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THREE ESSAYS ON FAMILY FIRMS

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THREE ESSAYS ON FAMILY FIRMS

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Multi-family Cofounders and Firm Value

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Abstract

The paper shows the higher valuation of family firms occurs only for family firms founded by several non-related people (multi-family cofounding firms), particularly founder controlled multi-family cofounding firms. The evidence suggests that having at least two unrelated cofounders involved in management reduces agency problems through mutual monitoring, reducing the number of shareholder proposals and serving as a substitute for other governance mechanisms. Relative to single-family founding firms, multi-family cofounding firms are more likely to force out founders and less likely to allow descendants to take control after founders retire.

1. Introduction

Subsequent to the research conducted by Anderson and Reeb (2003), scholars generally agree that the valuation of family firms is higher than that of non-family firms, and this occurs because of fewer agency problems. Most family owners are both managers and shareholders, and therefore their interests are aligned with those of other shareholders. Thus, managers do their best to maximize shareholder value. However, as DeAngelo and DeAngelo (2000) point out, it is possible that large shareholders such as family shareholders are inclined to pursue both pecuniary and non-pecuniary benefits at the cost of other shareholders. In this paper, I show that higher valuations of family firms occur only for multi-family cofounded firms, and I argue this is because of reduced agency problems.

Even though there are many papers about founding families, few papers consider cofounders separately. For example, Villalonga and Amit (2006) designate only the family with the largest voting stake as the founding family. The only study about cofounders is Chen et al. (2012) who investigate family firms founded by cofounders with listed firms in Taiwan. However, the authors only consider multi-founder firms where cofounders are still involved in the management. My paper extends cofounders' role even without management positions and suggests plausible reasons why multi-family cofounding firms have higher value than single-founding firms.

For the purpose of this study, I split family firms into single-family founding firms and multi-family cofounding firms depending on how many families are involved. If one person or his family members found and still manage a firm, there is only one family involved and it is designated as a single-family

founding firm. On the other hand, if unrelated friends or coworkers found a firm together and at least one of the cofounders continues to manage the firm, there is more than one family involved and it is designated as a multi-family cofounding firm. If none of the founding families currently manage the firm, the firm is classified as a non-family firm. Therefore, there is no transition from a single-family founding firm to a multi-family cofounding firm. In the sample used by this study, about one third of family firms are actually classified as multi-family cofounding firms.

The definition I use requires at least one family member to be involved in the management. There are several reasons for this. First, it is simple and clear. If I use both a management requirement and an ownership requirement, it will be complicated when I introduce the concept of cofounders: all cofounders are in the management, some are in the management and others are large or minority shareholders, or all cofounders are large or minority shareholders. Furthermore, more than 80 percent of family firms satisfy the management requirement.

Second, although it is possible to divide multi-family cofounding firms into three groups, but the quality of the ownership data is lower than the quality of the management data. The actual ownership is hard to know especially for shareholders that are not in the management. All directors should specify their ownership (not only direct ownership but also through trust funds, foundations, or Limited Liability Company (LLC)). Thus, we do not know exactly how many shares are held by founders who are not involved in the management.

More importantly, the last reason is to compare agency problems more precisely. There are two kinds of agency problems: 1) conflicts between owners and managers, and 2) conflicts between family shareholders and non-family

shareholders. By using the management condition, I can exclude agency problem 1), and only comparing agency problem 2) within family firms, which is the focus of this paper.

My definition is also consistent with previous studies about family firms and non-family firms. Villalonga and Amit (2006) claim agency problem 1) in non-family firms is bigger than agency problem 2) in founder-CEO firms, but agency problem 1) in non-family firms is smaller than agency problem 2) in descendant-CEO firms. As can be seen later analysis, the results still hold and we can confirm prior analysis by only treating agency problem 2) in family firms.

At the same time, my definition can broaden the range of cofounding firms. Chen et al. (2012) require all cofounders to have management positions, but it is only small subset of multi-family cofounding firms in this paper. By including cofounders who are not managers but large or minority shareholders, we can investigate agency problem more reliably.

Traditional theories assert that concentrated ownership is good for effective governance because large shareholders monitor the manager and prevent value-destroying actions. According to Grossman and Hart (1980), large shareholders are motivated to discipline managers in order to increase a firm's value. Developing this idea, Bennedsen and Wolfenson (2000) suggest an ownership structure where several large shareholders prevent a single shareholder from extracting private benefits by diluting his/her power. Edmans and Manso (2011) also theorize a structure in which multiple blockholders discipline the manager through trading and intervention.

I would argue that cofounders act like large shareholders in the above theories, reducing conflicts between family shareholders and non-family shareholders by monitoring and assessing the top executive, no matter cofounders assume the management positions or not. Of course, it is possible that cofounders pursue their personal interests together. However, the private benefits of cofounders are not always same, and even if they are, cofounders should share these benefits and consider the accompanying costs of firm devaluation. In this sense, corporate governance under several cofounders can reduce the behavior of expropriating non-family shareholders.

Many prior studies already show that a family firm's value is higher when managed by a founder (Morck, Shleifer, and Vishny (1988), Anderson and Reeb (2003), Perez-Gonzalez (2006), and Villalonga and Amit (2006)). The results of my study which separates the existence of cofounders show that the founder effect is significant only in multi-family cofounding firms. In addition, consistent with Chen et al. (2012), a firm's value is higher when cofounders control it together than when only one of the cofounders manages it. It seems that cofounders who are involved in the management more closely monitor and assess the top executive than cofounders who are not.

Focusing on low agency problems in multi-family cofounding firms, I run several tests pertaining to the cofounders who manage the firm together. Labeling this case as direct monitoring, I denote direct monitoring as (1) designating one of the cofounders as chief executive officer (CEO) and another as chairman of the board, or (2) one of the cofounders as chairman and another/other cofounder(s) as director(s). This direct monitoring contributes to a firm valuation which is even higher than other multi-family cofounding firms.

If cofounders in the management positions perform their monitoring duty successfully, shareholders would be satisfied. In order to investigate this, I test whether the extent of shareholders' proposals at the annual shareholders' meeting is lower in multi-family cofounding firms under cofounders' direct monitoring than other firms. Consistent with expectations, shareholders are less likely to submit proxy ballot questions or proposals at meetings when cofounders are on the board than other cases.

I also investigate whether cofounders' monitoring can serve as a substitute for other monitoring systems in the firm. I choose the ratio of independent directors in order to accomplish this. Given the assumption that strong monitoring contributes to high firm valuation, monitoring by both cofounders and independent directors can enhance firm value. I divide the entire sample into three groups based on the ratio of independent directors. When the independent director ratio is high, the monitoring system works well, and there is no significant difference between multi-family cofounding firms, single-family founding firms, and non-family firms. In contrast, when the independent director ratio is low, the value of multi-family cofounding firms is higher than both single-family founding firms and non-family firms owing to the monitoring by cofounders. Therefore, the cofounder in the management is an effective monitoring system and serves as a substitute for independent directors.

One of the most important decisions in the firm is assessing the CEO and inadequate CEO and hiring competent CEO. Unfortunately, the power of a founder with extensive ownership is so strong in family firms that the board cannot easily force the founder-CEO to resign. As a result, founder-CEOs are rarely fired. In my sample, there is only one such case in a single-family

founding firm. On the other hand, in multi-family cofounding firms, whether other cofounders are involved in the management or not, cofounders can insist resignation more easily. In fact, I find more founder-CEOs being forced out in multi-family cofounding firms than single-family founding firms. This indicates firing incompetent CEO works well in multi-family cofounding firms.

Bequeathing the company to the founder's descendants is the most distinctive characteristic of family firms. However, this limits the labor pool and the descendant may not be a capable manager. Prior studies show negative influences of descendant-CEO (Morck, Shleifer, and Vishny (1988), Anderson and Reeb (2003), Perez-Gonzalez (2006), and Villalonga and Amit (2006)). If the assessment role works well in a multi-family cofounding firm, cofounders do not allow other cofounders' incompetent descendants to manage the firm. Consistent with this, the results show that descendants of multi-family cofounding firms are less likely to take on the role of CEO, chairman, or director than are descendants of single-family founding firms.

We observe more cofounders in technology industries such as Google or Facebook than in other industries. To dispel the concern that these firms drive the main results, I run the main analysis separately in technology firms and non-technology firms. The results still hold: the value of multi-family cofounding firms is higher than that of non-family firms, irrespective of whether these firms are technology firms or non-technology firms.

Prior studies about family firms show high valuation of family firms and suggest that this high firm value arises from low agency problems. However, few studies directly examine how family control relieves agency problems. By dividing family firms into single-family firms and multi-family cofounding

firms, this study specifically investigates cofounders who can actually enhance firm value by reducing conflicts between family shareholders and non-family shareholders through monitoring and assessing top executives. In addition, multi-family cofounders share firm control, thereby allowing us to empirically test unique corporate governance under the leadership of several influential people.

The rest of this paper is organized as follows. In Section 2, I describe data and variables and show the main results that multi-family cofounding firms have a higher valuation than other firms in Section 3. I provide plausible explanations about high valuation of multi-family cofounding firms in Section 4, and examine whether this system can substitute other monitoring systems in Section 5. I also show cofounders' assessment role in Section 6, and as a robustness check, the main test is done again by separating technology industry firms and non-technology industry firms in Section 7. Finally, I conclude in Section 8.

2. Data and Variables

2.1. Base Sample of Family Firms

I use the family ownership data of Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012) as base sample. They begin with all firms from Compustat for data-year 2001 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, and firms with share price less than \$0.25. The authors select the 2,000 largest firms based on total assets for data-year 2001 and extend the sample from 2001 to 2010.

2.2. Cofounders

I manually collect data about the founder in the base sample firms from Wikipedia, Encyclopedia, FundingUniverse.com, and individual company websites. Similar to Villalonga and Amit (2006), I require the founder to be identified in at least two sources and to be a human being. Therefore, I do not count the founder when firms are founded through combinations of companies, spin-offs, leverage buy-outs, or by another company.

I classify family firms that are still under the founding family's control into two groups depending on how many families found the firm. To do this, I also gather management information. The SEC corporate proxy statements say whether the CEO, the chairman, or the director is the founder or the descendant every year.

The two groups are the single-family founding firm and the multi-family cofounding firm. If one person or members of the same family found the firm, it is the single-family founding firm and if non-related people found the firm together, it is the multi-family cofounding firm. For example, two brothers, Steven M. Rales and Mitchell P. Rales founded Danaher Corporation, so this firm is a single-family cofounding firm. On the other hand, two non-related people, James Sinegal and Jeffrey Brotman, founded Costco Wholesale Corporation together, so this company is a multi-family cofounding firm.

2.3. Firm Valuation

This paper measures firm valuation using Tobin's q , which many earlier studies about ownership and performance have used since Morck, Shleifer, and Vishny (1988). Tobin's q is calculated as the ratio of the firm's market value to the replacement cost of assets using items from Compustat. The market value of

common equity is the product of the stock price at fiscal year-end and the number of common shares outstanding for firms with a single class of shares. For firms with multiple share classes, the market value of common equity is estimated by multiplying the total shares outstanding of all classes by the share price of the tradable shares. The share price of non-tradable shares is regarded as the same price of the tradable shares, as in Gompers, Ishii, and Metrick (2004). Industry-adjusted q refers to the difference between the firm's Tobin's q and the firm's asset-weighted industry average q which computes based on two-digit standard classification code. Finally, I winsorize Tobin's q and industry-adjusted q at the 0.5% level to handle outliers.

2.4. Control Variables

Following Villalonga and Amit (2006), I include several control variables, which can affect firm valuation or ownership. As variables related to corporate governance, I also use the Governance index developed by Gompers, Ishii, and Metrick (2003). This index counts the number of governance provisions which limit shareholder rights, representing weak corporate governance¹. Since the IRRC did not provide information about corporate governance provisions every year, I assume that the governance provisions were the same as reported in the previous year and fill in for missing years until 2006, just as previous papers (Gompers, Ishii, and Metrick (2003), Bebchuk and Cohen (2005), and Bebchuk, Cohen, and Ferrell (2009)). Nonfamily blockholder ownership is calculated as the number of shares held by nonfamily blockholders divided by total shares outstanding, coming from Thomson Reuters Institutional (13F) holdings stock ownership data. Nonfamily outside directors variable is estimated the

¹ I also use the entrenchment index suggested by Bebchuk, Cohen, and Ferrell (2009) and the results are almost same.

proportion of independent director to the total number of directors on the board from ISS.

I control for various firm characteristics as well, such as dividends and debt by normalizing book value of equity and market value of equity, respectively and market risk using Compustat and CRSP. The diversification dummy equals one if two or more segments are found in Compustat. As variables which measure investment and growth opportunities, I include the ratio of research and development expenses to sales, the proportion of capital expenditures to total property, plant, and equipment, and sales growth. I also include the natural log of total assets to control the firm size and the natural log of the number of years since the firm's inception to control the firm age.

Lastly, to limit industry characteristics and year effects, I put two-digit SIC code dummies and year dummies in the analysis when the dependent variable is unadjusted Tobin's q . In case of industry-adjusted q , I drop industry dummies.² The final sample consists of 1,159 firms and 7,109 firm-year observations.³

3. Multi-family Cofounding Firms and Firm Valuation

3.1. Univariate Analysis

Table 1 describes data used in this paper. Panel A provides means and standard deviations of all variables and difference of means tests between family firms under the founding families and other firms. Only with family

² I also try with industry-year fixed effects in the analysis, and the results are almost the same.

³ Some firms are defunct so not all firms have ten observations during the sample period. Moreover, I use several control variables about governance from ISS which provides information only for S&P 1,500 firms, which are different from the 2,000 largest firms based on total assets for data-year 2001. Both reasons reduce sample size as 1,159 firms.

firms in Panel A, I present the results of univariate tests between (a) family firms founded by one person and (b) family firms founded by single-family cofounders, and between (a) family firms founded by one person and (c) those founded by multi-family cofounders in Panel B.

As can be seen in Panel A of Table 1, family firms account for 28 percent of the entire sample. Consistent with prior literatures, family firms' valuation, both the mean Tobin's q and industry-adjusted mean q , is much higher than nonfamily firms. In terms of firm characteristics, family firms are smaller, less diversified, and younger, but have higher capital expenditure than non-family firms and sales growth is much higher. In addition, family firms have less nonfamily blockholdings and independent directors, but stronger corporate governance than nonfamily firms.

Panel B of Table 1 focuses on family firms. Of all 2,052 family firm observations, 1,070 (52%) observations come from family firms founded by one person, 205 (10%) observations are about single-family cofounding firms, and 777 (38%) observations belong to multi-family cofounding firms.

I also compare firm valuation and characteristics among three family firm groups. (a) family firms founded by one person and (b) those founded by single-family cofounders appear to be similar not only in their valuations but also in most of the firm and governance characteristics. Therefore, I combine two groups and name it the single-family founding firm.

On the other hand, there are many significant distinctions between (a) family firms founded by one person and (c) those founded by multi-family cofounders. Comparing both mean Tobin's q and industry-adjusted mean q indicates that the value of multi-family cofounding firms is significantly higher than that of

single founding family firms. Moreover, multi-family cofounding firms are bigger, younger, and spend more expenditure on R&D and capital than single founding family firms. While governance index and nonfamily blockholdings ratio are similar in both kinds of firms, the proportion of independent directors is higher in multi-family cofounding firms than family firms founded by one person.

3.2. Multivariate Analysis

The univariate analysis in the previous section suggests high valuation of multi-family cofounding firms. To confirm this, I run multivariate OLS regressions. My sample covers 1,159 firms with 7,109 firm-year observations. The dependent variables are Tobin's q and industry-adjusted q to proxy for firm valuation. Control variables are governance or firm characteristics, industry, and year, as discussed. When I use industry-adjusted q as a dependent variable, I drop industry dummies. In all regressions the standard errors are clustered by firm.

Panel A of Table 2 shows the results. The coefficients of multi-family cofounder are significantly positive in column (1) and column (2), confirming the high valuation of multi-family cofounding firms. Based on the mean Tobin's q, multi-family cofounding firms' valuations are 14 percent higher than nonfamily firms.⁴

On the other hand, the value of single-family founding firms is not significantly different from nonfamily firms. Previous studies assert all family firms have high valuation, but results in this paper suggest it may not necessarily be true. As I mention in the introduction, family control can be good

⁴ The mean Tobin's q of the entire sample is 1.92 and the coefficient of multi-family cofounding firms in column (1) of Table 2 is 0.266. Thus 0.266 divided by 1.92 gives 0.14.

for the firm by reducing the agency problem, but it can also cause managerial entrenchment. It is possible that the advantage of family control is offset by disadvantage of family control in single-family founding firms, emphasizing the importance of multi-family cofounders' role.

I also test whether these two coefficients on variables, multi-family cofounders and single-family founder, are significantly different. The test result rejects the hypothesis that the coefficient on multi-family cofounders is equal to the coefficient on single-family founder. Therefore, we can confirm that the firm valuation of multi-family cofounding firms is significantly higher than that of single-family founding firms.

The control variables have similar sign and significance across all regressions. I find a negative correlation between firm value and nonfamily blockholder ownership, debt usage, risk, and diversification, and positive association between firm value and dividends, capital expenditures, firm size, and sales growth, which are all similar to Anderson and Reeb (2003) and Villalonga and Amit (2006).

Panel B of Table 2 is the results of propensity score matching as a robustness check. The treatment indicator is one for multi-family cofounding firms, and zero for other firms. The outcome variable is Tobin's q. First, I estimate logit models including the same control variables as in the OLS regression of Panel A. And then I use four matching algorithms to get the outcome results in the second-stage models: 1:1 nearest neighbor matching with replacement, 1:1 nearest neighbor matching without replacement, 4:1 nearest neighbor matching with replacement and caliper (0.2), and Kernel Matching. All coefficients are

significantly positive, confirming that the value of multi-family cofounding firms is higher than other firms.

4. Explanations for Multi-family Cofounding Firms' Value

4.1. Founder Effects

Many earlier studies insist the firm value is high when founder controls the firm, but it decreases when his descendant succeeds the firm (Morck, Shleifer, and Vishny (1988), Anderson and Reeb (2003), Perez-Gonzalez (2006), and Villalonga and Amit (2006)). Some authors suggest this is due to valuable skills which the founder brings to the firm (Morck, Strangeland, and Yeung (2000), Fahlenbrach (2004)). In this section, I investigate whether the founder effects are different in the multi-family cofounding firms and in the single-family founding firms.

I denote founder-controlled dummy equals to one if the founder (in case of cofounding firms, it means at least one of cofounders) is the CEO, the chairman, or the director. Since we define family firms as firms under the control of founding family members, if the founder-controlled dummy is zero in family firms, it indicates the descendant is the CEO, the chairman, or a director.⁵ In this paper's sample, a founder serves as a manager in 1,455 firm-year observations, which is 71 percent of family firm-year observations.

⁵ There are 230 cases where both the founder and the descendant are in management at the same time. Because I focus on the founder and the descendant usually obeys the founder, I treat these cases as the founder-controlled firm.

I examine the founder effects with the OLS regression and the propensity score matching. Panel A of Table 3 shows the OLS regression results of the main variables: founder-controlled variable, single-family founder variable, multi-family cofounder variable, and the interaction of founder-controlled and multi-family cofounder variable. Same control variables are used as Table 2.

As can be seen in column (1) of Table 3, the coefficient of founder-controlled family firms is 0.155, which means founder-controlled family firms' valuation is 8 percent higher than other firms, calculated by mean Tobin's q, 1.92. This is in line with previous literatures that firm value is high under the founder-control.

However, the coefficients of founder-controlled are not significant in column (2) and (4) of Table 3, while those of the interaction term of founder-controlled and multi-family cofounder variable are significant. The coefficient of multi-family cofounding firms under the cofounders' control is 0.559, meaning that firm value is 29 percent higher than nonfamily firms based on mean Tobin's q. Meanwhile, the coefficients of multi-family cofounders are significantly negative, -0.168, indicating that the value of multi-family cofounding firms controlled by descendants is 8 percent lower than non-family firms, consistent with previous literatures.

I also use propensity score matching method to compare the firm value of two family firm groups under found-control. The treatment indicator is one for multi-family cofounding firms and zero for single-family founding firms, and the outcome variable is Tobin's q. First, I estimate logit models including same control variables as Table 2, and then use following four matching algorithms in the second-stage models: 1:1 nearest neighbor matching with replacement,

1:1 nearest neighbor matching without replacement, 4:1 nearest neighbor matching with replacement and caliper (0.2), and kernel matching.

The results of Panel B of Table 3 correspond with Panel A of Table 3. All coefficients are significantly positive. Therefore, I conclude that the firm value of multi-family cofounding firms is high when founders manage the firms. In the following section, I suggest cofounders' monitoring can be the reason of high firm value.

4.2. Cofounders' Mutual Monitoring

The board is responsible for monitoring management by observing manager's behavior and correcting it if it can hurt shareholders. Therefore, cofounders who serve on the board pay attention to other cofounder managers' actions, for instance, whether the founder-CEO tries to expropriate firm resources or the founder-chairman colludes with non-family CEO to take advantage the firm for their own benefits.

The board's monitoring ability is limited if the CEO also holds the position of the chairman of the board. For this reason, some authors argue the roles of the CEO and the board chair should be separated (Fama and Jensen (1983), Lipton and Lorsch (1992), and Jensen (1993)). In case of multi-family cofounding firms, the CEO can be separated from the chairman if one of cofounders is a CEO and another cofounder is a chairman. Therefore, I treat this as the first case of cofounders' direct monitoring.

It is possible that one of cofounders appoints non-family CEO and serves as a chairman. In this case, it can harm the firm value if the CEO and the chairman are connected and try to do something that maximizes their utility. If another cofounder director is in the board as a director, he can check whether the

chairman fulfill his monitoring responsibility. I regard this as the second case of cofounders' direct monitoring.

Table 4 is the result of testing cofounders' direct monitoring hypothesis. In the Panel A of Table 4, monitoring dummy equals to one if (1) one of cofounders is the CEO, and another cofounder is the chairman of the board, or (2) one of cofounders is the chairman and another cofounder(s) is (are) director(s). Other variables, including control variables, are same as Table 2. In the sample, there are 42 firm-year observations that meet the first case conditions and 199 firm-year observations that satisfy the second case conditions. The first case is all about multi-family cofounding firms and the second case comprises of 145 observations for multi-family cofounding firms and 54 for single-family founding firms, which account for 18 percent and 4 percent of each groups, respectively⁶.

The focus in this paper is the interaction term of monitoring and multi-family cofounders. As predicted, it is significantly positive in column (2) and column (4) of Table 4. The coefficient of the interaction term is 0.463 and the mean Tobin's q is 1.92, so I can interpret this as the firm value of multi-family cofounding firms under cofounders' direct monitoring is 24 percent higher than other multi-family cofounding firms.

In addition, monitoring variable in column (2) of Table 4 is significantly negative. It indicates that if there are several single-family members in the board, the monitoring does not function well, destroying the firm value.

⁶ If I split single-family founding firms into the single founder and the family cofounders, as Table 1 Panel B, the second case account for 26 percent of the single-family cofounding firm, which is higher than that of the multi-family cofounding firm.

Panel B of Table 4 shows the propensity score matching results which compare the cofounders' direct monitoring in two kinds of family firms, single-family founding firms and multi-family cofounding firms. The treatment indicator is one for multi-family cofounding firms and zero for single-family founding firms, and the outcome variable is a Tobin's q. First, I estimate logit models including same control variables as OLS regression. And then I use four matching algorithms to get the outcome results in the second-stage models, same as Table 2 and Table 3.

If the firm is the single-family founding firm, the cofounder who is the family member of other cofounders' does not have any incentive to monitor each other. However, cofounders in the multi-family cofounding firms are inclined to monitor each other. Consistent with the expectation, firm value is much higher in the multi-family cofounding firm than in the single-family founding firm because of cofounders' different monitoring incentive.

5. Mutual Monitoring and Substitute Mechanisms

5.1. Shareholder Proposal

In the previous section, I show that when cofounders closely monitor another cofounder as the board member, the firm value is the highest. It suggests that cofounders' immediate and direct monitoring improves corporate governance, and enhances firm value. In this section, I examine whether this monitoring really contributes to the better corporate governance using voting data.

According to the SEC rules, shareholders who own more than \$2,000 in stock or 1 percent of the company can initiate a shareholder proposal. The issues are various, such as management compensation, shareholder voting

rights, or a company policy. The company should add the proposal to the agenda for voting the next annual shareholders meeting, except for the case that the SEC permits to exclude it. If shareholders are satisfied with the current governance, the percentage of shareholder proposal at the meeting is low. In contrast, if shareholders want to change a lot, the percentage is high.

If cofounders monitor actively as the board members, shareholders have few to propose to the firm. Therefore, I expect that the proportion of shareholder proposal at the meeting is low when cofounders directly monitor other cofounder either as the chairman or as the director.

This paper's sample is matched with 4,712 firm meetings of 754 firms during 2001-2010. The dependent variable is the ratio of shareholder's submitting the proxy ballot questions or proposals to total agendas at the meeting. Monitoring dummy, multi-family cofounder dummy, single-family dummy, and all control variables are same as variables in Table 4.

Table 5 is the OLS regression results. We can observe the coefficient of interaction term of monitoring and multi-family cofounding firms is significantly negative, -0.031. The average proportion of the shareholder proposal at the meeting is 4.3 percent in the sample. It means shareholders in multi-family cofounding firms propose 72 percent less likely to the firm than those in other firms. Therefore, I suggest that cofounders' monitoring reduces the need for shareholder activism.

5.2. Independent Director

Fama (1980) points out independent directors are important to strengthen board oversight because they can challenge the CEO better than gray or inside directors. In addition, Weisbach (1988) shows firms with outsider-dominated

boards result in stronger relation between firm performance and the likelihood of CEO turnover than firms with insider-dominated boards.

Cofounders, either as the board members or as shareholders, can defy the CEO, even stronger than the independent director. In this sense, the existence of cofounders can weaken the necessity of the independent director. This section tests whether cofounders' monitoring can substitute other monitoring system, independent directors.

To examine this, I divide the entire firm-year observation into three groups based on the firm's independent director level. One concern about this analysis is that the ratio of the independent director itself can be related to the firm valuation. However, none of previous studies provide clear relation between board independence and firm valuation (Bhagat and Black (1999), Hermalin and Weisbach (2003), and Masulis and Mobbs (2014)⁷).

As can be seen in Panel A of Table 6, the first quartile of independent director ratio is 0.61 and the third quartile of it is 0.83. Thus, I treat the first quartile group as low-independent director ratio firms, the third quartile group as high-independent director ratio firms, and the rest group as medium-independent director ratio firms. I summarize the mean of independent director ratio of each groups in Panel B of Table 6: 0.49, 0.72, and 0.88 for low-, medium-, and high-independent director ratio firms, respectively.

According to the statistics in the Panel C of Table 6, family firms tend to have low independent director ratios: 48 percent of single-family founding firms and 36 percent of multi-family cofounding firms belong to low-independent director ratio group. In terms of firm valuation, there is no significant pattern among in

⁷ They find out positive relation between board independence and firm value, but mention that "it is yet empirically elusive".

the single-family founding firm. However, contrary to Masulis and Mobbs (2014), the valuation of low-independent director ratio firms is higher than medium- and high-independent director ratio firms in the full sample firms and in multi-family cofounding firms.

Table 7 shows the OLS regressions results in each subsample. All variables used are same as Table 2. The coefficient of multi-family cofounder is 0.301 and the mean Tobin's q is 1.92, so the valuation of the multi-family cofounding firm is 16 percent higher than other firms when the independent director level is low. In the medium-independent director ratio firm group, multi-family cofounding firms' value is still higher, but the statistical significance level goes down from 1 percent level to ten percent level. Furthermore, there is no significant firm value difference between multi-family cofounding firms and other firms when the independent director level is high. Therefore, I interpret that cofounders' monitoring can substitute the independent director in multi-family cofounding firms.

6. Assessment

6.1. Founder CEOs' Forced Turnover

Hermalin and Weisbach (2003) say that "one way to evaluate the board's effectiveness is to look at the quality of CEO turnover decisions." Jenter and Kanaan (2015) also emphasize that "whether to retain or fire a CEO after bad stock price or accounting performance is one of the most important decisions made by corporate boards." Therefore, searching CEO forced turnovers is a good way to assess the board's effective monitoring role.

As Naveen (2006) mentions, the founder is hardly forced out, but we sometimes witness it happens. For example, Chip maker Atmel Corporation fired its founder after an investigation into alleged misuse of corporate travel funds. I hypothesize that the founder-CEO is forced out more in a multi-family cofounding firm than in a single-family founding firm because cofounders assess the founder-CEO and replace the CEO if the assessment is not good.

I hand-collect information about all founder-CEO transitions in the sample. Following Parrino (1995)'s forced departure definition, I identify forced turnover (1) when the press release announces that the CEO is "fired, forced from the position, or departs due to unspecified policy differences," (2) if the CEO is under age 60, the reason should not be related to death, health problem, or other opportunity, (3) when the retirement is not announced at least six months before the turnover.

Panel A of Table 8 describes the sample. Of all 65 founder CEO turnovers in the sample, there are 31 cases in single-family firms and 34 cases in multi-family cofounding firms, and forced turnovers account for 3 percent and 29 percent of each group. I cannot run the regression because there is only one observation in the single-family firm, but apparently the CEO of multi-family cofounding firms is more likely to be forced out than that of single-family founding firms.

Furthermore, the percentage of the founder-CEO forced turnover in multi-family cofounding firms seems to be higher than that of normal-CEO forced turnover. There are 24 percent forced-CEO turnovers in Guo and Masulis (2015)'s sample, and 26 percent in Jenter and Kanaan (2015)'s sample.⁸ This

⁸ Guo and Masulis (2015)'s sample comprises 406 forced turnovers and 1,261 voluntary

indicates that even though many people believe that the founder-CEO is scarcely forced out, it is only true for single-family founding firm. In multi-family cofounding firms, the founder CEO can be replaced because cofounders assess top executives and remove incapable ones.

I describe all ten founder-CEO forced turnovers and two special founder-CEO voluntary turnovers in multi-family cofounding firms in Panel B of Table 8. The parenthesis indicates the ownership of each person just before the turnover happens. In most cases, we can observe founder-CEO forced turnovers when at least one of the cofounders are in the management and/or the founder-CEO holds less than 5 percent of ownership.

In terms of voluntary turnovers, cofounders tend to serve as interim CEO when predecessor abruptly resign the CEO. As a very special case, the two cofounders of Bed Bath & Beyond INC served as co-chairman and co-CEO, and then retired together.

Panel C of Table 8 shows the probability of founder-CEO turnover along with firm performance. The measurements for firm performance are mean of past three years' pre-tax operating income to total assets in column (1) and (3), and a negative income dummy that equals one if the mean of past three years' pre-tax operating income is negative in column (2) and (4). All control variables are the same as previously.

As expected, firm performance over the prior three years has a significant impact on the founder-CEO forced turnover. The coefficient of return on assets is negative, meaning that bad firm performance is closely related to CEO forced turnover, and the coefficient of negative income dummy is positive, meaning

turnovers between 1996 and 2010, and Jenter and Kanaan (2015)'s sample consists of 875 forced turnovers and 2,490 voluntary turnovers from 1993 to 2009.

that negative firm performance is closely associated with CEO forced turnover. However, we cannot see any significant results in the CEO voluntary turnover. Therefore, we can conclude that even a founder-CEO can be forced out from the firm if he fails to run the firm successfully, especially in multi-family cofounding firms.

6.2. Descendant-controlled Firms

Succession is one of the most peculiar characteristics of family firms because departing founder-CEO has a huge impact on naming his successor and he may want to appoint his offspring as his successor regardless of capacity. Many previous studies show negative influences when descendants assume the CEO position (Morck et al. (1988), Perez-Gonzalez (2001), Anderson and Reeb (2003) and Villalonga and Amit (2006)). The results of Table 3 correspond with this.

Things can be complicated in multi-family cofounding firms because all cofounders may try to bequeath their control to their descendants. However, as previous studies show, incapable descendants can destroy the firm value if they do not manage the firm well. Cofounders who assess the qualified leader do not let this happen. Therefore, I predict that descendants are less likely to enter management in multi-family cofounding firms as compared to single-family cofounding firms.

Table 9 shows the results of test of this hypothesis. This test is about founders' descendants, so the sample consists of 366 family firms (single-family founding firms and multi-family cofounding firms) during 2001-2010. I run a logit model of multi-family cofounder variable on descendant-controlled dummy, using the

same variables such as the descendant-controlled dummy, multi-family cofounder dummy, and all control variables as Table 3.

Consistent with the expectation, the coefficient of multi-family cofounder variable is significantly negative, -0.957. This fitted model says that, holding all control variables at a fixed value, the odds of descendants assuming the management position for multi-family cofounding firms over those for single-family founding firms is 0.38. I can interpret this as the descendant in multi-family cofounding firms is less likely to be in management than the descendant in single-family founding firms because cofounders really care about hiring the competent manager.

7. Robustness Check

Even though I include industry fixed effects, it is possible that a specific industry might drive this paper's conclusion. Especially, since information technological companies, such as Google or Facebook, tend to be cofounded, are very young, so still under the founder, it is possible that my results mainly come from these firms. To show that this paper's results are robust within and without IT industry firms, I do additional tests by separating technology firms.

The two-digit SIC code for information technology firms is 73 and account for 11 percent of the sample. I summarize comparison of firm characteristics in the Panel A of Table 10. Consistent with the popular belief, technology firms are more likely to be founded by cofounders, younger, and still under founder-control than the rest of the firms. Moreover, firm valuation is also much higher than other firms.

To prevent technology firms from driving my results, I run Table 2 OLS regressions again with technology firms and non-technology firms, separately. Panel B of Table 10 shows that the results are robust. The coefficient of the single-family founding firm is not significant, but that of the multi-family cofounding firm is positively significant both in non-technology firm group, 0.221 and in technology firm group, 0.375. When I calculate with mean Tobin's q , 1.92, multi-family cofounding firms' value is 11 percent higher in non-technology firm group and 19 percent higher in technology firm group than non-family firms.

To sum up, it is true that the characteristics of information technology firms are different from other industry firms. Especially, there are more multi-family cofounding firms in technology industry, so these IT firms which have high valuation might cause the main results. In that case, I cannot generalize this paper's conclusion. However, the results still hold both in technology firms and non-technology firms. Therefore, my claims are not restricted in the specific industry.

8. Conclusion

It is widely known that family firms' valuations are higher than non-family firms'. Just as concentrated ownership is very effective corporate governance structure, family ownership can motivate the family manager to work hard for the firm. However, family ownership can hurt other shareholders when controlling shareholders try to pursue their own benefits. Therefore, restricting the disadvantage of family ownership is important.

This paper shows that only multi-family cofounding firms have higher valuation than non-family firms, especially when founders control the firm. Of course, it is because cofounders bring valuable skills together, creating synergy effects. In this paper, however, I interpret this phenomenon from the perspective of corporate governance.

I suggest one of the plausible reasons why multi-family cofounding firms have high firm valuation is cofounders' mutual monitoring. If it is true, the firm valuation is high when at least one of cofounders still manages the firm. The monitoring effect can be maximized when cofounders are closely monitoring other cofounder as the board members.

When cofounders' monitoring functions well, the firm may not need to use other monitoring mechanism. I find that the proportion of shareholder proposal is low when cofounders monitor another cofounder either as the chairman or as the director. In addition, the value of multi-family cofounding firms is much higher than other firms when the independent director level is low because cofounders work as effective monitors as independent directors even if other monitoring system is weak.

Cofounders also pay attention to fire and hire the capable executives. To support this argument, I show that the founder-CEO is more likely to be forced out and the descendants of cofounders are less likely to be in the management in multi-family cofounding firms than in single-family founding firms.

Finally, I test whether the results are applied to both the IT industry and non-IT industries. Actually, the percentage of multi-family cofounding firms is higher in the IT industry than that of non-IT industries, so it is possible that the high firm valuation mainly come from IT industry firms. The robustness check

which run the main test separately with IT industry and non-IT industries indicates that multi-family cofounding firms have high valuation both in IT industry and in non-IT industries.

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Table 1 Descriptive Data

Panel A reports means, standard deviations, and tests of differences in means between family and nonfamily firms. Panel B analyzes family firms into three groups depending on the number of founding family. The sample is from Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012) and the period is 2001-2010. Asterisks denote statistical significance at 1% (***), 5% (**), or 10% (*).

Panel A: Differences between family firms and non-family firms							
	[a] All firms		[b] Family firms		[c] Nonfamily firms		
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	t-stat.
Tobin's q	1.92	1.07	2.06	1.15	1.87	1.02	7.01***
Industry-adjusted q	0.00	1.02	0.13	1.09	-0.04	0.98	6.62***
Assets (\$ millions)	6,572	27,905	4,390	13,487	7,455	31,898	-4.19***
Sales (\$ millions)	5,643	12,729	4,022	9,643	6,299	13,730	-6.85***
Firm age	25.51	19.15	19.89	13.05	27.79	20.70	-16.02***
Sales growth	0.08	0.35	0.10	0.54	0.07	0.22	3.63***
Governance index	9.21	2.54	8.38	2.32	9.55	2.54	-18.04***
Nonfamily blockholdings	0.23	0.15	0.21	0.14	0.24	0.15	-6.93***
Nonfamily outside directors	0.71	0.15	0.63	0.15	0.75	0.14	-31.10***
Dividends/book equity	0.04	0.60	0.02	0.13	0.04	0.71	-1.31
Debt/market value of equity	0.83	2.93	0.65	1.52	0.90	3.33	-3.21***
Market risk (beta)	1.17	0.54	1.15	0.54	1.18	0.54	-2.39**
Diversification dummy	0.65	0.47	0.60	0.49	0.67	0.47	-5.43***
R&D/sales	0.08	0.52	0.09	0.43	0.07	0.55	1.63
CAPX/PPE	0.22	0.15	0.24	0.19	0.21	0.14	8.06***
Number of observations	7,109		2,052		5,057		

Panel B: Differences among family firms

	[a] Single founder		[b] Family cofounders		[c] Multi-family cofounders		t-stat.	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev		
							[a] vs. [b]	[a] vs. [c]
Tobin's q	1.90	1.01	1.84	0.98	2.34	1.32	-0.80	8.05***
Industry-adjusted q	0.06	1.00	-0.05	0.89	0.28	1.24	-1.50	4.23***
Assets (\$ millions)	3,194	12,991	3,316	5,971	6,314	15,266	0.14	4.72***
Sales (\$ millions)	3,387	9,376	3,496	3,992	5,033	10,905	0.18	3.47**
Firm age	21.52	14.08	21.79	12.79	17.14	11.04	0.33	-7.20***
Sales growth	0.08	0.20	0.19	1.57	0.11	0.27	2.12**	2.75***
Governance index	8.40	2.47	8.24	2.36	8.38	2.08	-0.77	-0.15
Nonfamily blockholdings	0.21	0.13	0.20	0.15	0.22	0.13	-1.15	0.82
Nonfamily outside directors	0.62	0.15	0.57	0.14	0.66	0.14	-4.34***	5.13***
Dividends/book equity	0.02	0.07	0.02	0.03	0.02	0.19	-0.71	-0.18
Debt/market value of equity	0.75	1.91	0.77	1.28	0.48	0.76	0.15	-3.66***
Market risk (beta)	1.09	0.54	1.20	0.54	1.21	0.52	2.79***	4.78***
Diversification dummy	0.65	0.47	0.53	0.50	0.54	0.49	-3.57***	-4.82***
R&D/sales	0.06	0.48	0.05	0.24	0.14	0.39	-0.41	3.73***
CAPX/PPE	0.21	0.15	0.27	0.29	0.28	0.20	4.08***	7.51***
Number of observations	1,070		205		777			

Table 2 Founding Family Firms and Firm Valuation

Panel A is OLS regressions of founding family firms on Tobin's q (industry-adjusted q). Single-family founder dummy is one if one person or his family members found and still manage a firm, and multi-family cofounders dummy equals to one if unrelated persons found a firm together and at least one of the cofounders continues to manage the firm. Tobin's q is calculated as the ratio of the firm's market value to total assets, winsorized at 0.5% level. Industry-adjusted q is the difference between the firm's q and the asset-weighted average of two-digit SIC industry q. Following Villalonga and Amit (2006), I include several control variables. The sample consists of 1,159 firms in U.S. stock markets during 2001-2010. Panel B is the results of propensity score matching. The treatment indicator is one for multi-family cofounding firms, and zero for other firms. The outcome variable is Tobin's q. First, I estimate logit models including the same control variables as OLS regression. And then I use four matching algorithms in the second-stage models. Robust standard errors are clustered by firm and asterisks denote statistical significance at 1% (***), 5% (**), or 10% (*).

Panel A. OLS regression		
	Tobin's q	industry-adjusted q
	(1)	(2)
Single-family founder	0.011 (0.067)	0.030 (0.070)
Multi-family cofounders	0.266*** (0.098)	0.188** (0.097)
Governance index	-0.012 (0.009)	-0.007 (0.009)
Nonfamily blockholder ownership	-0.385*** (0.114)	-0.390*** (0.116)
Nonfamily outside directors	-0.054 (0.163)	-0.001 (0.162)
Dividends/book value of equity	0.069** (0.032)	0.085** (0.036)
Debt/market value of equity	-0.036*** (0.013)	-0.032*** (0.012)
Market risk (beta)	-0.145*** (0.033)	-0.169*** (0.034)
Diversification dummy	-0.284*** (0.060)	-0.261*** (0.058)
R&D/sales	0.116 (0.077)	0.117 (0.074)
CAPX/PPE	1.197*** (0.204)	0.914*** (0.185)
Ln (assets)	0.051*** (0.020)	0.053*** (0.018)
Sales growth	0.299*** (0.084)	0.324*** (0.094)
Ln (age)	-0.005 (0.036)	0.006 (0.034)
Constant	0.837*** (0.311)	-0.242 (0.202)
Industry effects	Yes	No
Year effects	Yes	Yes
R ²	0.251	0.123
Number of observations	7,109	7,109
Panel B. Propensity score matching		
(a) Nearest neighbor matching		
1:1 with replacement	0.228*** (0.068)	
1:1 without replacement	0.226*** (0.063)	
4:1 with replacement and caliper	0.244*** (0.056)	
(b) Kernel matching		
Kernel	0.274*** (0.051)	
Number of observations	7,109	

Table 3 Firm Valuation under Founder-controlled

Panel A shows OLS regression results. Founder-controlled dummy equals to one if the founder is in the management as the CEO, Chairman, or director and zero if only descendant is in the management as the CEO, Chairman, or director. Other variables are same as variables in Table 2. The sample consists of 1,159 firms in U.S. stock markets during 2001-2010. Panel B is the results of propensity score matching only with firms under founder-controlled. The treatment indicator is one for multi-family cofounding firms, and zero for single-family founding firms. The outcome variable is Tobin's q. First, I estimate logit models including same control variables as OLS regression. And then I use four matching algorithms to get the outcome results in the second-stage models, just as Table 2. Robust standard errors are clustered by firm and reported in the parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. OLS regression				
	Tobin's q		industry-adjusted q	
	(1)	(2)	(3)	(4)
Founder-controlled	0.155** (0.072)	-0.041 (0.113)	0.137* (0.072)	0.018 (0.123)
Single-family founder		0.023 (0.095)		0.007 (0.103)
Multi-family cofounders		-0.168** (0.085)		-0.190** (0.083)
Founder-controlled× Multi-family cofounders		0.559*** (0.165)		0.434*** (0.172)
Control Variables	Yes	Yes	Yes	Yes
R ²	0.248	0.251	0.136	0.121
Number of observations	7,109	7,109	7,109	7,109
Panel B. Propensity score matching				
(a) Nearest neighbor matching				
1:1 with replacement		0.249* (0.141)		
1:1 without replacement		0.387*** (0.068)		
4:1 with replacement and caliper		0.299*** (0.095)		
(b) Kernel matching				
Kernel		0.252*** (0.084)		
Number of observations		1,455		

Table 4 Cofounders' Direct Monitoring

Panel A presents OLS regression results. Monitoring dummy equals one if (1) one of cofounders is the CEO, and another cofounder is the chairman of the board, or (2) one of cofounders is the chairman and another cofounder(s) is (are) director(s). Other variables are same as variables in Table 2. The sample consists of 1,159 firms in U.S. stock markets during 2001-2010. Panel B shows propensity score matching results with samples under cofounders' direct monitoring. The treatment indicator is one for multi-family cofounding firms, and zero for single-family founding firms, and the outcome variable is a Tobin's q. First, I estimate logit models including same control variables as OLS regression. And then I use four matching algorithms to get the outcome results in the second-stage models, just as Table 2. I cluster robust standard errors reported in the parentheses by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. OLS regression				
	Tobin's q		industry-adjusted q	
	(1)	(2)	(3)	(4)
Monitoring	0.164 (0.165)	-0.380* (0.203)	0.216 (0.173)	-0.367* (0.222)
Single-family founders		0.014 (0.068)		0.037 (0.071)
Multi-family cofounders		0.251** (0.108)		0.133 (0.104)
Monitoring×Multi-family cofounders		0.463* (0.280)		0.630** (0.308)
Control Variables	Yes	Yes	Yes	Yes
R ²	0.246	0.249	0.121	0.121
Number of observations	7,109	7,109	7,109	7,109
Panel B. Propensity score matching				
(a) Nearest Neighbor Matching				
1:1 with replacement		0.897*** (0.241)		
1:1 without replacement		0.570*** (0.190)		
4:1 with replacement and caliper		0.926*** (0.212)		
(b) Kernel Matching				
Kernel		0.843*** (0.287)		
Number of observations		241		

Table 5 Shareholder Proposal

This table shows OLS regression results of shareholder proposal. The dependent variable is the ratio of shareholder's submitting the proxy ballot questions or proposals to total agendas at the meeting. Monitoring dummy, single-family dummy, multi-family cofounder dummy, and all control variables are same as Table 4. The sample comprise of 754 firms' meeting during 2001-2010. Robust standard errors reported in the parentheses are clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Shareholder Proposal
Monitoring	0.017 (0.015)
Single-family founders	0.006 (0.068)
Multi-family cofounders	0.003 (0.007)
Monitoring×Multi-family cofounders	-0.031* (0.018)
Governance index	0.000 (0.001)
Nonfamily blockholder ownership	0.014 (0.010)
Nonfamily outside directors	0.015 (0.015)
Dividends/book value of equity	-0.001 (0.001)
Debt/market value of equity	-0.002 (0.002)
Market risk (beta)	-0.010*** (0.003)
Diversification dummy	-0.001 (0.004)
R&D/sales	0.005*** (0.001)
CAPX/PPE	0.006 (0.011)
Ln (assets)	0.031*** (0.002)
Sales growth	-0.034*** (0.006)
Ln (age)	0.013*** (0.003)
Constant	-0.229*** (0.061)
Industry effects	Yes
Year effects	Yes
R ²	0.278
Number of observations	4,712

Table 6 Summary Statistics for Subsamples

The entire firm-year observations are divided into three groups using the independent director level: I treat the first quartile group as low-independent director ratio firms, the third quartile group as high-independent director ratio firms, and the rest group as medium-independent director ratio firms. Panel A posts the criteria of each group and the mean percentage of independent director is in the Panel B. Panel C describes firm performance and firm characteristics of subsamples. Asterisks denote statistical significance at 1% (***), 5% (**), or 10% (*) level, respectively.

Panel A. Criteria of independent director ratio						
	Independent director ratio					
1 st quartile	0.61					
2 nd quartile	0.75					
3 rd quartile	0.83					

Panel B. Independent director ratio among subsamples						
	Mean					
[a] Low-independent director ratio firms	0.49					
[b] Medium-independent director ratio firms	0.72					
[c] High-independent director ratio firms	0.88					

Panel C. Firm valuation among subsamples						
	[a] All firms		[b] Single-family founding firms		[c] Multi-family cofounding firms	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
[a] Low-independent director ratio firms	1.96	1.16	1.86	1.01	2.46	1.43
Number of observations	1,696		615		284	
[b] Medium-independent director ratio firms	1.95	1.07	1.93	1.00	2.32	1.30
Number of observations	3,323		546		383	
[c] High-independent director ratio firms	1.84	0.96	1.88	1.02	2.09	0.99
Number of observations	2,090		114		110	

Table 7 Monitoring Effects in Subsamples

Each Panel shows OLS regressions in each subsample. I divide the entire firm-year observations into three using the independent director level: I treat the first quartile group as low-monitoring firms, the third quartile group as high-monitoring firms, and the rest group as medium-monitoring firms. I calculate Tobin's q and industry-adjusted q in the same way and include same control variables as Table 2. Standard errors reported in the parentheses are robust and clustered by firm. Asterisks denote statistical significance at 1% (***), 5% (**), or 10% (*) level, respectively.

	Tobin's q	industry-adjusted q
	(1)	(2)
Panel A. Low-independent director ratio firms		
Multi-family cofounder	0.301** (0.135)	0.310** (0.158)
Control variables	Yes	Yes
R ²	0.323	0.119
Number of observations	1,696	1,696
Panel B. Medium-independent director ratio firms		
Multi-family cofounder	0.186* (0.112)	0.093 (0.106)
Control variables	Yes	Yes
R ²	0.337	0.168
Number of observations	3,323	3,323
Panel C. High-independent director ratio firms		
Multi-family cofounder	0.072 (0.145)	0.004 (0.141)
Control variables	Yes	Yes
R ²	0.334	0.179
Number of observations	2,090	2,090

Table 8 Founder CEO Forced Turnover

Panel A presents statistics about founder CEO turnovers. There are 65 founder-CEO turnovers in total during 2001-2010. Following Parrino (1995), I identify forced CEO turnover (1) when the press release announce that the CEO is “fired, forced from the position, or departs due to unspecified policy differences”, (2) if the CEO is under age 60, the reason should not be related to death, health problem, or other opportunity, (3) if the retirement is not announced at least six months before the turnover. Panel B describe all ten founder-CEO forced turnovers and two special founder-CEO voluntary turnovers in multi-family cofounding firms. The parenthesis indicates the ownership of each person just before the turnover happens. Panel C estimates the probability of founder-CEO turnover along with firm performance. The measurements for firm performance are mean of past three years’ pre-tax operating income to total assets in column (1) and (3), and a negative income dummy that equals one if the mean of past three years’ pre-tax operating income is negative. All control variables are same as previously and standard errors reported in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Statistics				
	Single-Family Founder		Multi-Family Cofounder	
	Number of observations	%	Number of observations	%
Forced Turnover	1	3.2	10	29.4
Voluntary Turnover	30	96.7	24	70.6
Total Turnover	31	100	34	100

Panel B. Descriptions	
MENTOR CORP	Mentor Corporation was founded in 1969 by Christopher Conway, Eugene Glover, and Thomas Hauser. Mr. Conway (4.1%) was Chief Executive Officer from 1969 to 1999 and from 2000 to 2004 when Mr. Glover (2.2%) was a president and private investor.
SUN MICRO SYSTEMS INC	Vinod Khosla, Andy Bechtolsheim, and Scott McNealy, all Stanford graduate students, founded Sun Microsystems in 1982 and one more cofounder Bill Joy, a primary developer of the Berkeley Software Distribution, joined soon. When Mr. Khosla left the company in 1984 (voluntary turnover), the board asked Mr. McNealy to take the interim CEO, but failed to find the new CEO, so he became the permanent CEO. However, Sun eventually appointed new CEO instead of Mr. McNealy (2.2%) in 2006 (forced turnover).
CREE INC	Cree was founded in 1987 by six cofounders. Neal Hunter (1.4%) resigned from the chairman and CEO in 2001 when one of the cofounders Calvin Carter (1.4%) was an executive vice president and John Palmour (1.6%) was a director.
CARMAX INC	Carmax was founded in 1993 by Austin Ligon and Richard Sharp. On May 23, 2006, The board decided that Mr. Ligon (1.8 %) would terminate the president and CEO on June 20, 2006. On May 24, 2006, Mr. Ligon

	expressed his intention to retire as president, CEO, and director effective June 20, 2006. At that time, Mr. Sharp, (less than 1%) was a chairman of the board and private investor.
FASTENAL CO	Fastenal was founded in 1968 by several co-workers and high-school buddies. When Robert Kierlin (10.31%) resigned from the CEO in 2002, cofounders were in the management: Stephen Slaggie (5.11%) was a secretary, and Michael Gostomski (1.69%), Henry McConnon (2.15%), and John Remick (3.24%) were directors.
VERTEX PHARMACEUTICALS INC	Vertex was founded in 1989 by Joshua Boger (1.7%) and Kevin Kinsella. On February 5, 2009, the company announced new CEO and Chairman of the Board, so Dr. Boger resigned as the president on that day and resigned as CEO on May 23, 2009.
BROADCOM CORP	Broadcom corporation was founded in 1991 by Henry Nicholas and Henry Samueli. Mr. Nicholas (34.4%) served as its president, CEO and co-chairman from the company's inception until January 2003, when he resigned as President and CEO, expressing his intention to devote more time to his family. At that time, Mr. Samueli (34.4%) had served as its CTO and co-chairman since the company's inception.
PROGRESS SOFTWARE CORP	Progress Software was founded in 1981 by three MIT graduates - Joseph Alsop, Charles Clyde, and Ziering Kessel. On March 30, 2009, the company announced that the board appointed the new president and CEO of the Company and Mr. Alsop (4.4%) resigned as CEO, effective as of March 29, 2009.
RADISYS CORP	RadiSys was founded in 1987 as Radix Microsystems by former Intel engineers Dave Budde and Glen Myers. On May 3, 2002, the company announced that Dr. Myers (3.02%) stepped down as president, CEO and chairman of the board and the board initiated a search for a new president and CEO.
LINEAR TECHNOLOGY CORP	The company was founded in 1981 by Robert Swanson, Jr. and Robert Dobkin. When Mr. Swanson resigned from the position of CEO, Mr. Dobkin was a vice president, Engineering and CTO. Both holded less than one percent of the outstanding common stocks.
HOLOGIC INC	On June 21, 2001, S. David Ellenbogen (3.7%), the company's founder, chairman and CEO passed away. After cofounder's death, Dr. Stein (2.6%), a cofounder, executive vice president, and CTO served as the company's interim CEO for about a month. On July 31, 2001, the Board of Directors announced a new CEO and president.
BED BATH & BEYOND INC	In 1971, Warren Eisenberg and Leonard Feinstein founded the company together and served as co-chairman from 1999 and as co-CEO from 1971 to April 2003. Mr. Eisenberg (2.8%) and Mr. Feinstein (2.9%) retired together in 2003.

Panel C.

Logit regression

	Forced Turnover		Voluntary Turnover	
	(1) Return on assets	(2) Negative income dummy	(3) Return on assets	(4) Negative income dummy
Firm performance	-14.866* (8.494)	1.906* (1.078)	-0.837 (3.322)	0.711 (0.697)
Control variables	Yes	Yes	Yes	Yes
Pseudo R ²	0.416	0.196	0.134	0.096
Number of observations	451	845	951	1483

Table 9 The Probability of Descendant-controlled

This table shows logit model of multi-family cofounder variable on descendant-controlled dummy. Descendant-controlled dummy equals one if the descendant takes a position such as the CEO, Chairman, or director in that year. Multi-family cofounder dummy equals one if there are more than two cofounders without any family ties. I include same control variables and year and industry dummies as Table 2. The sample consists of 366 founding family firms (single-family founding firms and multi-family cofounding firms) during 2001-2010. Robust standard errors reported in the parentheses are clustered on firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Descendant-controlled
Multi-family cofounder	-0.957*** (0.403)
Governance index	0.024 (0.089)
Nonfamily blockholder ownership	1.213 (0.749)
Nonfamily outside directors	-1.117 (0.945)
Dividends/book value of equity	0.683 (0.484)
Debt/market value of equity	0.019 (0.069)
Market risk (beta)	-0.041 (0.216)
Diversification dummy	-0.038 (0.366)
R&D/sales	-25.542*** (6.165)
CAPX/PPE	-0.541 (0.943)
Ln (assets)	0.154 (0.161)
Sales growth	-1.111*** (0.441)
Ln (age)	1.732*** (0.406)
Constant	3.480 (2.383)
Industry effects	Yes
Year effects	Yes
Pseudo R ²	0.415
Number of observations	1,889

Table 10 Firm Valuation Excluding Information Technology Companies

Panel A compares all firms to information technology firms. Panel B displays the OLS regression of Table 2 excluding information technology firms and only information technology firms, respectively. All variables are same as Table 2. The sample consists of 997 firms for Panel B [a] and 162 firms for Panel B [b] in U.S. stock markets during 2001-2010. Robust standard errors reported in the parentheses are clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Differences between firms and technology firms				
	[a] Firms excluding technology firms		[b] Technology firms	
	Mean	Std Dev	Mean	Std Dev
Tobin's q	1.87	1.02	2.29	1.30
Firm age	26.61	19.39	18.27	15.07
Multi-family cofounder (%)	9.57		21.59	
Founder-controlled (%)	18.80		33.50	
Number of observations	6,304		805	
Panel B. OLS Regression				
	Tobin's q			
	[a] Firms excluding technology firms		[b] Technology firms	
Single-family founder	0.029 (0.094)		-0.075 (0.249)	
Multi-family cofounder	0.221** (0.109)		0.375* (0.218)	
Control Variables	Yes		Yes	
R ²	0.269		0.173	
Number of observations	6,304		805	

Governance Changes around Family Firms' CEO Turnover

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Abstract

This paper shows family firms tend to adopt policies that increase managerial entrenchment after CEO turnovers. However, the newly-organized board characteristics are different depending on whether the incoming CEO is a family member. After an outsider becomes the CEO in a family firm, the board size is increased with more independent directors, but meanwhile, family owners sell their equities. Overall, this paper shows that the private incentive of family owners around CEO changes affect firm policies, board structure, and ownership structure.

1. Introduction

Prior research has shown that corporate governance is closely related to firm value. Bebchuk, Cohen, and Ferrell (2009) suggest the E-index (entrenchment index) based on six IRRC (Investor Responsibility Research Center) provisions and show increases in the index level are correlated with reductions in firm valuation and negative abnormal returns. This is because IRRC provisions provide management with protection from removal, but may not be beneficial to shareholders. Focusing on the manager's motivation to adopt provisions he likes, this paper shows that new CEOs in family firms adopt the E-index provisions even though it reduces non-family shareholders' wealth.

Family shareholders have an incentive to expropriate non-family shareholders, generating conflicts between family shareholders and non-family shareholders. The expropriation is much easier under a family-CEO because a family member directly controls the firm.

However, when the family-CEO resigns, family members may not enjoy the private benefits as much as they did. To maintain the founding family's controlling power from generation to generation, family members alter the governance structure with the support from the board by adopting provisions that can strengthen their control, but may or may not be harmful to non-family shareholders.

Provisions of an entrenchment index can meet the family members' needs in that the E-index provisions reduce the disciplinary threat of removal and at the same time facilitate families' shirking, empire-building, and extraction (Manne (1965)). The six provisions of the E-index are staggered boards, limits to

shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. Four provisions – staggered boards, limits to shareholder amendments of the bylaws, supermajority requirements for mergers, and supermajority requirements for charter amendments – limit shareholder voting power, which makes it difficult for shareholders to impose their will on management. Two other provisions – poison pills and golden parachutes – are effective in discouraging a hostile offer. Therefore, the E-index provisions help founding families to protect themselves from the board, shareholders, and outside threats, which allow them to pursue private benefits.

New leaders may need new strategy and new governance system to start the new era. In this sense, company provisions are more likely to be changed when a new CEO takes over the firm. Focusing on CEO turnover periods, I find that the E-index provisions are more likely to be adopted in family firms than in non-family firms.

In family firms, the new CEO can be either a founding family member or a non-family member, so we need to think about two cases separately. When a family member becomes the new CEO, there can be a conflict between family shareholders and non-family shareholders. When a non-family member becomes the CEO, there can be an additional conflict between the shareholders (both family shareholders and non-family shareholders) and the manager. Therefore, in this case, family owners confront the problem about the agent they hire.

Holding substantial ownership can be beneficial for family members in terms of influencing the company and expropriating the firm's resources, but it also has opportunity costs. Therefore, family owners sell their equities if they expect to get less pecuniary private benefits. I investigate how family ownership changes depending on whether the departing CEO and the incoming CEO is a family member or not. When a family CEO hands over the control to a non-family CEO, family owners may not enjoy enough expropriation as before, so would rather sell their shares.

Nonetheless, CEOs cannot decide firm policies arbitrarily. The board exists to monitor the CEO and important decisions require the board members' agreement. In this sense, family owners can easily control the firm if the board is on founding owners' side. For doing this, family owners organize the board which consists of more insiders, not independent directors, and more incumbent directors who have close relationship with them.

On the contrary, the board characteristics can be different if a professional-CEO is a new CEO. Now family owners need to monitor the top executive, so increase the board size and raise the independent director ratio. However, compared to non-family firms, the incumbent directors were probably co-opted by the family already and so they act to protect the family owners' interests.

All the above scenarios are possible because most director elections are uncontested (Schwartz (1983) and Bebchuk (2003)) and the CEO can have a large influence on the nomination process (Shivdasani and Yermack (1999)). From the perspective of shareholders, it is a way of expressing dissatisfaction about the agenda not to vote for the entrenched directors but to withhold their

votes. Since the newly organized board is run by family owners' interests when the new CEO is a family member, the propensity to withhold voting is the most significant after a founder's descendant inherits the CEO position.

We can draw a conclusion that family owner's incentives have a huge impact on corporate policies, ownership structure, and board characteristics. Of course, it is not a problem if family owners' incentives are same as non-family shareholders. As mentioned earlier, however, family owners tend to take advantage of firms for their own benefits at the costs of non-family shareholders. In terms of the points of this paper, adopting E-index policies reduces shareholders' rights. Moreover, when family owners hold small ownership, compared to when they hold large ownership, family shareholders' incentives are less likely to correspond with non-family shareholders' incentives. Not to mention, changed board characteristics are not good at monitoring top executives.

This paper contributes to many areas. First, the main topic is the succession of family firms, which has not been widely studied. Whether a family member becomes the next CEO causes different kinds of agency problems. This leads to significant changes not only in terms of firm policies but also the ownership structures, and the board organization, emphasizing the important role of the top executive.

Second, this research brings light on a subject about agency problems. Even though firm policies should be reformed in direction of increasing the firm valuation, family firms reverse this trend because adopting provisions related to the entrenchment is advantageous for defending family controls. Moreover, to

achieve this, family owners construct the board that prohibits it from functioning well.

Third, this paper directly deals with the E-index. Although there are many papers which investigate the relation between the E-index and firm valuation, but to my knowledge, this is the first paper which shows the E-index changes around CEO turnover, splitting the company into family firms and non-family firms.

Lastly, this paper suggests a plausible reason why firm valuation is destroyed at the descendant level in family firms. Several previous studies show this, but they just explain that incompetent descendants bring about low firm valuation. It is quite possible, but entrenched corporate governance and the board can corroborate the assertion.

The rest of this paper is organized as follows. In Section 2, I describe data and variables, and then provide statistics about that. The E-index changes around CEO turnovers, both all CEO turnovers and only voluntary CEO turnovers, are shown in Section 3. How ownership structure is changed after the CEO turnover is handled in Section 4, and Section 5 investigates the characteristics of the newly-organized board, in addition to shareholders' opinions about the board. I conclude in Section 6.

2. Data and Descriptive Statistics

The focus of this paper is how family firms change their corporate governance differently around CEO turnovers compared to non-family firms. Therefore, I

need data about family firms, CEO turnovers, and corporate governance. I also use voting data to support my arguments.

2.1. Data

2.1.1. Family firm data

I get family ownership data of Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012). They start by pulling the 2,000 largest firms based on total assets for data-year 2001 from Compustat after excluding the following firms: 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. And then they extend the sample from 2001 to 2010. Searching SEC corporate proxy statements, 10-k's and corporate history, the authors annually denote family ownership dummy as one when the fraction of total number of shares held by founding family to total outstanding shares is more than 5 percent.

With this data, I hand-collect whether a family member is a CEO, chairman, or director in each year from the SEC corporate proxy statements. A CEO turnover is identified in the firm year when a family member is a CEO, but not a CEO in the next year.

Following Anderson and Reeb (2003), I define family firms as firms whose founder or a member of the founder's family by either blood or marriage is an officer, a director, or the owner of at least 5 percent of the firm's equity, individually or as a group. Total firm-year observations are 8,342, which

consists of 2,988 family firm observations and 5,354 non-family firm observations.

2.1.2. CEO turnover data

The ExecuComp database contains information about CEO changes of all firms in the S&P 500, S&P MidCap, and S&P SmallCap indexes. After identifying CEO turnovers, Jenter and Kanaan (2015) search the Factiva news database and classify turnovers into forced and voluntary following Parrino (1997)'s forced turnover definition.⁹ My hand-collected CEO turnovers correspond with the CEO turnovers in the ExecuComp database.

I split CEO turnovers into CEO turnovers in family firms and CEO turnovers in non-family turnovers, and designate the former as Turnover_Fam. Depending on whether the departing CEO and the incoming CEO are family members or not, there are three kinds of CEO turnovers in Turnover_Fam: 1) firm control transfers from the family-CEO to professional-CEO, 2) the family-CEO hands over the firm to the descendant-CEO, and 3) professional-CEO takes over the firm after departing professional-CEO. Each case is designated as Turnover_FP, Turnover_FF, and Turnover_PP, using the initial letter of family-CEO and professional-CEO.

2.1.3. Corporate governance and director data

The Institutional Shareholder Services (ISS) (formerly RiskMetrics) provide data about corporate governance provisions and information on the directors since 2007. Before 2007, the Investor Responsibility Research Center (IRRC)

⁹ I thank to Dirk Jenter for sharing the CEO turnover data.

published volumes, covering the S&P 1500 index in addition to more firms with high market capitalization and high institutional ownership.

Since the IRRC did not provide information about corporate governance provisions every year, I assume that the governance provisions were the same as reported in the year preceding the volume's publication and fill in for missing years until 2006, just as previous papers (Gompers, Ishii, and Metrick (2003), Bebchuk and Cohen (2005), and Bebchuk, Cohen, and Ferrell (2009)).¹⁰ This filling method is not necessary for director data.

With this information, I measure the following board characteristics. Board size is the total number of directors on the board, independent ratio is the number of independent directors divided by the board size, number of outside boards is the number of other major company board positions per person, and co-option ratio is the number of co-opted directors, both independent and non-independent directors, who joined the board after the CEO assumed office¹¹ divided by the board size.

2.1.4. Voting data

From July 2003, Institutional Shareholder Services (ISS) compiles voting records of companies and mutual funds to create the ISS Voting Analytics database. To investigate how the proxy advisory firm's views about nominated board members, I use voting data of electing directors. Specifically, I am interested in the ISS recommendation for every director election, which is published in ISS proxy research reports from 2003 to 2010.

¹⁰ Even though I try to collect E-index changes using data from 1997, there are many missing values. This is the reason why the sample size is reduced from 8,342 to 6,095.

¹¹ I also thank to Lalitha Naveen for sharing the co-option ratio data.

2.2. Descriptive statistics

Table 1 presents summary statistics of data. Panel A of Table 1 reports means and standard deviations of full sample and compares those of family firms with non-family firms.

As can be seen, the entrenchment index is significantly lower in family firms than non-family firms. Because the entrenchment index is given a score from 0 to 6 based on the entrenching provisions, a low value of the E-index in family firms means low entrenchment. According to Bebchuk, Cohen, and Ferrell (2009), who first suggest the entrenchment index, the E-index is negatively associated with firm valuation, and Anderson and Reeb (2003) show that family firms' valuations are higher than non-family firms'. Taken together, it makes sense that the valuation of family firms which have lower E-index is higher than non-family firms.

In addition, family firms are more likely to have a dual class structure. Because holding superior voting rights enables incumbents to decide as they want without a lot of equities, family owners tend to adopt a dual class structure. In this sense, this powerful structure renders other entrenching mechanisms relatively unimportant. Thus, Bebchuk, Cohen, and Ferrell (2009) exclude firms which have a dual class structure when they investigate the relation between the E-index and the firm value. However, if dual class firms are excluded, more family firms are excluded than non-family firms. Therefore, I provide two cases, all firms and firms without a dual class structure, in all results related to the E-index.

In terms of board characteristics, relative to non-family firms, there are fewer board members and independent directors, directors hold less outside boards, and more directors are chosen by the current CEO in family firms. I can interpret this board structure as family firms tend to maintain initial board members who found the firm together without considering directors' monitoring role. In this sense, the board has high possibility of being entrenched. Additionally, Morse, Nanda, and Seru (2011) claim the co-option ratio represents CEO power, so high co-option ratio can be related to the strong power of family member CEOs and less monitoring power of the board.

Panel B of Table 1 shows the changes of the entrenchment index and the board characteristics between three years before and three years after CEO turnovers in family firms and in non-family firms. All changes are calculated as subtracting the value of three years before from the value of three years after. In terms of the E-index changes, consistent with the hypothesis, new CEOs in family firms are more likely to adopt E-index policies than new CEOs in non-family firms.

Contrary to the expectation, however, the ratio of forced CEO turnovers is not significantly different in family firms from non-family firms. This is because Turnover_PP, professional-CEO takes over the firm after departing professional-CEO, accounts for large amounts.¹² When I only analyze CEO turnovers excluding Turnover_PP, the percentage of forced turnover is only 6 percent.

¹² Of all 197 CEO turnovers in family firms, 73 cases are about CEO turnovers that departing CEO or/and incoming CEO is a family member.

The board also experiences different characteristic changes in family firms compared to non-family firms. Family firms are more likely increase board size and the ratio of independent directors than non-family firms, and less likely to hire new directors than non-family firms. In the next section, I analyze this by splitting CEO turnovers in family firms into Turnover_FP, Turnover_FF, and Turnover_PP, depending on whether the departing CEO and the incoming CEO are family members or not.

3. The Entrenchment Index Changes

From the summary statistics, we know that the E-index changes in family firms are different from non-family firms after the new CEO takes the office. In this section, we examine using statistical methods and splitting the entire sample into subsamples to exactly test whether univariate results hold.

3.1. All CEO Turnovers

As a base analysis, I run the regression of the entrenchment index changes between three years after and before the year on 640 CEO turnover events. Turnover dummy equals one in the year when the CEO turnover happens and Turnover_Fam dummy is one if the firm is a family firm. As three subsets of Turnover_Fam, 1) Turnover_FP dummy equals to one if control transfers from the family-CEO to professional-CEO, 2) Turnover_FF dummy equals to one if the family-CEO hands over the firm to the descendant-CEO, and 3) Turnover_PP dummy equals to one if professional-CEO takes over the firm after previous professional-CEO. I control year effects and cluster standard

errors to deal with the correlation between error terms. The full sample consists of 6,095 firm-year observations of 950 firms from 2001 to 2010.

Panel A of Table 2 shows the results for the full sample. It seems that company provisions tend not to be changed often, but can be reformed a lot under the new CEO. As expected, the coefficient of Turnover dummy is significantly negative, meaning that the entrenchment index drops three years after the new CEO comes compared three years before. It also suggests that the direction of the amendment is generally headed to improve corporate governance. Meanwhile, the entrenchment index goes up in family firms relative to in non-family firms. Economically, while a new CEO generally decreases the E-index 8 percent, a new CEO in family firms increases the E-index 10 percent. Especially, professional-CEO who succeeds family-CEO increases the E-index 16 percent and descendant-CEO who succeeds his family increases the E-index 38 percent, calculated from the mean of entrenchment index, 2.85. However, professional-CEO who is successor of professional-CEO in family firms does not show any significant different E-index changes compared to those of non-family firms.

As I explain in the data section, previous studies about the entrenchment index exclude firms choosing a dual class structure. In my sample, about 7 percent of the entire observations have a dual class structure, so I also do the same analysis after excluding observations with a dual class structure. The results are almost same: the E-index falls 7 percent in all CEO turnover cases, but rises 7 percent in family firms, calculated from the mean of entrenchment index, 2.92. Again, the percentage is much higher when a departing-CEO is a family

member: 12 percent when the family-CEO hands over the firm to the professional-CEO and 31 percent when family-CEO hands over the firm to the descendant-CEO, but when both departing and incoming CEO are professional-CEO in family firms, there is no significant difference from non-family firms.

With two coefficients on variables, Turnover_FP and Turnover_FF, I test whether these two variables are significantly different. The test result rejects the hypothesis that the coefficient on Turnover_FP is equal to the coefficient on Turnover_FF. Therefore, we can confirm that if the incoming CEO is a family member, E-index provisions are more likely to be adopted to the firm compared to the case that the incoming CEO is not a family member. It suggests the intention of protecting control by adopting E-index provisions is remarkable when a family-CEO inherits the firm.

I also run the same regression using only CEO turnover events in Panel B of Table 2. Same as the results in Panel A of Table 2, the entrenchment indexes significantly increase in family firms after the CEO transitions, especially when a descendant-CEO inherits the company.

To sum up, while many companies repeal entrenching provisions in my sample period, we can observe two kinds of the incoming CEO in family firms move in the opposite direction. The degree of increasing E-index is pronounced when the family member succeeds the firm. Combined with previous papers about negative correlation between the E-index and the firm value (Bebchuk, Cohen, and Ferrell (2009)), and descendant-CEO's destroying firm valuation (Villalonga and Amit (2006) and Perez-Gonzales (2006)), the results are consistent with these studies in that the E-index is very high at the descendant-

CEO level. On the contrary, CEO turnovers in family firms of which neither departing CEO nor incoming CEO is a family member show similar tendency of changing policy in non-family firms. We can interpret that when a family member leaves the CEO position, he has a concern about whether he can preserve the firm control as before, so uses E-index provisions as a protective device.

3.2. Voluntary CEO turnovers

Unlike family member CEOs who normally retire or resign when they want, some CEOs in non-family firms are forced out. In my sample, forced turnovers account for 21 percent of CEO-turnover events. After the forced turnover, the incoming CEO and the board can have a different policy direction relative to after the voluntary turnover. A new CEO may want to relax provisions that threaten his position or shareholders may press the management to reinforce those provisions. To remove different motivation of the reform and to examine with similar characteristics of CEO turnovers, I test the same regressions as Table 2 only with 500 voluntary CEO turnover events.

As can be seen in Table 3, the sign and the significance are almost same as Table 2, but there are some differences in terms of degree. Panel A of Table 3 shows that new CEOs after voluntary turnovers also amend the provisions in the direction of reducing managerial entrenchment. Based on the mean entrenchment, 2.85, new CEOs generally decrease 6 percent of the E-index, which is slightly less than when I include forced CEO turnovers. However, the degree of changes in family firms is almost same or slightly higher as 10 percent in family firms, 13 percent and 36 percent, when the family-CEO hands

over the firm to the professional-CEO and descendant-CEO respectively than previous section. The coefficient of Turnover_PP, which indicates both departing CEO and incoming CEO are professional-CEOs in family firms is not significant, either. The results are same when I exclude observations under a dual class and use only CEO turnover sample as can be seen in Table 3.

We observe that the incoming CEOs in family firms, especially family-CEOs, seem apparently to have a tendency to adopt provisions which are favorable for them to protect themselves from removal. The expected adverse effect is the possibility of expropriation by entrenched family owners. Since one of strengths of family firms is the congruence of interests between family owners and non-family shareholders, we suppose changing policies can weaken this benefit.

3.3. Subsamples of E-index

Family firms normally have concentrated ownership, which could serve as a barrier to takeovers thus making anti-takeover governance provisions unnecessary. To examine this, I divide the six provisions into two groups, one includes poison pills and golden parachute, and the other includes the other four provisions. The former provisions are for discouraging a hostile offer and the latter provisions are for limiting shareholder voting power. The same methodology is used as previously.

Table 4 shows the results. We can see the significance only in the group that includes poison pills and golden parachute. The difference from previous analysis is that even the coefficient Turnover_PP is significant. This implies

family firms want to prevent a hostile offer even when family owners hire outsiders.

The explanation about the reason why family firms with concentrated ownership want to adopt anti-takeover provisions will be discussed in combination with the results in the next section.

4. Stockholding Changes

Family owners decide whether, and how much, ownership to retain in the company based on the costs and benefits of holding equities. Of course, substantial ownership is important because it enables family owners to sit on the board, to have enough shares to convene an extraordinary shareholder meeting, to stand in litigation, or to exercise power in other ways (Burkart, Panunzi, and Shleifer (2003)). Moreover, family owners get pecuniary benefits from expropriating outside investors (Jensen and Meckling (1976)), especially if family members sit on the management.

However, holding substantial equities incurs expenses for family owners. Because family owners lack of diversification, they should bear higher risk. Moreover, if they need capital for another investments or business expansions, there are opportunity costs because the capital is locked in the company as shares.

The costs get bigger if the family owner hires a professional-CEO. Family owners cannot freely expropriate compared to when they directly manage the firm, so pecuniary benefits can be reduced. In addition, family owners should monitor the professional-CEO, generating additional monitoring costs.

Furthermore, as large shareholders, family owners have a risk of being the victim of agency problem. Even if family owners can collude with the professional CEO, the amount of benefits should be shared with the manager, so still can not be enough to compensate the costs of large ownership.

Despite all disadvantages of hiring professional-CEO, family owners still want to appoint the professional-CEO if he is enough to be competent to increase the firm value while there are no competent family members. It is also possible that giving CEO position to the outsider is a kind of the family's diversification strategy. As mentioned the above, family owners need to diversify their portfolio to reduce the risk. Family owners can use their focus, time, and capital to other investment by delegating the control, but still protect the firm from outside by adopting E-index provisions.

I examine when family owners think that the costs of holding equities are bigger than the benefits, so sell their shares. I denote selling dummy equals one in the year when family ownership drops less than 5 percent and include time variables which indicate the timing about CEO turnovers. I identify 113 cases of selling. Following Ge, Tanlu, and Zhang (2016), several control variables and year and industry dummies are included.

Table 5 shows the logit model result. Two coefficient of After_Turnover_FP and After_Turnover_PP variables are significantly positive; the odds ratio is 7.63 if professional-CEO succeeds the firm from family-CEO and 6.27 if professional-CEO succeeds the firm from departing professional-CEO in family firms. The odd ratio of After_Turnover_FP is much higher as 10.40, but that of

After_Turnover_PP is slightly lower when I analyze only the firms without a dualclass structure.

Supporting the hypothesis about founding family's diversification strategy, I interpret it that when family members delegate the CEO position to the outsider, family owners start diversification. Of course, pecuniary benefits from expropriation may not exceed the costs of retaining family ownership when the new manager is an outsider, but there might be another reason why family owners hire the professional-CEO, bearing reduced pecuniary benefits. In addition, since the family still can enjoy nonpecuniary private benefits, such as amenity potential (Demsetz and Lehn (1985)), with less than 5 percent of ownership as long as they control the firm, family owners can concentrate other investments.

We can also interpret this combined with the results of the previous section. Instead of holding substantial equities which incurs huge amount of expenses, family owners prefer adopting anti-takeover provisions, especially when the costs are expected to increase after a professional-CEO takes over the firm. In other words, now that family owners give up concentrated ownership, they need something else to prevent a hostile offer. Changing the policy costs much less than retaining the concentrated ownership, so we can understand family owners' incentive to adopt anti-takeover provisions.

5. Board Characteristics Changes

5.1. Board characteristics changes around CEO turnovers

I mention in the descriptive data section that the board size of family firms is small and there are many non-independent directors and directors chosen by the current CEO. In addition, I show in the previous section that new CEOs in family firms, especially family member CEOs, are inclined to entrench themselves by changing company provisions.

I investigate how new CEOs organize the board because one of the most important function of the board is monitoring, which can be an obstacle to the managerial entrenchment. In this sense, in family firms, the board characteristics can be changed depending on whether the new CEO is a family member or not. If a professional CEO assumes the CEO, family owners want to intensify monitoring. Therefore, the number of board directors, especially independent directors, needs to be increased. On the contrary, if a family member inherits the company, he just wants to leave the familiar board members as it were, rather than hiring new directors. Then the co-option rate is very low.

Table 6 shows the results. As in Tables 2 and 3, I analyze both the full sample and the CEO turnover sample. We can see the expected results in Panel A of Table 6. While the board size and independent ratio are reduced around normal CEO transitions, the board size is increased 8 percent and independent ratio is raised 14 percent when the professional-CEO is appointed following the family member-CEO in family firms. When the professional-CEO is appointed

following another professional-CEO in family firms, only independent ratio is increased 6 percent.

On the other hand, each board member takes 16 percent more other board positions in family firms when family-CEO succeeds the firm. According to Fich and Shivdasani (2006), serving on several boards can result in inefficient monitoring. Although it is not clear that board members try to assume another positions because they do not need to monitor this firm hard or taking other board positions makes them distracted, but we can anticipate weakening monitoring.

In terms of the co-option ratio, which refers to the ratio of co-opted directors who joined the board after the CEO assumed office to total directors, it is natural to observe significantly negative coefficients after CEO-turnovers. However, the ratio is reduced 56 percent and even 96 percent drop more when family-CEO leaves in family firms, while only 41 percent drop in all CEO transitions. When family-CEO is neither the departing CEO nor the incoming CEO in family firms, the cooption ratio is not significantly different from that of CEO turnovers in non-family firms. The ratio is one of the measures which Morse, Nanda, and Seru (2011) represent CEO power. Coles, Daniel, and Naveen (2014) also assert that co-option diminishes board monitoring. When the family-CEO succeeds the power from the former family-CEO, he can also enjoy the CEO power and the board's weak monitoring.

As presented in Panel B of Table 6, the results are almost same when I only use the CEO turnover sample.

In this section, I show that even though family owners adopt entrenching provisions, the newly constructed board can be different depending on whether a family member becomes a CEO or not, because of the necessity of monitoring.

5.2. Board entrenchment

Schwartz (1983) and Bebchuk (2003) point out that most director elections are uncontested. According to Cai, Garner, and Walking (2009), lower level of votes cannot affect the election of directors: votes exceeding 90 percent are normal even for poorly performing directors and firms. Thus, almost all of board candidates identified by a board committee are elected. Moreover, Shivdasani and Yermack (1999) assert the nomination process is influenced by the CEO. That is, CEOs can make directors elected through uncontested elections as they want. Therefore, the board can be closely related to the CEO. I use voting data to investigate the director election process and whether it is good for shareholders.

Table 7 describes voting data for director elections. As mentioned in the previous voting literatures, almost all electing directors voting results are “Pass” in all firms: 98 percent of votes pass while only 0.04 percent of votes fail. However, the recommendations of the proxy advisory firm are different from the voting results. Of all votes about electing directors, ISS recommends shareholders to vote for 91 percent of votes, even 87 percent in family firms and withhold their votes.

To examine how the proxy advisory firm evaluates the newly constructed board, I run the logit model with ISS recommendations. Since we are interested in board entrenchment, I only focus on the votes for which ISS recommends

shareholders to withhold their voting, which means the director is not appropriate to be elected. Therefore, the dependent variable is one if the ISS recommendation is “Withhold” and zero otherwise. Same as Table 5, this test does not use differences between before and after CEO turnovers as dependent variables, so I include dummy variables that denote times related to the CEO turnover and control variables about firm characteristics and governance characteristics which Ge, Tanlu, and Zhang (2016) use.

Table 8 shows the results. For consistency, I present two cases, samples of all firms and firms without a dual class structure. This fitted model says that, holding all control variables at a fixed value, the odds of getting “Withhold” recommendation from ISS is 1.56 (1.74 when I only use firms without a dual class structure) before the family-CEO leaves the CEO position over those in other cases. Additionally, the odds ratio is 3.06 (4.04 only with firms without a dual class structure) after a family member assumes the CEO position. This implies even though a candidate is not qualified, he can be elected as a director when a family member assumes the CEO position.

Combined with the results of Table 6, the family-CEO maintains almost the same board as previous CEO, but the board members are interested in increasing outside board positions rather than concentrating on monitoring the firm. I conjecture the more entrenched directors there are in the board, the worse corporate governance. The results using ISS recommendation support the hypothesis that family-CEOs try to increase board entrenchment.

6. Conclusion

Corporate governance is closely related to firm value, so companies try to remove bad provisions. As a result, an entrenchment index which consists of six provisions that protect management from inside and outside removal has been decreasing over time. However, family firms still favors E-index provisions, especially when family members become the new CEO. I regard it as only pursuing family members' interests at the cost of other shareholders, destroying firm value.

Family owners tend to sell their equities when the costs of holding stakes exceed the benefits of it. Of course, the expropriation is much easier when family owners directly manage the firm compared to when they hire professional manager. Moreover, family owners want to diversify their portfolio, so delegate control to the professional-CEO and invest other opportunities with reduced ownership. Therefore, selling behavior of family members can be pronounced when an outsider becomes the CEO.

In addition, family owners can construct the board favorable to themselves. While there is no significant changes about independent director ratio when family members become the CEO, the ratios is raised a lot when the professional-CEO is the new CEO because monitoring role of the board is important. In addition, incumbent directors who are familiar with family members remain on the board when a departing CEO is a family member, which prevent the board functioning well. We can see shareholders' dissatisfaction at the voting about electing directors, especially when a family member takes the CEO position.

Obviously, all observed decisions in family firms, from governance structure, the board construction to the ownership structure, depend on maximizing family owners' utility, even if the decision is against shareholders' wealth. This is a family firms' unique characteristic, but at the same time, can be an answer to the question about the reason why family firm value decreases from generation to generation.

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Table 1 Descriptive Data

Panel A compares means, standard deviations, and tests of differences in means between firm characteristics of family and nonfamily firms. Family firms are defined as firms where one or more family members are officers or directors, or holds 5% or more equity, either individually or as a group. The E-index consists of six provisions: staggered boards, limits to amend bylaw, limits to amend charter, supermajority requirements for mergers, golden parachutes, and poison pills. Firm-year observations are based on the largest 2,000 firms from Anderson, Duru, and Reeb (2009) and Anderson, Reeb, and Zhao (2012) and then merged with ISS data during 2001-2010. Panel B analyzes the changes of main variables during six years (before three years and after three years) of CEO turnovers, and tests the differences in means between different CEO turnovers in family firms and non-family firms. Asterisks denote statistical significance at 1% (***), 5% (**), or 10% (*) level, respectively.

Panel A: Differences between family firms and non-family firms							
	[a] All firms		[b] Family firms		[c] Nonfamily firms		
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	t-stat.
E-index	2.85	1.45	2.50	1.52	3.04	1.36	-17.26***
Dual class	0.08	0.28	0.18	0.38	0.03	0.18	24.14***
Board size	9.11	2.22	8.91	2.29	9.23	2.17	-6.28***
Independent ratio	0.71	0.15	0.63	0.15	0.75	0.14	-36.88***
Number of outside boards	0.86	0.56	0.67	0.50	0.97	0.56	-24.68***
Co-option ratio	0.46	0.31	0.52	0.34	0.42	0.29	14.33***
Number of observations	8,342		2,988		5,354		

Panel B: Differences between CEO turnovers in family firms and non-family firms

	[a] All CEO turnovers		[b] Turnover_Fam		[c] Turnover_Nonfam		t-stat.
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	
E-index change	1.15	1.29	1.35	1.28	1.06	1.28	2.58***
Forced turnover	0.21	0.41	0.20	0.40	0.22	0.41	0.43
Board size change	0.03	1.89	0.28	1.95	-0.07	1.86	2.17**
Independent ratio change	0.11	0.15	0.15	0.17	0.09	0.14	4.67***
Number of outside boards change	0.04	0.54	0.05	0.45	0.03	0.58	0.35
Co-option ratio change	-0.21	0.37	-0.28	0.39	-0.19	0.35	-2.69***
Number of observations	640		197		443		

Table 2 E-Index Changes around CEO Turnover

Panel A shows OLS regression results of 640 CEO turnover events (593 events without a dual class structure) on the entrenchment index changes between after three years and before three years of the turnovers. Turnover dummy equals one in the year when the CEO turnover happens and Turnover_Fam dummy is one if the firm is a family firm. As three subsets of Turnover_Fam, 1) Turnover_FP dummy equals to one if control transfers from the family-CEO to professional-CEO, 2) Turnover_FF dummy equals to one if the family-CEO hands over the firm to the descendant-CEO, and 3) Turnover_PP dummy equals to one if professional-CEO takes over the firm after previous professional-CEO. We control year effects. The full sample of Panel A consists of 950 firms (885 firms without a dual class structure) from 2001 to 2010. We examine in the same way only with CEO turnover events in the Panel B. Robust Standard errors are in the parentheses and clustered by the firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Full sample				
E-index change				
	All firms		Firms without a dual class structure	
Turnover	-0.229*** (0.055)	-0.229*** (0.055)	-0.202*** (0.056)	-0.202*** (0.056)
Turnover_Fam	0.293*** (0.110)		0.218* (0.115)	
Turnover_FP		0.472*** (0.143)		0.364*** (0.149)
Turnover_FF		1.089*** (0.234)		0.928*** (0.294)
Turnover_PP		0.133 (0.132)		0.091 (0.140)
Year effects	Yes	Yes	Yes	Yes
R ²	0.260	0.261	0.256	0.256
Number of observations	6,095	6,095	5,647	5,647

Panel B: CEO Turnover sample				
E-index change				
	All firms		Firms without a dual class structure	
Turnover_Fam	0.281*** (0.111)		0.214* (0.116)	
Turnover_FP		0.468*** (0.141)		0.378*** (0.145)
Turnover_FF		1.104*** (0.236)		0.941*** (0.294)
Turnover_PP		0.112 (0.136)		0.077 (0.144)
Year effects	Yes	Yes	Yes	Yes
R ²	0.268	0.280	0.271	0.273
Number of observations	640	640	593	593

Table 3 E-Index Changes around Voluntary CEO Turnover

Panel A shows OLS regression results of 500 voluntary CEO turnover events (466 events without a dual class structure) on the entrenchment index changes between after three years and before three years of the event. All variables are all same as Table 2 and I also control year effects. The full sample of Panel A consists of 948 firms (884 firms without a dual class structure) from 2001 to 2010. I examine in the same way only with voluntary CEO turnover events in the Panel B. Standard errors in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Full sample				
E-index change				
	All firms		Firms without a dual class structure	
Turnover	-0.169*** (0.061)	-0.169*** (0.061)	-0.141** (0.063)	-0.141** (0.063)
Turnover_Fam	0.292*** (0.104)		0.198** (0.108)	
Turnover_FP		0.385*** (0.154)		0.255* (0.158)
Turnover_FF		1.034*** (0.235)		0.873*** (0.294)
Turnover_PP		0.138 (0.118)		0.094 (0.126)
Year effects	Yes	Yes	Yes	Yes
R ²	0.263	0.264	0.258	0.259
Number of observations	5,955	5,955	5,520	5,520

Panel B: CEO Turnover sample				
E-index change				
	All firms		Firms without a dual class structure	
Turnover_Fam	0.262* (0.103)		0.174 (0.108)	
Turnover_FP		0.364** (0.151)		0.263* (0.152)
Turnover_FF		1.101*** (0.240)		0.930*** (0.289)
Turnover_PP		0.089 (0.120)		0.041 (0.129)
Year effects	Yes	Yes	Yes	Yes
R ²	0.322	0.335	0.318	0.326
Number of observations	500	500	466	466

Table 4 E-Index Changes in Subsamples

Panel A shows OLS regression results of 640 CEO turnover events (593 events without a dual class structure) on the two entrenchment index changes between after three years and before three years of the event and Panel B shows those on the other four entrenchment index changes between after three years and before three years of the event. All variables are all same as Table 2 and I also control year effects. The sample consists of 950 firms (885 firms without a dual class structure) from 2001 to 2010. Standard errors in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Poison pills and golden parachute				
E-index change				
	All firms		Firms without a dual class structure	
Turnover	-0.096*** (0.025)	-0.096*** (0.025)	-0.086*** (0.026)	-0.086*** (0.026)
Turnover_Fam	0.214*** (0.052)		0.201*** (0.057)	
Turnover_FP		0.316*** (0.084)		0.310*** (0.091)
Turnover_FF		0.406*** (0.142)		0.373*** (0.148)
Turnover_PP		0.146** (0.063)		0.135* (0.070)
Year effects	Yes	Yes	Yes	Yes
R ²	0.111	0.112	0.126	0.127
Number of observations	6,095	6,095	5,647	5,647

Panel B: Other four provisions				
E-index change				
	All firms		Firms without a dual class structure	
Turnover	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
Turnover_Fam	-0.002 (0.002)		-0.002 (0.002)	
Turnover_FP		-0.002 (0.002)		-0.002 (0.002)
Turnover_FF		-0.002 (0.002)		-0.002 (0.002)
Turnover_PP		-0.002 (0.002)		-0.002 (0.002)
Year effects	Yes	Yes	Yes	Yes
R ²	0.003	0.003	0.004	0.004
Number of observations	6,095	6,095	5,647	5,647

Table 5 Selling Shares around CEO Turnover

This table shows logit model of family owners selling shares before and after CEO turnovers. Selling dummy equals one in the year when family ownership drops less than 5 percent. Before_ or After_ indicate three years before or three years after the CEO turnover. All other variables are same as Table 2. Following Ge, Tanlu, and Zhang (2016), I include several control variables and year and industry dummies. The full sample is comprised of 950 firms (865 firms without a dual class structure) from 2001 to 2010. Standard errors in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Selling				
	All firms		Firms without a dual class structure	
Before_Turnover	-0.296 (0.331)	-0.167 (0.313)	-0.410 (0.364)	-0.280 (0.344)
Before_Turnover_Fam	-0.172 (0.663)		0.045 (0.702)	
Before_Turnover_FP		-0.401 (1.070)		-0.187 (1.077)
Before_Turnover_FF		0.000 (0.000)		0.000 (0.000)
Before_Turnover_PP		-0.261 (0.731)		-0.093 (0.779)
After_Turnover	-2.176*** (0.494)	-1.097*** (0.316)	-2.125*** (0.506)	-1.123*** (0.340)
After_Turnover_Fam	3.404*** (0.471)		3.441*** (0.490)	
After_Turnover_FP		2.033*** (0.384)		2.342*** (0.413)
After_Turnover_FF		0.000 (0.000)		0.000 (0.000)
After_Turnover_PP		1.836*** (0.329)		1.823*** (0.365)
Control variables	Yes	Yes	Yes	Yes
Industry effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Pseudo R ²	0.131	0.115	0.137	0.123
Number of observations	5,095	5,066	4,585	4,560

Table 6 Board Characteristics' Changes around CEO Turnover

This table shows OLS regression results of CEO turnover events on the board characteristics changes. All variables are same as Table 2. As board characteristics, board size is the number of directors on the board for the year, independent ratio is the ratio of independent directors, number of outside boards is the number of other major company board positions per person, and co-option ratio is the ratio of co-opted directors who joined the board after the CEO assumed office. All dependent variables are the changes of these characteristics between after three years and before three years of the CEO turnover. I control year effects. The sample consists of 958 firms from 2001 to 2010. Standard errors in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Full sample				
	Board size	Independent ratio	Number of outside boards	Co-option ratio
Turnover	-0.196** (0.093)	-0.019*** (0.007)	0.012 (0.027)	-0.191*** (0.016)
Turnover_FP	0.726** (0.288)	0.101*** (0.026)	0.112 (0.069)	-0.260*** (0.057)
Turnover_FF	-0.088 (0.513)	0.031 (0.036)	0.139* (0.080)	-0.441*** (0.088)
Turnover_PP	0.225 (0.205)	0.043*** (0.016)	-0.028 (0.050)	0.246 (0.041)
Year effects	Yes	Yes	Yes	Yes
R ²	0.004	0.030	0.028	0.036
Number of observations	5,691	5,691	5,691	5,691

Panel B: CEO Turnover sample				
	Board size	Independent ratio	Number of outside boards	Co-option ratio
Turnover_FP	0.757*** (0.298)	0.105*** (0.027)	0.110 (0.070)	-0.260*** (0.057)
Turnover_FF	-0.118 (0.510)	0.038 (0.038)	0.161* (0.094)	-0.427*** (0.087)
Turnover_PP	0.208 (0.209)	0.042*** (0.016)	-0.036 (0.051)	0.022 (0.042)
Year effects	Yes	Yes	Yes	Yes
R ²	0.021	0.068	0.050	0.064
Number of observations	601	601	601	601

Table 7 Descriptive Voting Data

This table shows total voting numbers and percentage of voting results and ISS recommendations only about electing directors. The full sample consists of 877 firms from 2003 to 2010.

	[a] All firms		[b] Family firms		[c] Nonfamily firms	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Vote results						
Fail	11	0.04	7	0.07	4	0.02
Pass	30,381	98.76	9,960	98.61	20,421	98.83
ISS recommendation						
Against	157	0.50	41	0.40	116	0.55
For	28,616	91.50	9,017	87.64	19,599	93.39
Withhold	2,441	7.80	1,224	11.90	1,217	5.80

Table 8 ISS Recommendations around CEO Turnover

This table shows logit model of before and after CEO turnovers on withhold dummy. Before_ or After_ indicate three years before or after the CEO turnover. Turnover, Turnover_Professional, and Turnover_Descendant mean same as Table 2. Withhold dummy equals one if ISS recommends shareholders to withhold their voting. Following Ge, Tanlu, and Zhang (2016), we include several control variables and year and industry dummies. The full sample consists of 1,080 firms (992 firms without a dual class structure) from 2003 to 2010. Standard errors in the parentheses are robust and clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Withhold				
	All firms		Firms without a dual class structure	
Before_Turnover	0.071 (0.151)	0.058 (0.151)	0.083 (0.150)	0.045 (0.153)
Before_Turnover_Fam	0.348* (0.204)		0.179 (0.232)	
Before_Turnover_FP		0.447* (0.249)		0.558* (0.329)
Before_Turnover_FF		0.972* (0.540)		-0.976 (0.895)
Before_Turnover_PP		0.241 (0.264)		0.210 (0.282)
After_Turnover	-0.138 (0.138)	-0.114 (0.133)	-0.149 (0.145)	-0.139 (0.143)
After_Turnover_Fam	0.073 (0.238)		-0.033 (0.258)	
After_Turnover_FP		-0.258 (0.295)		-0.386 (0.343)
After_Turnover_FF		1.119*** (0.382)		1.397*** (0.373)
After_Turnover_PP		0.050 (0.289)		-0.420 (0.319)
Control variables	Yes	Yes	Yes	Yes
Industry and Year effects	Yes	Yes	Yes	Yes
Pseudo R ²	0.087	0.089	0.069	0.072
Number of observations	27,744	27,744	25,388	25,388

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.

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. (2012), 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 1976.¹³ 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 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,

¹³ 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.

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 endogeneity 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.¹⁴

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 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

¹⁴ 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.

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 2012.¹⁵

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

¹⁵ The results are similar when we extend the sample periods.

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 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.¹⁶ 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.

¹⁶ 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.

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, 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 2001, so the pick-up tax was supposed to reappear in 2002. However, Tax Reform 2001 did not bring back the pick-up tax until its expiration date, December 31, 2002. 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 2001. 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 2001. 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 equities, 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 \times 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 valuation method)	$\$96.5 \times 0.5 = \48.25	$\$90 \times 0.5 = \45 (alternative
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 valuation method)	$\$98.5 \times 0.5 = \49.25	$\$90 \times 0.5 = \45 (alternative
2)(cash \$20) -> buy	-	$\$10 \times 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 holds (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** (0.313)	-0.281*** (0.094)	-0.410 (0.362)	-0.820*** (0.258)	-0.230** (0.094)	-0.583** (0.234)
Family*After2001	0.814** (0.378)	0.110* (0.109)	0.705** (0.356)	0.880*** (0.261)	0.182** (0.082)	0.693*** (0.243)
Market-to-book ratio	-3.199 (3.043)	-0.595 (0.754)	-3.139* (3.034)	-1.997 (1.839)	-0.653 (0.760)	-1.920 (1.823)
Cash/Assets	1.794* (0.983)	-0.199 (0.332)	2.054** (0.899)	4.977*** (1.188)	0.219 (0.415)	4.840*** (0.921)
Free cash flow/Assets	3.015*** (0.781)	0.307 (0.205)	2.831*** (0.736)	5.040*** (0.836)	1.406*** (0.258)	8.567*** (1.504)
Debt/Assets	-0.717* (0.430)	-0.448*** (0.169)	-0.231 (0.375)	-1.483*** (0.563)	-0.765*** (0.141)	-0.656 (0.532)
Past 5-year stock return	-0.105*** (0.040)	-0.061*** (0.021)	-0.042 (0.033)	-0.110*** (0.030)	-0.063*** (0.018)	-0.046** (0.023)
Monthly stock volatility	-3.601*** (1.082)	-1.786*** (0.504)	-1.722** (0.847)	-2.792*** (1.053)	-1.450*** (0.377)	-1.285 (0.904)
Log(market value)	-0.016 (0.077)	-0.005 (0.025)	-0.006 (0.071)	0.441*** (0.058)	0.098*** (0.018)	0.344*** (0.054)
Firm Age	0.015** (0.006)	0.019*** (0.002)	-0.002 (0.006)	0.016*** (0.005)	0.019*** (0.002)	-0.003 (0.004)
Constant	1.922*** (0.724)	0.517* (0.294)	1.315* (0.708)	-2.106*** (0.708)	-0.593*** (0.223)	-1.630** (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** (0.460)	0.390** (0.183)	0.587 (0.428)	0.484 (0.469)	0.873** (0.356)	-0.328 (0.338)
Family*	-0.681 (0.705)	-0.369** (0.177)	-0.379 (0.674)	-1.086** (0.528)	-0.774** (0.349)	-0.387 (0.400)
After2010	0.950*** (0.346)	0.159 (0.154)	0.682** (0.324)	-0.312 (0.507)	-0.086 (0.338)	-0.454 (0.399)
Market-to-book ratio	5.243** (2.370)	2.434* (1.452)	2.583* (1.374)	6.345*** (1.263)	2.597*** (0.933)	3.576*** (0.951)
Cash/Assets	5.612*** (1.412)	1.551* (0.950)	3.748** (1.636)	10.529*** (1.867)	3.927*** (1.348)	6.364*** (1.819)
Free cash flow/Assets	3.546*** (1.255)	0.091 (0.437)	3.047** (1.636)	0.668 (1.118)	0.186 (0.951)	-0.030 (1.109)
Debt/Assets	-0.184*** (0.056)	-0.064*** (0.020)	-0.140*** (0.052)	-0.153** (0.059)	-0.063** (0.029)	-0.107* (0.056)
Past 5-year stock return	-7.678** (3.021)	-3.982*** (0.867)	-3.995 (2.715)	-8.693** (4.000)	-3.91*** (1.369)	-5.110* (2.851)
Monthly stock volatility	0.323*** (0.105)	0.015 (0.050)	0.298*** (0.090)	0.704*** (0.161)	0.076 (0.085)	0.625*** (0.128)
Log(market value)	0.016** (0.006)	0.019*** (0.002)	-0.005 (0.006)	-0.009 (0.007)	0.011*** (0.003)	-0.023*** (0.007)
Firm Age	-2.107* (1.189)	0.220 (0.599)	-1.851** (1.010)	-5.291*** (2.051)	-0.990 (0.840)	-3.934*** (0.007)
Constant						
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* (0.444)	-0.118 (0.151)	0.822** (0.414)	-0.018 (0.344)	-0.231* (0.129)	0.192 (0.303)
Family	-0.323 (0.386)	-0.383** (0.164)	0.055 (0.339)	-1.084*** (0.341)	-0.445*** (0.131)	-0.653** (0.295)
State*	-0.500 (0.623)	0.177 (0.185)	-0.633 (0.587)	0.419 (0.483)	0.321* (0.172)	0.128 (0.431)
Family	-0.663 (0.441)	0.208 (0.164)	-0.883** (0.405)	-0.300 (0.369)	0.055 (0.110)	-0.321 (0.341)
State*	-0.157 (0.448)	0.118 (0.154)	-0.254 (0.409)	0.320 (0.384)	0.199** (0.093)	0.167 (0.356)
After2001	1.331** (0.680)	0.057 (0.183)	1.356** (0.642)	0.852* (0.511)	-0.023 (0.151)	0.799* (0.471)
Family*	-3.213 (3.083)	-0.591 (0.767)	-3.153 (3.030)	-2.007 (1.836)	-0.639 (0.805)	-1.929 (1.821)
Market-to- book ratio	2.940*** (0.775)	0.307 (0.205)	2.757*** (0.731)	5.025*** (0.834)	1.409*** (0.257)	4.267*** (0.750)
Free cash flow/Assets	Yes	Yes	Yes	Yes	Yes	Yes
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 (0.875)	-0.103 (0.390)	-0.829 (0.605)	-1.792** (0.865)	-0.461** (0.180)	-1.422* (0.769)
Death	-1.629 (0.855)	-0.817** (0.326)	-0.791 (0.625)	-0.401 (0.791)	-0.108 (0.217)	-0.276 (0.678)
Family	-0.202 (0.848)	-0.364 (0.298)	0.310 (0.806)	-0.159 (1.321)	-0.200 (0.347)	0.002 (1.223)
Diagnosis *Family	-1.572 (1.195)	-0.252 (0.637)	-1.363* (0.748)	-3.527** (1.384)	-0.307 (0.502)	-2.597** (1.262)
Death *Family	1.666 (1.384)	1.207* (0.642)	0.433 (1.011)	2.637 (1.830)	1.768* (0.994)	1.848 (2.956)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Quarter effects	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.2469	0.2144	0.2265	0.4280	0.464	0.331
Observations	6372	6599	6378	6369	6596	6375

Table 7 The Effect of CEOs' Age on Payout Policy

This table displays 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's 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 (1.010)	-0.276** (0.116)	0.588 (1.006)	-0.286 (0.761)	-0.203* (0.110)	-0.073 (0.759)
Old CEO	0.776 (0.575)	0.166 (0.126)	0.601 (0.552)	0.399 (0.340)	0.111 (0.085)	0.279 (0.313)
Old CEO Family	-1.457 (1.070)	-0.191 (0.183)	-1.252 (1.044)	-0.585 (0.780)	-0.115 (0.155)	-0.486 (0.750)
Family *After2001	-0.265 (0.973)	0.240** (0.112)	-0.511 (0.966)	0.306 (0.705)	0.287*** (0.096)	0.009 (0.697)
Old CEO *After2001	-0.772 (0.604)	-0.135 (0.122)	-0.626 (0.588)	0.090 (0.376)	-0.086 (0.091)	0.178 (0.354)
Old CEO *Family *After2001	1.336 (1.271)	-0.220 (0.195)	1.531 (1.245)	0.319 (0.927)	-0.276 (0.180)	0.595 (0.899)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
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 Repurchase s / Total Asset
Family	0.138 (1.004)	-0.371*** (0.115)	0.519 (0.390)	-0.411 (0.640)	-0.246** (0.098)	-0.157 (0.635)
Young CEO	-0.452 (0.435)	-0.155 (0.173)	-0.302 (0.390)	0.703 (0.798)	-0.023 (0.213)	0.697 (0.755)
Young CEO *Family	-1.181 (1.095)	0.156 (0.218)	-1.366 (1.069)	-0.952 (1.100)	0.044 (0.263)	-0.988 (1.043)
Family *After2001	0.360 (0.868)	0.169* (0.092)	-0.554 (0.865)	0.232 (0.581)	0.178** (0.074)	0.039 (0.572)
Young CEO *After2001	0.359 (0.457)	0.048 (0.175)	0.299 (0.416)	-1.641** (0.813)	-0.155 (0.218)	-1.453* (0.773)
Young CEO *Family *After2001	2.108** (1.032)	0.036 (0.221)	2.118* (1.215)	2.398** (1.133)	0.372 (0.294)	2.035* (1.203)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
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), and 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 Repurchase s / Total Asset
Family Firm with Trust	-0.646 (0.413)	-0.197* (0.108)	-0.430 (0.392)	-0.604** (0.295)	-0.153 (0.103)	-0.460* (0.271)
Family Firm without Trust	-0.747 (0.517)	-0.434*** (0.099)	-0.258 (0.505)	-1.372*** (0.305)	-0.416*** (0.104)	-0.897*** (0.277)
Family Firm with Trust* After2001	0.642 (0.464)	0.000 (0.001)	0.656 (0.437)	0.576* (0.300)	0.122 (0.092)	0.469* (0.279)
Family Firm without Trust* After2001	0.903* (0.499)	0.259** (0.111)	0.599 (0.477)	1.633*** (0.372)	0.325*** (0.093)	1.246*** (0.355)
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)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
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