.205)	(0.731)	(0.834)	(0.257)	(0.750)
Cash/Assets	1.859*	-0.190	2.100**	4.974***	0.195	4.850***
	(0.987)	(0.335)	(0.903)	(1.183)	(0.417)	(1.044)
Debt/Assets	-0.718*	-0.443***	-0.238	-1.476***	-0.762***	-0.652
	(0.429)	(0.169)	(0.374)	(0.562)	(0.141)	(0.531)
Past 5-year stock return	-0.106***	-0.062***	-0.042	-0.111***	-0.064***	-0.047**
	(0.040)	(0.022)	(0.033)	(0.030)	(0.018)	(0.023)
Monthly stock volatility	-3.803***	-1.818***	-1.884**	-2.863***	-1.429***	-1.363
	(1.095)	(0.514)	(0.853)	(1.050)	(0.371)	(0.905)
Log(market value)	-0.015	-0.004	-0.006	0.443***	0.099***	0.346***
	(0.077)	(0.025)	(0.071)	(0.058)	(0.018)	(0.055)
Firm Age	0.016**	0.019***	-0.001	0.016***	0.019***	-0.003
	(0.006)	(0.002)	(0.006)	(0.005)	(0.002)	(0.004)

Constant	0.947 (0.762)	0.444 (0.315)	0.435 (0.732)	-2.115*** (0.722)	-0.440* (0.235)	-1.788*** (0.685)
Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.035	0.110	0.024	0.131	0.132	0.100
Number of observations	6896	7615	6903	6910	7644	6918

Table 5 Sample Characteristics of Event Study

The sample consists of 48 sudden diagnoses and deaths of senior corporate executives (i.e., chairman of the board, chief executive officer, or president) between January 1, 1992 and May 31, 2015. Following Nguyen and Nielsen (2010), we search Factiva, Lexis-Nexis, and Edgar Online, using key words on senior executives ("chairman", "CEO", and "founder") and death causes ("cancer", "disease", "surgery", "heart attack", "stroke", and "accident"). Once we get the information about their positions, firm names where they work, ages, medical records and whether the firms are listed on Amex, NASDAQ, and NYSE, we try to find the first time they know about their illness. We search again with both the company names and executives' names and look for when they die. Panel A classifies the cause of diagnosis and death and Panel B reports about firms which experienced this event.

Panel A. Cause of diagnosis and death		
	N	Share of total
Accident	4	0.083
Cancer	21	0.437
Disease	13	0.27
Heart attack	9	0.187
Stroke	1	0.02
	48	

Panel B. Summary Statistics			
	N	Mean	Median
Family dummy	10877	0.221	0
Cash Dividends	10742	536.107	74
Purchase of Common and Preferred Stock	10366	617.115	26
Stock-Option	10871	4.3	1.281
Market-to-book ratio	8587	0.257	0.258
Free cash flow/assets	8190	0.055	0.044
Debt/assets	10868	0.211	0.203
Five-year stock return	10821	0.009	0.01

Table 6 Event Study Results

The sample consists of 48 sudden diagnoses and deaths of senior corporate executives (i.e., chairman of the board, chief executive officer, or president) between January 1, 1992 and May 31, 2015. We set event window as four quarters after the event quarter, because the federal government requires maximum 12 months after death to complete the estate payment. Therefore, Diagnosis dummy equals one if the quarter of the firm is four quarters after the diagnosis and Death dummy equals one if the quarter of the firm is four quarters after the executive's death. We first find firms and then check if the diagnosed senior executive is a family firm member. Family dummy equals to one if both conditions are satisfied. Interacting terms of Family dummy with Diagnosis dummy and with Death dummy are also included.

	(1) (Dividends + Share Repurchases)/ Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Diagnosis	-0.965	-0.103	-0.829	-1.792**	-0.461**	-1.422*
	(0.875)	(0.390)	(0.605)	(0.865)	(0.180)	(0.769)
Death	-1.629	-0.817**	-0.791	-0.401	-0.108	-0.276
	(0.855)	(0.326)	(0.625)	(0.791)	(0.217)	(0.678)
Family	-0.202	-0.364	0.310	-0.159	-0.200	0.002
	(0.848)	(0.298)	(0.806)	(1.321)	(0.347)	(1.223)
Diagnosis *Family	-1.572	-0.252	-1.363*	-3.527**	-0.307	-2.597**
	(1.195)	(0.637)	(0.748)	(1.384)	(0.502)	(1.262)
Death*Family	1.666	1.207*	0.433	2.637	1.768*	1.848
	(1.384)	(0.642)	(1.011)	(1.830)	(0.994)	(2.956)
Option/Shares	0.019	0.022	-0.003	-0.008*	0.004*	-0.012***
	(0.028)	(0.013)	(0.014)	(0.004)	(0.003)	(0.003)
Market-to-book ratio	-1.064	-0.282	-0.837**	-2.614***	-0.356*	-2.327***
	(1.384)	(0.380)	(0.412)	(0.527)	(0.192)	(0.480)
Free cash flow/Assets	19.843***	4.874*	14.665***	10.997***	2.975***	7.936***
	(6.298)	(2.800)	(3.721)	(1.209)	(0.663)	(1.560)
Debt/Assets	1.121	0.512	0.518	1.802	0.867	0.828
	(1.765)	(0.773)	(1.405)	(3.177)	(0.628)	(2.730)
Past 5-year stock return	-6.755***	-2.846***	-3.773**	-5.003***	-1.897***	-3.061**
	(1.421)	(0.868)	(1.595)	(1.785)	(0.551)	(1.471)
Monthly stock volatility	-5.945***	-2.528***	-3.297***	-3.751***	-2.347***	-1.031
	(1.468)	(0.875)	(0.992)	(0.946)	(1.015)	(1.052)
Log(market value)	-0.573	-0.140	-0.426**	0.227	0.242***	-0.013
	(0.394)	(0.199)	(0.199)	(0.161)	(0.081)	(0.104)
Firm Age	0.007	0.002	0.004	-0.001	0.003	-0.004
	(0.009)	(0.003)	(0.008)	(0.010)	(0.002)	(0.009)
Constant	4.274	0.797	3.481*	-4.221*	-3.840***	-0.368
	(3.273)	(1.782)	(1.675)	(2.220)	(1.005)	(1.703)
Industry and Quarter effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.2469	0.2144	0.2265	0.4280	0.464	0.331
Number of observations	6372	6599	6378	6369	6596	6375

Table 7 The Effect of CEOs' Age on Payout Policy

This table displys OLS models which test the importance of executives' age in payout policies at the Tax Reform 2001. We examine not only the total payouts, but also dividends and share repurchases separately, all are normalized both market value and total assets. We collect family firm and family CEO data from U.S. Securities and Exchange Commission and CEOs' age from Execucomp. Old CEO equals 1 if CEO' age is above 65 (top 10%) and Young CEO equals 1 if CEO's age is below 44 (bottom 10%). Control variables are almost same as previous tables: options held by CEOs normalized by shares outstanding, firm market-to-book ratio, cash on hand-to-assets, free cash flow-to-assets, debt-to-assets, past 5-year stock return, monthly stock volatility, firm size, firm age, 2 digit industry indicator variables, and year dummies from CRSP and Compustat. Robust standard errors in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Family Firms with Old CEO

	(1) (Dividends + Share Repurchases)/ Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Family	0.314	-0.276**	0.588	-0.286	-0.203*	-0.073
	(1.010)	(0.116)	(1.006)	(0.761)	(0.110)	(0.759)
Old CEO	0.776	0.166	0.601	0.399	0.111	0.279
	(0.575)	(0.126)	(0.552)	(0.340)	(0.085)	(0.313)
Old CEO Family	-1.457	-0.191	-1.252	-0.585	-0.115	-0.486
	(1.070)	(0.183)	(1.044)	(0.780)	(0.155)	(0.750)
Family *After2001	-0.265	0.240**	-0.511	0.306	0.287***	0.009
	(0.973)	(0.112)	(0.966)	(0.705)	(0.096)	(0.697)
Old CEO *After2001	-0.772	-0.135	-0.626	0.090	-0.086	0.178
	(0.604)	(0.122)	(0.588)	(0.376)	(0.091)	(0.354)
Old CEO Family *After2001	1.336	-0.220	1.531	0.319	-0.276	0.595
	(1.271)	(0.195)	(1.245)	(0.927)	(0.180)	(0.899)
Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.065	0.139	0.052	0.171	0.314	0.130
Number of observations	5860	6377	5864	5860	6377	5864

Panel B. Family Firms with Young CEO

	(1) (Dividends + Share Repurchases)/ Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Family	0.138	-0.371***	0.519	-0.411	-0.246**	-0.157
	(1.004)	(0.115)	(0.390)	(0.640)	(0.098)	(0.635)
Young CEO	-0.452	-0.155	-0.302	0.703	-0.023	0.697
	(0.435)	(0.173)	(0.390)	(0.798)	(0.213)	(0.755)
Young CEO *Family	-1.181	0.156	-1.366	-0.952	0.044	-0.988
	(1.095)	(0.218)	(1.069)	(1.100)	(0.263)	(1.043)
Family *After2001	0.360	0.169*	-0.554	0.232	0.178**	0.039
	(0.868)	(0.092)	(0.865)	(0.581)	(0.074)	(0.572)
Young CEO *After2001	0.359	0.048	0.299	-1.641**	-0.155	-1.453*
	(0.457)	(0.175)	(0.416)	(0.813)	(0.218)	(0.773)
Young CEO *Family *After2001	2.108**	0.036	2.118*	2.398**	0.372	2.035*
	(1.032)	(0.221)	(1.215)	(1.133)	(0.294)	(1.203)
Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.065	0.139	0.052	0.171	0.313	0.130
Number of observations	5860	6377	5864	5860	6377	5864

Table 8 Family Firms with Family Trusts

This table presents the effects of the 2001 Tax Reform on family firms whose family CEOs put their shares in various estate tax saving techniques, such as Intentional Defective Grantor Trust (IDGT), grantor Retained Annuity Trust (GRAT), non-grantor irrevocable family trusts, family Limited Liability Company (LLC), Family Limited Partnership (FLP), ad family foundations. The sample period ranges from 1998 to 2002. The dependent variables are dividends and (or) repurchases normalized by market value and total assets. The indicator variable for Family Firm with Trust equals 1 if family CEOs' shares are held in those tools, and 0 for others. The indicator variable for Family Firm without Trust equals 1 if family CEOs do not have those tools. After2001 is one if the fiscal year is after 2001. We also include several control variables which can affect payout policy: firm market-to-book ratio, free cash flow-to-assets, debt-to-assets, past 5-year stock return, monthly stock volatility (based on the past 24 months), log of market value, 2 digit industry indicator variables, and year dummies. Robust standard errors reported in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) (Dividends + Share Repurchases)/ Market Value	(2) Dividends / Market Value	(3) Share Repurchases / Market Value	(4) (Dividends+ Share Repurchases) / Total Asset	(5) Dividends / Total Asset	(6) Share Repurchases / Total Asset
Family Firm with Trust	-0.646	-0.197*	-0.430	-0.604**	-0.153	-0.460*
	(0.413)	(0.108)	(0.392)	(0.295)	(0.103)	(0.271)
Family Firm without Trust	-0.747	-0.434***	-0.258	-1.372***	-0.416***	-0.897***
	(0.517)	(0.099)	(0.505)	(0.305)	(0.104)	(0.277)
Family Firm with Trust* After2001	0.642	0.000	0.656	0.576*	0.122	0.469*
	(0.464)	(0.001)	(0.437)	(0.300)	(0.092)	(0.279)
Family Firm without Trust* After2001	0.903*	0.259**	0.599	1.633***	0.325***	1.246***
	(0.499)	(0.111)	(0.477)	(0.372)	(0.093)	(0.355)
Market-to-book ratio	-3.205	-0.699	-3.132	-2.027	-0.075	-1.936
	(3.035)	(0.758)	(3.029)	(1.844)	(0.078)	(1.825)
Free cash flow/Assets	3.002***	0.310	2.810***	5.011***	1.416***	8.579***
	(0.786)	(0.203)	(0.742)	(0.836)	(0.258)	(1.506)
Cash/Assets	1.821*	-0.185	2.064**	4.991***	0.227	4.843***
	(0.985)	(0.332)	(0.902)	(1.187)	(0.414)	(1.050)
Debt/Assets	-0.715*	-0.452***	-0.222	-1.507***	-0.771***	-0.668
	(0.428)	(0.169)	(0.374)	(0.187)	(0.141)	(0.532)
Past 5-year stock return	-0.106***	-0.062***	-0.043	-0.111***	-0.064***	-0.046**
	(0.040)	(0.022)	(0.033)	(0.030)	(0.018)	(0.023)
Monthly stock volatility	-3.690***	-1.800***	-1.796**	-2.766***	-1.434***	-1.284
	(1.088)	(0.502)	(0.850)	(1.044)	(0.372)	(0.903)
Log(market value)	-0.017	-0.005	-0.006	0.442***	0.098***	0.344***
	(0.077)	(0.025)	(0.071)	(0.057)	(0.018)	(0.054)
Firm Age	0.015**	0.019***	-0.002	0.015***	0.019***	-0.003
	(0.006)	(0.002)	(0.006)	(0.005)	(0.002)	(0.004)

Constant	1.497* (0.773)	0.383 (0.287)	1.022 (0.759)	-2.079*** (0.709)	-0.560** (0.219)	-1.622** (0.672)
Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.035	0.110	0.023	0.131	0.132	0.100
Number of observations	6896	7615	6903	6910	7644	6918