2012

TWO ESSAYS ON SMALL CAPITILIZATION PUBLIC FAMILY AND NONFAMILY FIRMS

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TWO ESSAYS ON SMALL CAPITALIZATION PUBLIC FAMILY AND NONFAMILY FIRMS

By

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A DISSERTATION

Submitted to
H. Wayne Huizenga School of Business and Entrepreneurship
Nova Southeastern University

in partial fulfillment of the requirements
for the degree of

DOCTOR OF BUSINESS ADMINISTRATION

2012

A Dissertation
entitled

TWO ESSAYS ON SMALL CAPITALIZATION PUBLIC FAMILY AND NONFAMILY FIRMS

By

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We hereby certify that this Dissertation submitted by Philip L. Fazio conforms to acceptable standards, and as such is fully adequate in scope and quality. This dissertation submission and approval is in the fulfillment of the Dissertation requirements for the degree of Doctor of Business Administration.

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Nova Southeastern University
2012

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that where I have used the language, ideas, expressions, or writings of another I give appropriate credit.

Signed____________________
Philip L. Fazio

ABSTRACT

TWO ESSAYS ON SMALL CAPITALIZATION PUBLIC FAMILY AND NONFAMILY FIRMS

By

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The first essay examines two measures of risk, debt ratio, and idiosyncratic risk of small publicly held family firms relative to nonfamily firms to investigate differences in financial risk between them. Using a unique hand-collected data set of small family and nonfamily firms, I analyze certain firm characteristics (family ownership, family member on the board, size, and dual class status) and find that family and nonfamily firms do not differ in their book-based debt ratios but do differ in their market-based debt ratios. Specifically, I find that family firms that tightly control voting rights through dual class status have higher debt ratios and, hence, higher risk than nonfamily firms. Furthermore, I find a positive relation between idiosyncratic risk and family ownership and I find as the percentage of family ownership increases idiosyncratic risk increases.

The second essay utilizes the likelihood of incentive compensation presence and incentive compensation ratio of small publicly held family firms relative to nonfamily firms to investigate differences in CEO dividends and incentive compensation. Specifically, CEO dividends and family ownership reduce the likelihood of the existence of an incentive compensation plan. I find in the presence of CEO dividends that family and nonfamily firms differ in their incentive compensation ratios and the likelihood of incentive compensation. In my sample, I find a significant negative relation between the CEO dividend income ratio and the incentive compensation ratio and between family ownership percentage and the incentive compensation ratio. Lastly, consistent with current literature, I find that growth opportunities positively influence both family and nonfamily firms' incentive compensation ratios.

ACKNOWLEDGEMENTS

I acknowledge Drs. Baek, Collver, and Cho for their generous and tireless efforts toward helping me develop my thesis and data analysis. Without their commitment, dedication to research, and guidance, this dissertation would not have been possible. For his patience and use of humor when I did not grasp the subtle features of panel regressions, the data, and the statistical software, I thank Dr. Collver. Furthermore, I thank Nova Southeastern University for providing the instruction, tools, databases, and facilities with which I was able to develop this research. Finally, I thank my wife Mary Ann for her patient understanding, over the past several years, as she gave up many of our weekends and evenings to see the completion of this dissertation.

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ESSAY ONE

RISK IN SMALL CAPITALIZATION FAMILY AND NONFAMILY PUBLIC FIRMS

1. INTRODUCTION

This research links together disparate literature on family firms, large firms, small firms, and risk for small firms. The literature is not coherent in one theme: whether family firms operate with greater risk relative to nonfamily firms. Yet the literature finds performance advantage to family firms without an explanation of why a family firm on average generates better accounting returns and values relative to nonfamily firms, other than for reduced agency costs translated into value.

Anderson and Reeb (2003b) show that family firms are valued higher and show higher accounting profitability than nonfamily firms show and argue that a possible explanation is the "family governing structure reduces agency problems without leading to losses in decision making (p.1324)".

In a parallel article concerning diversification and leverage on large firms (defined as S&P 500 firms), Anderson and Reeb (2003a) find family firms are less diversified and have similar debt levels to nonfamily firms. Moreover, the authors find that total risk, systematic and firm-specific risks are indistinguishable between family and nonfamily firms. Anderson and Reeb conclude that there are no differences between family and nonfamily risk levels on average. Anderson and Reeb find nondiversified family firms (i.e., operating in only a single line of business) benefit from the concentration in economic valuation but not for those family firms with multi-segment business lines. Furthermore, Anderson and Reeb conclude that, despite less diversification, risk is similar to more diversified nonfamily firms. Anderson and Reeb not only test leverage with book debt to book assets but also book leverage to market valuation of the firm. I use both debt measures as well.

This research seeks to contribute to the literature by examining small firms, both family and nonfamily, from the perspective of risk. Specifically, do small family firms operate with similar or different debt levels? If family firms operate with higher debt in the capital structure then risk appears to be higher.

Anderson and Reeb (2003a) find no significant relation between firm-specific risk and family firms. Yet they find family firms are opaque in information disclosure (Anderson, Duru, & Reeb, 2009). Merton (1987) and Roll (1988) argue that information asymmetry creates idiosyncratic[1]. Karolyi (2001) argues for arrival of information increases firm-specific risk. If Anderson and Reeb (2003a) find family firms are more opaque then it implies (e.g., restricted information) that firm-specific risk is higher for family firms, and when that information becomes available, the arrival adds to firm stock volatility.

It seems likely that family firms operate with more risk on average based on performance and valuation; and those family firms withhold information until advantageous for the family relative to family firms. This opacity and the management of information (Anderson & Reeb, 2003a) support idiosyncratic risk. I examine small firm family and nonfamily idiosyncratic risk to contribute to the literature. Small firms are good candidates for examination of idiosyncratic risk because they are followed less by analysts, share illiquidity (Amihud, 2002), and have small investor relations staff[2] with

[1] I use interchangeably idiosyncratic and firm-specific risk in this research.

[2] Karolyi, (2001) and Hong, Lim and Stein, (2000).

which to disseminate information to the same extent that large firms disseminate. Moreover, small firms, both family and nonfamily, experience economic shocks coincident with the lack of available credit during economic downturns (Bernanke & Gertler 1989; Larrain, 2006) which exacerbates volatility.

The family firm ownership structure is the dominant corporate structure in the United States, controlling somewhere between 80% and 95% of U.S. firms (Beehr, Drexler, & Faulkner, 1997; Daily & Dollinger, 1992). Similar to large nonfamily firms, family firms operate among a broad range of industries (Gomez-Mejia, Larraza-Kintana, & Makri, 2003). In addition, although the majority of family firms are small businesses with few stockholders, they employ an estimated 85% of the U.S. labor force (Oster, 1999). Shleifer and Vishny (1986) confirm that large shareholders are common in larger firms, holding equity stakes in 33% of Fortune 500 firms. More recently, Anderson and Reeb (2003b) find that family firms represent 35% of the S&P 500. Chen, Chen, and Cheng (2007) suggest that small capitalization family firms represent approximately 46% of the sample of S&P 600 firms. Family firms are clearly a material ownership structure of corporate America. This research explores two areas of risk in small firm operation: risk as embodied in firms' capital structure and risk relative to excess returns found in small firms and in family-controlled firms.

Small firms make invaluable contributions to the U.S. economy. They are part of the renewal process necessary for a vibrant economy. They are incubators and experimenters of technological changes and productivity growth. Small firms are not only valuable to the U.S. economy for the innovation that they bring but also for the creation of jobs (Ackerman, 1999). During periods of economic downturn, small firms fare poorly and certainly perform worse than large capitalization firms. Small firms display an asymmetrical reaction to the economic cycle in operating performance, cash flows, and equity price.

Small firms operate with fewer lines of business and within fewer industry segments relative to large firms, making risk diversification more difficult. Garner and Yore (2010) examine the industry segments of large and small firms and find that small firms have a narrower focus. Specifically, they find that large firms have a median number of three industry segments and small firms have a median of only two segments. A narrow line of business is a concentrated business, and if that line of business falls into distress, firm earnings, and shareholder values suffers.

Small firms do not share the same managerial problems with large firms. Small firm management teams lack depth and versatility. These shortcomings include dependency on too few people for leadership, insufficient contingency talent replacement plans, and limited scope of management skills.

Prior literature reports that, among large capitalization firms, family firms outperform nonfamily firms (as measured by return on sales and Tobin's Q; Anderson & Reeb, 2003b). This performance advantage may be due to better investment decisions, closer monitoring, higher industry concentration, longer investment horizons, and greater debt ratios—all of which are characteristics shared with small capitalization and family-controlled firms. In fact, in the current investment climate, many investment management firms are overweighting small-capitalization companies in global investment portfolios to capture these above-average returns.[3] Research, supported by market expectations, shows

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[3] See Morgan Stanley Smith Barney Global Investment Committee (2009, p. 3) for rationale.

that small capitalization stocks have high returns and, in particular, family-run (i.e., tightly controlled) firms outperform nonfamily (i.e., widely held) public firms.

Ownership affects the debt ratio. Jensen (1986) shows that debt controls the agency cost between shareholders and management. Small family firms control agency costs between management and shareholders by monitoring management. Effective monitoring is a substitute for the roles that the capital markets and debt play in nonfamily firms. Based on agency theory, small public family firms should require less capital structure debt to control agency costs than nonfamily firms because they control management through monitoring (and may perform a dual role as management).

However, risk in small family firms should arise from concentrated business segment risk and from the family's desire to retain control by funding growth with debt in lieu of equity issuance.[4] Family firms in this case use debt for growth reasons and not for monitoring reasons. The question, then, becomes whether family firms avoid the default risks associated with debt and effectively monitor managers without using debt as a main control mechanism, or whether they keep tight ownership control by funding investments with retained earnings and debt and avoid dilution with accompanying equity offerings. Therefore, family firms are likely to take on the risks associated with debt to retain control.

I research the relation among small firm size, family control risk, and the debt ratio. Given that risk relates to return, family firms may have higher risk than nonfamily firms. I posit that this risk is manifest in family firms in two ways: higher debt ratios and

[4] Wu, Chua, and Chrisman (2007) find that "family involvement in firms, controlling ownership .. . . and management combined, decreases the use of equity financing and the use of public equity financing"(p. 893).

higher idiosyncratic risk. Therefore, I investigate the impact of debt and idiosyncratic risk on small capitalization family firms relative to nonfamily firms.

The organization of the remainder of this essay is as follows: In Chapter 2, I review some of the important literature, focusing on risk as characterized by debt ratios, idiosyncratic risk, dual-class ownership status, and family ownership. In Chapter 3, I report the methodology, the sample and data sources and discuss the differences in debt ratios and idiosyncratic risk between family and nonfamily firms. In Chapter 4, I present my analysis and research findings. In Chapter 5, I summarize the main findings.

2. LITERATURE REVIEW AND MOTIVATION

This research provides insight into the risk differences between family and nonfamily firms as measured by the debt ratios and idiosyncratic risk. Small firms are unique: They outperform larger firms and carry higher risk to support that performance. I compare the use of debt between family and nonfamily firms to relate debt with risk to better returns. Because family firms outperform nonfamily firms (Anderson & Reeb, 2003b), if return relates to risk, then do small family firms use more debt in the capital structure, that may account for better returns relative to small nonfamily firms?

Mishra and McConaughy (1999) argue that family firms are concerned with loss of control and will use less debt if that debt jeopardizes control in default. Family firms likely do not use debt to control agency issues to the same extent that nonfamily firms do. Family firms monitor management, which serves as a control for agency issues. In a contra view, family firms may use more debt in the capital structure because families are more sensitive to retaining control. Families have a built-in reluctance toward equity issuance to fund growth (Cronqvist & Nilsson, 2005). Because debt may play a role in funding growth, family firms with a desire to grow may have an incentive to use debt.

Dual class family ownership structure support the use of debt and the issuance of equity depending on the family goals. For example if growth is a goal then equity issuance is consistent with dual class, while debt may play the role of keeping control within the family when family control is in jeopardy. The literature finds mixed results in relation to the dual class structure and the debt structure of family firms. Gompers, Ishii, & Metrick (2010) and Moyer, Rao & Sisneros (1992) define this distinction. Gompers, et al. find that leverage is a tool that families utilize when they are concerned with losing control or when control is not subject to change. For example, Gompers, et al. find material differences in mean and median debt ratios of dual class and single class firms. To compliment Gompers et al., Moyer, Rao and Sisneros (1992) findings suggest that debt is a control mechanism in dual class firms.

While levels of debt in the capital structure may be a factor in family risks relative to nonfamily firms, small firms have concentrated lines of businesses (Garner & Yore, 2010), which also play a role in risk. A focused business structure imparts more risk to the cash flow stream and earnings and, thus, signals volatility. Karolyi (2001) argues that firm returns respond to risk other than market; that is, idiosyncratic risk affects firm value. Small family firms tend to be opaque in disclosure. Moreover, small firms do not have analysts following and have a small float that leads to share illiquidity, which imparts risk to the ownership. Because family firms have a greater disparity of information relative to nonfamily firms (Anderson, Duru, & Reeb, 2009), they should also likely have greater idiosyncratic risk. In a counter view, Ferreira and Laux (2007) argue that because small family firms are generally not subject to changes in control, their idiosyncratic risk is low. In other words, this constancy of family ownership, which provides for a reduced potential for restructuring, leads to less profit potential for investors and, thus, lowering the idiosyncratic risk.

Lastly, small firms need credit to withstand recessionary economic periods. Small firms do not have access to credit through banking relationships and the capital markets, as do large firms. Within a credit-restricted environment, small firms need to reduce their balance sheet and income statement positions, which affect earnings negatively. This variability in earnings and cash flows during times of economic stress imparts volatility to the earnings and equity returns of small firms. Family firms, depending on the empirical result, may benefit from low debt levels or, conversely, be adversely affected by higher debt ratios.

2.1. Small Firms versus Large Firms

Small companies are the jobs engine and innovation-creative segment of the U.S. economy, and yet they have several weaknesses relative to large firms. First, small companies have an Achilles' heel: They require access to credit to work their magic, especially during periods of economic hardship. Because small companies are sensitive to economic down drafts, downturns in the economy adversely affect earnings. Second, small companies' exhibit returns volatility, which, in part, is the result of a narrow line of business. Larger companies, in contrast, have multiple lines of business with easier access to credit through the capital markets. Today, large firms tap the world capital markets to fund growth options and assets needs. Lastly, small firms have access to smaller pools of talent compared to large firms and, therefore, do not have a deep bench when replacing executives or assigning executives to growth projects. Ang (1991) suggests a small firm's management team is largely incomplete relative to larger firms. Therefore, small firms differ from larger firms in that they have limited sources of credit and capital, a less diversified business line, and an incomplete or shallow talent supply.

The U.S. economy has performed impressively over the past 25 years in contrast to other developed economies in Europe and Japan. The business competition and entrepreneurial environments and the formation of new businesses may explain this difference in gross domestic product growth. The story of U.S. business during this period reflects the restructuring of large capitalization firms to mirror the growth trends of small capitalization firms, immigrant, and minority and women new firm formations (Ackerman, 1999).

Small firms make invaluable contributions to the U.S. economy. They are part of the renewal process necessary for a vibrant economy. They are incubators and experimenters of technological changes and productivity. Small firms are vital to the U.S. economy not only in innovation but also in the creation of jobs (Ackerman, 1999). Through these jobs, "millions enter the economic and social mainstream of American society" (Ackerman, 1999, p. 3). Neumark et al. (2011) find that small firms and small establishments create more jobs relative to larger firms. Neumark et al. also find an inverse relation between firm size and net job growth in manufacturing and service sectors of the economy. Bernanke (2010) finds in our economy small businesses are central to creating jobs; family firms employ one-half of all Americans and account for 60 percent of gross job creation. However, small firms' success depends on the credit availability, which remains an unresolved issue during recessions. To this end, small firms remain adversely sensitive during credit restrictive periods and economic downturns.

2.2 Small Firms Need Credit

During times of economic stress and recessions, small firms need credit and find it most difficult to obtain.[5] Clearly, relative to large firms, small firms have unequal access to credit. Rational investors see that small firms will experience credit rationing when credit most needed. If Bernanke and Gertler (1989) and Larrain (2006) are correct, investors will expect more risk (i.e., the distribution of earnings is wider) with firm earnings. This greater dispersion in expected earnings translates into return volatility in the time series.

Small firms display an asymmetrical performance reaction to the economic cycle, including cash flows and equity price performance. “Small firms with little collateral should be more strongly affected by tighter credit market conditions in a recession state than large, better collateralized ones . . . which [translates] into a higher sensitivity of their expected stock returns with respect to variables that measure credit market conditions” (Perez-Quiros & Timmermann, 2000, p. 1229). Small firms are concerned about using too much debt during a recession for fear of restricted, or no access, to additional credit when needed, causing a possible bankruptcy or loss of firm control or ownership.

Bernanke and Gertler (1989) find that bank credit bridges the inventory adjustment process for larger firms, which tend to have strong credit banking relationships, but not for smaller firms, where output is more volatile without credit. Others concur with Bernanke and Gertler. For example, Larrain (2006) notes, “The results show that banks smooth real shocks, particularly idiosyncratic shocks, and that

[5] During the 2009_2010 recession recovery, large firms had access to credit through the capital markets whereas small firms that rely on bank credit had difficulty or were unable to obtain credit (Martin, 2010)

one way in which this is achieved is through the use of short-term debt” (p. 1922). If output is more volatile in small firms, earnings and shareholder returns will follow output, causing equity price and return volatility.

As previously discussed, relative to large firms, small firms have unequal access to credit. Rational investors see that small firms will experience credit rationing when they most need credit. This greater dispersion in expected earnings translates into return volatility in the time series. This equity volatility is a built-in compensation tool for small firms available for incorporation into an equity-based incentive compensation plan for executives.

2.3. Small Firms Are Risky

I suggest that small firms are a microcosm of agency and industry risk issues relative to larger firms. Historically, small firms experience high returns but at a volatility price. If the markets price risk, small firms exhibit more risk. One form of risk is the firms' limited diversification. Garner and Yore (2010) find small- and medium-size firms have a concentrated line of business.

Small firms have higher equity returns and concomitant higher risk (Karolyi, 2001). Banz (1981) finds that risk relates to size, and Fama and French (1993) find that size explains small stock returns. Illiquidity of small firm equity creates risk–return volatility. Debt controls the agency cost between shareholders and management (Jensen, 1986). Small family firms reduce management and shareholders agency costs by monitoring management. Indeed, monitoring is a substitute for the access to capital markets and debt monitoring in nonfamily firms. However, monitoring alone is imperfect in controlling CEOs once the firm begins to require nonfamily/external human capital. Here, smaller firms compete for talent with larger firms, and the separation of management and shareholder agency cost becomes more important. Small firms and family firms employ CEO equity-based incentive plans to assist in aligning CEO interests with shareholders. With risk evident in smaller firms, the volatility portion of option incentive plans should be valuable to CEOs and as a tool for boards of directors.

2.4. Incomplete Management Teams

Small firms lack management depth and versatility. These shortcomings include dependency on too few people for leadership, an insufficient contingency plan for replacement of talent, and limited scope. Small firm management teams are likely to lack “the full complement of managerial talents with knowledge and skills in finance, marketing, production, and international business” (Ang, 1991, p. 576). Accordingly, management is not as flexible in responding to external business environment changes. This depth brevity and the limited breadth of management skills are a principal difference between large and small firms.

Large firms have the financial resources to recruit, retain, and develop talent. In short, large capitalization firms have access to the best business schools and recruiting and to warehouse talent for future use. “Unlike large businesses, published research further indicates that recruiting, motivating, and retaining employees is one of the biggest problems for small firms “(Deshopande & Golhar, 1994, p. 1). Candidates view opportunities with large firms favorably based on business diversity, stability during economic recessionary periods, and training that is only available in a large firm (Williamson, Cable, & Aldrich, 2002).

In addition, small firms have limited resources to devote to investor relations. Once the firm is public, limited contact leads to greater information asymmetry between management and shareholders. Capital sources will find small firms more difficult to monitor CEO activities and will likely limit debt and new equity sources.

2.5. Small Family and Nonfamily Firm Risk

Small firm share-illiquidity, exacerbated by the lack of analysts following and access to capital during economic recessions, all relate to firm risk and stock return volatility (Berk et al., 1999; Bernanke & Gertler, 1995; Brennan & Tamarowski, 2005; Gertler & Gilchrist, 1994; Hong et al., 2000). Debt is a control for the agency cost between shareholders and management (Jensen, 1986). Small family firms reduce control agency costs between management and shareholders by monitoring management, which are substitutes for the role the capital markets and debt play in nonfamily firms. Agency theory suggests that small public family firms require less debt in the capital structure than nonfamily firms because families monitor and control management.

Small firms display an asymmetrical reaction to the economic cycle in performance, cash flows, and equity price performance. Small firm earnings react strongly and adversely to tighter credit market conditions in comparison to large better collateralized ones (Perez-Quiros et al. 2000). Small firms, without a strong banking connection or collateral, are concerned about using too much debt during a recession for fear of restricted or no access to additional credit when needed and possible bankruptcy and loss of firm control and ownership. For example, Larrain (2006) notes, “The results show that banks smooth real shocks, particularly idiosyncratic shocks, and that one way in which this is achieved is through the use of short-term debt” (p. 1922). If output is more volatile, then earnings and shareholder returns will follow output causing equity price and return volatility.

Small firms need credit and find it most difficult to obtain. It is apparent that small firms have unequal access to credit compared with large firms. Rational investors see that small firms will experience credit rationing when they need credit the most. This greater dispersion in expected earnings translates into return volatility in the time series. Compared to nonfamily firms, if family firms use less debt, the firm will experience more muted idiosyncratic earnings shock and lower volatility, and vice versa, if they use more debt. Moreover, due to the volatility created from a credit shock, small firm share illiquid (Amihud, 2002) will amplify these shocks and reinforce the price swings. Thus, I expect that idiosyncratic risk to diverge in this situation between family and nonfamily firms.

2.6. Small Firms, Concentrated Ownership, and Business Line

Small firms have more concentrated ownership in the form of founding family members. Likewise, family firms have concentrated ownership in the family group. Nonfamily publicly held firms are without concentrated ownership by a family or a group of families generally related to the founder.

Holderness (2009) finds in a random sample evaluation of both large and small U.S. public firms that, on average, 96% of U.S. firms have concentrated ownership. Franks, Mayer and Rossi (2007) find insider concentrated control mechanisms govern small European public firms (Germany and French). By using control or management positions, families may reduce risk for all shareholders relative to firms without family involvement. Techniques available to family firms include controlling debt levels and investment risks. Anderson and Reeb (2003a) find that large family firms (S&P 500 firms) are less diversified that nonfamily firms and use comparable leverage. Families appear to reduce the concentration of line of business risk, which is counter to the monitoring hypothesis previously discussed.

Anderson and Reeb (2003b) find that large (i.e., S&P 500) family firms outperform (e.g., Tobin's q, and net income margin) nonfamily firms. If families are monitor managers in lieu of debt, with all other things equal, then the need for debt or proportionately more debt is not evident. Nonetheless, families firms perform (i.e., earn) better than nonfamily firms perform, suggesting that risk is higher in the firm. Barber, Lehavy, McNichols, and Trueman (2001) find that small firm investors earn high returns when following analysts' recommendations, which provides further support for the risk hypothesis. Then, if risk positively relates to return, family firms likely have more risk than nonfamily firms, and risk is likely idiosyncratic. I expect that Anderson and Reeb's findings translate to small firms and that small family firms outperform nonfamily firms. If true, then small family firms have more embedded- risk within their system, and debt is a factor to risk.

Moving to agency costs, small firms that monitor management have lower agency costs between management and shareholders, leading to better performance. If family firms have less reason for use of debt due to better monitoring, then families may use debt, not for control agency purposes, to fund investment projects. Although Anderson and Reeb (2003b) find no difference in debt levels, risk–return theory argues for less debt if the projects per se have more cash flow volatility combined with business segment concentration. Therefore, family-firm agency costs imply that family firms have a negative relation to the debt ratio.

2.7. Debt and Agency Costs of Debt

Myers (2001) contends that conflicts between debt and equity investors only arise when a risk of default exists: "If there is a chance of default, then shareholders can gain at the expense of debt investors. Equity is a residual claim, so shareholders gain when the value of existing debt falls, even when the value of the firm is constant" (p. 98). The tradeoff theory of capital structure suggests that firms will borrow up to the point at which the marginal benefits of debt (i.e., tax and nontax factors) just equal the cost of default (Myers, 2001). Myers and Majluf (1984) suggest that debt issuance has a pecking order. Firms are reluctant to issue new equity. Indeed, Myers and Majluf expect that managers who maximize market value will avoid external equity financing when they have better information than outside investors and that investors are rational. Accordingly, family-owned firms that do not actively disclose information and, hence, have better information than the market will likely issue debt.

Debt disciplines managers to improve performance by not spending excessively on personal consumption, overinvesting, and accepting poor net present value projects. Harris and Raviv (1991) argue, “Debt serves as a disciplining device because default allows creditors the option to force the firm into liquidation” (p. 321). Jensen (1986) finds that debt will monitor management’s use of cash flows and, thus, reduce management’s power to divert cash flows to entrenching or poor net present value projects. Internal financing avoids external debt and capital markets monitoring. As a result, management is motivated to grow beyond the optimal size to reward managers and increase size-related compensation (Murphy, 1985). To the extent that families monitor management’s use of internal cash flows and focus cash flow to projects that benefit shareholders, excessive use of debt to finance entrenching projects does not occur. Whether the family desire to use debt (and not equity) or less debt because families monitor management remains unclear from the literature.

The previous discussion suggests that an agency case exists for family firms to use less debt in their capital structure. Yet, Harris and Raviv (1990), Agrawal and Nagarajan (1990) find evidence those family firms without debt out number nonfamily firms by a factor of two and correspondently show material underrepresentation in levered firms. However, Anderson and Reeb (2003a), who find no evidence of a difference in family and nonfamily firms’ capital structure, argue that the level of debt is independent of founding family control. This Nagarajan argues for lower debt levels and are with family firms monitoring as control nonowner-management agency costs. Despite the family’s desire to fund growth with debt and to avoid equity offerings (Wu et al., 2007), family control is a substitute for creditor monitoring. To this end, families have less need for debt than nonfamily firms have. Considering these previously discussed divergent factors, I expect that family firms' monitor role, when combined with the desire to avoid debt to control default risk, will dominate the desire for issue debt in the capital structure Therefore I posit that family firms will relate negatively to the debt ratio.

2.8. Small Family Firms and Agency Costs

Families represent a unique class of shareholders that hold poorly diversified portfolio, are long-term investors, and an often hold executive management positions (Anderson &Reeb, 2003a). Family management is, therefore, in the position to control investment policy and capital structure to suit their goals (DeAngelo & DeAngelo, 2000).

Agency costs occur when conflicts exist between debt and equity investors. Why are family firms motivated to control the firm differently than nonfamily firms? Family firms have different incentives than diversified shareholder firms. Families with large ownership percentage in the firm have strong incentives to maximize their firm's value and are in the position to collect information (monitor) and oversee managers. Families can thus overcome the major principal–agent problems of the modern corporate structure. Consistent with Jensen and Meckling (1976), Ang, Cole, and Lin (2000) find that the alignment of owners' and managers' interests in small firms is higher when owners manage the firm and are lower when nonowner managers increase within the firm. However, family firms with concentrated ownership impose costs that nonfamily firms do not bear. For example, families are motivated to pass on their ownership to future generations and thus may act to limit the probability of control loss by limiting risky capital structures or investment projects.

Families likely use low default probability debt vehicles, maturities, and debt levels in the capital structure (Barclay & Smith, 1995; Myers, 1977; Titman & Wessels, 1988). Casson (1999), Chami (1999), and James (1999) suggest that families hold the ownership position as trust for future generations. Because families are concerned with firm survival, they select capital structures that are consistent with survival. Family concern with continuity and control should lead the family to select capital structures that avoid a forced restructuring such as a bankruptcy. If intergenerational stewardship is a motivation, families are unlikely to subject the firm to undue risk that jeopardizes the firm to reorganization and possibly loss of control.

Shleifer and Vishny (1986) suggest that large undiversified shareholders reduce firm risk through aversion or avoidance of risk. Families may influence investment decisions by accepting projects with imperfectly correlated cash flows to the existing projects (Anderson and Reeb, 2003a, p. 654) at the expense of greater net present value projects. This selection leads to a somewhat diversified investment portfolio but with a lower risk profile within a concentrated overall business segment.

If family ownership is significant to capital structure, the level of family ownership, control, and involvement in management is important to evaluating risk. Mishra and McConaughy (1999) find that family-controlled firms are different from nonfamily firms: “Family controlled firms are more averse to control risk. More leverage increases control risk, and this is associated with higher probability of . . . the loss of family control.” (p. 61). Mishra and McConaughy also suggest that capital structure studies that do not control for family ownership and control are misspecified. In other words, the family's desire for continuity, concomitant loss of control avoidance, and intergenerational stewardship are agency costs that influence the capital structure, which results in lower risk. Agency costs associated with family ownership is likely then to have a negative relation to the debt ratio.

2.9. Debt and Family Firms

Jensen (1986) implies that ownership affects the debt ratio. Small family firms reduce principal–agency costs by monitoring management, which are substitutes for the role that the capital markets and debt play in nonfamily firms. Small public family firms require less debt than nonfamily firms require because family firms' families monitor and control, indeed families are usually in management or are directors. Small family firms risk arises from a concentrated business segment risk. Moreover, risk also comes from borrowing to fund growth and to retain control with debt in lieu of equity issuance (Wu et al., 2007). Whether family firms avoid the default risks associated with debt and effectively monitor managers without debt as a main control mechanism or whether they keep tight ownership control by funding investments with retained earnings and debt but not new equity will show in the debt ratios of family firms.

As previously discussed, Anderson and Reeb (2003a) argue that the level of debt is independent of founding-family control. However, corporate finance theory argues for prudence and that firms not take on financial risk with high operating risk coincident with undiversified portfolios. Therefore, firms should take on less debt if their projects per se have high cash flow volatility and operate within a concentrated business segment. Thus, contrary to Anderson and Reeb's neutral findings, I expect that family firms are more concerned with maintaining equity control and secondarily revenue growth; and therefore, will have lower debt ratios.[6]

2.10. Dual Class Structure

A dual class equity structure is a powerful tool to keep voting control within the family while making public shares available to finance growth as necessary. Dual class firms are a small but a meaningful sample of public firms.[7] Ellul (2008) argues that control drives the debt ratio. He finds that when control is contestable, the blockholder (and by extension, family owners) use leverage strategically despite the higher risk and costs of bankruptcy posed with debt. Conversely, when control-enhancing mechanisms such as a dual class structure are in place and ownership is not easily contestable, blockholders use less debt. Using a sample of U.S. dual class firms, Gompers et al. (2010) show that dual class shares are superior in shareholder voting. Typically, a dual class equity share-structure has 10 votes per share whereas a common share class has only one vote per share. Gompers et al. find that insiders, on average, control 60% of the voting rights and 40% of the cash flow rights of a dual class firm.[8] Dual class ownership is clear sign that the blockholder wants to retain control.

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[6] I use the terms *leverage* and *debt ratios* interchangeably; see Appendix A for variable definitions.
[7] Gompers et al. (2010) find that 6% of the all Compustat firms are dual class firms; Masulis, Wang, and Xie (2009) find a similar percentage of dual class firms in the Compustat database whereas our sample consists of 9% dual class firms.
[8] Gompers et al. (2010) find, as I do, that some firms have more than two classes of common stock. I follow their and other research in referring to multiclass structures as dual class.

The dual class voting structure is also an excellent tool for growth firms and still allowing blockholders to retain voting control. Firms under dual class capital structures are less likely to undergo a hostile take-over but still have default risk resulting from high debt levels and loss of control on debt default. Nonetheless, dual class family firms may use more debt relative to single class firms. In a large-scale study of dual class firms, Gompers et al. (2010) find a significant difference in means and median debt ratios of dual class and single class firms. Specifically, Gompers et al. find that dual class firms have significantly more debt to total assets than single class firms in both the mean and median ratios.

One possibility for the difference in debt ratios is that dual class firms are reluctant to engage in seasoned equity offerings for fear of diluting control, despite the large voting superiority. Cronqvist and Nilsson (2005) find a similar reluctance for seasoned equity offerings in family-controlled firms. Another possibility, suggested by Moyer, Rao, and Sisneros (1992), is that dual class firms use debt as an alternative control mechanism. The debt ratio then becomes a function of the degree of family ownership, firm size, and the extent of control that the family exerts on the firm, whether by dual class equity structure or other means.

Dual class firms are meaningful sample of public firms with sizeable control over the voting shares of those firms. Masulis et al. (2009) find support for Gompers et al. with a similar percentage of dual class firms in the Compustat database. Moreover, Masulis et al. find that as the difference between the insider-controlled percentages of voting rights and cash flow rights increase, the incentives of insiders to extract private benefits increases. Clearly, dual class structure firms appear to use debt/creditor monitoring to hinder the extraction of private benefits.

The capital structure question of control by dual class is, therefore, a material topic for research. Families with dual class capital structures are less likely to be concerned with take-over risk, but they are still concerned with default risk and the accompanying loss of control. Dual class structures may lead to more debt relative to nondual class firms but less than straight ownership structures (Gompers et al., 2010).

Claessens et al. (2002) and Lins (2003) argue that two separate forces—voting rights and cash flow rights—are meaningful in evaluating firm value. Claessens et al. (2002) use dual class status to disentangle voting rights and cash flow rights. Firms with dual class structures break the incentives and entrenchment links to voting and cash flow rights. Lins (2003) extends Claessens (2002) by examining not only family ownership but also nonfamily blockholders and firm value. Lins finds that family dual class ownership reduces firm value and nonfamily block ownership mitigates the valuation discount. If valuation relates to dual class and blockholder ownership, then the interaction of family ownership and dual class structure may have additive effects on capital structure that is not evident in each variable individually. If dual class family firms have lower debt levels, then debt's monitoring influence is small, and families are the lead-control mechanism on the consumption of private benefits within the family.

The employment of dual class control-enhancing mechanisms within family firms or other family-oriented control mechanisms (e.g., holding executive management positions or board representation) may lead to either higher or lower debt in the capital structure. Which dominates family ownership or dual class? So far, the results are mixed.

Contrary to Gompers et al. (2010), Anderson and Reeb (2003a) suggest that no difference exists in the debt ratios of family firms. Because findings differ on whether family firms use the more or less debt in the capital structure, I address an empirical issue specifically with a focus on small capitalization family and nonfamily firms. The capital structure question of control by dual class is, therefore, an empirical question. Based on lower agency costs originating from monitoring and voting control, I posit that dual class structure firms relate negatively to the debt ratio. Arguably, dual class firms can issue equity to finance growth and permit the family to retain control.

2.11. Idiosyncratic Volatility

Merton (1987) shows that expected returns depend on other factors than simply market risk and, specifically, include the cost of incomplete information, firm-specific risk, and the concentration of investors owning the shares. He suggests that this firm-specific effect is larger for smaller firms, which have a narrow shareholder base and concentrated ownership. Family firms in particular fit this definition of a narrow shareholder base. According to Merton, market risk for smaller firms does not capture all the risk and thus investors should consider size, investor base distribution, and incomplete information costs in establishing returns.

Anderson et al. (2009) find that founder and heir firms are more opaque in their financial disclosure (i.e., financial and nonfinancial transparency). This opacity coupled with disclosure restrictions adversely affect firm market value, as investors fear the level of private benefits that family owners may extract from the firm. Karolyi (2001) and

Merton (1987) argue that expected returns depend on factors other than market risk, including compensation for shadow costs of incomplete information. Hence, firm idiosyncratic risk negatively affects firm value. In addition, with a concentrated number of shareholders, small firms feel this risk more intensely.

Small firms also provide limited investor relations management,[9] which compounds stock illiquidity. Amihud (2002) finds that small firm stock's excess return is partly a result of the stock illiquidity. The role of an investor relations department is to reduce information asymmetry via communication with analysts and shareholders with the aim of improving the stock price (or reduce idiosyncratic risk). However, family and nonfamily small firms are not likely to have a developed investor relations department to facilitate communication with nonfamily shareholders and analysts (Hong et al., 2000).

Roll (1988) and Ross (1989) relate the arrival of information to stock return volatility. Ross finds that "volatility of prices is directly related to the rate of flow of information to the market "(p.16). Roll, who focuses specifically on idiosyncratic volatility, finds evidence that idiosyncratic price changes reflect investors' use of private information. Ross' and Roll's studies lends support to the notion that private information translates into stock prices that are affected by informed traders, rather than traders who employ publicly available information. With greater information disparity (Anderson et al., 2009), idiosyncratic risk is likely higher in smaller firms and even higher in family firms[10] if they do not use capital markets as extensively as nonfamily firms.

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[9] Karolyi (2001) suggests that investor relations members should take an active role in lowering idiosyncratic risk through information dissemination because they have no control over market risk.

[10] Anderson, Reeb and Zhao (2012) suggest that family firms exhibit greater short selling and that sales contain valuable information that is not evident with diffuse shareholder firms. This argument suggests higher idiosyncratic risk for family firms. Bali, Cakici, Yan, and Zhang (2005) find an aggregated relation between average stock volatility for a value-weighted portfolio and returns. This relation is partly due to small stocks and their illiquidity premium.

However, the literature also argues that governance is a source of idiosyncratic risk. For example, Ferreira and Laux (2007) suggest that governance restrictions, specifically delaying or prohibiting corporate takeovers or limiting shareholder protections, directly affect reduces idiosyncratic risk. They find that private investors, attempt to profit from corporate takeover and restructurings when corporate governance permits a take-over or change in control. These investors, armed with research, trade in firms with good prospects for future restructuring or sales and avoid firms with a low probability of or restrictions on the restructure or sale of the firm. Because family firms usually hold voting control sufficient to block unwanted change-in-control or merger activity, the result is a lower idiosyncratic risk relative to nonfamily firms, where lenient governance and control permit an easier reorganization or sale.

With fewer investors uncovering information, the flow of information declines and information asymmetry increases. Roll’s (1988) information asymmetry theory predicts an increase in idiosyncratic risk under these conditions; however, contra to Roll (1988), and Ferreira, and Laux (2007) suggest idiosyncratic risk is lower relative to firms without takeover protections, irrespective of family or nonfamily status because an insufficient number of investors are uncovering information about the firm. Ferreira and Laux argue that asymmetry in information but the availability of information on a potential for change or restructure of ownership increases idiosyncratic risk.

Given that private investors are unable to uncover sufficient tradable information with opaque family firms, I suggest investors’ ability to profit—via change in control—from fundamental research is limited. Because fewer opportunities exist for profit through private research, fewer investors conduct research, which, according to Ferreira and Laux (2007), translates directly into reduced idiosyncratic risk. However, equally likely is that the theory of arrival of information and information asymmetry (Karolyi, 2001; Roll, 1988; Ross, 1989) will increase idiosyncratic risk. I posit that this asymmetric information relation is independent of change in control restrictions and covers all information on the firm and impounds stock return volatility.

Given this difference in what causes information asymmetry in family firms, the outcome of whether family firms have more or less idiosyncratic risk remains an empirical question. I explore whether idiosyncratic risk positively relates to family ownership.

3. METHOD

The examination of corporations with professional management has been underway for a third of a century, in part kicked off by Jensen and Meckling's (1976) seminal paper on agency costs. The examination of family firms is a later phenomenon of this agency research and Anderson and Reeb's (2003b) study is prominent, which finds that founding families are a material segment of large family firms and those family firms relative to nonfamily firms perform superiorly when using accounting and Tobin's Q measures.

If family firms perform better operationally, as well as in the equity capital market, risk–return analyses suggest that they are a better investment opportunity because they select better, on average, capital projects, have more focus, employ more debt, assume more risk, or have some combination these characteristics. If family firms have increased risk, it should be evident either in the debt ratio or in the idiosyncratic risk. Anderson and Reeb (2003a) anticipate this risk differential. They explore large capitalization family firms relative to nonfamily firms with diversification and firm-leverage and conclude that family firms are modestly more concentrated but do not have measureable differences in leverage. Anderson and Reeb's specifications for leverage includes multiple forms, including my specification of book debt to book total assets and book debt to market value of total assets. Yet they find no family relationship in large capitalization firms (i.e., S&P 500 firms) and debt. They find neither a significant difference in total risk nor differences in firm-specific risk between large family and nonfamily firms. This research focuses on small capitalization firms to either corroborate

Anderson and Reeb (2003a) finding for small firms or to find a link between idiosyncratic risk, which is the logical extension of risk–return thinking.

Small family firms reduce agency costs between management and shareholders by monitoring management; shareholder monitoring is a substitute for monitoring by the capital markets available to nonfamily firms. Based on agency theory, small public family firms require less debt than nonfamily firms in the capital structure do because they have less need to monitor and control nonowner management. However, risk in small family firms may arise from concentrated business segment risk and from the family's desire to retain control by funding growth with debt in lieu of equity issuance. The question, then, becomes whether family firms avoid the default risks associated with debt and effectively monitor managers without using debt as a main control mechanism, or whether they keep tight control by funding through debt rather than equity offerings and thus take on the risks associated with debt.

With a concentrated number of shareholders, small firms feel idiosyncratic risk more intensely. Because family firms opacity —both disclosure restrictions and information asymmetry—affect risk, Merton (1987), argues that expected returns depend on factors other than market risk. Firm idiosyncratic risk negatively affects firm value.

3.1. Sample Selection

I collect annual financial information from the S&P Compustat database (quarterly when annual data are not available). I also obtain monthly stock prices from the Center for Research in Stock Prices (CRSP) and 10-k financial information from the U.S. Security and Exchange Commission. I hand collect family ownership data, family members on the board of directors, dual class, and unaffiliated block holder data from firms' annual corporate proxy statements (DEF-14a). Control variables come from WRDS Compustat annual update database. The data are a random sample of S&P 600 small capitalization firms excluding financial firms and utilities (SIC 6000–6999 and 4900–4999, respectively).

The sample covers calendar years 1999 through 2008 and uses 2006 calendar year as the base year for selection. The sample covers 40% of available S&P 600 firms as of 2006. The sample excludes firms that do not have 10 years of data looking both forward to 2008 and back to 1999. For a handful of firms that have a partial year financials, I annualize to arrive at the fiscal year. The final sample includes 202 firms and 2,020 firm years.

3.2. Data Sources, Models, and Variables

I calculate the dependent variables as the ratio of short-term and long-term debt either to book assets (book leverage) or to the sum of book assets minus book equity plus market value of the common shares (market leverage). In addition, I use a measure of idiosyncratic risk as a dependent variable to test whether family firms have different idiosyncratic risks than nonfamily firms.

I use the control variables identified by Frank and Goyal (2009) as significant in examining debt ratio. Variables include market value of common equity to book equity, tangible assets (plant property and equipment – net), and profits (operating income before depreciation and interest to total assets). The dividend variable is a dummy variable that equals 1 if a firm pays dividends, and zero otherwise. I also include the sum of squared errors (SumSq12) as the independent variable, which comes from the market regression where the S&P 600 index is the market. I find the median three-digit SIC industry book and market debt ratios using the sample. For more detail on the variables, see Appendix A.

4. RESULTS AND ANALYSIS

4.1. Descriptive Statistics

Table 1, Panel A, presents the summary percentages of the total sample, family, and nonfamily firms for SIC industry data. I use Compustat data and the SIC classification for each firm in the sample. Family (nonfamily) firms have family ownership percentage of equal to or greater than (less than) 1%. During the 10-year period, several family firms moved to nonfamily concentration; this movement leads to fractional numbers. Panel A represents the distribution of SIC industries for family and nonfamily firms for all 202 firms. Overall, family firms make up 56.7% (1,146 firm years) of the total, and nonfamily firms account for 43.3% (874 firm years). Family and nonfamily firms are nearly equally distributed (means and variances are not statistically different) across industry classifications.[11]

Table 1, Panel B compares the sample of S&P 600 firms, excluding real estate, financial, and utilities listings. Table 1 show that the sample, which covers roughly 40% of the S&P 600 firms, underrepresents agriculture, hospitals, legal, investment advisors, car rentals, funeral services, and laundry and supplies. Relative to the S&P 600 index, minerals, mining, transportation, leather, plastics, and industrial machinery industries have a higher proportion in the sample. Although some high concentration industries are capital intensive, other low-concentration industries may also be capital intensive. As a result, bias between family and nonfamily firms should negate results from the

[11] The *t*-tests for equality of means and variances between series are insignificant. I cannot reject the null that the means and variances are not statistically equal.

concentration of capital in industries that require financing and conducting debt financing as an ordinary part of the business.

4.2. Variables

The test variables are family percentage ownership, family member on the board of directors, family member as CEO, dual class structure, and unaffiliated blockholders. For control variables, I follow Frank and Goyal (2009) research into those variables that are reliable in measuring book leverage and market leverage. They find industry median-leverage, tangibility (i.e., tangible assets), profits, firm size (in terms of assets), market-to-book assets ratio, and expected inflation are the most reliable factors when studying the debt ratio. Frank and Goyal find that the following core factors relate positively (negatively) to the debt ratio: industry median, firm size, tangibility, and expected inflation (profits and the market-to-book assets ratio). They argue that book-based leverage is backward looking and that industry median, profits, and tangibility are a function of the past. Conversely, market leverage is forward looking and is consistent with market to book, firm size, and expected inflation, which are also all forward-looking factors. Although Frank and Goyal (p. 21) do not find that dividends are significantly related to debt ratio in the short term, they do find that over longer periods—nine years, which is consistent with my 10-year time frame—dividends are negatively related to debt ratio.

For all sample firms, I construct book and market leverage ratios and several control variables including median SIC three-digit book and market value-leverages, the dividend payout ratios, and market-to-book ratios. Percentage of equity ownership by the family determines family ownership. The family board member and CEO dummy variable equals 1 if family ownership is present, and zero otherwise. If family ownership is not disclosed (via proxy DEF-14a), then I assign a value of zero for the percentage of family owned variable. Dual class status and percentage ownership equals control. To examine whether family firms exhibit more or less risk, I construct an idiosyncratic risk variable that is the sum of the squared error resulting from the market model. For a full description of the variables, see the Appendix A.

Following Ferreira and Laux's (2007) use of information and idiosyncratic risk, I use the sums of square returns for each month to estimate return variances and construct each stock's relative idiosyncratic volatility as the ratio of idiosyncratic volatility to total volatility. Again, following Ferreira and Laux, I regress the information variables on the logistic transformation of the volatility ratio. I follow this model in the test of family ownership and dual class variables.

4.3. Difference of Means Tests and Correlations

Table 2 presents the correlation matrix for 202 firms resulting in 2,020 observations over a 10-year period from 1999 through 2008. The family variables negatively and significantly correlate to total assets, book and median leverage measures, and market leverage. As expected, a positive and significant correlation occurs between CEO family member, family member on the board of directors, and percentage of equity ownership.

Moreover, as expected, tangible assets and inflation variables do not correlate to the family variables.

Anderson and Reeb (2003b) find that large capitalization family firms perform better than large nonfamily firms. Given Anderson and Reeb's result, I may infer that family firm market-to-book ratios, on average, are significantly different from nonfamily firms. Yet, as shown in the summary statistics for small family and nonfamily publicly traded firms in Table 3, I find no significant difference (*t*-statistic = 0.91) in mean market-to-book values between family and nonfamily firms in my sample. Prior studies[12] have shown a non-monotonic relation between family ownership and market value with a decreasing market value to book as insider ownership increases above 5%. However, the market may not apply the same capitalization factors to family firms as it does to nonfamily firms due to family control. That is, family ownership may dampen the takeover possibility, which results in a lower market-to-book ratio for similar earnings. Alternatively, family firms, given superior operating performance and Tobin's Q relations, may experience higher market-to-book ratios.

Profits correlate negatively and significantly to book leverage and median industry-leverages. Interestingly, market-to-book ratios do not correlate to profits (see Table 2). I expect the profit ratio to correlate with growth opportunities for which the market-to-book serves as a proxy. Contrary to other empirical findings (e.g., Frank & Goyal, 2009), I find that dividend payout ratios correlate positively and significantly with the book leverage and market leverage ratio.

[12] Morck, Shleifer, and Vishny (1988), McConnell and Servaes (1990), Holderness, Kroszner, and Sheehan (1999), La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002), and Seifert, Gonenc, and Wright (2002) find an increasing market value with 0% to 5% and then decreasing with insider ownership over the 5% to 25% range.

Idiosyncratic risk, measured by SumSq12, is negatively significant to assets (*t*-statistic –1.69) and positively significant to profits (*t*-statistic = 2.9; see Table 2). I find significant positive correlations with profit ratio and family variables supportive of Anderson and Reeb (2003b). However, leverage measures negatively correlate with family variables. Idiosyncratic risk is not significant with family variables or leverage measures, which is curious considering that only profits and assets are positive and negatively correlated. Because the interest of this research concerns how idiosyncratic risk relates to book and market leverages, the lack of correlation with the leverage measures indicates further examination of the asymmetry theory. Therefore, I conduct a multivariate analysis to clarify the extent of significant correlations (i.e., family variables and leverage) and the absence of correlation significance with idiosyncratic risk and leverage ratios.

Table 3 displays statistics that represent differences in means for the control, dependent, and family variables. The results shows that the average book and market leverages of family firms are significantly below nonfamily firms (*t*-statistic = –2.03 and –1.9, respectively). In addition, three-digit SIC industry identification for both book and market leverage median values for family firms are significant and below nonfamily firms levels (*t*-statistic = –2.49 and –3.11, respectively).

Family firms' mean asset levels are smaller than nonfamily firms are (*t*-statistics = –6.07), as shown in Table 3. On average, tangible assets are smaller than nonfamily firms but the difference is not significant at the 5% level (*t*-statistic = –1.4). Despite having fewer assets on average, I find that family firms are more profitable on average (*t*-statistic

= 5.89), and fewer pay dividends than nonfamily firms do (*t*-statistic = –2.13). Idiosyncratic risk is not significantly different at the 5% level.

Table 3 shows family firms have meaningful statistics for the family variables, because these variables discriminate between family and nonfamily firms by definition. The results also show that nonfamily firms do not use dual class equity structures (*t*-statistic = 11.23). In addition, the correlation between family ownership and blockholders is negatively (*t*-statistic = –9.83; see Table 2). Table 3 supports the notion that overwhelmingly family firms use dual class ownership structures. My findings suggest that family firms' use of both dual class structures and their reliance on voting control without dual class that makes blockholder investing less attractive than nonfamily investing. Indeed, blockholders will likely not invest in family firms unless they are convinced that high growth is attainable or that a change in control is possible that will permit sale or merger with another firm.

I find material and significant differences in leverage variables of interest between family and nonfamily firms. At the same time, my sample shows significant differences in asset levels, profits, dividend payout strategies, dual class control-enhancing vehicles, and blockholders. Despite these differences, idiosyncratic risk is not significantly different, on average, at the 5% level. The difference in variables suggests a multivariate analysis to investigate further the differences in idiosyncratic risk between family and nonfamily firms.

Further, Figure 1 suggests an increasing linear relation between book leverage and family ownership concentration. Specifically, family firms—defined herein as firms with a percentage of family concentration greater than 1%—plotted using the median cross-sectional average book leverage against family concentration exhibit an increasing relation between ownership and book leverages. Figure 2 suggests that this relation holds for market leverage as well. That is, Figures 1 and 2 show a possible negative relation between nonfamily ownership and cross-sectional average book and market leverages.

4.4. Empirical Framework

I use a panel regression model to test the impact of family ownership and related characteristics for both book and market debt ratios. The complete specification is

$$\begin{aligned} \text{Leverage}_{i,t} = {} & c + \beta_1 \text{FO1}_{i,t} + \beta_2 \text{FO2}_{i,t} + \beta_3 \text{FO3}_{i,t} + \beta_4 \text{Dual\_class}_{i,t} + \beta_5 \text{Uaff\_blk}_{i,t} \\ & + \beta_6 \text{Bk\_Sic3\_med}_{i,t} + \beta_7 \text{Assets}_{i,t} + \beta_8 \text{Dividend}_{i,t} + \beta_9 \text{Inflation}_{i,t} \\ & + \beta_{10} \text{MB}_{i,t} + \beta_{11} \text{Profit}_{i,t} + \beta_{12} \text{Tang}_{i,t} + \beta_{13} \text{SumSq12}_{i,t-1} + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

where FO1 is the percentage of the firm owned by family and related family members of common equity; FO2 is a dummy variable that equals 1 when a family member sits on the board of directors, and zero otherwise; FO3 is a dummy variable that equals 1 when a family member is the chief executive officer (CEO), and zero otherwise; Dual_class is a dummy variable that equals 1 if the firm has more than one voting class (i.e., dual class), and zero otherwise; and Uaff_blk is the sum of all nonfamily unaffiliated owners' percentage ownership that own more than 5% in common equity. Control variables include size, annual inflation, market-to-book, profitability, tangibility, volatility, industry median-leverage, and an indicator variable for dividend payers (Frank & Goyal, 2009).

Petersen (2009) shows the possibility of bias in the standard errors due to cross-sectional correlation, autocorrelation, and heteroscedasticity. To obtain appropriate standard errors, I correct the residual variance matrix with an algorithm detailed in Thompson (2011).

I further test the impact of family ownership and control on idiosyncratic risk. I regress monthly returns for each firm on monthly S&P 600 returns from 1999 to 2008. The idiosyncratic risk variable is a logistic transformation of the R^2 from this market model:

$$Idiosyncratic\ risk_{i,t} = \ln\left\{\frac{(1-R^2_{i,t})}{R^2_{i,t}}\right\}, \tag{2}$$

where *i* is the firm and *t* is the year. To test for family influence on idiosyncratic risk, I use the same set of family variables from the leverage regressions, along with a set of controls suggested by Ferreira and Laux (2007). These controls include profitability, leverage, market-to-book, size, age, diversification, an indicator for dividend payers, and industry-level fixed effects. The complete specification is

$$\begin{aligned}\text{Idiosyncratic risk}_{i,t} = {} & \beta_1\text{FO}_{i,t} + \beta_2\text{FO2}_{i,t} + \beta_3\text{FO3}_{i,t} + \beta_4\text{Dual\_class}_{i,t} + \\ & \beta_5\text{Uaff\_blk}_{i,t} + \beta_6\text{ROE}_{i,t} + \beta_7\text{Bk\_Lev}_{i,t} + \beta_8\text{MB}_{i,t} + \beta_9\text{Size}_{i,t} + \\ & \beta_{10}\text{Dividend}_{i,t} + \beta_{11}\text{Age}_{i,t} + \beta_{13}\text{Seg\_dum}_{i,t} + \varepsilon_{i,t}.\end{aligned} \tag{3}$$

Again, I correct the standard errors using Thompson’s (2011) algorithm.

4.5. Book and Market Leverage

Table 4 reports results for book (Panel A) and market leverage (Panel B). Consistent with prior literature on family book leverage, I find no significant relation between any of the family firm variables and book leverage, relative to my nonfamily firm variables. Market leverage tests of differences between family and nonfamily firms show a contrast in results within the literature and with my findings for book leverage. Specifically, I find a significant positive (*t*-statistic = 1.94) relation between family ownership percentage and market leverage when the percentage of family ownership variable is the sole family variable in the regression (Table 4, column 2). Similarly with the market debt ratio regression, when a family member is on the board (a dummy variable), the relation with market leverage is positive and significant (column 3). This finding suggests that board membership occurs with ownership, as might be expected. This proxy aspect for family ownership appears in the full model (column 1), where family board representation is significant. The dual class variable is not significant in the models, suggesting that dual class is not a dominating influence of market leverage. Therefore, these results suggest, based on a market definition of risk, that family firms have higher debt ratios relative to nonfamily firms.

Consistent with Anderson and Reeb (2003a), I find that family and nonfamily firms do not differ in their book-based debt ratios. Since family firms operate within the capital markets and with bank financing, both firms will need to conform to accepted norms for debt to capitalization ratios in their capital structures and consistent with their industry. Accordingly it is not surprising, in hind sight, that firms operating in competitive markets will need to run capital structures consistent with growth needs. Moreover, public firms must prepare financial statements based on acceptable accounting standards, which prescribe the booking of assets, liabilities, and income recognition. Therefore, cross sectionally I expect some uniformity in book financials.

How the capital market view the firms' prospects moves the market value of the residual claim of assets and earnings. I find that small family and nonfamily firms do differ in their market-based debt ratios, which is a forward view of financial leverage. Since I find that there is no significant difference in book leverage ratios between family and nonfamily firms, this higher, on average of market based leverage ratio, implies a lower market value of the family firm relative nonfamily firms to yield a higher market leverage ratio consistent with the book ratio. Black and Scholes (1973), Galai and Masulis (1976) suggests lower market value equity when volatility is lower. However, this implication is inconsistent with Anderson and Reeb (2003a&b) findings, that family firm have higher valuations (EVA & Tobin's Q). In this regard, using the Black and Scholes implications, if we expect valuation is higher for family firms then volatility needs to be higher than nonfamily firms. To be consistent with Black and Scholes, and Galai and Masulis, the expected asset levels will need to be lower to offset this higher equity value if volatility is above nonfamily firms. In this situation suggests that the market expect families extract value (via cash flows) over the life of the ownership (the private benefits theory). Market participants expect family firms to extract private benefits available with their control. The private benefits theory has support in the literature from many sources (Jensen and Meckling, 1976; Barclay & Holderness, 1989; Dyck & Zingales, 2004). The implication is that the market recognizes the private benefits risk and reduces the family firm market value. An implication stemming from this theory is that families will want to reduce the market's perception of the extraction risk to improve share price.

4.6. Dual Class Family Firms and Market Leverage

As previously discussed, dual-class status does not affect the debt ratio with regard to the book and market leverage specifications of the full sample. Dual class firms represent a minor 9% of the sample, and the 91% of nondual class firms likely overpowers this small percentage representation. Accordingly, I use an interaction dummy variable, composed of percentage family ownership and dual class status, to filter out nonfamily and family firms that are not dual class firms. As a result, I highlight dual class family firms and their respective book and market leverages. Interaction components, when combined with the interaction results, do not negate the coefficient and significance.

I report the results of the interaction of dual class family firms and book and market leverage in Table 4, Panel C. Notably, for book leverage, the interaction between percentage family ownership and dual class (column 1) is positive and significant (*t*-statistic 2.39). Likewise, the interaction variable on market leverage for family percentage ownership and dual class (column 4) is also significant and positive (*t*-statistic = 2.97). Interaction variables carry with them the interaction of the individual parts, and these parts collectively do not detract from the interaction significance. In sum, independent of the definition of the debt ratio, I find support for the notion that family firms with dual class status have higher debt ratios.

I find that family firms that tightly control voting rights through dual class status have higher debt ratios and, hence, a suggestion of higher risk than nonfamily firms. As mentioned above, the private benefits extraction theory applies with dual class structures and is a signal to the market that families have the power without a market forces correction (i.e., for example by a take-over threat or proxy contest). Gompers, Ishii and Metrick (2010), and Villalonga and Amit (2006) find a negative and convex relation between firm value and dual class structures.

4.7. Idiosyncratic Risk

Consistent with my empirical expectations and contra to Ferreira and Laux (2007), I find a positive relation between idiosyncratic risk and family ownership. Table 5 show results for family and nonfamily firms and idiosyncratic risk. Family firms relate positively and significantly to idiosyncratic risk at the 10% level. Indeed, as the family percentage ownership variable increases, idiosyncratic risk increases. This relation holds when all the family variables (column 1) are in the regression and when the family percentage ownership is the sole family variable considered (column 2). However, this panel regression has a low explanatory power and thus suggests additional research aimed at improving the explanatory power.

Finally, I find a positive relation between idiosyncratic risk and family ownership and that as the percentage of family ownership increases, idiosyncratic risk also increases. Given that family firms are opaque (Anderson and Reeb, 2003a) with disclosure and disclose what is required and limited beyond the basic needs for public firms, the idea that information asymmetric will impact firm share prices appears reasonable. Anderson, Reeb and Zhao (2010) find consistent with idiosyncratic risk that family firms have abnormal (20 times more) short-selling prior to negative earnings announcements. Anderson, Reeb and Zhao further find that family firms with family management and dual class firms intensify informed trading in the firm. If family firms restrict information, an information asymmetry develops and trading in advance of the announcements ensues. This supports the elevated idiosyncratic volatility position of this paper and is consistent with Merton (1987) and Roll (1988).

4.8. Conclusion

I examine two measures of risk—debt ratio and idiosyncratic risk—of small publicly held family firms relative to nonfamily firms to investigate differences in financial risk between family firms and nonfamily firms. Using a unique hand-collected, randomly selected data set of small family and nonfamily firms, I analyze certain firm characteristics (family ownership, family member on the board, size, and dual class status). Consistent with Anderson and Reeb (2003a), I find that family and nonfamily firms do not differ in their book-based debt ratios. However, more important, I find that small family and nonfamily firms do differ in their market-based debt ratios, which is a forward view of financial leverage. Specifically, I find that family firms that tightly control voting rights through dual class status have higher debt ratios and, hence, higher risk than nonfamily firms. Furthermore, I find a positive relation between idiosyncratic risk and family ownership and that as the percentage of family ownership increases, idiosyncratic risk also increases.

5. SUMMARY AND CONCLUSIONS

5.1. Debt and Family Firms

During periods of economic downturn, small firms fare poorly and certainly do worse than large capitalization firms do. Small firms display an asymmetrical reaction to the economic cycle in operating performance, cash flows, and equity price. Without credit to bridge a recession's cash dry spell, a possible bankruptcy or at least a loss of firm control becomes more likely. If the firm survives, the recession affects earning adversely. During the recovery period earnings subsequently rebound. It is then that earnings are volatile, which should favorably affect idiosyncratic risk.

Historically, small firms experience high returns but at a volatility price. If the markets price risk, then small firms exhibit more risk. One form of risk is the firms' limited diversification. Garner and Yore (2010) find small- and medium-size firms have concentrated line of business. Small firms have higher average equity returns and concomitant higher risk (standard deviation; Karolyi, 2001, p. 16).

Unlike large firms, small firms lack management depth and versatility. These shortcomings include dependency on too few people for leadership, an insufficient contingency plan for replacement of talent, and limited scope. Accordingly, management is not as flexible in responding to external business environment changes. This depth brevity and the limited breadth of management skills are a principal difference between large and small firms.

Small firms have limited resources to devote to investor relations. Once the firm is public, limited contact leads to greater information asymmetry between management and shareholders. Capital sources will find small firms more difficult to monitor CEO activities and will likely limit availability of new debt and equity sources. Small firms need credit and find credit most difficult to obtain during recessions. With credit rationing, investors see that small firms will experience more risk with firm earnings. With expected earnings-volatility, investor returns follow. Compared with nonfamily firms, if family firms use less debt, the firm will experience a more muted idiosyncratic earnings shock and lower volatility, and vice versa, if they use more debt.

Techniques available to family firms include controlling debt levels and investment risks. If families monitor in lieu of debt, then the need for debt or proportionately more debt is not evident. Nonetheless, families firms perform (earn) better than nonfamily firms perform, suggesting that risk is higher in the firm. If risk positively relates to return, it is likely that family firms have more risk than nonfamily firms. Family firms are more opaque and do not offer as much information as nonfamily firms, which induces idiosyncratic risk. In turn, small family firms may more risk embedded within their system, and debt may be a factor to risk.

Hostile take-over offers generally without consent of the family are unlikely with firms under dual-class capital structures. Dual class firms continue to have default risk when using high debt levels and experience loss of control with default. Despite the default risks, dual class family firms may use more debt relative to single class firms. Dual class control-enhancing mechanisms or other family-oriented control mechanisms (e.g., holding executive management positions and/or board representation) may lead to either higher or lower debt in the capital structure.

By definition, idiosyncratic risk depends on factors other than market risk: Karolyi (2001) and Merton (1987) argue that expected returns depend on incomplete information and that firm idiosyncratic risk negatively affects firm value. Then if private investors are unable to uncover tradable information with opaque family firms, investors' ability to profit—via change in control—from fundamental research is limited.

5.2. Conclusions Drawn from This Study

Using a unique stratified random sample of 202 S&P 600 small capitalization firms, I investigate the impact of debt and idiosyncratic risk on small capitalization family firms, relative to nonfamily firms. I argue that family firms relative to nonfamily firms will have lower debt ratios and that idiosyncratic volatility is an empirical issue.

First, I find a relation between the debt ratio and family ownership. Specifically, and contra to my expectation, when the market debt ratio is the measure of risk, I find that family firms have higher debt ratio (risk) than nonfamily firms. Moreover, when family-percentage ownership combines with a dual class dummy variable, the debt ratio develop a significantly positively relation with the interaction variable. I also find that both book leverage and market leverage variables relate significantly and positively to the interaction between percentage of ownership and dual class. This phenomenon may represent the isolation of family ownership to the exclusion of all other family ownerships without dual class.

Consistent with Anderson and Reeb (2003a), I find that family and nonfamily firms do not differ in their book-based debt ratios. Since family firms operate within the capital markets and with bank financing, both firms will need to conform to accepted norms for debt to capitalization ratios in their capital structures and consistent with their industry.

Black and Scholes (1973), Galai and Masulis (1976) suggests lower market value equity when volatility is lower. However, this implication is inconsistent with Anderson and Reeb (2003a&b) findings, that family firm have higher valuations (EVA & Tobin's Q). In this regard, using the Black and Scholes implications, if we expect valuation is higher for family firms then volatility needs to be higher than nonfamily firms. To be consistent with Black and Scholes, and Galai and Masulis, the expected asset levels will need to be lower to offset this higher equity value if volatility is above nonfamily firms. In this situation suggests that the market expect families extract value (via cash flows) over the life of the ownership (the private benefits theory).

I find that family firms that tightly control voting rights through dual class status have higher debt ratios and, hence, a suggestion of higher risk than nonfamily firms. As mentioned above, the private benefits extraction theory applies with dual class structures and is a signal to the market that families have the power without a market forces correction (i.e., for example by a take-over threat or proxy contest). Gompers, Ishii and Metrick (2010), and Villalonga and Amit (2006) find a negative and convex relation between firm value and dual class structures.

Moving to the book–debt ratios findings, family and nonfamily firms have similar debt ratios despite family ownership, family member on the board of directors, and dual class capital structures. However, when combined with the dual class indicator variable, the book–debt ratio and market–debt ratio findings suggest otherwise. Because book ratios are a historic view of the balance sheet, the ratio is not forward looking. Contrariwise, the market–debt ratio impounds information gained from market participants. According, my findings suggest that the market believes that family control and the debt ratio are positively related.

Second, I find that small family firms have higher idiosyncratic risk than nonfamily firms (all industry constants are significant) and that as family ownership increases the idiosyncratic risk increases. I find a positive and significant relation between family ownership percentage and idiosyncratic risk. Given that family firms are opaque (Anderson and Reeb, 2003a) with disclosure and disclose what is required and limited beyond the basic needs for public firms, the idea that information asymmetric will impact firm share prices appears reasonable.

5.3. Discussion on Relation to Existing Literature

Agency theory implies that family firms will monitor management and will act as a substitute for debt. Jensen (1986) finds that debt is a monitor for management. Because family owners have access to nonpublic information and disclose less (Anderson et al., 2009), information asymmetry is greater in family firms relative to nonfamily firms. Consistent with Myers and Majluf (1984), this information asymmetry suggests that families will issue more debt. In addition, families desire to retain firm control (Casson, 1999; Chami, 1999; James, 1999) and to continue the family firm dynasty, which suggests a reluctant to issue equity. Cronqvist and Nilsson (2005) support this notion and find that family firms are reluctant to conduct seasoned equity offerings. However, families may want the benefits of monitoring afforded by debt, which reinforces their inspection and control over the firm. The incentive to take on debt appears especially high when the firm desires growth and needs capital to finance the expansion.

With the previously discussed apparent bias toward using debt and for this sample, this research contributes to the literature by showing that family control influences the market ratio debt. Although Anderson and Reeb (2003b) find higher returns for family-controlled firms, I find that as returns increase, higher risk is manifested by market leverage. Moreover, because book value debt ratios are backward looking (i.e., a historical record), book values are not a predictor of forward market expectations and do not distinguish debt structure between family and nonfamily firms—specifically for small capitalization firms. The book leverage findings of this study support Anderson and Reeb that family ownership and control-enhancing structures (i.e., dual class structure) are not discriminating factors of the capital structure of small family firms.

Gompers et al. (2010) find that dual class firms have significantly more debt to total assets than single class firms do in both the mean and median ratios. Moyer et al. (1992) suggest that dual-class firms use debt as an alternative control mechanism. In support of Moyer et al., Ellul (2008) argues that control drives the debt ratio. The debt ratio then becomes a function of the degree of family ownership, firm size, and the extent of control that the family exerts on the firm, whether by dual class equity structure or other means.

When control is contestable, family owners use leverage strategically despite the higher risks associated with debt. Conversely, when ownership is not contestable, as is the case with a dual class structure, families use less debt in the firm's capital structure. I do not find support for Gompers et al. (2010) or Ellul (2008): that is, the dual class variable for my sample is not significant in either the book or the market leverage regressions, suggesting that dual class is not related to the capital structure.

Moving to idiosyncratic risk, I find a positive relation between idiosyncratic risk and family ownership, consistent with the higher returns found with family firms. Anderson et al. (2009) find family firms disclose less and are more opaque in disclosing firm information to the public. Their findings suggest that family firms impart information or lead investors to expect a change in performance, control, or restructuring that triggers the research–trading sequence. Ferreira and Laux (2007) suggest that investors' profits motivate the search for information that may lead to changes in control or a restructuring, which, in turn, drives idiosyncratic risk to a stock.

Contrary to Ferreira and Laux (2007), who propose that the chance of change in corporate control or restructuring stimulates investor research and ultimately profits for the trader, Karolyi, 2001 Roll, 1988, and Ross, 1989 suggest that disclosure relates to higher idiosyncratic risk in an efficient no-arbitrage market. However, if Anderson et al. (2009) are correct, opacity also leads to idiosyncratic risk, which is different from Ferreira and Laux (2007) view of idiosyncratic risk that rests on the absence of take-over governance restrictions as its foundation. In my sample, family firms have higher levels of idiosyncratic risk than nonfamily firms. Based on the results of the market leverage interaction variable regression, my findings suggest that family control infers idiosyncratic risk. In short, families appear to impart nonsystematic risk, which manifests itself in stock idiosyncratic volatility.

5.4. Implications to Scholars and Practitioners

How family involvement and ownership percentage interacts with debt capitalization and risk in small company U.S. firms is of interest to both scholars and practitioners. There remains a divergence of opinion about the risk of family and nonfamily firms. The idea that some firms can earn higher overall returns on capital, on average, across industries without higher return remains a puzzle. This research finds that risk relates to family firms relative to nonfamily firms.

As a further implication for scholars, I find that the book capital structure does not distinguish between small family and nonfamily firms. Although capital structures do not yield differences after controlling for the standard variables, I find information in the market value capital structure variable that implies that investors believe that a difference exists between small family firms. The implication is that future research into capital structures should focus on the market-value capital structure. This notion is consistent with the literature surrounding the proper cost of capital calculations (see Modigliani and Miller, 1963).

Other implications of this study include the relation of agency costs and dual class status to the debt ratio and idiosyncratic risk among family firms. When family firms have more debt in their capital structure, families may employ debt to retain control under growth conditions and to assist with the monitoring of management. In the context of monitoring, families should welcome additional monitoring by debt holders as long as the firm needs capital, especially where families have a low ownership interest. Dual class equity structures protect the family from loss of control. Although I find no significance between the dual class dummy variable and the debt ratio, the literature remains powerful in the possibilities of dual class and debt outcomes. Scholars and practitioners may find other empirical application with different measures of dual class.

Scholars and practitioners should consider idiosyncratic risk in establishing and measuring firm risk because we know that beta, systematic risk, does not capture the entire risk spectrum (Fama & French, 1993; Merton, 1987). Idiosyncratic risk may measure the added volatility imparted by families. The literature on dual class structures and blockholders finds, with some empirical support (Anderson & Reeb, 2009; Barclay & Holderness, 1989; Dyck & Zingales, 2004; Hwang & Hu, 2009), that these structures foster private benefits consumption. Idiosyncratic risk may capture the market's concern for family control and dual class structures to abet private benefit consumption. Moreover, families may impart idiosyncratic volatility because the firm is more concentrated or perhaps due to the family's longer investment horizon that does not generate market consistent annual returns.

Moreover, the implication is that the market recognizes the private benefits risk and reduces the family firm market value. An implication stemming from this theory is that families will want to reduce the market's perception of the extraction risk to improve share price. Market participants expect family firms to extract private benefits available with their control. The private benefits theory has support in the literature from many sources (Jensen and Meckling, 1976; Barclay & Holderness, 1989; Dyck & Zingales, 2004).

Lastly, Anderson, Reeb and Zhao further find that family firms with family management and dual class firms intensify informed trading in the firm. If family firms restrict information, an information asymmetry develops and trading in advance of the announcements ensues. The implication of this finding is that small family firms with elevated short-selling will likely have high idiosyncratic risk which suggests that market valuations generated from systematic risk will not capture the firm valuation implied by the volatility associated with family firms and aggravated by short-selling.

5.5. Limitations and Suggestions for Further Studies

This study has several limitations. To begin, the sample is imperfect. The study covers approximately 40% of the small capitalization firms included in the S&P 600 index and includes incomplete years. Some of the sample firms have less than 10 years of financial data (I use a quarter's financial data to complete either the beginning or final year in the sample when absent). Additional research, with a larger sample and more frequent risk observations, may uncover a relation between dual class and debt ratio and improve the explanatory power of the idiosyncratic analysis.

Welch (2011) argues that the traditional methods of calculating the debt ratio (i.e., debt to total assets) miss nonfinancial liabilities in the capital structure. By ignoring non-financial liabilities in the calculation, it implicitly classifies non-financial liabilities as equity. Accordingly, this absence classifies increases in nonfinancial liabilities as a decrease in leverage. There are legitimate disagreements about whether liabilities-to-assets ratios, which accounts for nonfinancial and financial liabilities in the same manner, or financial debt-to-capital ratio, which dismisses nonfinancial liabilities altogether, is the best measure (Welsh, 2011). Welsh shows that it is possible that findings, using only financial leverage, can be reversed. Welsh's debt ratio defines financial debt to either book capital or market capital. He defines book capital as book equity plus financial debt and market capital as market value equity plus book financial debt. Thus, future studies should consider Welsh's leverage measure that eliminates the nonfinancial liabilities.

The findings point toward further research into the relation between family firms and the dual class equity structure and idiosyncratic risk. Further areas of study should add to the literature on how dual class status influences the market capital structure and which attributes of family firms contribute to idiosyncratic volatility. Moreover, future research should explore whether a nonlinear relation exists among family ownership, the debt ratio, and idiosyncratic risk. Family influence on leverage may vary with the level of ownership, similar to changes in market value with family ownership (Morck et al, 1988, among others). Future research would benefit from a more granular panel regression and further investigation into the unique characteristics of family firms that increase their idiosyncratic risk.

Modigliani and Miller (1963) provide results on the tax effects on firm value with debt. Firms with different tax rates will likely have different effects on market value. A study that controls for cross-sectional tax rates would be of use. Furthermore, firms have different nonfinancial tax shields or substitutes. These substitutes (e.g., noncash charges such as depreciation, depletion allowances, and investment tax credits) also affect firm value. Hence, future studies should control for these financial variables cross sectionally.

I control for inflation (the expected change in the Consumer Price Index) in the debt ratio regressions and find the inflation variable as insignificant. Nonetheless, differences may exist after controlling for inflation and indexing the financial variables. Inflation has a varying impact on firm balance sheets, cash flow, debt, and market values of equity but not on shares owned by the family. Using real values via indexing the financials and market values to the beginning period provides a real debt ratio. Real values should drive economic decisions (i.e., decision makers account for inflation's affect and then examine whether real debt ratios have value). Firm managers know that in inflationary times, debt is repaid with deflated dollars (Corbin, 1956).

Lastly, the literature makes a distinction among founder CEO-, descendant CEO-, and nonfamily CEO-managed firms. This study distinguishes only between family CEOs and nonfamily CEOs. It would be interesting to see the effect on debt ratio and risk between descendant- and founding CEO-managed firms. In short, uncovering whether descendant- and founding CEO-managed small family firms have a capital structure similar or dissimilar to each other and to nonfamily firms would advance the literature on capital structure. The outperformance results (e.g., Tobin's Q) findings appear to be sensitive to the definition of a family company (Miller, Le Breton-Miller, Lester, & Cannella, 2007). In addition, future studies may consider the definition of family and perhaps use a dummy variable to proxy for family based on founder CEO, descendant CEO, family members on the board of directors, and a percentage threshold ownership of a family.

ESSAY TWO

CEO DIVIDENDS AND EQUITY-BASED INCENTIVE COMPENSATION IN SMALL CAPITALIZATION FAMILY AND NONFAMILY FIRMS

1. INTRODUCTION

The agency cost literature implies that directors can align CEO interests with the interests of diversified shareholders through contracting. The literature also finds that agency cost contracting, in practice, is imperfect. Moreover, the tools available for boards of directors to incentivize CEOs to act in accordance with diverse shareholder wishes, including risk taking, investment selection, and the on-the-job consumption of resources, are stock options, stock grants, and cash bonuses. CEO incentive contracts that include stock options are an inefficient devise.

Empirical research finds that boards of directors do not account for a CEO's current company stock portfolio in negotiating the incentive contract. Furthermore, CEOs use their position to influence the compensation committee members toward a skewed payoff contract their favor. CEOs have intellectual capital and their portfolio concentrated with the firm, which leads the CEOs to reduce risk. This desire to control risk drives CEOs to sell off additions to their equity position in the company.

I argue that agency theory in practice is imperfect in incentive contracting. Controlling and monitoring of nonowner managerial acceptance of risk and investment policies to be consistent with shareholder needs as well as paying for performance are major goals of contracting. I posit that concentrated owners use other forms of controls to correct for these imperfections. CEO dividends are a tool available to boards to apply to this contracting situation. Therefore, I examine the role of dividends, as a percentage of total compensation, in family and nonfamily firms.

2. LITERATURE REVIEW

2.1. Agency Theory and Imperfection

The literature shows, in practice, an imperfect application of agency theory. Corporate governance is the set of complementary mechanisms that align the actions of managers with shareholders interest. Monitoring actions by the board of directors, debt holders, or institutional blockholders has an important impact on firm performance (Core, Holthausen, & Larcker, 1999; Holderness, 2003; Jensen, 1989). Agency theory supports the contracting theory for compensating executives with incentives that align executive pay and shareholder's interests. In other words, boards of directors use compensation as an incentive to monitor, or keep in check, its managers. Core, Guay, and Larcker (2003) find that agency theory defines an efficient contract. However, Jensen and Meckling (1976) show that, according to agency theory, nonowner management actions do not necessarily conform to shareholder interests. In addition, Jensen and Murphy (1990) find that most CEO compensation contracts have a general absence of management incentives and that observed compensation patterns are inconsistent with the implications of formal agency models of optimal contracting.[13]

Therefore, although the alignment of management actions with agency contracting is theoretically feasible, many executive contracts are not optimal from the shareholders' perspective. In his examination of agency contracting, Stulz (1990) suggests that Jensen and Meckling's (1976) agency cost theory argues that shareholders

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[13] Jensen and Murphy (1990) find a wide dispersion of all-inclusive pay for performance sensitivity. The top half of their sample produces at $1.85 per $1,000 and the bottom half at a much larger $8.85 per $1,000.

choose a financial policy ex ante to minimize agency costs. Despite the policy selection, Yermack (1995) concludes that the evidence does not support leading compensation agency theories. Despite this evidence to the contrary, in practice, boards continue to rely on agency theory contracting for optimal CEO compensation in the belief that the risk of the firm and the power of the board to design the contract can influence optimal executive pay.

The literature is expansive on contracting technique and the variables that should be included in and excluded from an incentive CEO plan. Bebchuck and Fried (2004) suggest that an agency-theory approach explanation of executive pay implies that pay is subject to firms' risk and that nonowner CEOs influence boards of directors during incentives and pay contract negotiations. This reasoning implies an imperfection in the contracting process, which leads to inefficient contracting and agency cost control. If CEOs affect the board, divergent objectives, particularly between family and nonfamily firms, may result in different CEO contracting outcomes between family and nonfamily firms.

Despite dialog about optimality, the research continues in the quest for the optimal method to incent agency costs. Ang et al. (2000) measure relative equity agency costs for concentrated ownership, disperse ownership, and nonowner management structures. They find that (a) agency costs are significantly higher when outsiders manage the firm, (b) costs are inverse to the managers' ownership share percentage, (c) they increase with the number of nonmanager shareholders, and (d) they are lower when monitoring is in place. All these findings are all consistent with agency theory. Family firms have different motivations than nonfamily firms in incentivizing CEOs. Anderson, Mansi, and Reeb (2003) argue, “Because family firms typically have undiversified portfolios, . . . are concerned with firm and family reputation, and often desire to pass the firm onto their descendants, we contend they represent a unique class of shareholders that potentially affect agency costs” (p. 283). Accordingly, I expect to find differences between family and nonfamily incentives structures.

Overall, the literature continues to address the Jensen and Meckling (1976) agency costs with forms of CEO contracting; however, agency cost contracting remains an imperfect tool. Nonfamily (family) firms may experience greater (lesser) agency costs because dispersed-equity (concentrated) owners find it uneconomic (economic) to monitor. Yet, whether CEO incentive contracts control agency costs is unclear (Jensen & Murphy, 1990), and current related theories are not conclusive. I argue that families with concentrated positions likely use other methods in conjunction with incentive equity-based contracting to correct for these imperfections.[14]

2.2. Incentive Contracts and Inefficiency

I contend that not only are incentive contracts imperfectly modeled, given the practicalities of a powerful CEO and Yermack’s (1995) evidence that contradicts compensation agency theories, but also inefficient in controlling costs as intended. Lambert, Larcker, and Verrecchia (1991), provide evidence that CEOs value equity-incentive contracts materially less that the Black-Scholes value. Because many contracts do not require a firm ownership floor, CEOs sell shares once exercised. This environment

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[14] Jensen and Murphy (1990) do not examine methods of control other than incentive-based contracts in their research.

dilutes the thrust of alignment goals between shareholders and CEOs with incentive contracts.

With the proliferation of incentive contracts, which include stock-option features, researchers began to explore the link among equity options, management actions, and the shareholders' costs of these options. One line of research includes Bebchuk, Grinstein, and Peyer (2010) work on CEO incentive contracts. Bebchuk et al. argue that boards, in an attempt to control the classic agency cost of professional management, employ standard incentive contracts with options as an alignment of actions tool. However, Bebchuk et al. argue that equity options reward CEOs for firm performance that they do not control (i.e., luck) rather than for improving shareholder worth (i.e., skill).

More recently, the literature examines how boards of directors set contracts in the presence of CEO power. CEOs employ their extensive powers to influence the board regarding their compensation (Bebchuk & Fried, 2004). Bebchuk and Fried report a biased contracting process skewed toward the CEO. Board members are inherently dependent on the CEO for board renomination/election and a desire a good working relationship with the CEO in execution of director duties. Additionally, CEOs can assist directors in satisfying personal goals[15] through the execution of CEO duties. CEOs wield power to improve their compensation and camouflage the extent and form of pay, and they can shift incentive pay toward firm performance insensitivity.

Thus, CEO incentive compensation depends, in part, on the level of power and influence the CEO wields with the board. Where blockholders are present in the ownerships structure, Cyert, Sok-Hyon, and Kumar (2002) and Benz, Kucher, and Stutzer

[15] Bebchuck and Fried (2004) make the case here that directors often have charitable affiliations and use their relationship with the CEO to make corporate contributions to those charities.

(2001) find that top executives receive smaller option grants relative to grants at less concentrated firms. Thus, families and blockholders appear to affect pay sensitivity. Li and Srinivasan (2011) find that founder firms have higher pay-for-performance sensitivity for nonfounder CEOs compensation and find that the level of pay is lower than CEOs of nonfounder firms. Their evidence suggests greater alignment of CEO incentives with shareholder interests.

Because option awards are the primary tool for aligning CEO interests with shareholders' interests, I suggest that the inverse relation between ownership concentration and incentives holds for family blockholders as well. Despite contracting imperfections and inefficiencies, families with growth aspirations require specialized skills of nonfamily professional managers and thus compete for talent in the market for CEOs. This competition moves family-controlled firms to offer attractive and competitive compensation packages similar to packages offered by nonfamily firms. However, families firms continue to achieve agency cost control in nonstandard ways, consistent with their monitoring role.

2.3. Governance: Additional Evidence of Contracting Inefficiency

Governance plays an important role in the awarding of options and the effectiveness of the contracting process. However, option awards have flaws that benefit CEOs. Options contain a gift component so that even if the CEO does not improve firm value, he or she is rewarded: Options have value originating from time to maturity and the underlying stock volatility. Poorly governed firms do not control efficiency in the contracting process, which includes pay for luck and awards CEOs without offsetting firm benefits.

Firms with large concentrated shareholders and small boards are better able to charge their CEOs for options and better able to remove the gift component by reducing the other components of pay. Bertrand and Mullainathan (2000) show that well-governed firms charge CEOs more for options. Bertrand and Mullainathan (2001) support the contracting view of CEO pay and find that shareholders use pay to solve the agency problem and that pay should be linked to performance but not luck (e.g., events beyond the CEO's control). However, Bertrand and Mullainathan (2001), Bebchuck, Grinstein, and Peyer (2010) find empirically that pay, in fact, does responds to luck. Specifically, in line with Bebchuk and Fried's (2004) power theory, they find that pay for luck is strongest among poorly governed firms. Moreover, they show that by adding a large shareholder to the board, pay for luck decreases by a material 23% to 33%. Indeed, well-governed firms fit the predictions of the contracting view of compensation, and the principal–agent model works best when individuals are available to act as principals (Bertrand & Mullainathan, 2001).

In sum, governance is the role of boards of directors. Larger boards and firms with dispersed stock ownership pay more and are susceptible to the powerful influence of the CEO when setting CEO pay. Firms with founder-directors monitor more, and thus the CEO's power effect is less important in setting compensation. Incentive pay is more (less) sensitive to firm performance in better (weaker) governed firms. Benz et al. (2001), Cyert et al. (2002), and Li and Srinivasan (2011) find that founder-director firms have higher pay-for-performance sensitivity for nonfounder CEOs and the level of pay is lower than CEOs of nonfounder firms. Their evidence suggests a greater alignment of CEO incentives with shareholder interests in support of monitoring and governance. I argue that family firms are likely to monitor more effectively and to make pay more sensitive to firm performance. Option incentives are an important alignment tool at the disposal of directors to ensure that CEO pay is sensitive to firm performance.

2.4. Options: Evidence of Contracting Inefficiency

The literature suggests that option awards are an imperfect and inefficient tool aimed at solving the agency costs between CEOs and dispersed shareholders. However, family firms are likely to implement these tools more effectively than nonfamily firms because they have principals who monitor managerial activities including incentives. While the evidence is inconclusive that family firms account for CEO equity ownership when contracting for incentives, families may not wish to issue material amounts of equity or the CEOs' activities regarding disposal of optioned shares. From a governance standpoint, families are more likely than nonfamily firms to see that incentive pay is sensitive to performance.

Core and Guay (2001) and Hall and Murphy (2000) assume that the solution to the principal–agent problem is through the incentive contract and that the solution is linear with stock prices. Options and restricted stock grants provide with CEO incentives; however, the option payoffs are not linear and incentive contracting ignores the options payoff convexity and risk-taking incentives. Brockman, Martin, and Unlu (2010) posit that managerial stock and option compensation exerts two opposing forces on CEO riskseeking behavior. One effect arises from the sensitivity of the manager's portfolio to stock prices, and the other effect arises from the sensitivity to stock return volatility. CEO incentive contracting uses option awards. The incentive and option literature finds mixed results on the benefits of linking CEO performance to options awards. Directors of both family and nonfamily firms face formulation and construction difficulties related to CEO incentive compensation contracts. Specifically, when options are part of the plan, directors face complexities and weaknesses in compensating the CEO for luck and indigenous market growth that is independent of the CEO's influence.

When contracting for incentives, Lambert, Larcker, and Verrecchia (1991), suggest that directors ignore the CEO's wealth, which leads to inefficient incentives. Lambert et al. show that a CEO's valuation of an option can be less than 50% of the Black-Scholes value when a CEO constrains him- or herself on the material portion of his or her wealth in firm stock. They find that CEOs prefer lower pay with low volatility versus higher pay with volatility. Black and Scholes (1973) find that a call options value is directly sensitive to the underlying stock's volatility. If CEOs want lower volatility and if incentive plans give them more risk, then a conflict is inherent in motivating shareholder alignment. Still others (e.g., Hall & Murphy, 2000) argue for the importance of considering the CEO's portfolio when setting CEO pay and incentives. If CEOs want lower volatility in pay and portfolio valuations, the retention of option-exercised shares is perhaps a misspecification assumption of the contract.

To the extent that a rising market lifts most stocks, option holders gain a spurious reward that leads to a luck benefit for the CEO (i.e., the CEO did not contribute to the market's upward movement). Likewise, should markets decline, dragging down share values, options are not symmetric in their reward. Bertrand and Mullainathan (2001) report that a CEOs' luck pay is a function of asymmetric benchmarking of pay with stock price performance. Pay increases occur when equity performance increases based on exogenous shocks. As equity markets increase, causing rising firm equity values, an executive's options portfolio value rises in tandem, without effort from the CEO. Conversely, pay does not decrease proportionally to declines in equity values based on the time value of the option and volatility. Bertrand and Mullainathan argue that these results are a combination of poor shareholder monitoring, inefficient director incentive tool selection (especially during periods of good performance), and CEOs influence (e.g., power) over the pay-setting process—all embodied in the incentive-option contract.

Executives generally rebalance firm holdings after exercising option contracts to reduce portfolio volatility and concentration. Core and Guay (2001) and Ofek and Yermack (2000), among others, provide evidence that executives rebalance portfolios in response to option grants. Core and Guay find that when executives rebalance their stock portfolio, incentive effects are not induced by option grants. When the effect of a compensation payment results in extra risk, the executive may very likely value this compensation form at less than its market value.

The discussion of luck, CEO rebalancing, and option payoff asymmetry suggest a flawed approach to incentive contracting. As CEOs gain new stock option awards, they exercise vested options and sell shares to reduce portfolio volatility (or otherwise lose the option at expiration). If this counter-incentive effect on share ownership is prevalent, another policy tool may affect pay sensitivity and provide for more efficient contracting. To this end, I test empirically whether the board uses dividend policy to impact option and equity values for both family and nonfamily firms to counteract the options imperfections. This research suggests that dividends are an important compensation policy variable.

2.5. Options, Dividends, and Compensation

Small firms use dividends as an integral part of distributions, salary, and bonuses with personal income, where dividends are only one component of compensation (Ang, 1991). I argue that dividends are an important element to incentive compensation plans. Dividends are a policy tool for capital structure, and, I argue, are a tool for alignment of agency costs.

2.5.1. Options

Black and Scholes (1973) find that an option's value responds strongly to the underlying stock volatility, the strike price, and price of the underlying security. Black and Scholes assume no payment of dividends, although the intuition is based on how a stock's price reacts to dividends and suggests an inverse relation to the dividend (e.g., a decline by some fraction of the dividend value). Geske (1979) and Whaley (1981) formalize this intuition and provide a reformulation to the Black–Scholes model that converts the European option contract to an American option with a known dividend; however, in both cases, the value of the American option declines with the payment of dividends. Accordingly, option-pricing models find an inverse relation between the value of options and the payment of dividends; therefore, if a firm changes (i.e., increases) the dividend, a CEO's option portfolio value declines.

2.5.2. Dividends

Dividends and the CEO ratio (i.e., dividends to total compensation) offer an interesting approach to incentive compensation. Smith and Watts (1992) find that firms with more growth options offer lower dividend yields and higher executive compensation and make greater use of stock-option plans. Garver and Garver (1993) show that Smith and Watts' findings hold at the firm level. Accordingly, firms with material growth options do not pay dividends but incentivize CEOs with stock plans.

However, not all firms are pure growth companies. Other firms have sufficient cash flow and sources of capital to fund growth. In those firms that pay a dividend, some use incentive contracts with dividend covenants that limit CEO and top management incentive pay to a specified level or to growth in dividends. White (1996) finds that firms with dividend covenants offer agency cost reduction benefits. These firms provide incentives for managers to reduce shareholder-monitoring costs associated with CEO risk aversion (through avoidance of cash over-retention). Firms with dividend covenants reduce the free cash flow agency costs because they offer higher dividend payouts (and yields) than those without the covenant.

Other research shows that the level of dividends moderate the use of stock options awards in incentive plans. Using a large firm sample, Lambert, Lanen, and Larcker (1989) find evidence that the initial adoption of executive stock option plans is associated with dividend reductions. Mehran (1995) find a negative relation between an executive's equity compensation and the percentage of their equity holdings. Furthermore, Mehran finds firms with increasing blockholder ownership engage in less equity-based incentive compensation; this result suggests that blockholder monitoring is a substitute for equity-based incentive pay.

Easterbrook (1984) argues that dividends force management to the capital markets to fund ongoing operations and growth. This process of continually accessing capital provides scrutiny over management's risk levels, (i.e., whether management is or becomes more risk averse) and whether management is assuming its appropriate role as agents of the shareholders who act to align the CEO's interests with those of the shareholders. By paying dividends, shareholders control the CEO's innate desire to reduce risk. Easterbrook notes, "Dividends set in motion mechanisms that reduce the agency costs of management and that prevent one group of investors from gaining, relative to another, by changes in the firm's fortune after the financial instruments have been issued" (p. 655). Because agency monitoring is costly, the repurchase of shares is another method of aligning the interests of management with shareholders. In fact, Easterbrook claims that the "repurchase of shares would do as well as or better than dividend" (p. 655). Boards may also require management to retain a greater ownership of company stock as another tool of agency control or as a substitute for dividends. Indeed, as management's ownership increases, the effects of dividends become less important; yet, presumably at some smaller ownership level, dividends are influential. However, empirically, CEO ownership remains a small fraction of the ownership of public companies other than family firms.

Rozeff (1982) finds that “firms establish higher dividend payouts when insiders hold a lower fraction of equity and/or a greater number of stockholders own the outside equity. This evidence supports the view that dividend payments are part of the firm’s optimum monitoring/bonding package and serve to reduce agency costs” (p.251). Firms with disperse ownership use dividends as a monitoring cost. With widely held ownership, shareholders a face higher monitoring burden for any individual owner and thus increase their incentive to demand the CEO and directors to commit to dividends payouts.

Dividend covenants, contained within incentive contracts, limit CEO and top management incentive pay to the level of (or some fraction thereof) or growth in dividends. White’s (1996) results are consistent with theory: Firms link compensation incentives to dividend payments. The aim of a dividend covenant is to reduce conflicts between shareholders and management over dividend decisions. Moreover, Fenn and Liang (2001) confirm that CEO stock ownership is consistent with higher payouts when firms have low investment options, low executive stock ownership, and high free cash flow. Fenn and Liang find a strong negative relation between dividends and CEO stock options. Their finding is consistent with Lambert et al. (1989). Fenn and Liang speculate that CEO stock option awards are a cause for greater share repurchases rather than more rapid growth in dividend payouts. Clearly, any study on incentives and dividends should control for growth options.

More recently, the literature addresses the fact that firms with higher CEO ownership are likely to want dividends. Brown, Liang, and Weisbenner (2007) record the impact of the 2003 dividend tax cut. They find higher concentrated equity-ownership CEOs are more likely to increase dividends after the 2003 tax rate cut on dividends.

Additionally, firms that initiated dividends after 2003 were more likely to reduce open market share repurchases. Brown et al. find a link between reduced repurchases and dividends and suggest that the substitution of dividends for repurchases is consistent with reducing agency costs. Brown et al.'s findings are consistent with CEOs' desire to adjust dividend policy to meet personal financial incentives and agency theory. Given the impact of their findings, they suggest that equity-based incentive plans contain unaddressed (imperfections) agency issues.

Given the characteristics of options contracts and dividends as previously discussed, I suggest that both family and nonfamily firms can use dividends to reduce agency costs (Jensen, 1986) and that dividends are an efficient method to control CEO risk aversion and to monitor CEO investment decisions. Moreover, I posit that family firms are more inclined to use dividends because the family does not need additional firm ownership and is reluctant to issue material ownership in the firm and dilute family control (Barclay & Holderness, 1989). Family firms prefer to pay CEOs in cash compensation, whether incentive bonuses or ordinary pay, and are better able to correct weaknesses in current incentive tools.

3. METHOD

3.1. Data

I collect annual financial information from the S&P Compustat database (quarterly when annual are not available). I further obtain monthly stock prices from the Center for Research in Stock Prices (CRSP) and 10-k financial information from the U.S. Security and Exchange Commission. I hand collect family ownership data, family members on the board of directors, dual class, and unaffiliated block holder data from firms' annual corporate proxy statements (DEF-14a). WRDS Compustat annual update database is the source for the control variables. Using a stratified-random process, I select the data from the S&P 600 small capitalization index firms. I exclude financial firms and utilities (SIC 6000–6999 and 4900–4999). The sample covers calendar years 1999 through 2008 and uses the 2006 calendar-fiscal year-end as the base year for firm selection. The sample covers 39% of available S&P 600 firms as of 2006. The sample excludes firms that do not have 10 complete years looking both forward to 2008 and back to 1999. I annualize the fiscal year 2008 if the firms' fiscal data are not available but the firm has quarterly data for 2008. The final sample consists of 193 firms with 1,124 firm-years for the panel regressions and 1,725 firm-years for the logit analysis.

3.2. Variables

My dependent variables are the presence of an equity-based incentive plan and percentage equity-based incentive compensation of total compensation. Variables of interest are family ownership percentage, CEO dividend as a percentage of total compensation, family member as CEO, and the interaction of family member CEO and CEO dividend percentage. I use control variables identified by Combs, Penney, Crook and Short (2010) and Fahlenbrach (2009) as significant in examining CEO compensation. I control for growth options by including research and development (R&D) expenses normalized by net plant and equipment, advertising expenses (also normalized), and capital expenditures (normalized by revenues) in my models. Control variables include book leverage, median book leverage for the three-digit SIC, unaffiliated blockholders, CEO_ownership percentage, dual class status, market value of common equity to book equity, tangible assets (plant property and equipment – net), the sum of squared errors (SumSq12) of the firm's equity return, and operating margin (operating income before depreciation and interest to total revenues). The CEO dividend variable represents the ratio of the total dividends earned on the shares owned by the CEO for the calendar year to total compensation for that same year. The sum of squared errors comes from the market regression where the S&P 600 index is the market. I find the median three-digit SIC industry book and market debt ratios using the sample. For more detail on the variables, see Appendix B.

3.3. Empirical Framework

I use a panel regression model to test the impact of family ownership and related characteristics for both CEO dividends and family ownership percentage on the presence of incentive compensation plans and on the percentage of equity-based incentive compensation in total compensation. The panel logit regression specification is

Presence of incentive compensation percentage$_{i,t}$ = f(revenues, CEO_Age, FirmAge, operating margin, tangible asset, MrktBK, CEO_Div, BK_LEV_Diff), familyown, FamilyCEO, unaffiliated blockholders, Dual_Class, CEO_ownership, GrowthOptions, CEO_Tenure, FamilyCEO*CEO_Div, sumsq12) (1)

Incentive compensation percentage$_{i,t}$ = c + $\beta_1$family ownership$_{i,t}$ + $\beta_2$familyCEO$_{i,t}$ + β_3Div_CEOR$_{i,t}$ + β_4Dual_class$_{i,t}$ + β_5Uaff_blk$_{i,t}$ + β_6Bk_Lev_Diff$_{i,t}$ +β_7Revenues$_{i,t}$ + β_8Dividend$_{i,t}$ + β_9GrwthOptions$_{i,t}$ + β_{10}MrktBk$_{i,t}$ +β_{11}Opmargin$_{i,t}$ +β_{12}Tang$_{i,t}$ + β_{13}SumSq12$_{i,t-1}$ + β_{14}CEO_tenure$_{i,t}$ +β_{15}CEO_Owner%$_{i,t}$ + β_{16}CEO_Age$_{i,t}$ + β_{17}Firm_Age$_{i,t}$ +β_{18}FamCEO*CEODiv$_{i,t}$ +β_{19} Bk_Lev +β_{20}familyCEOBoard$_{i,t}$ + $\varepsilon_{i,t}$,, (2)

where family ownership is the percentage owned by family and related family members of common equity; FamilyCEO is a dummy variable that equals 1 if a family member is the CEO, and zero otherwise; Dual_class is a dummy variable that equals 1 if the firm has more than one voting class (i.e., dual class), and zero otherwise; CEO_Div is the percentage of dividends to total compensation; FamilyCEO *CEO_dividend is the interaction variable and represents family CEOs who have dividends; and Uaff_blk is the sum of all nonfamily unaffiliated owners' percentage ownership that own more than 5% in common equity.

I follow Combs et al. (2010) and Fahlenbrach (2009) to measure CEO incentive compensation. These authors suggest tangibility (i.e., tangible assets), operating profits, firm size (revenues), market-to-book assets ratio, and growth options (e.g., R&D, capital expenditures, and advertising) as important factors for examining incentive compensation for CEOs. In addition, I also include the following control variables: revenues, CEO tenure, firm age, CEO age, market-to-book, volatility, book leverage less the median industry leverage, and CEO ownership percentage.

I account for possible clustering of standard errors. Cross-sectional correlation, autocorrelation, and heteroscedasticity may introduce standard error biases (Petersen, 2009). To obtain appropriate standard errors, I correct the residual variance matrix with an algorithm detailed in). Accordingly, I correct the standard errors using Thompson's algorithm.

4. RESULTS AND ANALYSIS

4.1. Descriptive Statistics

Table 6, Panel A, presents the summary percentages of the total sample (*n* = 193) and family and nonfamily subsample firms for SIC industry data. I use Compustat data and the SIC classification for each firm in the sample. I classify a firm as a family (nonfamily) firm if it has a family ownership percentage of equal to or greater than (less than) 1%. During the 10-year period, several family firms move to nonfamily status; this movement leads to fractional numbers. Overall, family firms make up 53% (686 firm years) of the total, and nonfamily 47% (607 firm years), Family and nonfamily firms are nearly equally distributed across industry classifications. Overall, the sample has concentrations in industrial equipment (33%), manufacturers (13%), and industrial machinery (8%); however, family and nonfamily firms distribute approximately evenly across family and nonfamily firms, which provide symmetry to the study.

Table 6 Panel B, compares the sample of S&P 600 firms, excluding real estate, financial, and utilities listings. The results show that the sample, which covers, on average, 39% of the S&P 600 firms, underrepresents agriculture, hospitals, legal, investment advisors, car rentals, funeral services, and laundry and supplies. The sample has concentration in minerals, mining, transportation, leather, plastics, and industrial machinery industries. Although industry concentrate are capital intensive, others low-weighted industries in the sample may also be capital intensive. As a result, any bias between family and nonfamily firms should negate results from the concentration of capital in industries that require financing and conducting debt financing as an ordinary part of the business.

4.2. Variable Statistics

4.2.1. Correlations

Table 7 presents the correlation matrix for 193 firms resulting in 1,124 firm-year observations over a 10-year period from 1999 through 2008. My research concerns the relation among family ownership, CEO dividend ratio, and incentive compensation. I find that the CEO incentive compensation ratio to total compensation has a significant (at the 1% level) correlation to CEO age, firm age, operating margin lagged one year, CEO dividend percentage of total compensation, book leverage ratio, family ownership percentage, unaffiliated blockholder percentage, CEO-ownership percentage of the firm, R&D expense ratio, capital expenditures, and CEO tenure. I find a significantly negative relation between CEO dividend ratio, unaffiliated blockholders, and the incentive compensation ratio. This negative correlation provides motivation to move to a difference of means test and a multivariate analysis.

4.2.2. Difference in Means Tests

I separate family firms and nonfamily firms to test the means of the variables. I define a family firm as a firm where at least 1% of the shares are family controlled and a family does not hold less than 1% control. This separation is important because many families begin the sample period with a high percentage control and during the sample period, the family's ownership declines generally using the SEC-proxy disclosure data. I suspect that even though the family continues to report ownership below 5%, the proxy statement threshold, families continue to hold—although more widely dispersed than earlier—material ownership or board and management positions. I are capturing this effect by defining a family as 1% or larger in ownership.

The results in Table 8 show that family firms are smaller than nonfamily firms in revenues, firm age, unaffiliated blockholders, and R&D spending. I find that family firms have higher CEO dividend compensation, longer CEO tenure, and higher CEO ownership percentage and CEOs are older in family firms than CEOs in nonfamily firms. Of course, the family variables are significantly different from nonfamily firms. Specifically, the means difference test for CEO dividends ratio *t*-statistic is 5.87, and the CEO ownership percentage is 12.52%, indicating that CEOs own higher percentages and collect more dividends than average nonfamily firms collect.

4.3. Results

4.3.1. Probability of Incentive Compensation Plans

Table 9 represents the results of a logit regression on the presence of an incentive compensation plan and the variables. The logit regression suggests that CEO dividends (*t*-stat = –2.17) have a highly significant inverse relation with equity-based incentive plans and that family firm ownership percentage (*t*-stat= –2.87) and CEO age (*t*-stat =–2.78) have an inverse relation. Book leverage difference from SIC median-leverage ratio (*t*-stat =1.96) has a positive relation. These findings suggest that family ownership and CEO dividends reduce the likelihood of incentive plans. The literature is supportive of family and debt monitoring, which alleviates the need for equity-based incentive plans to substitute for monitoring and act as controls for agency issues between the CEO and shareholders. That is, CEO dividends reduce the likelihood of the presence of an equity-based incentive plan.

4.3.2. Panel Regression

Table 10 reports the results for the incentive compensation plan. Panel A regresses the variables on equity-based incentive plan percentages in total compensation using a panel method. Panel B reports the same variables and the interaction variable regression on equity-based incentive plan percentages in total compensation. In Panel B, the interaction variables are family percentage ownership and CEO dividend ratio.

Panel A of Table 10 shows that CEO dividends (*t*-stat = –4.44) have a highly significant inverse relation with equity–based incentive plans and that family firm ownership percentage (*t*-stat= –2.11), firm age (*t*-stat =–1.96), and book leverage ratio difference from median SIC leverage (*t*-stat =–1.97) have an inverse relation to the incentive compensation ratio. These findings suggest, in line with the logit regression, that family ownership and CEO dividends, on average, reduce level of equity-based incentive plan compensation in total compensation.

Table 10, Panel B, reports the panel regression results for the variables including the interaction variable (family member as CEO and CEO dividends ratio) on the percentage equity-based incentive compensation in total compensation. Consistent with my earlier findings, the results of this panel regression show that family firms relate inversely and significantly (weakly), and book leverage difference relate inversely and significantly, and CEO dividends when not paired with family CEOs are inversely related to the incentive compensation ratio.

However, when family CEO is paired with CEO dividend ratios as a variable in the regression, families without a family CEO remain inversely and significantly (*t*-stat = –4.44) related to the incentive compensation plan ratio. Furthermore, the interaction variable (i.e., the interaction of family CEO and CEO dividend ratio) has a significant (*t*-stat = 2.05) positive relation to the incentive compensation ratio. This result suggests that when family members are CEOs, they desire greater equity-based incentive compensation. Perhaps these CEOs look to improve their family ownership relative to other family members, and, additionally, they may be the sole member on the board or in management and will use their power to increase ownership. Combs et al. (2010) suggest, "When the family-member CEO is the only family-member involved . . . compensation increases relative to CEOs at non-family firms" (p. 27). Combs et al. argue that multiple active family members in the firm act as a control on opportunism by the family-CEO in compensation matters.

5. SUMMARY AND CONCLUSIONS

5.1. CEO Dividends and Equity-Based Incentives

Using a unique random sample of 193 S&P 600 small capitalization firms, I investigate the impact of CEO dividends on family firms, relative to nonfamily firms, on the presence of an equity-based incentive plan and the percentage of total compensation allocated to equity-based compensation. I propose that family firms have an empirical issue. Indeed, I find a relation among the family ownership, CEO dividends, and incentive compensation. Specifically, I find a significant and inverse relation between CEO dividend percentage and family ownership to the level of equity-based incentive compensation. However, when I add an interaction variable covering CEO dividends and family ownership percentage to the panel regression, I uncover a weakly significant positive relation between the interaction and the equity-based incentive compensation percentage. This finding is supports other current literature and is consistent with agency theory. Solo family CEOs are unchecked, except for their material ownership percentage, from succumbing to the agency factors of compensation, by family members and experience compensation weaknesses similar to nonfamily firms CEO.

Overall, my results support the literature on family and debt monitoring, which alleviates the need for incentive plans to substitute for monitoring and to act as controls for agency issues between the CEO and shareholders. Except for solo family CEOs, my findings suggest that just as debt and family ownership play a role in both increasing monitoring and reducing agency costs, the CEO dividend ratio follows as an agency cost control. The results support the literature on family monitoring.

As small firms and family firms grow, the need for outside CEO talent also grows, and, accordingly, firms need competitive incentive alignment tools. After controlling for normal variables that affect incentive compensation such as size, profitability, and growth options, I find an inverse relation between that both family ownership and CEO dividends and the level of equity-based incentive compensation. This finding implies that both family and nonfamily firms substitute CEO dividends for equity incentives. This inverse relation goes beyond the decline in option value with dividend payments. Incentive options and stock awards occur in the next calendar year after payment of dividends.

5.2. Conclusions Drawn from This Study

Both family ownership and CEO dividends are inverse to the probability of the existence of an incentive plan. This finding suggests small family firms need fewer incentives to align CEO activities and that CEO dividends act in a similar way. This join inverse relation suggests CEO dividends are a substitute for CEO equity incentive plans. Small firms appear to use CEO dividends to supplement equity-based incentive plans.

The results suggest that small firms use CEO dividends as a tool to fortify the imperfections and inefficiencies of agency contracting. Moreover, the CEO dividend income findings suggest that CEO dividends are a counter to the inefficiencies of equity-based incentive contracting. Although family firms use incentive compensation as part of the CEO compensation scheme, they tend to use less incentive contracting (i.e., the incentive compensation ratio to total compensation). Consistent with agency theory (i.e., monitoring), small firms that employ above-the-median book leverage use less incentive compensation in the compensation mix. In addition, when family CEOs hold the chairperson's position in conjunction with CEO dividends, they act similar to nonfamily CEOs in desiring higher equity-based incentive compensation.

My research contributes to the literature in three ways. First, we explore the influence of CEO dividends on small firms and on small family-owned firms using a hand-collected randomly selected sample of family firms. Second, I believe that the literature is in its infancy in the examination of the use of equity-based incentive compensation percentage and small firms, and I add to this growing body of research by considering the imperfections of the agency cost control tools. Third, my findings, which are consistent with prior literature, are unique in their application to small and family-owned firms.

5.3. Discussion on Relation to Existing Literature

The current state of the literature on aligning CEO incentives with disperse shareholders implies an application of Jensen and Meckling's (1976) agency cost; however, the process is imperfect. Furthermore, the control of CEO incentives using stock options is inefficient, given that options have an asymmetric payoff and that options payoff is not tied to CEO performance (i.e., luck). Moreover, CEOs influence boards of directors to their favor to the cost of shareholders. Finally, boards of directors fail to incorporate the

CEO’s company stock portfolio when establishing incentive awards and fail to factor in CEO sale of vested option shares. The sale of exercised option shares dilutes the intended incentive effect.

The literature is clear that firm and CEO dividends affect incentives and incentive plans. Easterbrook (1984), Fenn and Liang (2001) Lambert et al. (1989), Rozeff (1982), and White (1996) find that dividends influence incentives. More recently, Brown et al. (2007) find that tax rates on dividend distributions affect incentive awards. After the 2003 dividend tax-rate reduction, incentive option awards are lower concomitantly with the dividend increases.

My results are consistent with Fenn and Liang (2001) and Lambert et al. (1989) who find that firms with low growth options, low executive stock ownership, and high free cash flow have high payout ratios. I control for these variables as suggested by Fenn and Liang and find that the dividend CEO payout as a percentage of total compensation is negatively related with incentive compensation. Therefore, I find support for Fenn and Liang, and Lambert et al.’s notion that CEO payout has a negative relation to incentive compensation.

Mehran (1995) finds a negative relation between an executive’s equity compensation and the percentage of the CEO’s equity holdings. Mehran also reports that firms with rising blockholder ownership engage in less equity-based incentive compensation, which suggests that blockholder monitoring is a substitute for equity-based incentive pay. I find that unaffiliated blockholders show a negative and significant relation with probability of the existence of an incentive compensation plan.

Where blockholders are present in the ownership structure, Benz et al. (2001) find that top executives receive smaller option grants relative to grants at less concentrated firms. The families and blockholders affect pay performance sensitivity. Li and Srinivasan (2011) find that founder-director firms have higher pay-for-performance sensitivity for nonfounder CEOs and that pay is lower than CEOs of nonfounder firms. When unaffiliated blockholders are present in the logit regression on the presence of incentive plans, I find that unaffiliated blockholders have a negative relation (t-stat = –2.03) to incentive plan existence.

Consistent with Jensen and Murphy (1990) and Yermack (1995), I find that both family and nonfamily firms employ CEO dividends as a tool to complement incentive contracting. Agency theory in practice is imperfect when it comes to incentive contracting. Jensen and Murphy find that most CEO compensation contracts have a general absence of management incentives and that observed compensation patterns are inconsistent with the implications of formal agency models of optimal contracting. Moreover, Yermack concludes that the evidence does not support the leading compensation agency theories. My results suggest that CEO dividend ratios are inversely related to the level of incentive compensation percentage (*t*-stat = –4.44).

Easterbrook (1984), Fenn and Liang (2001), Lambert et al. (1989), Rozeff (1982), and White (1996) find that dividends influence incentives. My findings are consistent with agency theory, and these works on dividends and blockholders and incentive options. CEO dividends affect incentives and incentive plans. I find that the CEO dividend ratio is negatively related to the existence of an incentive plan and the level of incentive compensation to total compensation.

5.4. Implications to Scholars and Practitioners

Black (1976) proposed the "dividend puzzle" because he could not explain why dividends are important to shareholders or corporations. Broadly, if a firm's dividend policy relates to CEO compensation plans, another small piece of the dividend puzzle may exist with incentive plans. In their attempt to focus CEOs activities, directors should evaluate the level and the direction of CEO dividends. Research on dividend and incentive policy may want to control for CEO dividends in future incentive-plan research design.

Practitioners who design equity-based incentive plans should examine the level of CEO dividends when establishing the CEO incentive plans. Some incentive plans have a dividend payment limitation to awarding incentives to CEO and managements. Boards of directors should be cognizant of the level and direction of CEO dividends in approving equity-based incentives. Furthermore, boards of small capitalization firms should consider the incentive effects of CEO dividend income when setting dividend policy.

Families should consider the impact of CEO dividends on the motivations of family CEOs. This research suggests that, in the presence of dividends, family member CEOs act similar to nonfamily member CEOs. This finding suggests that family CEOs with dividends want more equity.

5.5. Limitations and Suggestions for Further Studies

Limitations to this study include the partial sample of the S&P 600 index, the number of firm years, and the absence of a measure for CEO wealth and changes in CEO equity ownership during the study period of 1999 through 2008. Moreover, the study does not control for the change in dividend taxation, which occurred in the middle of the study period. The Jobs and Growth Tax Relief Reconciliation Act of 2003 lowered the maximum tax rate on dividend and interest income for individuals from the maximum ordinary income rates to 15% in May of 2003.

The sample is imperfect. The study covers approximately 40% of the small capitalization firms included in the S&P 600 index and incomplete years. Some of the sample firms have less than 10 years of compensation data (CEO compensation, option and equity awards), further narrowing the firm years in the sample.

Future studies will benefit from controlling for changes in dividend taxation and from controlling for share repurchases. Consistent with White's (1996) findings that large firms employ dividend incentive covenants to control for cash over retention by CEOs, future studies will benefit from controlling for dividend covenants found in small firm incentive plans. Moving to family ownership, the literature makes a distinction in performance among founder CEO, descendant CEO, and nonfamily CEO managed firms. This study distinguishes only between family CEOs and nonfamily CEOs. Future studies may wish to focus on the effect on equity incentive compensation between descendant and founding CEO firms, in light of this study's suggestion that CEO family members with dividends appear to mimic nonfamily CEOs in incentives (i.e., they both have a positive relation with incentive compensation). Moreover, segmenting the relations among CEO incentives, CEO dividend income among family firms perhaps by percentage ownership may uncover whether the findings are concentrated in certain family ownership levels. Additionally, because dividends are only one method at firms' disposal for distributing earnings to shareholders, further studies should examine the impact of share repurchases combined with dividends on compensation.

Clarity on the direction of cause and effect here is also useful. This research analyzes concurrent dividends and equity incentive awards. I posit that because the level of CEO dividends does not vary materially from year to year that, by linking the prior year's incentive activity to dividends, the incentive awards respond to dividends and performance. Whether a change in dividends leads to a change in equity-based incentives or whether a change in equity-based incentives causes reduced dividends is a topic for further research.

Moreover, adjusting for the effects of inflation on the levels of dividends, option and stock awards eliminate possible bias in increasing values over time. Jensen and Murphy (1990) use the consumer price index for the closing month of the fiscal year. Lastly, because incentive compensation is dependent on the other elements in the compensation plan, the extent of ownership restrictions, and so on, future studies should control for minimum share ownership requirements, hedging restrictions, and the level and changes in CEO firm-concentrated wealth.

APPENDIX A

APPENDIX A - Essay One

DEFINITION OF VARIABLES

The financial variables definitions are provided. Corresponding data items in the Compustat database are in parentheses where applicable.

Variables	Definitions
Age	Number of months (divided by 12) since the firms' inclusion in the CRSP database
Assets	Log of book value of assets (AT)
Bk_Lev	Sum of short-term (DLC) and long-term debt (DLTT) to book AT
Bk_Sic3_Med	Median book leverage for SIC three-digit industry classification (SIC)
Dividend	Annual dividend-payer dummy, which equals 1 if the firm pays dividends, and zero otherwise (Compustat annual DVT)
Diver	Annual dummy variable that equals 1 when a firms operates in multi-segments (SIC1, SIC2), and zero otherwise
Dual_Class	Dummy variable that equals 1 when a firm has more than one common class, and zero otherwise (hand collected from SEC DEF-14a)
FO1	Percentage of family ownership of common shares, the ratio of family ownership to total shares outstanding (hand collected from SEC DEF-14a)
FO2	Dummy variable that equals 1 when the firm has a family member on the board of directors, and otherwise (hand collected from SEC DEF-14a)
FO3	Dummy variable that equals 1 when a firm has a family member as CEO, and zero otherwise (hand collected from SEC DEF-14a)
SumSq12	Relative idiosyncratic risk, the log of 1– R^2 divided by R^2, where R^2 is using the market model using S&P 600 as the market for each firm year.
Inflation	Expected inflation rate, the expected change in the consumer price index over the coming year using data from the Livingston Survey (available at http://www.phil.frb.org/liv/index.html)
MB	Ratio of the market value of the common equity (Mkvalt) to book equity (SEQ), all divided by 1,000. Mkvalt and SEQ are in millions
Mk_Sic3_Med	Median market leverage for SIC three-digit industry classification (SIC)
Mk_Lev	Sum of short-term (DLC) and long-term debt (DLTT) to the sum of book AT minus SEQ plus Mkvalt

Prof	Ratio operating income before depreciation (oibdp) to AT
ROE	Annual return-on-equity given by Net Income (NI) before extraordinary divided by SEQ from Compustat
Tang	Ratio of plant property and equipment (ppent) to AT
SIC3	Four-digit standard industrial classification code divided by 10
Size	Annual log of Mkvalt
Seg_Dum	Dummy variable that equal 1 if the NAICS operating line of business is more than one industry classification, and zero otherwise
SumSq12	Square of the residual from the market model regression of the S&P 600 index on the total return of the firm stock (s&p600 index yahoo.finance) and the firm stock return from (CRSP)
Uaff_blk	Percentage of common shares owned by 5% or more unaffiliated shareholders (hand collected from SEC DEF-14a)

Appendix A continues

APPENDIX B

Appendix B – Essay Two

Definitions of the Variables

The financial variables are provided. Corresponding data items in Compustat database are in parentheses where applicable.

Variables	Definitions
FirmAge	Number of months (divided by 12) since the firms' inclusion in the CRSP database
ADV2/PPENT	The ratio of advertising expenses to property plant and equipment net
Bk_Lev	Sum of short-term (DLC) and long-term debt (DLTT) to book AT
Bk_Lev_Diff	Bk_Lev less median book leverage for SIC three-digit industry classification (SIC)
CAPX/Revt	The ratio of capital expenditures to REVT
CEO_Age	The CEO chronological age
CEO_OwnP	The percentage shares owned by the CEO
CEO_Tenure	The number of years the CEO is in the job
Div_CEOR	The ratio of CEO dividends in dollars to total compensation in dollars
Dual_Class	Dummy variable that equals 1 when a firm has more than one common class, and zero otherwise (hand collected from SEC DEF-14a)
Family Own	Percentage of family ownership of common shares, the ratio of family ownership to total shares outstanding (hand collected from SEC DEF-14a)
Family CEO	Dummy variable that equals 1 when a firm has a family member as CEO, and zero otherwise (hand collected from SEC DEF-14a)
FamCEOBRD	A dummy variable that is one when either the family member is CEO or family member is on the board of directors, otherwise zero
MrktBK	Ratio of the market value of the common equity (Mkvalt) to book equity (SEQ), all divided by 1,000. Mkvalt and SEQ are in millions
Mk_Sic3_Med	Median market leverage for SIC three-digit industry classification
OPMARG	Operating income after depreciation to Revt lagged one year
Revt	The annual sales or revenues for the firm
SIC3	Four-digit standard industrial classification code divided by 10

SumSq12	Square of the residual from the market model regression of the S&P 600 index on the total return of the firm stock (s&p600 index yahoo.finance) and the firm stock return from (CRSP)
Uaff_blk	Percentage of common shares owned by 5% or more unaffiliated shareholders (hand collected from SEC DEF-14a)

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TABLES

Table 1
Summary Standard Industrial Classification for Small Family and Nonfamily Publicly Traded Firms

This table presents summary statistics for the sample. Panels A presents the percentage of industry classification totals for the total sample firm years of family and nonfamily firms. Panel B compares our sample with the S&P 600 firms. Sample covers the period from 1999 to 2008. Data are collected from Compustat annual updates and the SIC code for each firm in the sample. Family (nonfamily) firms have family ownership percentage of equal to or more than (less than) 1%. Family firms, for firm years, are firms where the majority of the sample years are greater than 1% ownership. The sample of S&P 600 firms excludes financials, real estate, and utilities firms. The panel represents the distribution of SIC industries for family and nonfamily firms for all for 202 firms.

Panel A. Industry classifications for total sample, family firms, and nonfamily firms

	All Firms (firm yrs.) (*n* = 2,020)		**Family (firm yrs.) (*n*= 1,146)**		**Nonfamily (firm yrs.) (*n* = 874)**	
SIC	Obs.	%	Obs.	%	Obs.	%
[1000, 1499)	130	6.4	35	3.1	95	10.9
[1500, 1999)	20	1.0	0	0.0	20	2.3
[2000, 2499)	140	6.9	100	8.7	40	4.6
[2500, 2999)	260	12.9	130	11.3	130	14.9
[3000, 3499)	180	8.9	80	7.0	100	11.4
[3500, 3999)	610	30.2	353	30.8	257	29.4
[4000, 4499)	80	4.0	60	5.2	20	2.3
[4500, 4999)	70	3.5	50	4.4	20	2.3
[5000, 5499)	140	6.9	98	8.6	42	4.8
[5500, 5999)	150	7.4	80	7.0	70	8.0
[6000, 6499)	10	0.5	10	0.9	0	0.0
[6500, 6999)	10	0.5	10	0.9	0	0.0
[7000, 7499)	150	7.4	80	7.0	70	8.0
[7500, 7999)	10	0.5	0	0.0	10	1.1
[8000, 8499)	30	1.5	30	2.6	0	0.0
[8500, 9000)	30	1.5	30	2.6	0	0.0
All	2020	100.0	1146	100.0	874	100.0

Table 3.1 continues

Table 1 (*continued*)

Panel B. Comparison of S&P 600 firms and sample firms by industry classification

Industry Classification	**SIC**	**Available S&P 600 Firms (*n* = 489)** (*n*)	%	**Sample (*n* = 202)** *n*	%	**% of S&P 600**
Agriculture	0, 999	1	0.20	0	0.00	0.00
Minerals and mining	1000, 1499	15	3.07	13	6.44	86.67
Heavy construction	1500, 1999	6	1.23	2	0.99	33.33
Tobacco products & Mfgrs furn/fixtures	2000, 2499	27	5.52	14	6.93	51.85
Manufacturers—paper and paperboard products	2500, 2999	44	9.00	26	12.87	59.09
Industrial machinery and computer equipment	3000, 3499	37	7.57	18	8.91	48.65
Industrial equip, vehicles	3500, 3999	145	29.65	61	30.20	42.07
Transportation, railroad equip	4000, 4499	8	1.64	8	3.96	100.00
Airlines, air courier, and misc.	4500, 4999	14	2.86	7	3.47	50.00
Durable goods wholesale, and retailers	5000, 5500	29	5.93	14	6.93	48.28
Durable and nondurable stores, dealers, jewelers	5500, 5999	48	9.82	15	7.43	31.25
Hospitals,	6000, 6499	8	1.64	1	0.50	12.50
RV camps, patent holders	6500, 6999	3	0.61	1	0.50	33.33
Hotels, motels, misc. service	7000, 7499	67	13.70	15	7.43	22.39
Auto repair, car rentals,	7500, 7999	6	1.23	1	0.50	16.67
Health/legal services,	8000, 8499	21	4.29	3	1.49	14.29
Engineering, architectural	8500, 9000	10	2.04	3	1.49	30.00
Total		489	100	202	100	
Avg. coverage						40.0

Table 2
Correlations: Leverage Ratios and Family and Control Variables

This table presents summary correlations for the capital structure and family and control variables. The panel presents the correlation matrix for all for 202 firms resulting in 2,020 observations over 10 fiscal years from 1999 through 2008. Appendix A describes the variables. *t-statistics* are below each correlation.

Variable	ASSETS	BK_LEV	BK_SIC3 _MED	MK_SIC3 _MED	MK_LEV	MB	DIVID'D	FO1	FO2	FO3	PROF	TANG	UAFF_ BLK	INFLA'N	SUM_ SQ12
ASSETS	1.000														
	—														
BK_LEV	0.359	1.000													
	17.254	—													
BK_SIC3_MED	0.327	0.726	1.000												
	15.554	47.445	—												
MK_SIC3_MED	0.361	0.679	0.924	1.000											
	17.379	41.595	108.549	—											
MK_LEV	0.408	0.912	0.729	0.786	1.000										
	20.105	99.971	47.906	57.032	—										
MB	–0.010	0.060	0.000	0.004	0.016	1.000									
	–0.432	2.681	–0.004	0.184	0.739	—									
DIVID'D	0.213	0.097	0.133	0.125	0.103	–0.022	1.000								
	9.785	4.400	6.043	5.641	4.660	–0.968	—								
FO1	–0.143	–0.080	–0.099	–0.095	–0.075	–0.006	0.022	1.000							
	–6.495	–3.603	–4.479	–4.294	–3.364	–0.249	1.010	—							
FO2	–0.130	–0.031	–0.049	–0.062	–0.029	0.021	0.040	0.385	1.000						
	–5.884	–1.373	–2.192	–2.789	–1.324	0.943	1.793	18.763	—						
FO3	–0.145	–0.093	–0.077	–0.065	–0.073	0.035	–0.030	0.310	0.572	1.000					
	–6.579	–4.199	–3.474	–2.940	–3.279	1.579	–1.368	14.665	31.351	—					
PROF	0.052	–0.150	–0.090	–0.137	–0.190	–0.016	0.111	0.130	0.146	0.082	1.000				
	2.344	–6.794	–4.044	–6.215	–8.702	–0.720	4.999	5.899	6.625	3.710	—				
TANG	0.225	0.227	0.302	0.247	0.209	–0.017	0.098	–0.014	–0.023	–0.044	0.253	1.000			
	10.364	10.484	14.212	11.458	9.611	–0.780	4.442	–0.647	–1.048	–1.975	11.740	—			
UAFF_BLK	0.029	0.090	0.097	0.124	0.123	0.008	–0.138	–0.214	–0.186	–0.140	–0.197	0.010	1.000		
	1.306	4.039	4.380	5.627	5.562	0.360	–6.244	–9.837	–8.517	–6.330	–9.013	0.435	—		
INFLA'N	0.081	0.056	0.063	0.101	0.094	–0.022	0.002	–0.003	–0.033	–0.008	–0.035	0.007	0.108	1.000	
	3.640	2.531	2.849	4.545	4.225	–0.982	0.075	–0.120	–1.482	–0.351	–1.593	0.302	4.859	—	
SUMSQ12	–0.038	–0.008	–0.006	–0.016	–0.019	–0.004	–0.024	0.006	0.026	0.001	0.064	0.009	–0.001	–0.014	1.000
	–1.689	–0.366	–0.259	–0.730	–0.860	–0.161	–1.075	0.268	1.171	0.023	2.896	0.402	–0.031	–0.623	—

Table 3
Summary Statistics for Small Family and Nonfamily Publicly Traded Firms, 1999–2008

This table presents summary tests for differences in means for the capital structure, family, and control variables. Data are for annual periods from 1999 through 2008 on a sample of S&P 600 firms, which exclude financials and utilities. The panel presents the differences in means for family and nonfamily firms for all for 202 firms resulting in 2,020 firm-year observations. Appendix A describes the variables.

	Family (*n* = 1,146)		**Nonfamily (*n* = 874)**		**Diff in Mean**
Variable	**Mean**	***SD***	**Mean**	***SD***	***t*-stat**
BK_LEV	0.192	0.176	0.207	0.161	–2.027
Mk_Lev	0.149	0.153	0.162	0.144	–1.902
BK_SIC3_MED	0.178	0.146	0.194	0.136	–2.492
MK_SIC3_MED	0.134	0.133	0.152	0.130	–3.107
MB	7.407	1.165	2.338	4.381	0.906
ASSETS	6.126	0.886	6.371	0.913	–6.073
TANG	0.288	0.221	0.302	0.225	–1.415
PROF	0.147	0.106	0.118	0.112	5.887
DIVIDEND	0.442	0.500	0.490	0.497	–2.129
SUMSQ12	0.304	1.875	0.215	0.505	1.376
DUAL_CLASS	0.145	0.352	0.008	0.089	11.231
UAFF_BLK	0.201	0.143	0.267	0.155	–9.829
VOT_IDX2	0.230	0.303	0.004	0.057	21.772
FO3	0.499	0.500	0.005	0.067	29.017
FO2	0.946	0.226	0.029	0.167	100.772
FO1	0.147	0.228	0.000	0.000	19.042

Table 4
Leverage Ratios, Family, and Control Variables
This table presents the results of panel regressions (two-way cluster standard errors) of the family variables and control variables on book leverage Panel A) and market leverage (Panel B). Panel C presents the family interaction variables for book and market leverage. Book leverage is the ratio of short and long debt to total assets. Market leverage is the ratio of short and long debt to total assets minus book common plus market value of equity. The results are for all for 202 firms resulting in 2,020 firm-year observations over 10 fiscal years from 1999 through 2008. Appendix A describes variables. *t*-statistics are in parentheses. I correct standard errors for clustering and time according to Petersen (2009). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A: Book Leverage

	1	2	3	4	5
FO1	–0.051	0.051			
	(0.098)	(1.15)			
FO2	0.018		0.014		
	(1.25)		(1.24)		
FO3	–0.022			–0.06	
	(–1.52)			(–0.47)	
DUAL_CLASS	–0.003	–0.001	–0.009	0.000	–0.002
	(–0.010)	(–0.040)	(–0.450)	(–0.010)	(–0.120)
UAFF_BLK	0.012	0.011	0.005	–0.004	–0.002
	(0.420)	(0.400)	(0.190)	(–0.130)	(–0.060)
BK_SIC3_MED	0.792***	0.794***	0.794***	0.793***	0.794***
	(21. 02)	(21. 06)	(20.89)	(20.77)	(20.75)
ASSETS	0.029***	0.028***	0.028***	0.027***	0.027***
	(4.39)	(4.47)	(4.43)	(4.22)	(4.34)
DIVIDEND	–0.005	–0.004	–0.004	–0.004	–0.004
	(–0.480)	(–0.380)	(–0.370)	(–0.390)	(–0.360)
INFLATION	0.055	–0.024	0.023	0.035	0.019
	(0.090)	(–0.050)	(0.040)	(0.060)	(0.030)
MB/1000	0.083***	0.081***	0.080***	0.082***	0.081***
	(23.75)	(31.27)	(27.20)	(27.30)	(31.86)
PROF	–0.166***	–0.162***	–0.164***	–0.155***	–0.157***
	(–3.28)	(–3.29)	(–3.20)	(–3.15)	(–3.17)
TANG	0.017	0.017	0.017	0.016	0.017
	(0.630)	(0.620)	(0.630)	(0.620)	(0.620)
SUMSQ12	0.001	0.001	0.001	0.001	0.001
	(0.990)	(1.24)	(1.26)	(1.13)	(1.23)
C	–0.112***	–0.114***	–0.114***	–0.096***	–0.099***
	(–3.03)	(–3.05)	(–3.10)	(–2.61)	(–2.82)
Obs.	2,020	2,020	2,020	2,020	2,020
Adj. R^2 (%)	55.81	55.61	55.61	55.51	55.48

Table 3.4 continues

Table 4 (*continued*)

Panel B. Market Leverage

	1	2	3	4	5
FO1	0.049	0.065*			
	(1.26)	(1.94)			
FO2	0.018*		0.018**		
	(1.65)		(2.12)		
FO3	–0.014			0.003	
	(–1.220)			(0.290)	
DUAL_CLASS	–0.004	–0.001	–0.012	–0.004	–0.003
	(–0.280	(–0.07)	(–0.780)	(–0.300)	(–0.220)
UAFF_BLK	0.024	0.024	0.017	0.009	0.008
	(1.180)	(1.17)	(0.820)	(0.410)	(0.370)
MK_SIC3_MED	0.802***	0.802***	0.803***	0.803***	0.803***
	(22.99)	(22.96)	(22.98)	(22.82)	(22.81)
ASSETS	0.027***	0.027***	0.027***	0.025***	0.025***
	(5.88)	(5.92)	(5.90)	(5.80)	(5.72)
DIVIDEND	–0.003	–0.002	–0.002	–0.002	–0.002
	(–0.350)	(–0.260)	(–0.260)	(–0.230)	(–0.250)
INFLATION	0.284	0.227	0.279	0.265	0.273
	(0.330)	(0.290)	(0.330)	(0.310)	(0.320)
MB/1000	0.017***	0.017***	0.015***	0.016***	0.016***
	(6.96)	(9.74)	(7.50)	(7.86)	(9.47)
PROF	–0.154***	–0.150***	–0.152***	–0.144***	–0.143***
	(–4.82)	(–4.77)	(–4.72)	(–4.54)	(–4.47)
TANG	0.018	0.017	0.018	0.018	0.018
	(0.890)	(0.890)	(0.930)	(0.910)	(0.910)
SUMSQ12	0.001	0.005	0.001	0.001	0.001
	(0.830)	(1.080)	(1.140)	(1.080)	(1.060)
C	–0.134***	–0.130***	–0.129***	–0.112***	–0.111***
	(–3.82)	(–3.79)	(–3.85)	(–3.49)	(–3.39)
Obs.	2,020	2,020	2,020	2,020	2,020
Adj. R^2 (%)	64.8	64.7	64.7	64.4	64.4

Table 3.4 continues

Table 4 (*continued*)

Panel C. Book And Market Leverage Family Interaction Variables

	1 Bk_lev	2 Bk_lev	3 Bk_lev	4 Mk_lev	5 Mk_lev
FO1*DUAL_CLASS	0.479**			0.486**	
	(2.39)			(2.97)	
FO1	0.044			0.057*	
	(0.98)			(1.71)	
FO2*DUAL_CLASS		0.022			
		(1.01)			
FO2		0.014			
		(1.22)			
FO3*DUAL_CLASS			0.020		0.023
			(0.62)		(0.96)
FO3			–0.008		0.001
			(–0.61)		(0.04)
DUAL_CLASS	–0.028	–0.031**	–0.012	–0.029	–0.018
	(–1.24)	(–3.90)	(–0.68)	(–1.83)	(–1.30)
UAFF_BLK	0.012	0.006	–0.005	0.024	0.008
	(0.43)	(0.19)	(–0.15)	(1.24)	(0.36)
BK_SIC3_MED	0.794**	0.794**	0.795**	0.801**	0.806**
	(21.30)	(20.88)	(21.02)	(23.33)	(23.20)
ASSETS	0.029**	0.028**	0.027**	0.028**	0.025**
	(4.67)	(4.43)	(4.22)	(6.27)	(5.83)
DIVIDEND	–0.005	–0.004	–0.004	–0.003	–0.002
	(–0.47)	(–0.37)	(–0.40)	(–0.38)	(–0.25)
INFLATION	–0.095	0.029	0.016	0.155	0.239
	(–0.21)	(0.05)	(0.03)	(0.20)	(0.28)
MB/1000	0.081**	0.080**	0.082**	0.017**	0.016**
	(30.75)	(27.17)	(27.17)	(9.52)	(7.84)
PROF	–0.165**	–0.164**	–0.155**	–0.153**	–0.143**
	(–3.33)	(–3.20)	(–3.16)	(–4.92)	(–4.52)
TANG	0.011	0.017	0.016	0.019	0.017
	(0.42)	(0.63)	(0.60)	(0.65)	(0.88)
SUMSQ12	0.001	0.001	0.001	0.007	0.001
	(1.59)	(1.24)	(1.33)	(1.60)	(1.42)
C	–0.113**	–0.114**	–0.095**	–0.128**	–0.111**
	(–3.07)	(–3.11)	(–2.59)	(–3.84)	(–3.46)
Observations	2,020	2,020	2,020	2,020	2,020
Adj. R^2 (%)	55.8	55.6	55.5	64.9	64.4

Table 5
Idiosyncratic Volatility, Dual Class, and Family Variables
This table presents the results of panel regressions of the family variables and control variables on idiosyncratic risk. Idiosyncratic risk is the R^2 values for each year from 1999 through 2008 for each firm derived from the market model with the S&P 600 as the market. Panel regression uses a transformation of idiosyncratic risk using the log of $1 - R^2$ divided by R^2 ratio. The table presents the result for all for 202 firms resulting in 1,896 firm-year observations over 10 fiscal years from 1999 through 2008 with family variables as the test and control variables include size, age, leverage, return on equity, firm segment dummy, dividend dummy and market-to-book equity ratio. Regressions include SIC industry fixed effects. Appendix A describes variables. The *t*-statistics are in parentheses. I correct the standard errors for clustering and time according to Petersen (2009). *** and * indicate significance at the 0.01 and 0.10 levels, respectively.

	1	2	3	4	5	6
FO1	0.560*	0.566*				
	(1.85)	(1.78)				
FO2	–0.032		0.049			
	(–0.29)		(0.53)			
FO3	–0.026			0.041		
	(–0.2)			(0.34)		
UAFF_BLK	–0.272				–0.396	
	(–0.64)				(–0.94)	
DUAL_CLASS	0.007					–0.039
	(0.04)					(–0.23)
ROE	0.041	0.046	0.048	0.049	0.042	0.048
	(0.53)	(0.6)	(0.63)	(0.63)	(0.54)	(0.63)
BK_LEV	0.405	0.399	0.351	0.358	0.372	0.349
	(1.32)	(1.35)	(1.2)	(1.18)	(1.28)	(1.19)
MB	0.006	0.0061	0.007	0.007	0.006	0.006
	(0.51)	(0.57)	(0.6)	(0.6)	(0.51)	(0.6)
SIZE	–0.174***	–0.169***	–0.179***	–0.177***	–0.185***	–0.178***
	(–3.06)	(–2.77)	(–2.94)	(–2.89)	(–3.2)	(–2.92)
DIVIDEND	0.029	0.036	0.041	0.045	0.029	0.051
	(0.17)	(0.23)	(0.25)	(0.28)	(0.18)	(0.3)
AGE	–0.009***	–0.009***	–0.009***	–0.009***	–0.009***	–0.009***
	(–2.72)	(–2.59)	(–2.61)	(–2.73)	(–2.75)	(–2.85)
SEG_DUM	0.000	–0.0004	0.000	–0.002	–0.002	0.003
	(0)	(0)	(0)	(–0.02)	(–0.02)	(0.03)
Adj. R^2 (%)	1.59	1.74	1.62	1.62	1.70	1.61
Observations	1,986	1,986	1,986	1,986	1,986	1,986

Table 6
Summary Standard Industrial Classification for Small Family and Nonfamily Publicly Traded Firms

This table presents summary statistics for the sample. Panels A presents the percentage of industry classification totals for the total sample, family, and nonfamily firms. Panel B compares our sample with the S&P 600 firms. Sample period covers 1999 to 2008. Panel A uses 2006 as the base firm selection year. Data are collected from Compustat annual updates and the SIC code for each firm in the sample. Family (nonfamily) firms have family ownership percentage of equal to or more than (less than) 1%. The sample of S&P 600 firms excludes financials, real estate, and utility firms. The panel represents the distribution of SIC industries for family and nonfamily firms for all for 193 firms.

Panel A. Industry classifications for total sample, family firms, and nonfamily firms

		All Firms		**Firm Years**		**Nonfamily Firm Years**	
Industry Classification	**SIC**	***n***	**%**	***n***	**%**	***n***	**%**
Minerals and mining	[1000, 1499)	93	7.2	61	4.7	32	2.5
Heavy construction	[1500,1999)	13	1.0	13	1.0	0	0.0
Tobacco products & Mfgrs furn/fixtures	[2000, 2499)	87	6.7	24	1.9	63	4.9
Manufacturers—paper and paperboard products	[2500, 2999)	169	13.1	93	7.2	76	5.9
Industrial machinery and computer equipment	[3000, 3499)	109	8.4	74	5.7	35	2.7
Industrial equip, vehicles,	[3500, 3999)	426	32.9	203	15.7	223	17.2
Transportation, railroad equip	[4000, 4499)	41	3.2	8	0.6	33	2.6
Airlines, air courier, and misc.	[4500, 4999)	48	3.7	19	1.5	29	2.2
Durable goods wholesale and retailers	[5000, 5499)	75	5.8	28	2.2	47	3.6
Durable and nondurable stores, dealers, jewelers	[5500, 5999)	86	6.7	50	3.9	36	2.8
Hospitals	[6000, 6499)	8	0.6	0	0.0	8	0.6
RV camps, patent holders	[6500, 6999)	9	0.7	0	0.0	9	0.7
Hotels, motels, misc. service	[7000, 7499)	86	6.7	30	2.3	56	4.3
Auto repair, car rentals	[7500, 7999)	4	0.3	4	0.3	0	0.0
Health/legal services	[8000, 8499)	21	1.6	0	0.0	21	1.6
Engineering, architectural	[8500, 9000)	18	1.4	0	0.0	18	1.4
Total	All	1293	100.0	607	46.9	686	53.1

Table 4.1 continues

Table 6 (*continued*)

Panel B. Comparison of S&P 600 firms and the sample firms by industry classification

		S&P 600 Firms (N = 489)		**Sample** (N = 193)	
Industry Classification	*SIC*	*n*	*%*	*n*	*%*
Agriculture	[0, 999)	1	0.2	0	0.0
Minerals and mining	[1000, 1499)	15	3.1	13	6.7
Heavy construction	[1500, 1999)	6	1.2	2	1.0
Tobacco products & Mfgrs furn/fixtures	[2000, 2499)	27	5.5	13	6.7
Manufacturers—paper and paperboard products	[2500, 2999)	45	9.2	25	13.0
Industrial machinery and computer equipment	[3000, 3499)	37	7.6	16	8.3
Industrial equip, vehicles,	[3500, 3999)	145	29.7	59	30.6
Transportation, railroad equip	[4000, 4499)	8	1.6	6	3.1
Airlines, air courier, and misc.	[4500, 4999)	14	2.9	7	3.6
Durable goods wholesale and retailers	[5000, 5499)	30	6.1	14	7.3
Durable and nondurable stores, dealers, jewelers	[5500, 5999)	48	9.8	14	7.3
Hospitals	[6000, 6499)	7	1.4	1	0.5
RV camps, patent holders	[6500, 6999)	3	0.6	1	0.5
Hotels, motels, misc. service	[7000, 7499)	66	13.5	15	7.8
Auto repair, car rentals	[7500, 7999)	6	1.2	1	0.5
Health/legal services	[8000, 8499)	21	4.3	3	1.6
Engineering, architectural	[8500, 9000)	10	2.0	3	1.6
Total		489	100.0	193	100.0

Table 7
Correlations: Incentive Comp, Div_CEOR, Family, and Control Variables

This table presents summary correlations for the capital structure and family and control variables. The panel presents the correlation matrix for all for 193 firms resulting in 1,124 firm-year observations over 10 fiscal years from 1999 through 2008. *t*-stats are below correlations. Appendix B describes the variables.

	INC_COM	REVT	CEO_AGE	FIRM AGE	OP MAR	TANG-ASSET	DIV_CEOR	MRKT BK	BK_LEV	FAM OWN	FAM CEO-BRD	UAFF_BLK	DUAL_CLA	CEO_OWN	RND2_PPE	CAPX_PPE	SSQ12
REVT	–0.05	1.00															
	–1.93	—															
CEO_AGE	–0.18	–0.03	1.00														
	–6.61	–0.92	—														
FIRMAGE	–0.15	0.16	0.06	1.00													
	–5.32	5.79	2.23	—													
OPMARG	–0.08	0.02	0.03	0.00	1.00												
	–2.75	0.81	1.17	–0.14	—												
TANG ASSETS	0.02	–0.17	0.01	–0.05	–0.01	1.00											
	0.62	–6.16	0.26	–1.87	–0.27	—											
DIV_CEOR	–0.21	–0.03	0.03	0.07	0.01	–0.05	1.00										
	–7.43	–0.94	1.23	2.65	0.22	–1.94	—										
MRKTBK	0.05	–0.09	–0.08	–0.08	–0.03	–0.06	–0.01	1.00									
	1.76	–3.09	–2.92	–2.81	–1.16	–2.14	–0.44	—									
BK_LEV	–0.14	0.16	0.03	0.10	0.01	0.21	–0.03	–0.06	1.00								
	–4.90	5.75	1.00	3.62	0.48	7.62	–1.14	–2.29	—								
FAMOWN	–0.08	0.06	–0.02	–0.06	0.02	–0.05	0.27	0.01	–0.04	1.00							
	–2.99	2.29	–0.61	–2.29	0.88	–1.89	9.87	0.20	–1.49	—							
FAMCEO-BRD	–0.03	–0.06	0.01	–0.15	0.03	0.05	0.15	0.05	0.03	0.55	1.00						
	–0.97	–2.30	0.43	–5.37	1.00	1.87	5.22	1.86	1.13	23.26	—						
UAFF_BLK	0.07	–0.07	–0.04	0.00	–0.06	0.08	–0.13	0.00	0.07	–0.25	–0.16	1.00					
	2.51	–2.49	–1.54	0.05	–2.10	2.70	–4.67	0.14	2.46	–9.33	–5.63	—					
DUAL_CLASS	0.00	–0.06	–0.01	–0.07	–0.04	–0.01	–0.04	0.02	0.09	–0.02	0.27	–0.03	1.00				
	–0.08	–1.96	–0.42	–2.42	–1.49	–0.18	–1.40	0.63	3.22	–0.58	10.09	–1.08	—				
CEO_OWNP	–0.08	–0.09	0.18	–0.11	0.02	–0.03	0.37	–0.01	–0.07	0.49	0.29	–0.12	–0.01	1.00			
	–2.79	–3.19	6.66	–3.87	0.62	–1.02	14.26	–0.25	–2.53	20.12	10.94	–4.28	–0.28	—			
RND2_PPENT	0.18	–0.13	–0.08	–0.06	–0.74	–0.08	–0.04	0.08	–0.15	–0.06	–0.06	0.02	–0.01	–0.05	1.00		
	6.63	–4.58	–2.90	–2.10	–39.13	–2.80	–1.42	2.70	–5.29	–2.22	–2.29	0.76	–0.18	–1.75	—		
CAPX_PPENT	0.23	–0.05	–0.09	–0.13	0.00	–0.07	–0.07	0.14	–0.26	0.01	0.02	–0.04	–0.04	0.01	0.27	1.00	
	8.39	–1.63	–3.11	–4.76	–0.16	–2.59	–2.33	5.02	–9.56	0.24	0.81	–1.51	–1.52	0.53	10.07	—	
SUM SQ12	0.05	–0.03	0.03	–0.04	0.01	0.00	0.01	0.01	–0.01	0.02	0.03	0.00	0.11	0.00	–0.01	0.03	1.00
	1.87	–1.03	1.05	–1.52	0.46	–0.06	0.18	0.20	–0.35	0.54	1.07	0.11	3.78	0.13	–0.20	1.03	—
CEO_TENURE	–0.09	–0.07	0.47	–0.06	0.00	–0.01	0.14	0.01	0.01	0.20	0.20	–0.10	0.13	0.51	0.00	0.06	0.02
	–3.22	–2.34	18.71	–2.21	0.05	–0.48	4.85	0.33	0.24	7.40	7.12	–3.43	4.68	21.21	–0.12	2.12	0.76

Table 8
Summary Statistics for Small Family and Nonfamily Publicly Traded Firms, 1999–2008
This table presents summary tests for differences in means for the Incentive Comp ratio, Div_CEOR, family, and control variables. Data are for annual periods from 2000 through 2008 on a sample of S&P 600 firms that excludes financials and utilities. The panel presents the differences in means for family (FAMOWN > 0.01) and nonfamily (FAMOWN < 0.01) firms for all for 193 firms resulting in 1,124 firm-years observations. Appendix B describes the variables.

	Family Firms (*n* = 607)		**Nonfamily Firms (*n* = 696)**		**Diff in Mean**
Variables	**Mean**	***SD***	**Mean**	***SD***	***t*-stat**
Leverage measures					
Bk_Lev_Diff	0.015	0.005	0.17	0.006	0.12
BK_LEV	0.20	0.01	0.21	0.01	–0.62
BK_SIC3_MED	0.18	0.01	0.19	0.01	–1.05
Incent_compR	0.42	0.01	0.44	0.01	–2.11
Market to book					
MrktBK	2.50	0.17	2.31	0.11	1.12
Assets					
REVT	854.62	1111.45	1034.31	1334.31	–2.62
CEO_AGE	56.42	0.37	55.66	0.26	2.04
FIRMAGE	28.57	0.80	33.41	0.55	–6.05
Profits and dividends					
OPMARG	0.08	0.05	0.03	0.03	1.07
DIV_CEOR	0.10	0.01	0.02	0.01	5.87
Variability					
SUMSQ12	0.35	0.10	0.21	0.07	1.41
Control variables					
DUAL_CLASS	0.14	0.01	0.02	0.01	8.09
UAFF_BLK	0.20	0.01	0.27	0.01	–8.41
CEO_OWNP	0.03	0.00	0.01	0.00	12.52
CEO_TENURE	120.31	4.93	77.70	3.37	8.65
RND2/PPENT	0.24	0.09	0.47	0.06	–2.45
ADV2/PPENT	0.07	0.01	0.06	0.01	0.45
CAPX/REVT	0.23	0.01	0.23	0.01	–0.18
FamCEOBRD	0.95	0.02	0.11	0.01	55.03
FamCEO	0.47	0.02	0.01	0.01	24.12
FamOWN	0.12	0.00	0.00	0.00	28.28

Table 9
Probability of the Presence of Incentive Plan, Div_CEOR, Family, and Control Variables

This table presents the results of logit panel regressions of the CEO dividend ratio, family variables and control variables on the presence of incentive plan a dummy variable. The table presents the result for all for 193 firms resulting in 1,725 observations over 10 fiscal years from 1999 through 2008 with family-variables as the test and control variables include size, age, leverage, and market-to-book equity ratios. Regressions include SIC industry fixed effects. Appendix B describes variables. **, **, * indicates significance at the 0.01, 0.05, and 0.10 levels, respectively.

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LOG(REVT)	0.056	0.078	0.723	0.470
LOG(CEO_AGE)	–1.466***	0.527	–2.781	0.005
LOG(AGE)	–0.010	0.147	–0.065	0.948
OPMARG	–0.141	0.393	–0.360	0.719
Tang Asset	0.542**	0.254	2.137	0.033
MB	0.005	0.022	0.244	0.807
DIV_CEOR	–0.922**	0.424	–2.172	0.030
BK_LEV_Diff	1.079**	0.550	1.964	0.050
Family OWN	–1.912***	0.666	–2.869	0.004
Family CEO	–0.348*	0.182	–1.911	0.056
UAFF_BLK	–0.870**	0.428	–2.031	0.042
DUAL_CLASS	0.203	0.234	0.865	0.387
CEO_OWNP	–1.468	1.490	–0.985	0.325
RND2/PPENT	0.113	0.110	1.028	0.304
ADV2/PPENT	–0.509**	0.204	–2.496	0.013
CAPX/REVT	–0.762	0.786	–0.969	0.333
LOG(CEO_TENURE)	0.026	0.068	0.384	0.701
FamCEO *DIV_CEOR	0.791*	0.435	1.820	0.069
SUMSQ12	0.151	0.178	0.851	0.395
C	7.902***	2.190	3.609	0.000

McFadden R^2	0.081
S.D. dependent var	0.433
LR statistic	156.411
Prob(LR statistic)	0
Obs with Dep=0	432
Obs with Dep=1	1,293
Mean dependent var	0.750
S.E. of regression	0.417
Avg. log likelihood	–0.517
Total obs	1,725

Table 10
Div_CEOR, Ratios, Family, and Control Variables
This table presents the results of panel regressions of the family variables and control variables on the incentive compensation ratio (Panel A) and the incentive compensation ratio with joint family percentage and family member as CEO interaction variable (Panel B). The results are for all for 191 firms resulting in 1,283 observations over 10 fiscal years from 1999 through 2008. Appendix B describes variables. I correct standard errors for clustering and time according to Thompson (2011). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. Table includes fixed period dummy variables.

	Incentive Compensation Ratio		**Incentive Comp Ratio w/interaction variable**	
Variable	**Coefficient**	***t*-stat**	**Coefficient**	***t*-stat**
LOG(REVT)	–0.011	–1.024	–0.011	–0.981
LOG(CEO_AGE)	–0.146	–1.460	–0.144	–1.446
LOG(AGE)	–0.048**	–1.964	–0.046*	–1.884
OPMARG [a]	0.001	0.059	0.000	0.019
Tang Asset	0.020	0.548	0.020	0.551
MrktBK	0.002	1.231	0.002	1.250
DIV_CEOR	–0.130***	–4.438	–0.220***	–4.474
BK_LEV_Diff	–0.129**	–1.972	–0.131**	–2.009
Family OWN	–0.221**	–2.113	–0.200*	–1.949
Family CEO	0.033	1.476	0.026	1.150
UAFF_BLK	–0.032	–0.614	–0.031	–0.603
DUAL_CLASS	–0.054#	–1.704	–0.051	–1.567
CEO_OWNP	0.357	0.984	0.362	0.991
RND2/PPENT	0.052***	4.040	0.051***	4.021
ADV2/PPENT	–0.046*	–1.916	–0.047	–1.910
CAPX/REVT	0.264***	2.837	0.262***	2.834
DIV_CEOR* FamCEO			0.101**	2.052
SUMSQ12	0.003***	3.221	0.003***	3.208
LOG(CEO_TENURE)	–0.016	–1.594	–0.015	–1.553
C	1.333	3.647	1.315	3.584

Adj. R^2	0. 237
F-statistic	6.448
Prob(F-statistic)	0
Effects Specification	
Mean dependent var	0.432
Durbin–Watson stat	1.210

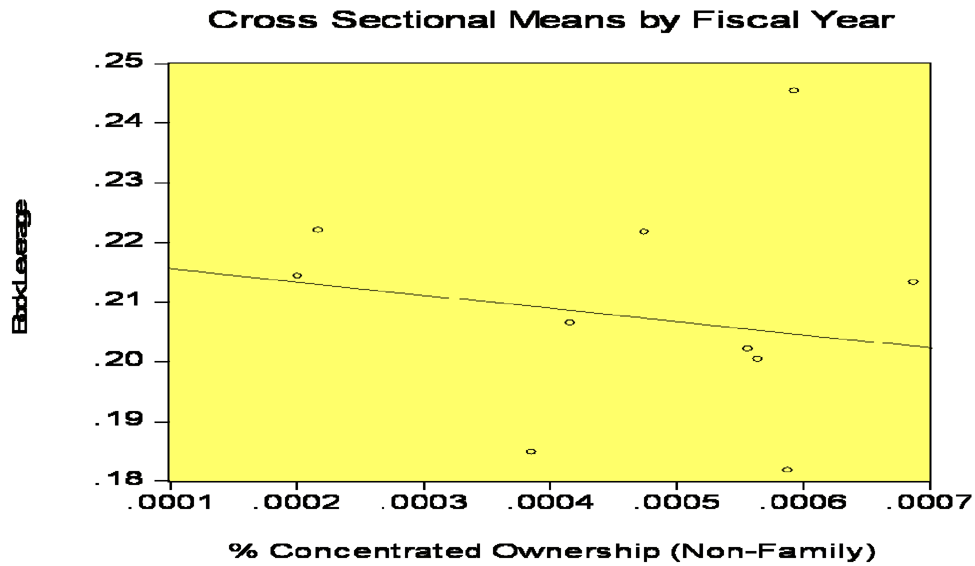
[a] If Operating margin is lagged one year, then the variable remains insignificant (panel A t-stat = 0.47; panel B t-stat = 0.39) with period fixed effects standard error adjustment. Thompson (2011) two-way clustered standard error adjustment is not available with this lagged variable in the regression. The significance of other variables is the same.

FIGURES

Figure 1
The Cross-Sectional Mean Book Leverage

Panel A plots family ownership of less than 1% versus mean book debt ratio, and Panel B plots family ownership equal to or larger than 1% versus mean book debt ratio. Chart A and B presents a graphic relation of the cross-sectional mean book leverage by fiscal year and plot against percentage concentrated ownership.

Panel A: Plot of Nonfamily Ownership and Mean Book Leverage by Fiscal Year



Panel B: Mean Book Leverage by Fiscal Year and Family Firm % Ownership

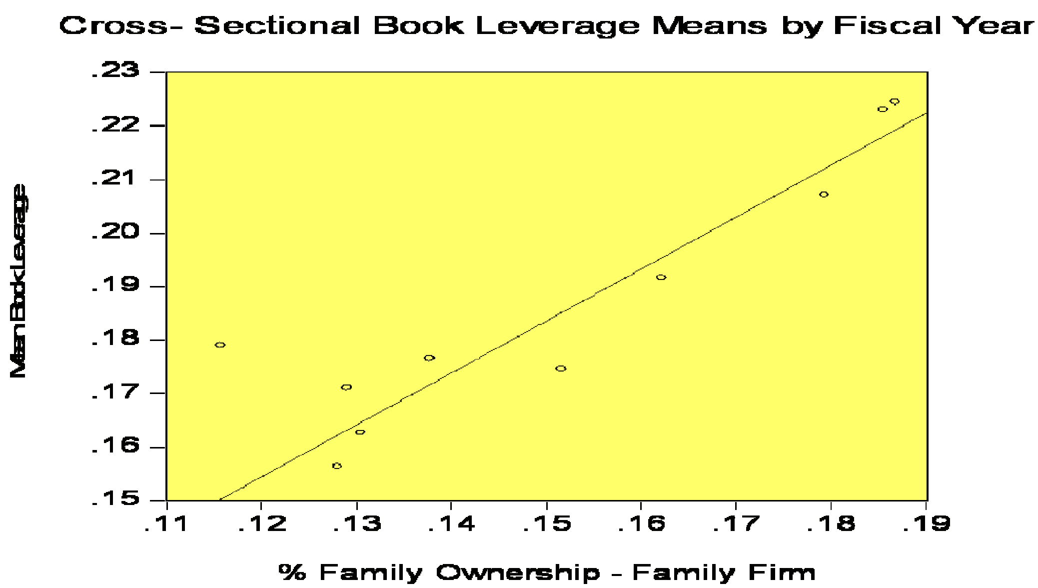
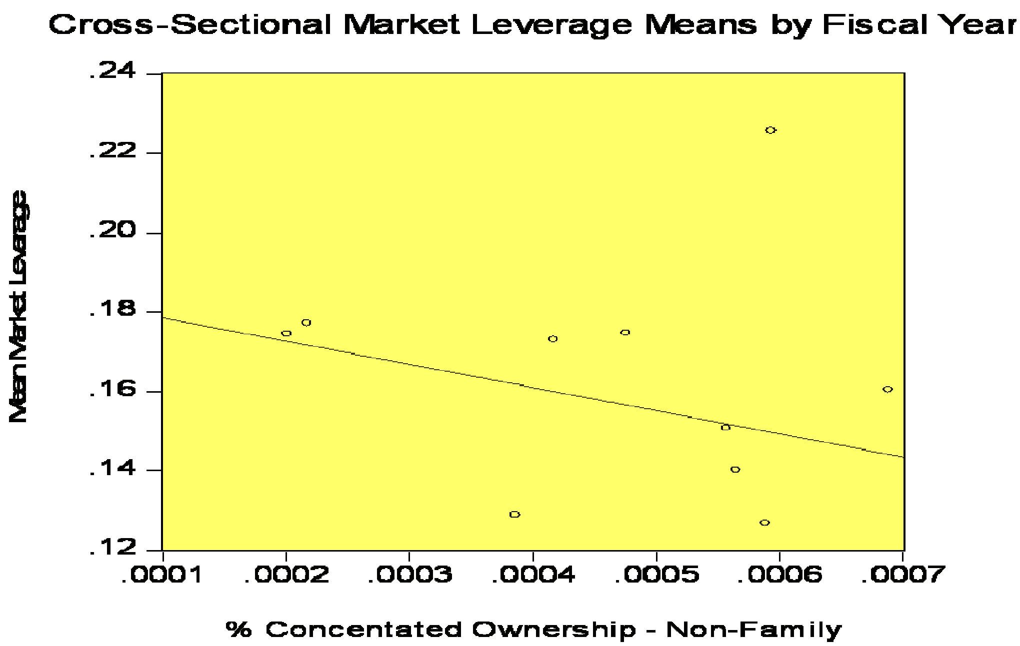


Figure 2
Cross-Sectional Mean Market Leverage
Panel A plots family ownership of less than 1% versus mean market debt ratio, and Panel B plots family ownership equal to or larger than 1% versus mean market debt ratio. Chart A presents a graphic relation of the cross-sectional mean market leverage by fiscal year and plot against percent concentrated ownership.

Panel A: Nonfamily ownership and Mean Market Leverage by Fiscal Year



Panel B: Mean Market Leverage by Fiscal Year and Family Firm % Ownership