1-2010

Are Family Firms more Tax Aggressive than Non-family Firms?

Shuping CHEN
University of Texas at Austin

Xia CHEN
Singapore Management University, xchen@smu.edu.sg

Qiang CHENG
Singapore Management University, qcheng@smu.edu.sg

Terry Shevlin
University of Washington - Seattle Campus

Are family firms more tax aggressive than non-family firms? *

Shuping Chen
shuping.chen@mccombs.utexas.edu
University of Texas at Austin

Xia Chen
xchen@bus.wisc.edu
Qiang Cheng
qcheng@bus.wisc.edu
University of Wisconsin-Madison

Terry Shevlin
shevlin@u.washington.edu
Foster School of Business, University of Washington

November 2008

Abstract

Taxes represent a significant cost to the firm and shareholders, and it is generally expected that shareholders prefer tax aggressiveness. However, this argument ignores potential non-tax costs that can accompany tax aggressiveness, especially those arising from agency problems. Firms owned/run by founding family members are characterized by a unique agency conflict between dominant and small shareholders. Using multiple measures to capture tax aggressiveness and founding family presence, we find that family firms are less tax aggressive than their non-family counterparts, ceteris paribus. This result suggests that family owners are willing to forgo tax benefits in order to avoid the non-tax cost of a potential price discount, which can arise from minority shareholders' concern with family rent-seeking masked by tax avoidance activities (Desai and Dharmapala 2006). This inference is further strengthened by our finding that family firms without long-term institutional investors (as outside monitors) and family firms expecting to raise capital exhibit even lower tax aggressiveness. Our result is also consistent with family owners being more concerned with the potential penalty and reputation damage from an IRS audit than non-family firms. We obtain similar inferences when using a small sample of tax shelter cases.

* We thank Helen Adams, Bob Bowen, Gus DeFranco, Scott Dyreng, Fayez Elayan, Steve Hillegeist, Frank Hodge, Ross Jennings, Steve Kachelmeier, Bill Kinney, Oliver Li, Dawn Matsumoto, Mervi Niskanen, Lill Mills, Mervi Niskanen, Morton Pincus, Shiva Rajgopal, Gord Richardson, Richard Sansing, Chuck Swenson, Bob Trezevant, Franco Wong, Yong Zhang, and workshop and conference participants at the 2008 CAAA conference, the 2008 FARS conference, the 2008 AAA conference, the 2008 EAA conference, the 2008 HKUST Summer Symposium on family firms, the 2007 International Symposium on Empirical Accounting Research, Baruch College, University of California at Irvine, Dartmouth College, Simon Fraser University, University of Southern California, University of Minnesota, University of Texas at Austin, University of Toronto, University of Washington, and University of Wisconsin-Madison. The authors acknowledge the financial support of UW Business School Faculty Development Fund (Shuping Chen), the Social Sciences and Humanities Research Council of Canada and PricewaterhouseCoopers (Xia Chen, Qiang Cheng), and the Paul Pigott/PACCAR professorship (Terry Shevlin).

1. Introduction

The government (federal, state and local) takes a greater than one-third share of a firm's pre-tax profits. Given the significance of this tax cost to the firm and shareholders, it might be expected that tax aggressiveness is desired by shareholders. However, this argument ignores potential non-tax costs that can accompany tax aggressive activities (Scholes et al. 2005). In this paper, we study the implications of non-tax cost considerations arising from the unique agency conflict in family firms for their tax management activities. Specifically, we investigate whether family firms are more or less tax aggressive than non-family firms.[1]

As is common in the literature, we define family firms as firms where members of the founding family continue to hold positions in top management, are on the board, or are blockholders of the company.[2] Founding family presence implies a greater agency conflict between large and minority shareholders and a smaller agency conflict between owners and managers as compared to non-family firms. The nature and extent of agency conflicts, such as the costs arising from hidden actions of managers, can affect the level of tax aggressiveness. Accordingly, prominent researchers (Scholes et al. 2005; Desai and Dharmapala 2004, 2006) call for more research to examine tax aggressiveness within an agency context. The different agency conflicts in family firms versus non-family firms enable us to examine this issue.

[1] Consistent with existing research (e.g., Frank, Lynch, and Rego 2006), we define tax aggressiveness as downward management of taxable income through tax planning activities. Tax aggressiveness in our paper encompasses tax planning activities that are legal, or that may fall into the gray area, as well as activities that are illegal. Thus, tax aggressive activities do not necessarily indicate that the firm has done anything improper. Further, we use the term tax aggressiveness throughout the paper but the term can be used interchangeably with tax avoidance and tax management.

[2] We also examine a stricter definition of family firms in which we classify firms as family firms only if the family's equity holdings are at least five percent. Under this definition 32.3% of the firms are classified as family firms. As reported below, we find qualitatively similar results.

In addition, in their review of the empirical tax literature, Shackelford and Shevlin (2001) point out that insider control and other organizational factors, such as ownership structure, are important, but under-studied, determinants of tax aggressiveness.[3] We fill in the void by examining the impact of founding family ownership on tax aggressiveness. The presence of the founding family leads to a different ownership structure compared to non-family firms and thus provides a unique setting to examine the impact of insider control on tax aggressiveness activities. Lastly, family firms are an important component of the economy – 32% to 46% of S&P 1500 firms are classified as family firms depending on the definition of family firms – and are thus of interest in their own right.

To determine the level of tax aggressiveness, firms trade off the marginal benefits against the marginal costs of managing taxes. The marginal benefits include greater tax savings, whereas the marginal costs include the potential penalty imposed by the IRS, implementation costs (time/effort and transaction costs of implementing tax transactions), and agency costs accompanying tax aggressive activities (including rent extraction). Desai and Dharmapala (2004, 2006) argue that the critical characteristics of tax aggressive activities are complexity and obfuscation. Such complexity could be used to mask rent extraction, such as earnings management, related-party transactions, and other perquisite consumption behavior.[4] If this is the case, shareholders will price protect

[3] Prior literature has examined the role of firm size and industry membership in explaining the cross-sectional variation in corporate tax burdens (often defined as either the current effective tax rate or total effective tax rate). See, for example, Siegfried (1974), Stickney and McGee (1982), Zimmerman (1983), Shevlin and Porter (1992), and Gupta and Newberry (1997). For recent studies with an emerging interest in tax aggressiveness, see Hanlon, Mills, and Slemrod (2005) and Dyreng, Hanlon, and Maydew (2007). Most of these studies were motivated by fairness/equity issues – the distribution of tax burdens across firms.

[4] For example, when investigating Enron's tax management activities, the Joint Committee on Taxation (JCT) found that Enron treated its tax department as another profit center to manufacture fake accounting earnings with no tax benefit, while paying a significant transaction fee (real cash outflow) in the process. As an example of related party transactions, Andrew Fastow, Enron's CFO, was a key owner in some of the

themselves in an efficient capital market. That is, the potential rent extraction of tax aggressiveness, while beneficial to the decision maker, comes with a non-tax cost: a price discount on the firm's stock imposed by external shareholders. This non-tax cost is particularly poignant in family firms due to their larger dominant-small shareholder conflict: family owners have greater opportunities for rent extraction, but at the same time non-family shareholders, anticipating self-dealing, can penalize family members' self-dealing by discounting the share price.

Under the ceteris paribus condition, the difference between family and non-family firms in tax aggressiveness depends on the impact of the differential characteristics of family owners versus managers in non-family firms on the benefits and costs of tax aggressiveness. Because family owners have substantially higher holdings, they benefit more from tax savings or rent extraction that can be concealed by tax aggressive activities, but at the same time, the potential price discount is also more costly for them. In addition, due to their much larger equity ownership and their much longer investment horizons, family owners are more concerned with the potential penalty imposed by the IRS and the reputation damage from being involved in a tax related lawsuit. Thus, both the benefits and costs appear to be higher for family owners than for managers in non-family firms. Accordingly, *ex ante*, it is unclear whether family firms will be more or less tax aggressive than non-family firms, and we examine this issue empirically.

To examine the tax aggressiveness of firms, we rely on multiple measures of tax aggressiveness drawn from the literature. Specifically, we use two effective tax rate measures and two book-tax difference measures: effective tax rate (defined as total tax

---

notorious SPEs that transferred resources from Enron to the SPEs, with himself as the primary beneficiary (McLean and Elkind 2003).

expense divided by pretax book income), cash effective tax rate (cash tax paid divided by pretax book income), the book-tax difference measure advanced by Manzon and Plesko (2002), and a residual book-tax difference measure developed in Desai and Dharmapala (2006). Firms that are more tax aggressive have lower effective tax rates and higher book-tax differences than other firms. As an additional test, we also use a factor analysis to extract one common factor from these four measures.

Using 3,865 firm-year observations from S&P 1500 firms in the period 1996-2000, we document that family firms exhibit lower tax aggressiveness than their non-family counterparts, as demonstrated by their higher effective tax rates and lower book-tax differences.[5] This result holds both before and after we control for firm characteristics that are cross-sectionally associated with our tax aggressiveness measures: firm performance, leverage, loss carry forward, foreign income, tangible and intangible assets, equity income, firm size, market to book ratio, and industry fixed effects. Including these controls ensures that the documented difference in tax aggressiveness between family and non-family firms is not driven by fundamentals. For example, firms with loss carry forward will have a lower tax rate than other firms. Since on average family firms perform better than non-family firms (Anderson and Reeb 2003), family firms will appear to have a higher tax rate and be less tax aggressive. However, such a difference is not due to tax planning of non-family firms or lack of tax planning in family firms. Controlling for those firm characteristics mitigates the concern that correlated omitted

[5] Endogeneity is unlikely to be of critical concern in our setting, as it is unlikely that firms' tax aggressiveness prompts families to maintain or relinquish their holdings. However, assuming most firms start out with founders controlling the firm, there is the issue of why some firms continue to have family ownership/control while others do not. This self selection issue introduces a potential omitted correlated variable problem as some of the determinants might affect tax aggressiveness. To address this issue, we include a comprehensive list of controls. In particular, in the main tests we control for growth, size, and firm performance, and in a sensitivity test we further control for firm age, which are correlated with firm choice (family versus non-family firms).

variables explain our results. Note that including those characteristics admittedly controls for some of the tax aggressive mechanisms. However, doing this simply controls for the average tax effects associated with these variables (e.g., firms with more foreign income on average have lower ETRs), and leaves much room to capture cross-sectional variation in firms' tax planning activities (e.g., for firms with foreign operations, more tax aggressive firms will be more aggressive in transfer pricing to shift income). Our family firm variables also capture the difference between family firms and non-family firms in tax planning through means such as state tax planning, tax shelters, use of flow though entities, and use of off-balance-sheet financing, to name just a few. We provide a detailed discussion in Section 3.3.

We further document that family firms without long-term institutional investors (as outside monitors) and family firms expecting to raise capital exhibit even lower tax aggressiveness. These results are consistent with family owners in these firms having even stronger incentives to reduce the perception of family entrenchment: family firms are willing to forgo tax savings in order to avoid the associated price discounts. In addition, we conduct many sensitivity tests and obtain similar inferences. Our results are robust to the alternative explanation of differential firm sophistication and hold after controlling for outside blockholder ownership and CEO ownership. We obtain similar inferences when using a sample of tax shelter cases.

Our paper contributes to the literature in the following ways. First, our evidence provides an important step toward a better understanding of the impact of equity ownership and agency conflict on firms' tax reporting practices. Prior research generally focuses on the differences in firms' tax reporting between private and public companies

in a few selected industries, such as banks and insurers (e.g., Cloyd, Pratt, and Stock 1996; Beatty and Harris 1999; Mikhail 1999; Mills and Newberry 2001; Hanlon, Mills, and Slemrod 2005). The general conclusion of these studies is that private companies are more tax aggressive. In contrast, we examine public firms (S&P1500 firms) with diverse industry membership and employ proxies that capture the overall tax aggressiveness. Thus, our evidence can be generalized to a greater section of the economy. Interestingly we find family firms to be less tax aggressive. While family firms are similar to private firms in the concentration of ownership of selected individuals, the public nature of family firms gives rise to unique agency conflicts that can lead to differential non-tax cost concerns and hence differential tax aggressiveness.

To reconcile our findings with prior studies, we examine the banking industry further. We compare the tax aggressiveness of public family banks, public non-family banks, and private banks. (We focus on banks because financial data for private firms in other industries are not readily available.) Using both univariate and multivariate analyses, we find that private banks are the most tax aggressive, followed by public non-family banks, and then by public family banks. This reconciles our findings with prior research and is consistent with our conjecture that different agency problems and reputation concerns faced by private firms (as opposed to public family firms) lead to different tax aggressiveness.

Second, we extend the family firm literature by examining the impact of founding family presence on tax aggressiveness. Our evidence also corroborates Desai and Dharmapla's (2004, 2006) argument and highlights the importance of taking into consideration (1) the complementarity between tax-avoidance activities and rent

extraction, and (2) the non-tax costs arising from the greater agency conflicts between large and small shareholders in family firms in studying the tax aggressiveness of family firms. Our results show that the non-tax costs arising from agency conflicts can have a significant impact on these firms' tax management activities.

The rest of the paper proceeds as follows. In the next section we review related literature and develop our hypothesis. Section 3 describes our sample and research design. Sections 4 and 5 present our main results and corroborating evidence, and Section 6 reports additional analyses. Section 7 concludes.

2. Related literature and hypothesis development

Taxes represent a significant cost to the company and a reduction in cash flows available to the firm and shareholders, leading to firms' and shareholders' incentives to reduce taxes through tax aggressive activities. However, it is simplistic to assume that tax aggressive activities always lead to firm value maximization as there are potential costs of being tax aggressive, including non-tax costs arising from managers' hidden actions (Scholes et al. 2005). Tax aggressiveness also creates lost tax revenues to the IRS and additional regulatory costs to the SEC, as firms can utilize the opaqueness of tax saving transactions to mask earnings management (Desai and Dharmapala 2004, 2006). Despite the important implications of tax planning for shareholders and regulators, our understanding of the determinants of tax reporting aggressiveness is limited. In particular, as pointed out in Shackelford and Shevlin (2001), managerial or insider control of a firm is potentially an important determinant of tax aggressiveness, but there is little research on this issue. Scholes et al. (2005) and Desai and Dharmapala (2006) also call for more

research of tax management in the presence of agency conflicts. We fill this gap by examining the impact of family ownership and control on tax aggressiveness.

2.1. Costs and benefits of being tax aggressive

A benefit to one party can be a cost to another party. To streamline the discussion, we take the perspective of the party that presumably determines the extent of tax aggressiveness: family owners in family firms and CEOs in non-family firms.[6] In this section, we discuss the costs and benefits of tax aggressiveness, and in the next section, we discuss how they differ across these two groups of firms.

When determining tax aggressiveness, decision makers tradeoff the benefits and costs. The most obvious benefit of tax aggressiveness is greater tax savings. While such savings accrue to shareholders, managers also benefit if they are compensated, directly or indirectly, by shareholders for their efforts in effective tax management. Another potential benefit of tax aggressiveness to the decision makers, i.e., managers and family owners, is rent extraction that can be both enabled and masked by opaque tax avoidance activities. Rent extraction refers to non-value maximizing activities decision makers pursue at the expense of shareholders, including aggressive financial reporting, perk consumptions, and related party transactions. Desai and Dharmapala (2004, 2006) model the complementary relation between rent extraction and tax avoidance. They point out that tax-avoidance activities, such as seeking off-shore tax havens or creating complex structures involving tax-indifferent related parties, often comprise very complex transactions that are designed to obscure the underlying intent and to avoid detection by the IRS. Examples of complicated tax transactions include contested liability acceleration

[6] Family owners often act as CEOs in family firms; even when they are not CEOs, we assume that family owners' influence of and involvement in firm management can tilt the firms' decisions to their preference.

strategy, cross-border dividend capture, and offshore intellectual property havens (e.g., Graham and Tucker 2006). The obscure nature of such tax aggressiveness activities makes it easier for managers/family owners to hide rent extraction activities.

Enron offers a stylized example of manufacturing earnings through tax aggressiveness activities; a report by the Joint Committee on Taxation (JCT) of the US Congress (2003) provides detailed analysis of how Enron manufactured accounting earnings through extensive use of tax shelters that led to essentially no incremental tax benefit.[7] Similarly, Dynergy engaged in a series of complicated tax transactions to mislead investors about its financial performance. Specifically, Dynergy, through tax transactions with third parties, intentionally misclassified a temporary financing cash inflow as operating cash flows so as to mislead investors about the quality of their accounting earnings.[8] Such aggressive financial reporting benefits managers or insiders as it can lead to higher executive compensation or temporarily increase stock price allowing private gains from insider trading (Cheng and Warfield 2005). When controlling a separate business, insiders can also benefit themselves by buying assets at a higher price than the market price from, paying excessive consulting fees to, or borrowing money at higher interest rates from, their controlled business. All these activities can be promoted as saving taxes for the company of interest. In fact, in an effort to reduce tax

[7] For example, through one of its tax transactions named "Project Steele," Enron paid over $11 million in fees in order to generate $133 million in pretax financial income, though it would not have to pay taxes well into the future through previous tax shelters. Based on extensive analyses, the JCT concluded that "Enron looked to its tax department to devise transactions that increased financial income. In effect, the tax department was converted into an Enron business unit, complete with annual revenue targets. The tax department, in consultation with outside experts, then designed transactions to meet or approximate the technical requirements of tax provisions with the primary purpose of manufacturing financial statement income." See Desai and Dharmapala (2004) for more details.

[8] In order to obscure their underlying intent, Dynergy prepared two sets of records separately for their accountant and other parties involved in the funding of their 2001 tax sheltering transactions. See Desai and Dharmapala (2006) for more details.

shelter activities, many states recently enacted laws that disallow deductions for interests and intangible expenses paid to related parties (Schadewald 2005).

On the cost side, one important cost of tax aggressiveness is the potential penalty imposed by the IRS, which is the product of the probability of being audited and being found out by the IRS and the expected penalties once found out.[9] Another significant non-tax cost to the decision maker is the potential price discount imposed by other shareholders if they perceive that decision makers use tax aggressiveness to extract rents (Desai and Dharmapala 2006). The complementarity of tax aggressiveness and rent extraction and the obscure nature of tax transactions make it extremely difficult for shareholders to disentangle these two incentives, and accordingly they will price protect themselves and bid the firm price down.[10] Consistent with this notion, Desai, Dyck, and Zingales (2007) find that firms targeted by increased tax enforcement in Russia experience an increase in market value. This suggests that even though tax aggressive activities save investors cash, investors are aware of the potential managerial self-dealing and react favorably to regulatory actions that prevent managers from transferring corporate resources through tax transactions.

[9] The cost of tax aggressiveness also includes invested time/effort and the transaction costs of tax planning activities. The former is likely similar across family and non-family firms, and for the latter, one can think of tax savings as net savings after transaction costs. Another cost of tax aggressiveness is lower reported earnings, which can occur due to either implicit taxes and/or book-tax conformity. To the extent that family owners are less concerned with near-term reported earnings, family firms are expected to be more tax aggressive.

[10] Shareholders can detect firms' extent of tax aggressiveness through a variety of means. For example, they can observe ETRs and book-tax differences and they have access to press discussions about firms' tax practices.

2.2. Implications of ownership characteristics and agency conflicts for family firms' tax aggressiveness

Whether family firms exhibit more or less tax aggressiveness than non-family firms depends on whether the above benefits and costs are more substantial for family owners than for managers in non-family firms. Relative to managers in non-family firms, family owners have larger ownership, longer investment horizons, and greater reputation concerns. In addition, due to family owners' high ownership, family firms differ from non-family firms in that they have (1) greater owner-manager incentive alignment and thus lower owner-manager conflict, but (2) bigger agency conflicts between dominant and small shareholders. These unique characteristics of family firms all suggest that both the costs and the benefits of being tax aggressive are higher for family firms. Below we detail our reasoning.

The potential benefits are larger for family owners than for managers in non-family firms for several reasons. First, family owners have much higher ownership than professional CEOs and thus they capture more of the tax savings. Among S&P 1500 family firms, the founding family on average owns more than 18% of the outstanding equity. In contrast, the average CEO ownership is less than 1% in non-family firms. Second, of all family firms, more than 60% are managed by a family member and over 98% of the families have at least one family member sitting on the board of directors. Family owners' greater influence provides the founding family with more *opportunities* to seek rents, through transactions such as tax avoidance activities and related party

transactions. Thus, the potential private benefits from rent extraction can also be bigger for family owners than for managers in non-family firms.[11]

Higher benefits of tax aggressiveness to family owners would imply that family firms are more tax aggressive than non-family firms, if the costs are similar across the two groups. However the costs of being tax aggressive are higher for family firms due to family firms' unique agency conflicts. As discussed above, while having a lower manager-owner agency conflict, family firms face a larger agency conflict between dominant and smaller shareholders. Accordingly, the cost of aggressively managing taxes – the price discount arising from minority shareholders' perception of insiders' entrenchment – is higher. Family owners' large and under-diversified equity positions imply that the cost of a price discount has a larger impact on family owners' wealth than on managers in non-family firms.

In addition, the potential penalty imposed by the IRS is likely more substantial to family owners than to CEOs in non-family firms, because family owners are under-diversified and have their wealth tied disproportionately to their firms.[12] Also, there is generally a long lag between the design/implementation of tax transactions and the detection by the IRS. Given that managers' horizon tends to be shorter than that of family owners, it is easier for them to avoid the long-run consequences of an IRS audit and

[11] The saga surrounding the fall from grace of the founders of Adelphia provides a good example of family rent extraction. The SEC alleges that John Rigas, founder and CEO of the now bankrupt cable TV company, Adelphia Communications, and his two sons Timothy Rigas and Michael Rigas who served as senior executives, diverted firm resources for personal use: they asked the company to pay out over $252 million to satisfy margin calls against the Rigas family brokerage accounts, they used fraudulent documents and misleading accounting tricks to obtain more than $420 million in Adelphia stock for the Rigas family, without paying a dime, they asked the company to spend more than $13 million on building a golf course on John Rigas' land, and they forced the company to pay for airplanes and luxury apartments for the personal use of the Rigas family unrelated to Adelphia's business.

[12] When William Lauder, grandson of the company founder of Estee Lauder, recently stepped down, he made the following comment: "I am committed to the company. It's the vast majority of my personal wealth and my family's personal wealth – and we fully expect to be actively involved with this company going forward (The *Wall Street Journal* Nov 9, 2007, 'Lauder Scion Way Out, P&G Executive Way In')."

detection. In contrast, it is more difficult for family owners to avoid such penalties due to their much longer holding horizons.[13]

Family owners also have incentives to protect the reputation of the "family name" since they generally view their firms as legacies to be passed on to the next generations, not wealth to be consumed during their lifetime (Casson 1999). Anecdotal evidence suggests that family firms are concerned about the political impact of being labeled as tax aggressive.[14] These concerns suggest that family owners have higher incentives to avoid any negative publicity from an IRS audit of tax strategies. Consistent with family owners' greater reputation and litigation concerns, Chen, Chen, and Cheng (2008) find that although family firms on average provide less voluntary disclosure than non-family firms, they are more likely to give earnings warnings to preempt the negative publicity that can result from not issuing warnings.

Overall, although the benefits of tax aggressiveness are expected to be higher for family owners than for managers in non-family firms, the costs are likely higher too. It is thus unclear whether family firms will be more or less tax aggressive than non-family firms. Accordingly, our hypothesis is non-directional and we address this issue empirically:

Hypothesis: Family-firms exhibit a systematically different level of tax aggressiveness compared to non-family firms.

[13] Joos, Leone, and Zimmerman (2003) report that the average tenure of CEOs in non-family firms is 8 years, while the average tenure for CEOs who are founding family members is over 17 years and the CEO title is often passed from one family member to another.

[14] For example, WalMart was criticized for avoiding taxes in the early 2000s. WalMart subsequently spent considerable energy in combating the label of a 'poor corporate citizen'. Toward this end, in WalMart's 2004 letter to the shareholders, Wal-Mart president and CEO Lee Scott explicitly disclosed the federal income taxes that WalMart paid in 2004 ($4 billion) to highlight the firm's contribution to the treasury department.

A finding of greater tax aggressiveness in family firms is consistent with family owners valuing the tax savings and rent extraction more than the associated costs: price discount, IRS penalty, and reputation damage. An opposite finding would suggest that family owners' concern with these costs outweighs the benefits of tax aggressiveness.

3. Sample and research design

3.1. Sample

Our sample consists of 3,865 firm-years from 1,003 firms in the S&P 1500 index (S&P 500, S&P Mid Cap 400, and S&P Small Cap 600 indices) covering the period 1996-2000.[15] These are the firms that have the required data from Compustat (for financial accounting information and tax aggressiveness measures), ExecuComp (for executive compensation information), and Investor Responsibility Research Center (IRRC, for ownership and board information).

Following prior research (e.g., Anderson and Reeb 2003; Anderson et al. 2003), family firms refer to those in which founders or their family members (by either blood or marriage) are key executives, directors, or blockholders. Our collection of ownership and the founding family related information involves several steps. First, we start with ExecuComp and IRRC databases to identify key insiders (top executives and directors)

[15] Our sample ends in 2000 due to prohibitively high data gathering costs related to tracing founding families and to finding detailed information on family ownership and control. Note that our family firm classification is verified and updated every year. In contrast, some prior studies rely on *Business Week* classifications of S&P 500 in 2003 (BW classification) and extend this classification to other years; this approach leads to misclassification for firms that change their status over time. We compare BW (2003) classification with ours for S&P500 firms for 1996-2000, and find that the discrepancies (measured as a percentage of the number of firms in the year) are 12.1%, 11.7%, 10.4%, 9.5%, and 7.8% respectively. We re-run our analysis using the BW (2003) classification for S&P 500 firms and find somewhat weaker but qualitatively similar results. Thus the potential misclassification does not affect the inferences in our setting but it is possible that the inferences are affected in other settings, especially if researchers extend the BW classification further back in time.

for each company and compile ownership of each insider. Second, for each firm-year, we collect information about the founding family: the identity of founders, whether founders or their family members are actively involved (e.g., holding key executive positions, being directors, or being blockholders), and if they are actively involved, the ownership of the founding family. This step is completed through examining Hoover's company records, company proxy statements or websites (Hoover's provides comprehensive information about the business, company history, and executives for almost all public companies). Third, based on proxy statements, we compile the identities and ownership of blockholders other than insiders and founding family members.

Table 1 reports our sample composition. Of the 3,865 firm-year observations in the S&P1500 index, over 46% are family-firm observations, and over 47% of the 1,003 unique firms that comprise our sample are family firms (Panel A). Panel B of Table 1 tabulates the industry distribution. There are more family firms than non-family firms in Recreational Products, Printing and Publishing, Apparel, Pharmaceutical Products, Construction, Electronic Equipment, Transportation, Wholesale and Retail, and Restaurants. In contrast, non-family firms outweigh family firms in Steel works, Machinery, Petroleum and Natural Gas, Utilities, Hotel and Motel, Banking, and Trading. Since prior literature documents cross-industry variation in firms' effective tax rate, we control for industry effects by including industry dummies in our regression analysis.

Panel C of Table 1 reports more detailed information about family control and ownership. Approximately 64% (1,140 out of 1,790 firm years) of the family-firms are managed by family CEOs whereas the rest are managed by professional CEOs. Over 98% of the family firms have at least one family member sitting on the board of directors, and

approximately 23% have at least three family members on the board. On average, family equity ownership is 18.2% within family firms (untabulated), but there is a large variation in family ownership. About 70% of family firms have family ownership of 5% or higher and about 27% of family firms have family ownership of 25% or higher.

3.2. Tax aggressiveness measures

To triangulate our results, we use four measures of tax aggressiveness. Below we discuss each measure in turn. For ease of reading we present the detailed definitions of these variables in the Appendix.

The first measure we use is the effective tax rate ($ETR_{i,t}$):

$ETR_{i,t}$ = Total Tax Expense$_{i,t}$ (Compustat Data #16) / Pretax Income $_{i,t}$ (#170).

This measure reflects aggressive tax planning through permanent book-tax differences. Examples of such tax planning are investments in tax havens with lower foreign tax rates (provided that foreign source earnings are classified as permanently reinvested), investments in tax exempt or tax favored assets, and participation in tax shelters that give rise to losses for tax purposes but not for book purposes (see Wilson 2008 for a discussion of such shelters).

The second measure we employ is the cash effective tax rate ($CETR_{i,t}$):

$CETR_{i,t}$ = Cash Taxes Paid$_{i,t}$ (#317) / Pretax Income $_{i,t}$ (#170).

This measure reflects both permanent and temporary book-tax differences. By focusing on cash taxes paid, this measure avoids the overstatement of current tax expense due to the accounting for the income tax benefits of employee stock options during our pre-SFAS 123R sample period (see Hanlon and Shevlin 2003 for further discussions).[16]

[16] In an additional test, we also explicitly control for the income tax benefits of employee stock options and obtain similar inferences.

We also capture tax aggressiveness with two book-tax difference measures: the Manzon-Plesko (2002) book-tax difference ($MPBT_{i,t}$) and a residual book-tax difference measure ($DDBT_{i,t}$) advanced by Desai and Dharmapala (2006). The Desai-Dharmapala measure is the residual from a regression of the Manzon-Plesko book-tax difference on total accruals. As the book-tax difference can be a result of both earnings management and tax planning, the Desai-Dharmapala measure purges, at least partially, the book-tax difference caused by earnings management activities.

Panel A of Table 2 reports the means and medians of the tax aggressiveness measures, separately for family and non-family firms.[17] When using the common definition of family firms, the statistics indicate that family firms exhibit significantly lower tax aggressiveness than non-family firms: the effective tax rate measures are higher and the book-tax difference measures are lower for family firms than for non-family firms. The differences in means and medians are significantly different from zero, with the exception of the difference in the mean cash effective tax rate. In the same panel, we also report the statistics using an alternative family firm classification: firms with at least 5% family ownership. The inferences based on ETR measures are similar, but the difference in book-tax difference measures is insignificant.

Table 2, Panel B reports the correlations between these four measures. All correlations are significantly different from zero at the 0.001 level: the effective tax rate measures are positively correlated with each other, and are negatively correlated with the book-tax difference measures. Accordingly, we extract a common factor from these four

[17] The numbers are comparable to those reported in prior research (e.g., Manzon and Plesko 2002; Dyreng et al. 2008). Note that some prior studies, such as Graham and Tucker (2006), only include federal tax and thus report a much lower effective tax rate. In contrast, we include federal, foreign, and state taxes in the calculation of effective tax rate measures. We obtain the same inferences when we analyze an estimate of federal effective tax rate.

measures and use it in an additional test. However, the relatively low magnitudes of the correlation coefficients indicate that the four measures capture different aspects of tax aggressiveness and/or contain measurement errors. Using different measures of tax aggressiveness with similar results helps triangulate and strengthen our inferences.

3.3. Research Design

To test our hypothesis, we estimate the following cross-sectional regression:

$$\begin{aligned} TaxAgg_{i,t} = {} & \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NOL_{i,t} + \beta_5 \Delta NOL_{i,t} \\ & + \beta_6 FI_{i,t} + \beta_7 PPE_{i,t} + \beta_8 INTANG_{i,t} + \beta_9 EQINC_{i,t} + \beta_{10} SIZE_{i,t-1} \\ & + \beta_{11} MB_{i,t-1} + \beta_{12} BTD_{i,t-1} + YearDummies + IndustryDummies + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where:

$TaxAgg_{i,t}$ = Tax aggressiveness measure as discussed above;
$FAMILY_{i,t}$ = Measured as 1) an indicator variable coded as 1 for family firms, zero otherwise; 2) founding family equity ownership; or 3) an indicator variable coded as 1 if founding family ownership is ≥ 5%;
$ROA_{i,t}$ = Return on assets for firm i, year t, measured as operating income (#170-#192) scaled by lagged assets (#6);
$LEV_{i,t}$ = Leverage for firm i, year t, measured long-term debt (#9) scaled by lagged assets (#6);
$NOL_{i,t}$ = Indicator variable coded as 1 if loss carry forward (#52) is positive as of the beginning of the year t;
$\Delta NOL_{i,t}$ = Change in loss carry forward (#52) for firm i, year t, scaled by lagged assets (#6);
$FI_{i,t}$ = Foreign income (#273) for firm i, year t, scaled by lagged assets (#6);
$PPE_{i,t}$ = PPE (#8) for firm i, year t, scaled by lagged assets (#6);
$INTANG_{i,t}$ = Intangible assets (#33) for firm i, year t, scaled by lagged assets (#6);
$EQINC_{i,t}$ = Equity income in earnings (#55) for firm i, year t, scaled by lagged assets (#6);
$SIZE_{i,t-1}$ = Natural logarithm of the market value of equity (#199×#25) for firm i, at the beginning of year t;
$MB_{i,t-1}$ = Market to book ratio for firm i, at the beginning of year t, measured as market value of equity (#199×#25), scaled by book value of equity (#60);
$BTD_{i,t-1}$ = Book-tax difference, for firm i, year t-1 (see the Appendix for detailed definition).

For ease of reading, we also present these variable definitions in the Appendix.

If family firms are more tax aggressive than non-family firms, we expect a negative coefficient on the FAMILY variable, β_1, when using effective tax rates to capture tax aggressiveness, and a positive coefficient β_1 when using book-tax differences to capture

tax aggressiveness. We expect opposite signs if family firms are less tax aggressive. To mitigate statistical concerns arising from the potential time-series dependence in the data, we conduct a robustness check by taking the averages of our tax aggressiveness measures and our independent variables over the five year sampling period so that each firm only appears once in our analysis. We discuss the analyses and results of this approach in Section 6.5. As an additional robustness check, we also estimate regression (1) by year and use the Fama and MacBeth design to test the significance level of the average coefficients. We find the results are essentially the same as those reported below, and for the sake of brevity, we do not tabulate these results.

We control for firm characteristics documented in prior literature (e.g., Manzon and Plesko 2002; Mills 1998; Rego 2003; Dyreng et al. 2008; Frank et al. 2008) that are correlated with our tax aggressive measures so as to ensure that our results are not driven by fundamental differences between family and non-family firms. The first set of control variables (ROA, LEV, NOL, ΔNOL, and FI) captures firms' profitability, leverage and foreign operations. For example, prior research (e.g., Anderson and Reeb 2003) finds that family firms have better operating performance than non-family firms (and likely less loss carry forward). More profitable firms and firms with less loss carry forward tend to have higher effective tax rates. Therefore family firms will appear to be less tax aggressive if we do not control for profitability and loss carry forward. Similar logic applies to leverage and foreign operations.

The second set of control variables (PPE, INTANG, EQINC) captures differences in book and tax reporting that can affect our tax aggressiveness measures. Capital intensive firms are affected more by the different treatments of depreciation expense for

tax and financial reporting purposes, thus we include PPE. We include intangible assets (INTANG) and equity in earnings (EQINC) in our regressions to control for the differential book and tax treatments of intangible assets and consolidated earnings accounted for using the equity method. Similar to the first group of variables, these controls are intended to capture systematic differences between family and non-family firms that are correlated with our tax measures.

Lastly, we control for firm size and growth (proxied by MB) as growing firms may make more investments in tax-favored assets that generate timing differences in the recognition of expenses. For regressions with book-tax differences as the dependent variable, we follow prior studies (e.g., Manzon and Plesko 2002) and include lagged book-tax differences to control for book-tax differences that persist through time.[18] Note that with the exception of SIZE, MB, and BTD, all other control variables are measured contemporaneously with the dependent variables, as these factors are expected to be correlated with tax aggressiveness contemporaneously. In addition, for all regressions we include dummies to control for year and industry fixed effects.[19]

Note that controlling for firm characteristics that are related to standard methods of tax planning (foreign operations, intangible assets, loss carry forward, etc.) is not "throwing the baby out with the bath water." Adding those variables simply controls for

[18] To maintain the symmetry between ETR regressions and book-tax difference regressions, in sensitivity tests we either exclude lagged book-tax differences for regressions explaining book-tax differences, or include lagged ETR measures for regressions explaining ETR measures. Our inferences on the family test variables are unchanged.

[19] King and Peng (2008) examine the history of firms included in the S&P500 in 1993 and document that family firms tend to lose control earlier in more cyclical industries and industries with high capital intensity. Their result is consistent with our evidence in Table 1, Panel B. Family firms cluster in less capital intensive and unregulated industries probably because family firms are less likely to use outside financing due to risk aversion or fear of losing control and families prefer less regulatory interference. Apart from controlling for industry fixed effects, we re-run our analysis using industry-clustered t-statistics and obtain similar results. We also exclude all the regulated industries from our sample and obtain similar results.

the average tax effects associated with those variables (for instance, firms with more foreign income on average have lower ETRs). Take foreign operations as an example. Firms with similar foreign operations are not equally tax aggressive. Among firms with foreign operations, one firm can locate in low foreign tax jurisdictions (such as Microsoft in Ireland) to take advantage of the low tax rates, whereas another firm locates in countries to be close to major customers or suppliers and these countries might have high tax rates. That is, more tax aggressive firms will place a higher priority on taxes in their foreign location decisions. Further, more tax aggressive firms with foreign operations will be more aggressive in their transfer pricing to shift income to lower tax rate jurisdictions. Therefore, controlling for the level of foreign operations purges out the average ETR effect but leaves much room for us to capture firms' tax planning activities within the scope of foreign operations. Similar arguments apply to other control variables. Thus the estimated coefficient on the family firm measures captures variation in family firms' tax aggressiveness relative to non-family firms after controlling for the average level of the tax measures for firms with foreign operations, with intangibles, etc., as well as variation in tax aggressiveness due to other means.[20]

Panel A of Table 3 presents the descriptive statistics of firm characteristics and control variables, separately for family firms and non-family firms. Consistent with prior literature (e.g., Anderson and Reeb 2003), we find that family firms exhibit better operating performance (ROA) and higher market-to-book ratios. Family firms are less

[20] Some examples of other tax planning activities include: state tax planning, tax sheltering, use of flow through entities to achieve tax savings, use of off-balance sheet financing vehicles that give rise to tax deductions but no debt or interest on the financial statements (Mills and Newberry 2005), structuring inter-corporate investments to get dividend treatment (taking advantage of the corporate dividends received deduction, rather than corporate capital gains tax treatment, since corporate capital gains are taxed at the same rate as ordinary corporate income), and aggressively claiming the R&D tax credit – by being overly inclusive in what is included in R&D expenditures.

leveraged, have lower capital intensity (PPE), and are smaller than non-family firms, though they are not significantly different from non-family firms in the existence of net operating loss (NOL) or intangible assets.

Panel B of Table 3 presents the correlations among the control variables. Consistent with Panel A, the family firm indicator is positively correlated with ROA and MB, and negatively correlated with LEV, PPE, and SIZE. Most of the correlations among control variables are small, and thus multicollinearity is not an issue.

4. Primary empirical analyses

Table 4 presents the regression analysis of our hypothesis. We conduct the analyses using three alternative proxies to capture founding family presence: a family firm indicator (Panel A), a continuous family equity ownership variable (Panel B), and an alternative family firm indicator coded as one if founding family ownership is equal to or greater than 5%, i.e., family blockhoder indicator (Panel C). Panel A shows that family firms are significantly less tax aggressive than non-family firms based on all four measures of tax aggressiveness. The results are also economically significant. For example, the difference in effective tax rate between family and non-family firms is 0.5%, which is about one-tenth of our sample inter-quartile range of 5.3%. In an untabulated test, we find that the mean pre-tax income is $561 million in our sample. Thus, a reduction in effective tax rate of 0.5% roughly translates into a tax saving of $2.8 million for an average firm. The difference in MPBT is 0.6% of assets, which is more than one-tenth of our sample inter-quartile range of 5.3%.

The results using family equity ownership in place of a family indicator variable are similar, though family ownership has insignificant coefficients when the book-tax difference measures are used as the dependent variables (Panel B).[21] Note that using a continuous ownership variable implies a linear relation between tax aggressiveness and family equity ownership. If tax aggressiveness does not change linearly with family ownership, using family ownership will bias against finding results.

In Panel C, we use the family blockholder indicator to capture family presence. This definition, while putting some restriction on the level of family ownership, does not assume a linear relation between family ownership and tax aggressiveness. Under this definition, 32.3% of the firm-years are classified as family firms. These results show a significant difference between family and non-family firms in both the tax rates and the book-tax differences, though the result using ETR is marginally significant.

To sum up, the above analysis indicates that family firms exhibit a lower level of tax aggressiveness. This result suggests that the larger agency conflict between family owners and non-family shareholders dominate family owners' decision about tax aggressiveness: family firms engage in fewer tax planning transactions and forgo tax benefits in order to avoid the associated costs, including the potential price discount by other shareholders. This concern about price discount is reinforced by family owners' greater concern about the potential penalty imposed by the IRS and the subsequent reputation damage. Family owners are more concerned with these costs due to the nature

[21] Recall that the average difference in equity ownership between family and non-family firms is approximately 20%; this, coupled with the coefficient of 0.02 on the family ownership dummy (when using ETR as the dependent variable), indicate that the difference in ETR is about 0.04% between family and non-family firms. This magnitude is close to the coefficient of 0.05% documented in Panel A on the family firm indicator.

of their holdings – large, under-diversified, and long investment horizon – as well as their concerns with family reputation.

5. Corroborating analyses

If concerns about price discount arising from a larger agency conflict between family owners and other shareholders dominate family firms' decision on tax aggressiveness, then we should expect to see predictable differences when such concerns are mitigated or heightened. In this section we offer evidence to corroborate the above inference by identifying two situations where such predictable differences likely exist: when family firms have effective outside monitoring and when they seek external financing.

Since effective outside monitoring can mitigate managerial rent extraction, the concern with family members seeking rents through tax aggressive activities and hence the price discount imposed by other shareholders will be mitigated for such firms. Accordingly, family firms with effective outside monitoring will be more tax aggressive than otherwise. In contrast, family firms planning to raise external capital are arguably more concerned about investors' perception of family entrenchment and the corresponding price discount because the proceeds from debt or equity offerings can be negatively affected. It follows that family firms expecting to raise capital are less likely to engage in opaque transactions that can be used for both tax aggressiveness and rent extraction purposes. Thus, we expect to find even lower tax aggressiveness for family firms in need of external financing.

5.1. The effect of outside monitoring

To examine the impact of external monitoring, we introduce an indicator variable, EXTMON, coded as one for firms with long-term institutional holdings (Gaspar et al. 2005), and its interaction with the family-firm indicator (FAMILY) to regression (1). As in Gaspar et al. (2005), we calculate average institutional ownership turnover for a given firm-year and classify firms with institutional ownership turnover measure in the bottom quartile of the sample distribution as firms with long-term institutional investors. If the above prediction holds, we expect to observe a negative (positive) coefficient on the interaction term FAMILY × EXTMON in regressions using effective tax rates (book-tax differences) as dependent variables.

Table 5, Panel A presents the regression results. For parsimony we do not tabulate the results on the control variables. The results are largely consistent with our prediction: relative to other family firms, family firms with long-term institutional investors are more tax aggressive, as is evident from the negative (positive) coefficients on the interaction variable FAMILY × EXTMON using ETR (MPBT and DDBT) as dependent variables. In contrast, the coefficient on EXTMON is largely insignificant, indicating that having long-term institutional investors does not affect non-family firms' tax aggressiveness. Untabulated F-tests indicate that family firms with long-term institutional investors are not less tax aggressive than non-family firms.

5.2. The effect of external financing

We proxy for a firm's expectation of external financing using an indicator variable, EXTFIN, coded as one if the firm issues debt or equity per SDC in the next year.[22] We add this external financing indicator, as well as its interaction with the family firm indicator variable, FAMILY × EXTFIN, to equation (1). Table 5, Panel B presents the regression results. With the exception of the cash effective tax rate, the results are consistent with our conjecture: relative to other family firms, family firms expecting to raise capital exhibit a higher effective tax rate and lower book-tax differences. In contrast, there is evidence that non-family firms are even more tax aggressive when they are in need of external financing: the coefficient on EXTFIN for non-family firms is negative (positive) in the regressions with effective tax rates (book-tax differences) as dependent variables.

To sum up, the two additional tests on external monitoring and external financing strengthen the inference that family firms' concern with other investors' perception of family entrenchment, together with the complementarity of tax aggressiveness activities and rent seeking activities, reduces these firms' tax aggressiveness. This reinforces the role of the agency conflict between family owners and other shareholders in family firms' tax planning decisions.

6. Additional analyses

[22] Due to the low frequency of equity financing, it is not fruitful to examine the potentially different impact of debt financing and equity financing.

6.1. The effect of CEO type

In this section, we explore whether the type of CEOs hired by family firms affect their tax aggressiveness. As described above, while some family firms have family members as the CEOs, others hire professional CEOs. Prior research (e.g., Anderson and Reeb 2003; Villalonga and Amit 2006) finds that having a family-member CEO can further increase family control. Family control can increase the opportunities for rent extraction, but at the same time, it can also increase the associated cost – the price discount. Since these two effects have opposite impacts on the extent of tax aggressiveness, we have no ex ante prediction on which type of family firms are more tax aggressive. Instead, we examine whether the overall results we document above equally applies to family firms with different types of CEOs.

For this purpose, we replace the family firm variable in equation (1) with three indicator variables, coded as one for professional CEO family firms (FAM_PCEO), founder CEO firms (FOUNDER_CEO) and descendant CEO firms (DESC_CEO), respectively. Within our family firm sample, 789 firm-years are managed by founder CEOs, 353 firm-years are managed by descendant CEOs, and the rest (648 firm-years) are managed by non-family professional CEOs. Panel A of Table 6 reports regression results. We find that overall, relative to non-family firms, both professional CEO family firms and founder CEO firms exhibit less tax aggressiveness but descendant CEO firms in general do not. An interpretation of this result is that descendant CEOs are not as concerned with investors' perception of family entrenchment and/or the monetary/reputation damage brought by an IRS audit as the other two types of CEOs in family firms.

6.2. *The effect of outside blockholder and CEO equity ownership*

In this section, we examine whether family owners have a differential impact on tax aggressiveness than outside blockholders and CEO ownership. While both family owners and other blockholders have high equity ownership, they differ in two important aspects: family owners have less-diversified holdings and longer investment horizon, and they also have greater influence over firm management as family owners tend to act as CEOs and generally sit on the board of directors. The greater influence gives family owners the power to affect corporate decisions as well as the opportunities to extract rents. In Panel B of Table 6, we augment equation (1) with an indicator variable for the existence of outside blockholders. The results show that the coefficient on the blockholder indicator is significant in only one regression, while the coefficient on our family firm proxy remains significant in all four regressions. Thus, unlike family owners, outside blockholders do not seem to have a reliable impact on firms' tax aggressiveness.

In Panel C of Table 6, we examine whether family owners' impact on tax aggressiveness is affected by CEO equity ownership. We add CEO equity ownership into equation (1). The coefficients on our family firm indicator continue to be significant in all four regressions, while none of the coefficients on CEO equity ownership is significant, suggesting that our inference is robust to controlling for CEO equity ownership and that CEO ownership has little impact when the presence of founding family is controlled for.

We use the family-firm indicator in this specification to be consistent with other analyses. When we replace the family-firm indicator with family ownership, we find that the results on family ownership are similar to those reported in Table 4, Panel B. We also find that CEO ownership continues to have insignificant coefficients in the ETR and cash

ETR regressions, but has significantly negative coefficients in the book-tax difference regressions. The latter result suggests that firms are less tax aggressive when CEO ownership is higher, consistent with Desai and Dharmapala's (2006) result that the level of tax aggressiveness is negatively associated with CEO incentive compensations in firms with weak corporate governance.

6.3. Differences in firm sophistication as an alternative explanation

In this section, we report the results of our investigation of an alternative explanation for family firms' lower tax aggressiveness: family firms are less tax sophisticated than non-family firms, because they are on average younger and firms learn by experience in managing businesses. While firm size can capture sophistication to some extent, we nevertheless use an additional proxy for firms' sophistication: firm age. Firm age, measured as the number of years since the year of firm founding, is available for 3,549 firm-years. On average, family firms are younger than non-family firms by 22 years. After adding the log of firm age to equation (1), we obtain quantitatively similar results on the family firm indicator. The coefficient on firm age is significantly positive in the ETR, CETR, and MPBT regressions, and insignificant in the DDBT regression, yielding mixed evidence on the effect of firm age on tax aggressiveness.

6.4. Tax sheltering analysis

Graham and Tucker (2006) identify a sample of 43 publicly traded companies as tax shelter users (see their Table 1). Since tax sheltering is a more 'precise' measure of tax aggressiveness, an analysis of whether family firms are more or less likely to be involved in the identified tax sheltering cases can complement our main empirical analysis. Of the 43 cases identified in Graham and Tucker (2006), we are able to match 42 firms to our

sample. Of these, 28 are non-family firms and 14 (one-third) are family firms. The percentage of family firms involved with tax shelters (33%) is lower than the percentage of family firms in our sample (46%). Based on Fisher's exact test, the two-sided p-value of the difference is 0.072. Thus, this small sample analysis provides corroborating results to our large sample evidence that family firms are less tax aggressive than non-family firms.[23]

6.5. Private banks vs. public family banks and public non-family banks

Prior research, studying selected industries such as banks and insurers, documents that private firms tend to be more tax aggressive than public firms (e.g., Cloyd et al. 1996; Beatty and Harris 1999; Mills and Newberry 2001; Hanlon et al. 2005), yet we find that family firms are less tax aggressive than non-family firms. This difference is intriguing since both private firms and family firms are characterized by concentrated ownership. We conjecture that private firms and public family firms likely face different agency and reputational issues: private firms are closely monitored, do not rely on outside shareholders for funding and are likely less concerned with the perceptions of diffuse investors. To reconcile our findings with prior research, we compare the ETRs of three sets of firms: private banks, public non-family banks, and public family banks (results not tabulated). We focus on banks because financial data for private firms in other industries are not readily available. We obtain data on private banks from the Bank Regulatory database on WRDS. Because this database does not provide cash flow data necessary to

[23] If tax sheltering firms tend to be large firms, then the tax sheltering evidence can be driven by differences in firm size between the sample of tax sheltering firms and our large sample, since family firms tend to be smaller than non-family firms. To address this concern, we examine the size composition of the tax sheltering sample and find that it is similar to our sample. Therefore, it is unlikely that the evidence is driven by differences in firm size.

calculate cash ETR and because the data required to calculate book-tax difference measures (MPBT and DDBT) are unavailable for most banks, we focus on ETR.

In the univariate analysis, we find that the ETR of public family banks is higher than ETR of public non-family banks, which is in turn higher than ETR of private banks. All the differences in means and medians are significant at the 5% level, except for the mean difference between public family and public non-family banks. Regression analysis yields consistent results: ETR of public family banks > ETR of public non-family banks > ETR of private banks. The difference between public family banks and private banks is significant at the 0.01 level. The differences between public family banks and public non-family banks, and the difference between public non-family banks and private banks are marginally significant (t-statistics are1.56 and 1.65, respectively).

The above analysis provides evidence consistent with both prior research that finds that private firms are more tax aggressive than public firms, and with our main finding that family firms are less tax aggressive than non-family firms. The evidence supports our conjecture that different agency problems and reputation concerns in private firms affect their tax planning strategies.

6.6. Sensitivity checks

One common factor as a measure of tax aggressiveness

Since the four tax aggressiveness measures used above are correlated with each other and are intended to capture one common construct, we conduct a factor analysis to extract one common factor from these four measures.[24] This common factor is negatively

[24] We conduct a Principal Components factor analysis of the four tax aggressiveness variables. The first factor has an eigenvalue of 1.91 and the other three factors have eigenvalues of less than 0.3. Thus we only retain the first factor. The correlation coefficients between this common factor and the four variables are

correlated with the effective tax rate measures and positively correlated with book-tax differences; thus a higher factor indicates greater tax aggressiveness. Table 7 reports the results from regressing this common factor on family firm indicator and control variables. The coefficient on our family firm indicator is significantly negative. This result is consistent with our results using the four individual tax aggressiveness measures: family firms are less tax aggressive than non-family firms.

Use firm-level measures to capture tax aggressiveness

One statistical concern arises from the potential serial dependence in our data: family firms' tax activities and family firm classification might remain relatively stable over time. Thus, we also conduct the analysis at the firm level using the averages of our empirical measures over the 5-year sampling period, with average tax rates measured as aggregate tax expense or aggregate cash taxes divided by aggregate pre-tax income over the period. The average Manzon-Plesko book-tax difference measure is calculated similarly by taking the averages over five years first before scaling by the average lagged assets. Because the Desai-Dharmapala book-tax difference measure is a residual, we directly take the five year averages of the residuals as long as a firm has three non-missing values. We regress the five-year averages of the tax aggressiveness measures on the five-year averages of the control variables, omitting the year dummies. For control variables that are ratios, we compute the averages of the numerators and denominators before computing the ratios.

Table 8 presents the regression results. We conduct the analyses using the family firm indicator. We find that family firms, relative to non-family firms, exhibit

---

0.88 (ETR), 0.83 (cash ETR), -0.44 (MP book-tax difference), and -0.51 (DD book-tax difference), respectively.

significantly higher effective tax rates and smaller book-tax differences; the only exception is when we use cash effective tax rate to capture tax aggressiveness. The difference is also economically significant: for example, after controlling for other factors that might affect tax aggressiveness, the difference of 1.1% between family and non-family firms' ETR is about one-fifth of our sample inter-quartile range.

S&P500 versus S&P1000 firms

We split our sample into two groups, S&P 500 firms and S&P 1000 (S&P400 and S&P600) firms, and re-estimate equation (1) on these two sub-samples. While the results are slightly stronger for S&P 1000 firms than for S&P 500 firms, the difference is not statistically significant.

7. Conclusion

We examine the tax aggressiveness of family firms, relative to their non-family counterparts. We use multiple measures (two tax rate measures and two book-tax difference measures, and a common factor extracted from these four measures) to capture tax aggressiveness and different proxies for founding family presence in order to triangulate our results. Contrary to the notion that family firms would exhibit a higher level of tax aggressiveness as family owners will benefit more from tax savings, we document that family firms exhibit lower tax aggressiveness. This result highlights the importance of non-tax costs, including those that can arise from agency conflicts. Our results are consistent with family owners being more concerned with the non-tax costs of potential price discounts from non-family shareholders, the potential penalty imposed by the IRS, and the potential damage on family reputation.

This finding reinforces Desai and Dharmapala's (2006) argument that tax aggressiveness activities are often bundled with rent extraction. Since investors will price protect themselves if tax aggressiveness activities are used to mask rent extraction, family owners are willing to forgo the benefits of saved taxes in order to avoid the price discounts associated with investors' perception of family entrenchment. In this aspect, our results are consistent with prior studies' findings that overall, family entrenchment is not a serious concern in U.S. family firms, unlike in family firms in other countries (Anderson and Reeb 2003; Wang 2006; Ali et al. 2007). However, this does not imply that investors can assume away the possibility of family entrenchment. It is possible that the lower extent of family entrenchment is an outcome of minority shareholders' threat of price discount in anticipation of family entrenchment.

Our results highlight the importance of the unique agency conflict between family owners and other shareholders in determining family firms' tax reporting. We offer corroborating evidence by focusing on scenarios where family owners' concern with investors' perception of family entrenchment is predictably weaker or stronger. We find that, relative to other family firms, family firms with long-term institutional investors as effective outside monitors are more tax aggressive, presumably because these institutional investors can reduce the rent extraction of family owners. In contrast, family firms expecting to raise external capital are arguably more concerned with the negative perception of rent extraction. We find these firms to be even less tax aggressive.

In addition, our analysis of the Graham-Tucker (2006) tax sheltering firms shows that family firms are less likely to use tax shelters. We also find that our results are mainly attributed to family firms run by founders or non-family professional CEOs, and

the results hold after controlling for outside blockholding, CEO equity ownership, and firm sophistication measured by firm age.

Our paper contributes toward a better understanding of the impact of ownership structure on firms' tax reporting practices. We also extend the family firm literature by documenting family firms' differential tax reporting behavior. Our results, that family firms are less tax aggressive, might be surprising to some given prior studies' result that private firms are more tax aggressive than public firms. The 'surprising' result highlights the importance of studying tax aggressiveness in an agency setting. While family firms are similar to private firms in the ownership concentration of selected individual (usually the firm founders), unlike private firms, family firms face large-small shareholder conflict and the corresponding cost – price discount. Our additional analysis comparing private banks to public family banks provides corroborating evidence: we find that private banks are more tax aggressive than public non-family banks, which are in turn more tax aggressive than public family banks. Our results show that the agency conflict between family owners and other shareholders plays a significant role in family firms' tax aggressiveness.

References

Ali, A., T. Chen, and S. Radhakrishnan. 2007. Corporate disclosure by family firms. *Journal of Accounting and Economics* 44 (1-2): 238-286.

Anderson, R., S. Mansi, and D. Reeb. 2003. Founding family ownership and the agency cost of debt. *Journal of Financial Economics* 68: 263-285.

Anderson, R., and D. Reeb. 2003. Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance* 58 (3): 1301-1328.

Beatty, A., and D. Harris. 1999. The effects of taxes, agency costs and information asymmetry on earnings management: A comparison of public and private firms. *Review of Accounting Studies* 4: 299-326.

Casson, M. 1999. The economics of family firms. *Scandinavia Economic History Review* 47: 10-23.

Chen, S., X. Chen, and Q. Cheng. 2008. Do family firms provide more or less voluntary disclosure? *Journal of Accounting Research* 46 (3): 499-536.

Cheng, Q., and T. Warfield. 2005. Equity incentives and earnings management. *The Accounting Review* 80 (2): 441-476.

Cloyd, B., J. Pratt, and T. Stock, 1996. The use of financial accounting choice to support aggressive tax positions: Public and private firms. *Journal of Accounting Research* 34 (1): 23-43.

Desai, M., and D. Dharmapala, 2004. Earnings management and corporate tax shelters. Harvard University, working paper.

Desai, M., and D. Dharmapala. 2006. Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics* 79: 145-179.

Desai, M., A. Dyck, and L. Zingales. 2007. Theft and taxes. *Journal of Financial Economics* 84: 591-623.

Dyreng, S., M. Hanlon, and E. Maydew. 2007. The effects of managers on corporate tax avoidance. University of North Carolina and University of Michigan, working paper.

Dyreng, S., M. Hanlon, and E. Maydew. 2008. Long-run corporate tax avoidance. *The Accounting Review* 83: 61-82.

Frank, M., L. Lynch, and S. Rego. 2008. Does aggressive financial reporting accompany aggressive tax reporting (and vice versa)? *The Accounting Review*, forthcoming.

Gaspar, J., M. Massa, and P. Matos. 2005. Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics* 76 (1): 135-167.

Graham, J., and A. Tucker. 2006. Tax shelters and corporate debt policy. *Journal of Financial Economics* 81: 563-594.

Gupta, S., and K. Newberry. 1997. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16 (1): 1-34.

Hanlon, M., L. Mills, and J. Slemrod. 2005. An empirical examination of corporate tax non-compliance. University of Michigan and UT Austin, working paper.

Hanlon, M., and T. Shevlin. 2003. The tax benefits of employee stock options: The accounting and implications. *Accounting Horizons* 16: 1-16.

Hribar, P., and D. Collins. 2002. Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research* 40: 105-134.

Joos, P., A. Leone, and J. Zimmerman. 2003. Selecting CEOs: Matching the person to the job. University of Rochester, working paper.

Manzon, G., and G. Plesko. 2002. The relation between financial and tax reporting measures of income. *Tax Law Review* 55 (2): 175-214.

McLean, B., and P. Elkind. 2003. Smartest guys in the room: the amazing rise and scandalous fall of Enron. The Penguin Group.

Mikhail, M. 1999. Coordination of earnings, regulatory capital and taxes in private and public companies. MIT, working paper.

Mills, L. 1998. Book-tax differences and internal revenue service adjustments. *Journal of Accounting Research* 36: 343-356.

Mills, L., and K. Newberry. 2001. The influence of tax and non-tax costs on book-tax reporting differences: public and private firms. *Journal of American Tax Association* 23 (1): 1-19.

Mills, L., and K. Newberry. 2005. Firms' off-balance sheet and hybrid debt financing: evidence from their book-tax reporting differences. *Journal of Accounting Research* 43 (2): 251-282.

Rego, S. 2003. Tax avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research* 20: 805-833.

Schadewald, M. S. 2005. Deducting related-party interest and intangible expenses. *The Tax Advisor* 36 (5): 286-295.

Scholes, M., M. Wolfson, M. Erickson, E. Maydew and T. Shevlin. 2005. Taxes and Business Strategy: A Planning Approach. 3rd edition, Pearson Prentice Hall, Upper Saddle River, NJ.

Shackelford, D., and T. Shevlin. 2001. Empirical tax research in accounting. *Journal of Accounting and Economics* 31: 321-387.

Shevlin, T., and S. Porter. 1992. The corporate tax comeback in 1987: Some further evidence. *Journal of the American Taxation Association* 14: 58-79.

Siegfried, J. 1974. Effective average U.S. corporation income tax rates. *National Tax Journal* 27: 245-259.

Stickney, C., and V. McGee. 1982. Effective corporate tax rates: The effect of size, capital intensity, leverage and other factors. *Journal of Accounting and Public Policy* 1: 23-45.

Villalonga, B., and R. Amit. 2006. How do family ownership, control, and management affect firm value? *Journal of Financial Economics* 80 (2): 385-417.

Wang, D. 2006. Founding family ownership and earnings quality. *Journal of Accounting Research* 44 (3): 619-656.

Wilson, R. 2008. An examination of corporate tax shelter participants. *The Accounting Review*, forthcoming.

Zimmerman, J. 1983. Taxes and firm size. *Journal of Accounting and Economics* 5: 119-149.

Appendix: Variable Measurement

Part I: Measurement of Tax Aggressiveness

1. Effective tax rate (ETR):
   $ETR_{i,t}$ = Total Tax $Expense_{i,t}$ / Pretax $Income_{i,t}$ = Compustat item #16/#170
   ETR is set as missing when the denominator is zero or negative. We truncate ETR to the range [0, 1].

2. Cash effective tax rate (CETR):
   $CETR_{i,t}$ = Cash Taxes $Paid_{i,t}$ / Pretax $Income_{i,t}$ = #317/#170
   CETR is set to missing when the denominator is zero or negative. We truncate CETR to the range [0, 1].

3. Manzon-Plesko (2002) book-tax difference (MPBT): (US domestic financial income – US domestic taxable income – Income Taxes (State) –Income Taxes (Other) – Equity in Earnings)/lagged assets =(#272- #63/Statutory tax rate - #173 - #211 - #55) /$\#6_{t-1}$.

   We remove observations with total assets less than $1 million (to mitigate small deflator problem) and observations with negative taxable income (#63<0).

4. Desai-Dharmapala (2006) residual book-tax difference (DDBT): $\mu_i + \varepsilon_{i,t}$ from the following firm fixed-effect regression:

$$BT_{i,t} = \beta_1 TA_{i,t} + \mu_i + \varepsilon_{i,t}$$

   where BT is the Manzon-Plesko book-tax difference, TA is total accruals measured using the cash flow method per Hribar and Collins (2002). Both variables are scaled by lagged total assets and are winsorized at 1% and 99% levels for regression purposes. μ_i is the average value of the residual for firm i over the sample period, and $\varepsilon_{i,t}$ is the deviation of the residual in year t from firm i's average residual.

   We remove observations with total assets less than $1 million (to mitigate small deflator problem) and observations with negative taxable income (#63<0).

Part II: Definition of Family Firm Proxies and Control Variables

$FAMILY_{i,t}$ = Measured as 1) an indicator variable coded as 1 for family firms, zero otherwise; 2) founding family % equity ownership; or 3) an indicator variable coded as 1 if founding family ownership is ≥ 5%;

$ROA_{i,t}$ = Return on assets for firm i, year t, measured as operating income (#170-#192) scaled by lagged assets (#6);

$LEV_{i,t}$ = Leverage for firm i, year t, measured long-term debt (#9) scaled by lagged assets (#6);

$NOL_{i,t}$ = Indicator variable coded as 1 if loss carry forward (#52) is positive as of the beginning of the year t;

$\Delta NOL_{i,t}$ = Change in loss carry forward (#52) for firm i, year t, scaled by lagged assets (#6);

$FI_{i,t}$ = Foreign income (#273) for firm i, year t, scaled by lagged assets;

$PPE_{i,t}$ = PPE (#8) for firm i, year t, scaled by lagged assets;

$INTANG_{i,t}$ = Intangible assets (#33) for firm i, year t, scaled by lagged assets;

$EQINC_{i,t}$ = Equity income in earnings (#55) for firm i, year t, scaled by lagged assets;

$SIZE_{i,t-1}$ = Natural logarithm of the market value of equity (#199×#25) for firm i, at the beginning of year t;

$MB_{i,t-1}$ = Market to book ratio for firm i, at the beginning of year t, measured as market value of equity (#199×#25), scaled by book value of equity (#60);

$BTD_{i,t-1}$ = Book-tax difference, for firm i, year t-1.

Table 1
Sample Composition

This table reports the composition of our sample, which consists of 3,865 firm-years from 1,003 firms in the S&P 1500 index (S&P 500, S&P MidCap 400, and S&P SmallCap 600 indices) covering the period 1996-2000.

Panel A Sample composition

	Number of firm-years	Percent	Number of firms	Percent
Full sample	3865	100%	1003	100%
Composition by S&P index[*]				
S&P 500 Large Cap	1558	40.7%	384	30.1%
S&P 400 Mid Cap	1057	27.6%	362	28.4%
S&P 600 Small Cap	1213	31.7%	528	41.4%
Composition by firm type				
Family firm[**]	1790	46.3%	476	47.5%
Non-family firm	2075	53.7%	527	52.5%

*A small number of observations (included in the analyses) have missing index classification value in Compustat.
** Family firms refer to firms where members of the founding family, either by blood or marriage, continue to hold positions in top management, are on the board, or are blockholders of the company.

Table 1 (Continued)

Panel B Industry distribution of sample firm-years, by firm type

Industry (per Fama and French 1997)	Non-family firms frequency	Family firms frequency	% of family firms
Food products	41	42	51%
Recreational products	5	24	83%
Printing and publishing	20	49	71%
Consumer goods	48	43	47%
Apparel	27	45	63%
Healthcare	25	25	50%
Medical equipment	37	39	51%
Pharmaceutical products	59	81	58%
Chemicals	74	54	42%
Rubber and plastic products	6	20	77%
Construction materials	36	40	53%
Construction	29	39	57%
Steel works, etc.	56	22	28%
Machinery	103	54	34%
Electrical equipment	27	35	56%
Automobile and trucks	47	41	47%
Petroleum and gas	98	52	35%
Utilities	277	12	4%
Telecommunications	21	27	56%
Business services	140	153	52%
Computers	60	58	49%
Electronic equipment	81	148	65%
Measuring and control equipment	45	29	39%
Business supplies	70	32	31%
Transportation	52	71	58%
Wholesale	42	73	63%
Retail	95	162	63%
Restaurants, hotel, motel	29	61	68%
Banking	158	51	24%
Insurance	100	83	45%
Trading	27	0	0%
Other [*]	140	125	47%

[*] Other industries include those industries that have less than 20 observations: Agriculture, Aircraft, Alcoholic beverages, Candy and soda, Defense, Entertainment, Fabricated products, Miscellaneous, Nonmetallic mining, Personal services, Precious metals, Real estate, Shipbuilding and railroad equipment, Shipping containers, Textiles, and Tobacco products.

Table 1 (Continued)

Panel C Control and ownership characteristics of family firms (N=1,790)

Family control and ownership characteristics	Percentage of family firms
Family executives	
Percentage of family firms in which a founding family member (a founder or a descendant) is the CEO	63.8%
Representation of family members on the board of directors	
Percentage of families with at least one member on the board of directors	98.6%
Percentage of families with at least two members on the board of directors	55.2%
Percentage of families with at least three members on the board of directors	23.4%
Family ownership	
Percentage of families with at least 5% ownership	69.8%
Percentage of families with at least 25% ownership	26.7%

Table 2
Descriptive Statistics of Tax Aggressiveness Measures

Panel A Descriptive statistics of tax aggressiveness measures separately for family and non-family firms

The last two columns report the two-sided p-value for the difference between family and non-family firms in means and medians, respectively. T-tests (Wilcoxon rank tests) are used to test the difference in means (medians). See the Appendix for variable definitions.

	Family firms			Non-family firms			p-values of the difference	
	N	Mean	Median	N	Mean	Median	Mean	Median
Family firms refer to firms where founding family members continue to hold positions in top management, are on the board, or are blockholders								
ETR	1,671	0.367	0.370	1,959	0.355	0.360	0001	0.001
Cash ETR	1,671	0.308	0.309	1,959	0.307	0.298	0.819	0.039
MP book-tax difference	1,512	0.015	0.017	1,618	0.023	0.019	0.005	0.010
DD book-tax difference	1,512	0.010	0.012	1,612	0.018	0.014	0.003	0.081
Family firms refer to firms with family equity ownership≥5%								
ETR	1,184	0.368	0.371	2,446	0.357	0.361	0.003	0.001
Cash ETR	1,184	0.316	0.316	2,446	0.303	0.296	0.004	0.001
MP book-tax difference	1,050	0.018	0.018	2,080	0.020	0.018	0.600	0.161
DD book-tax difference	1,050	0.012	0.012	2,074	0.016	0.014	0.154	0.148

Panel B Pearson correlation matrix of tax aggressiveness measures (two-sided p-values in parentheses).

	ETR	Cash ETR	MP book-tax difference
Cash ETR	0.387		
	(0.001)		
MP book-tax difference	-0.361	-0.400	
	(0.001)	(0.001)	
DD book-tax difference	-0.242	-0.359	0.876
	(0.001)	(0.001)	(0.001)

Table 3
Descriptive Statistics on Firms Characteristics and Control Variables

Panel A Descriptive statistics

The last two columns report the two-sided p-value for the difference between family and non-family firms in means and medians, respectively. T-tests (Wilcoxon rank tests) are used to test the difference in means (medians). See the Appendix for variable definitions.

	Family firms (N=1,790)		Non-family firms (N=2,075)		p-values of the difference in	
	Mean	Median	Mean	Median	Mean	Median
Tax planning opportunities and differences in book-tax reporting						
ROA	0.134	0.122	0.105	0.087	0.001	0.001
Leverage	0.201	0.148	0.240	0.216	0.001	0.001
NOL dummy	0.193	0.000	0.189	0.000	0.705	0.730
Change in NOL	0.005	0.000	0.003	0.000	0.098	0.224
Foreign Income	0.016	0.000	0.017	0.000	0.303	0.009
PPE	0.344	0.284	0.378	0.297	0.001	0.015
Intangible assets	0.117	0.026	0.114	0.022	0.710	0.911
Equity income	0.00060	0.000	0.00130	0.000	0.004	0.001
Firm size and growth						
MV ($Mil.)	6,998	1,285	11,297	2,592	0.001	0.001
Total assets ($Mil.)	4,987	1,049	16,853	2,754	0.001	0.001
Market to book ratio	4.389	2.664	3.628	2.445	0.062	0.005

Table 3 (Cont'd)

Panel B Pearson correlation matrix (two-sided p-values in parentheses)

	FAMILY	ROA	LEV	NOL	ΔNOL	FI	PPE	INTANG	EQINC	SIZE
ROA	0.118									
	(0.001)									
LEV	-0.102	-0.200								
	(0.001)	(0.001)								
NOL	0.006	-0.075	0.049							
	(0.730)	(0.001)	(0.002)							
ΔNOL	-0.005	-0.137	0.071	0.265						
	(0.755)	(0.001)	(0.001)	(0.001)						
FI	-0.022	0.287	-0.099	0.125	-0.013					
	(0.181)	(0.001)	(0.001)	(0.001)	(0.410)					
PPE	-0.057	-0.002	0.413	-0.022	0.020	-0.039				
	(0.000)	(0.880)	(0.001)	(0.171)	(0.220)	(0.016)				
INTANG	0.008	0.031	0.316	0.069	0.064	0.017	-0.095			
	(0.620)	(0.057)	(0.001)	(0.001)	(0.001)	(0.297)	(0.001)			
EQINC	-0.050	0.044	0.072	-0.008	-0.033	0.017	0.092	0.076		
	(0.002)	(0.007)	(0.001)	(0.613)	(0.043)	(0.283)	(0.001)	(0.001)		
SIZE	-0.200	0.094	-0.036	0.052	-0.005	0.234	-0.046	0.051	0.064	
	(0.001)	(0.001)	(0.024)	(0.001)	(0.733)	(0.001)	(0.005)	(0.001)	(0.001)	
MB	0.029	0.441	-0.089	0.066	0.058	0.286	-0.100	0.071	0.028	0.389
	(0.074)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.0851)	(0.001)

Table 4
Firm-year Level Analysis of Family Firms' Tax Aggressiveness

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NOL_{i,t} + \beta_5 \Delta NOL_{i,t} + \beta_6 FI_{i,t} + \beta_7 PPE_{i,t} + \beta_8 INTANG_{i,t}$$
$$+ \beta_9 EQINC_{i,t} + \beta_{10} SIZE_{i,t-1} + \beta_{11} MB_{i,t-1} + \beta_{12} BTD_{i,t-1} + Year \quad Dummies + Industry \quad Dummies + \varepsilon_{i,t}$$

See the Appendix for the definition of variables. For each variable, the t-statistic is reported in the parenthesis. Year and industry dummies are included in each specification and for the sake of brevity, the results for these dummies are not reported.

Panel A FAMILY = family firm indicator, coded as 1 for firms where founding family members continue to hold positions in top management, are on the board, or are blockholders, 0 otherwise

	Dependent variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.365	0.370	-0.025	-0.043
	(46.55)	(20.01)	(-4.40)	(-6.92)
Family firm indicator	0.005	0.012	-0.006	-0.004
	(2.24)	(2.23)	(-3.67)	(-2.01)
ROA	0.039	-0.070	0.187	0.133
	(2.97)	(-2.29)	(21.28)	(14.11)
Leverage	0.010	-0.078	0.019	-0.001
	(1.39)	(-4.69)	(3.71)	(-0.20)
NOL dummy	-0.001	-0.024	0.009	0.011
	(-0.41)	(-3.48)	(4.09)	(5.05)
Change in NOL	0.650	1.138	-0.459	-0.414
	(8.41)	(6.55)	(-9.30)	(-7.77)
Foreign income	-0.250	-0.221	0.608	0.698
	(-7.15)	(-2.66)	(21.53)	(22.90)
PPE	-0.005	-0.026	0.006	0.051
	(-0.78)	(-1.83)	(1.35)	(10.67)
Intangible assets	0.071	0.099	-0.005	0.007
	(9.43)	(5.60)	(-0.90)	(1.23)
Equity income	-1.096	-1.059	-0.455	-0.638
	(-4.20)	(-1.73)	(-2.33)	(-3.04)
Firm size	-0.002	-0.001	0.001	0.000
	(-1.98)	(-0.71)	(2.36)	(0.59)
Market-to-book	0.000	-0.001	-0.002	-0.001
	(-0.45)	(-1.28)	(-6.60)	(-2.05)
Lagged book-tax difference			0.261	0.216
			(17.34)	(13.32)
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	19.9	12.5	49.0	47.0
N	3,630	3,630	3,130	3,124

Table 4 (Continued)

Panel B FAMILY = founding family equity ownership

	Dependent variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.355	0.358	-0.030	-0.043
	(40.70)	(19.86)	(-5.36)	(-7.48)
Family ownership	0.020	0.058	-0.003	-0.007
	(2.58)	(3.60)	(-0.66)	(-1.44)
ROA	0.045	-0.050	0.189	0.129
	(3.09)	(-1.66)	(21.42)	(14.26)
Leverage	0.011	-0.078	0.023	-0.001
	(1.39)	(-4.74)	(4.44)	(-0.14)
NOL dummy	-0.001	-0.024	0.008	0.011
	(-0.23)	(-3.49)	(3.97)	(5.27)
Change in NOL	0.694	1.072	-0.456	-0.413
	(8.10)	(6.26)	(-9.20)	(-8.17)
Foreign income	-0.247	-0.234	0.605	0.708
	(-6.25)	(-2.87)	(21.35)	(24.50)
PPE	-0.003	-0.022	0.005	0.049
	(-0.49)	(-1.57)	(1.13)	(10.74)
Intangible assets	0.076	0.100	-0.006	0.006
	(8.88)	(5.73)	(-1.18)	(1.04)
Equity income	-1.431	-1.013	-0.426	-0.539
	(-4.90)	(-1.68)	(-2.18)	(-2.70)
Firm size	-0.001	0.000	0.002	0.001
	(-0.77)	(-0.07)	(3.04)	(1.04)
Market-to-book	0.000	-0.002	-0.002	-0.001
	(-0.62)	(-1.64)	(-6.86)	-1.72)
Lagged book-tax difference			0.263	0.212
			(17.44)	(13.64)
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	17.5	12.7	49.0	49.8
N	3,630	3,630	3,130	3,124

Table 4 (Continued)

Panel C FAMILY = family firm indicator for firms with family equity ownership≥5%

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.346	0.343	-0.030	-0.042
	(36.55)	(21.71)	(-5.06)	(-7.20)
Family blockholder	0.005	0.015	-0.003	-0.003
	(1.63)	(3.10)	(-1.81)	(-1.82)
ROA	0.048	0.048	0.204	0.130
	(3.08)	(1.83)	(22.55)	(14.31)
Leverage	0.006	-0.076	0.025	-0.001
	(0.71)	(-5.32)	(4.78)	(-0.18)
NOL dummy	0.000	-0.022	0.008	0.011
	(0.06)	(-3.78)	(3.81)	(5.24)
Change in NOL	0.736	0.779	-0.452	-0.414
	(8.00)	(5.02)	(-8.76)	(-8.19)
Foreign income	-0.231	-0.221	0.593	0.708
	(-5.40)	(-3.14)	(20.14)	(24.48)
PPE	0.001	-0.022	0.003	0.048
	(0.07)	(-1.78)	(0.74)	(10.70)
Intangible assets	0.077	0.090	-0.010	0.006
	(8.42)	(5.88)	(-1.74)	(1.06)
Equity income	-1.555	-0.790	-0.526	-0.544
	(-4.92)	(-1.52)	(-2.59)	(-2.73)
Firm size	0.000	0.000	0.002	0.001
	(-0.39)	(-0.03)	(2.86)	(0.86)
Market-to-book	0.000	-0.002	-0.002	0.000
	(-0.91)	(-2.68)	(-6.54)	(-1.64)
Lagged book-tax difference			0.251	0.212
			(16.09)	(13.69)
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	15.5	14.6	47.3	49.8
N	3,630	3,630	3,130	3,124

Table 5
The Effects of External Monitoring and External Financing on Family Firms' Tax Aggressiveness

Panel A External Monitoring

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 EXTMON_{i,t} + \beta_3 FAMILY \times EXTMON_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LEV_{i,t} + \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} INTANG_{i,t} + \beta_{11} EQINC_{i,t} + \beta_{12} SIZE_{i,t-1} + \beta_{13} MB_{i,t-1} + \beta_{14} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

External monitoring ($EXTMON_{i,t}$) is an indicator variable coded as 1 for firms with long-term institutional holders (per Gaspar et al. 2005). See the Appendix for the definition of all other variables. For each variable, the t-statistic is reported in the parenthesis. Year and industry dummies are included in each specification and for the sake of brevity, the results for these dummies and control variables are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.365	0.368	-0.025	-0.042
	(46.32)	(20.03)	(-4.34)	(-6.75)
Family firm indicator	0.007	0.016	-0.008	-0.005
	(2.83)	(2.70)	(-3.97)	(-2.66)
External monitoring dummy	0.003	0.018	0.000	-0.001
	(0.97)	(2.37)	(-0.01)	(-0.40)
Family firm indicator × External monitoring dummy	-0.010	-0.018	0.006	0.008
	(-2.06)	(-1.54)	(1.73)	(1.89)
Control variables	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	20.0	12.6	48.7	47.1
N	3,630	3,630	3,130	3,124

Table 5 (Continued)

Panel B External Financing

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 EXTFIN_{i,t} + \beta_3 FAMILY \times EXTFIN_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LEV_{i,t} + \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} INTANG_{i,t} + \beta_{11} EQINC_{i,t} + \beta_{12} SIZE_{i,t-1} + \beta_{13} MB_{i,t-1} + \beta_{14} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

External financing ($EXTFIN_{i,t}$) is an indicator variable coded as 1 if the family firm raised capital (per SDC database) in year t+1. See the Appendix for the definition of all other variables. For each variable, the t-statistic is reported in the parenthesis. Year and industry dummies are included in each specification and for the sake of brevity, the results for these dummies and the control variables are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.373	0.363	-0.029	-0.044
	(64.31)	(19.22)	(-4.46)	(-7.09)
Family firm indicator	0.006	0.010	-0.004	-0.001
	(3.13)	(1.76)	(-1.89)	(-0.68)
External financing dummy	-0.004	-0.015	0.007	0.003
	(-1.53)	(-1.85)	(2.45)	(1.11)
Family firms × External financing Dummy	0.008	0.004	-0.008	-0.011
	(1.95)	(0.34)	(-1.81)	(-2.49)
Control variables	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	21.8	12.5	49.4	47.1
N	3,630	3,630	3,130	3,124

Table 6
The Effects of Professional CEO, Founder CEO, Descendant CEO, Outside Blockholders, and CEO % Ownership on Tax Aggressiveness

Panel A The incremental effects of Professional CEO, Founder CEO, and Descendant CEO

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAM\_PCEO_{i,t} + \beta_2 FOUNDER\_CEO_{i,t} + \beta_3 DESC\_CEO_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LEV_{i,t} + \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} INTANG_{i,t} + \beta_{11} EQINC_{i,t} + \beta_{12} SIZE_{i,t-1} + \beta_{13} MB_{i,t-1} + \beta_{14} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

$FAM\_PCEO_{i,t}$ is an indicator variable coded as 1 if the family firm hires a non-family CEO, $FOUNDER\_CEO_{i,t}$ is an indicator variable coded as 1 if the CEO is the founder of the firm, $DESC\_CEO_{i,t}$ is an indicator coded as 1 if the CEO is a descendant of the firm founder. See the Appendix for the definition of all other variables. For each variable, the t-statistic is reported in the parenthesis. Year dummies and industry dummies are included in each specification and for the sake of brevity, the results for these dummies and the control variables are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.367	0.365	-0.026	-0.042
	(46.18)	(19.89)	(-4.47)	(-6.92)
Professional CEO dummy	0.005	0.019	-0.007	-0.003
	(1.61)	(2.81)	(-3.26)	(-1.17)
Founder CEO dummy	0.007	-0.002	-0.008	-0.007
	(2.29)	(-0.34)	(-3.86)	(-2.82)
Descendant CEO dummy	0.000	0.020	0.000	0.001
	(0.014)	(2.23)	(0.06)	(0.36)
Control variables	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	19.9	12.6	49.1	47.1
N	3,630	3,630	3,130	3,124

Table 6 (Continued)

Panel B The incremental impact of outside blockholders

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 BLOCKHOLDER_{i,t} + \beta_3 ROA_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NOL_{i,t} + \beta_6 \Delta NOL_{i,t} + \beta_7 FI_{i,t} + \beta_8 PPE_{i,t} + \beta_9 INTANG_{i,t} + \beta_{10} EQINC_{i,t} + \beta_{11} SIZE_{i,t-1} + \beta_{12} MB_{i,t-1} + \beta_{13} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

$BLOCKHOLDER_{i,t}$ is an indicator variable coded as 1 if the firm has an outside blockholder (i.e., a non-family, non-insider blockholder). See the Appendix for the definition of all other variables. For each variable, the t-statistic is reported in the parenthesis. Year dummies and industry dummies are included in each specification and for the sake of brevity, the results for these dummies and the control variables are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.367	0.377	-0.025	-0.041
	(43.48)	(19.01)	(-3.97)	(-6.18)
Family firm indicator	0.005	0.010	-0.006	-0.004
	(2.13)	(1.78)	(-3.66)	(-2.07)
Outside blockholder indicator	-0.002	-0.012	-0.000	-0.001
	(-0.69)	(-1.99)	(-0.22)	(-0.53)
Control variables	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	19.9	12.5	49.0	47.0
N	3,630	3,630	3,130	3,124

Table 6 (Continued)

Panel C The incremental impact of CEO % equity ownership

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 CEO\_OWN_{i,t} + \beta_3 ROA_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NOL_{i,t} + \beta_6 \Delta NOL_{i,t} + \beta_7 FI_{i,t} + \beta_8 PPE_{i,t} + \beta_9 INTANG_{i,t} + \beta_{10} EQINC_{i,t} + \beta_{11} SIZE_{i,t-1} + \beta_{12} MB_{i,t-1} + \beta_{13} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

$CEO\_OWN_{i,t}$ is the CEO's percentage equity ownership. See the Appendix for the definition of all other variables. For each variable, the t-statistic is reported in the parenthesis. Year dummies and industry dummies are included in each specification and for the sake of brevity, the results for these dummies and the control variables are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.366	0.371	-0.027	-0.043
	(44.99)	(19.39)	(-4.60)	(-6.68)
Family firm indicator	0.005	0.010	-0.005	-0.004
	(2.04)	(1.84)	(-3.08)	(-1.93)
CEO equity ownership	-0.000	-0.001	0.001	-0.000
	(-0.31)	(-0.73)	(1.37)	(-0.03)
Control variables	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	19.9	12.5	49.1	47.0
N	3,630	3,630	3,130	3,124

Table 7
Analysis using the Common Factor of the Four Tax Aggressiveness Measures

Model:

$$TaxAgg_{i,t} = \alpha_0 + \beta_1 FAMILY_{i,t} + \beta_2 ROA_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NOL_{i,t} + \beta_5 \Delta NOL_{i,t} + \beta_6 FI_{i,t} + \beta_7 PPE_{i,t} + \beta_8 INTANG_{i,t} + \beta_9 EQINC_{i,t} + \beta_{10} SIZE_{i,t-1} + \beta_{11} MB_{i,t-1} + \beta_{12} BTD_{i,t-1} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{i,t}$$

The tax aggressiveness measure is a common factor extracted from effective tax rate, cash effective tax rate, Manzon-Plesko book-tax difference, and Desai-Dharmapla book-tax difference. See the Appendix for the definition of other variables. Year and industry dummies are included and for the sake of brevity, the results for these dummies are not reported.

	Coefficients	T-statistics
Intercept	-0.591	-6.53
Family firm indicator	-0.049	-1.87
ROA	0.837	5.59
Leverage	0.142	1.74
NOL dummy	0.111	3.38
Change in NOL	-6.112	-7.14
Foreign income	10.285	23.45
PPE	0.425	6.18
Intangible assets	-0.149	-1.74
Equity income	-5.858	-1.91
Firm size	-0.016	-1.64
Market-to-book	0.011	2.41
Year dummies	YES	
Industry dummies	YES	
Adj. R^2 (%)	44.6	
N	3,630	

Table 8
Firm Level Analysis of Family Firms' Tax Aggressiveness

Model:

$$TaxAgg_i = \alpha_0 + \beta_1 FAMILY_i + \beta_2 ROA_i + \beta_3 LEV_i + \beta_4 NOL_i + \beta_5 \Delta NOL_i + \beta_6 FI_i + \beta_7 PPE_i + \beta_8 INTANG_i + \beta_9 EQINC_i + \beta_{10} SIZE_i + \beta_{11} MB_i + Industry \quad Dummies + \varepsilon_i$$

See the Appendix for the definition of variables. All variables are five-year averages in the sample period. For each variable, the t-statistic is reported in the parenthesis. Industry dummies are included in each specification and for the sake of brevity, the results for these dummies are not reported.

	Dependent Variables			
	ETR	Cash ETR	MP book-tax difference	DD book-tax difference
Intercept	0.372	0.393	-0.004	-0.042
	(27.27)	(16.15)	(-1.82)	(-5.49)
Family firm indicator	0.011	0.005	-0.004	-0.005
	(2.58)	(0.61)	(-1.72)	(-2.12)
ROA	-0.028	0.050	0.112	0.073
	(-0.76)	(0.76)	(5.19)	(3.67)
Leverage	0.003	-0.093	0.029	0.004
	(0.14)	(-2.74)	(2.60)	(0.40)
NOL dummy	0.005	-0.020	0.005	0.003
	(1.08)	(-2.26)	(1.74)	(1.21)
Change in NOL	0.062	-0.043	-0.175	-0.114
	(0.99)	(-0.38)	(-5.08)	(-3.04)
Foreign income	-0.368	-0.036	1.082	1.050
	(-4.19)	(-0.23)	(20.42)	(20.98)
PPE	-0.015	-0.071	0.028	0.079
	(-1.08)	(-2.77)	(3.42)	(9.86)
Intangible assets	0.091	0.092	-0.013	0.023
	(5.17)	(2.89)	(-1.29)	(2.30)
Equity income	-0.499	-0.967	-0.889	-0.857
	(-0.72)	(-0.79)	(-2.17)	(-2.16)
Firm size	-0.002	-0.003	0.000	0.001
	(-1.07)	(-1.05)	(0.44)	(0.85)
Market-to-book	0.001	-0.005	-0.001	0.001
	(0.99)	(-3.58)	(-1.49)	(1.67)
Industry dummies	YES	YES	YES	YES
Adj. R^2 (%)	16.7	20.1	48.5	58.7
N	910	910	695	695