ESSAYS ON PUBLICLY TRADED FAMILY FIRMS IN THE UNITED STATES

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Family firms are an important part of the U.S. economy. Using a comprehensive sample of publicly traded family firms in the U.S. this dissertation looks into various aspects of their corporate structure. Specifically, this dissertation studies the industry distribution, capital structure choices, and performance and survival after Sarbanes-Oxley Act of 2002 of family firms. The chapter on industry distribution presents evidence that family firms are less likely to exist in industries where the optimal firm size is larger and more likely to exist in industries with greater amenity potential. Moreover, they are more likely to exist in more mature industries, less likely to exist in industries with more growth opportunities, and less likely to exist in industries with more volatile earnings. The evidence suggests that families choose to set up their companies in industries that require less wealth for control and in industries with less risk, which is consistent with families' higher risk aversion compared to atomistic shareholders. The chapter on capital structure choices presents evidence that family firms carry more debt on average than non-family firms. This is consistent with the agency argument that large shareholders are able to better monitor the company and reduce the agency costs of free cash flow; and therefore, increase the capacity for debt financing. There is also evidence that family firms borrow significantly less of highest and lowest priority debt and significantly more of debt with intermediate priorities than non-family firms. This is consistent with higher risk aversion of families compared to atomistic shareholders. Furthermore, family firms carry significantly less short-term debt and significantly more long-term debt. Moreover, they hold significantly less cash and short-term securities while they pay out significantly more of their earnings as dividends. The chapter on performance and survival presents evidence that family firms significantly outperformed non-family firms during the 2.5 years before Sarbanes-Oxley Act of 2002 and this outperformance disappeared during the 1.5 years after the Act. There is also evidence that family firms were less likely to delist from exchanges after the Act irrespective of whether the delisting was via acquisition or via other reasons.

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Preface

I would like to extend my heartfelt gratitude to my committee members, Professor Ken Lehn, Professor Gershon Mandelker, Professor Sara Moeller, Professor Frederik Schlingemann and Professor Shawn Thomas, who with their patience, continuous encouragement, and invaluable comments and suggestions have made the completion of this dissertation possible. All errors remain my own.

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1 Introduction

Articles in the popular press have documented the importance of family firms in the U.S. economy. *The Economist* reports that family firms make up 40% of the U.S. GDP and 60% of U.S. workforce.[1] Among other notable articles, *The New York Times* article argues that family firms have the ability to train family members in the business from a young age[2] while one *Wall Street Journal* article talks about the feud among family members over control of the company[3] and another *Wall Street Journal* reports the dilemma between wealth maximization and utility maximization among family members over the sale of their publishing company.[4]

Family firms have a number of unique characteristics compared to non-family firms. Family firms on average have both a high level and high degree of concentration of inside ownership relative to non-family firms. Moreover, for 70% of the family firms in the sample, one of the family members is the CEO. The combination of a high ownership stake, a top-level managerial position, and the fact that other family members are employed in the company makes for a situation where the family's portfolio is highly inefficient from a diversification point of view. Consequently, risk preferences are likely to be different for family firms than for non-family firms. Finally, risk preferences in family firms may also be different because of ex ante determined succession plans and therefore less scrutiny from the market for corporate control.

[1] "The family connection," *Economist*, 5 October 1996, 62. These ratios are typically higher for other industrialized countries.

[2] "Do families and big business mix?" *The New York Times*, 24 April 2005, 3.1.

[3] "Strained relations: At News Corp., a bitter battle over inheritance splits family," *The Wall Street Journal*, 1 August 2005, A1.

[4] "Dynasty's dilemma: For Bancrofts, Dow Jones offer poses challenge," *The Wall Street Journal*, 12 May 2007, A1.

Families are similar to company insiders and large stakeholders as they occupy managerial and directorial positions and hold significant voting and cash flow rights in their companies. However, families differ from typical insiders and large stakeholders to a significant extent. First, families see their companies as an asset to pass on to their descendants and therefore, they have a longer term interest in their companies than a typical atomistic shareholder. In relation to this, families also desire to maintain control of their companies through large ownership stakes as well as holding key managerial and directorial positions in the company. Second, families are less diversified than a typical atomistic shareholder as most of family's wealth is tied to the wealth of their companies. Their likely higher risk aversion affects their business choices to maintain survivability of their companies.

Despite their importance and unique characteristics, family firms have recently started to receive attention in the academic literature.[5] This is likely due to the difficulty in setting up a comprehensive sample of such companies. Lacking a clear-cut definition of what constitutes a family firm in the academic literature a family firm is defined in this dissertation as a firm in which at least two members of the same family are either a manager, director, or a five-percent owner of the firm, as stated in the firm's proxy statement. Using this definition a comprehensive sample of 1,123 publicly traded family firms is constructed and various aspects of their corporate structure – specifically their industry distribution, their capital structure choices, and their performance and survival after Sarbanes-Oxley Act of 2002 – are studied.

The dissertation proceeds as follows: Chapter 2 describes the setup of the family firm sample. Chapter 3 presents the study on the industry distribution of family firms. Chapter 4 presents the study on the capital structure choices of family firms. Chapter 5 presents the study on the

[5] See, for example, Anderson and Reeb (2003a, 2003b), Anderson, Mansi and Reeb (2003), Bhattacharya and Ravikumar (2001, 2004), Burkart, Panunzi and Shleifer (2003), Villalonga and Amit (2006), and Miller *et al.* (2007).

performance and survival of family firms after Sarbanes-Oxley Act of 2002. Chapter 6 summarizes the findings and concludes.

2 Family Firms Sample

Public companies generally use two expressions in their proxy statements in order to inform their shareholders that no familial relationships exist in the company. The more common of these statements is similar to "There are no family relationships among any directors or executive officers of the company." The less common of these statements is similar to "Neither the director nominee nor any director nor any of the principal executive officers are related by blood, marriage or adoption in the degree of first cousin or closer." This suggests that familial relationships in or closer than the degree of *first cousin* are worth being reported in a company's proxy statement and the companies that report such relationships can be considered good candidates as family companies.

Panel A of Table 2.1 summarizes the procedure followed in order to identify the family firms sample used in this dissertation. A family firm is defined as any public company, in which there are at least two related people in or closer than the degree of first cousin in a managerial, directorial or five-percent ownership position. Therefore, an array of familial relationships in or closer than the degree of first cousin such as father, daughter, aunt, brother, son-in-law, nephew and their plural forms (full set of these relationships is listed in Panel A of Table 2.1) is set up. Then, entering this array of keywords into Thomson Research Database the "full filing"[6] of all

[6] Most of the companies report familial relationships in the "officers/directors" section of their proxy statements. However, "full filing" search also allows capturing the companies that prefer reporting familial relationships in other parts of their proxy statements. One example is Ford Motor, which reports the familial relationships in the "security ownership" section of its proxy statement.

proxy statements submitted to the SEC between January 1, 2003 and December 31, 2003 are searched (company data is thus from 2002). This initial search returns 6,330 matches. However, many of these matches are companies, in which managers or directors share portion of their ownership with their family members who are not related to the company in other aspects.[7] Therefore, each of these 6,330 matches is searched through in order to eliminate such irrelevant cases. This elimination process leaves 1,401 companies. 19 trusts and funds are further removed. Then, the remaining 1,382 companies are matched with Compustat database, the process of which leaves 1,160 companies. Finally, the companies incorporated outside the United States and companies that have zero assets reported on Compustat for their 2002 fiscal year are removed. The final sample consists of 1,123 family firms.[8] For each of these firms, information about the people who are related to each other, namely their first affiliation with the company and cash flow right, voting power and position in the firm, and degree of familial relationship to each other, are collected. Moreover, information about the top executive of the firm (who carries the CEO title most of the time and the President title if a CEO title is not used in the firm), namely his/her relationship to the family, the year s/he assumed the position, identity of his/her ascendant in the firm, are identified.[9]

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[7] One example is a statement like "(1) Includes 875,000 shares subject to currently exercisable options; and includes 95,942 shares and 60,000 shares subject to currently exercisable options owned beneficially by Mr. Millar's wife, as to which Mr. Millar disclaims beneficial ownership.*" Here, Mr. Millar's wife is not related to the company in a managerial, directorial or five-percent ownership position but shares part of the ownership reported for her husband.

[8] Some companies, albeit not many, append their proxy statements to their 10-Ks and do not submit a separate proxy statement. Also, some companies do not report the type of familial relationships that exist even though there are members of the same family employed in the company. One example to the latter group of companies is Washington Post, which is owned by the Graham Family and employs the Family's three members. However, how these three people are related to each other is not reported in the proxy statement. Because this dissertation only looks into proxy statements and uses an array of familial relationships as keywords, it is not able to capture neither group of companies in the sample of family companies.

[9] For example, the Levin Family holds 22.87% of the voting power at Spherix Inc. Gilbert Levin holds 10.70% of the voting power and is chairman, chief executive officer and treasurer of the company. He is also the husband,

The remaining companies on Compustat are classified as non-family firms, which serve as the control group in this dissertation. To make both samples comparable similar criteria are applied to this group. Panel B of Table 2.1 summarizes the procedure. The number of public companies on Compustat for the fiscal year 2002 turns out to be 9,258. Then, the 1,261 companies that are incorporated outside the United States, the duplicate entries of 19 companies, and the 78 companies with zero reported assets are removed. The final Compustat sample consists of 7,900 companies for the fiscal year 2002, 1,123 of which are family firms and the remaining 6,777 of which are non-family firms.

Because the process to setup the sample of family firms uses all exchange-listed public companies in the United States, the family firms sample used in this dissertation is significantly more comprehensive than the family firms samples used in studies such as Anderson and Reeb (2003a, 2003b), Anderson, Mansi and Reeb (2003), Villalonga and Amit (2006), and Miller *et al.* (2007). This, in turn, increases the reliability of the results and reduces the biases related to sample selection.

3 Industry Distribution of Family Firms

The differences between family firms and non-family firms as well as between families and typical insiders and large stakeholders discussed in Chapter 1 make it interesting for a case whether family firms differ from non-family firms in their industry characteristics. Specifically,

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father, and uncle of Karen Levin, Carol Sanchez, and Richard Levin, respectively. Karen Levin holds 11.20% of the voting power and is a director and vice president of the company. Carol Sanchez holds 0.86% of the voting power and is a director of the company. Richard Levin holds 0.11% of the voting power and is vice president and chief financial officer of the company. The company has single class of shares so cash flow right of these individuals is the same as their voting power. Also, Gilbert Levin has been the chief executive officer of the company since the company's inception in 1967.

this chapter tests whether certain industry characteristics such as industry's maturity, optimal company size, growth opportunities, profitability, earnings volatility, and amenity potential explain family firms' existence in that industry.

Main findings of the chapter are summarized as follows: Family firms are more likely to exist in more mature industries. This can be related to families' ability to train their descendants in the family business and this early-on training's greater value in traditional industries compared to modern industries. Family firms are also more likely to exist in industries where the optimal company size is smaller. Families desire to maintain the control of their companies and with their limited wealth this may be easier if their company's size is small. There is also evidence that family firms are more likely to exist in industries with fewer growth opportunities, higher profitability and lower earnings volatility. These observations can be due to families' higher risk aversion compared to atomistic shareholders. Finally, family firms are more likely to exist in industries with greater amenity potential (publishing and broadcasting industries). Companies in industries with greater amenity potential offer utility beyond wealth maximization and such companies may be more important for families as they see their companies as not just a business but an asset to pass on to their descendants.

The chapter proceeds as follows: Section 3.1 briefly describes the sample. Section 3.2 describes the theory and associated predictions while Section 3.3 describes the experimental design that is used to test them. Section 3.4 presents and discusses the results. Section 3.5 concludes.

3.1 Sample Setup

The process used to setup the sample in this chapter is described in Chapter 2. Briefly, an array of familial relationships in or closer than the degree of *first cousin* is used to search through

proxy statements to the SEC during 2003 to identify family firms. After matching with Compustat, there are 1,123 family firms and 6,777 non-family firms in the sample.

Table 3.1 presents the industry distribution of family firms as measured by the total book value of assets in an industry accounted for by family firms. Panel A1 of Table 3.1 presents the 50 industries as defined at the 4-digit SIC-code level where the family firms hold the largest portion of industry assets. The distribution suggests that family firms hold more of the industry assets in industries which are composed of relatively smaller companies; industries with fewer growth opportunities; and industries with greater amenity potential. Panel A2 of Table 3.1 presents the 50 industries as defined at the 4-digit SIC-code level where the family firms hold the smallest portion of industry assets. The distribution suggests that family firms hold less of the industry assets in industries which are composed of relatively larger companies and industries with more growth opportunities. Panels B1 and B2 of Table 3.1 present industry distribution of family firms where family's voting power is at least 25%, and the distribution is similar to that in Panels A1 and A2 of the same table.

3.2 Theory and Predictions

Demsetz and Lehn (1985) argue that in order to maintain effective and concentrated ownership a small group of owners need to commit more wealth to their company as it grows and the need for capital increases. They emphasize that these owners should only purchase new shares at risk-compensating prices, which discourages them from attempting to maintain highly concentrated ownership in larger companies. Families desire to maintain control in their companies and it is difficult to do so in larger companies with a limited amount of wealth. Therefore, family firms should be more likely to exist in industries where the optimal company size is smaller.

Fama and Jensen (1983) argue that large shareholders are likely to value uncertain cash flows lower than atomistic shareholders, which suggests that large shareholders are more risk averse. Stein (1989), on the other hand, demonstrates that shareholders with longer investment horizons help reduce the myopic decision making by the management, i.e. such shareholders would prefer market value rules more than atomistic shareholders. Insofar that most of their wealth is tied to the fortunes of their companies, families are more risk averse than atomistic shareholders. Thus, it can be expected that they prefer less uncertainty both in their business and in the cash flows of their business. Therefore, family firms should be more likely to exist in industries with fewer growth opportunities, higher profitability and lower earnings volatility.

Demsetz and Lehn (1985) argue that companies, in which owners can get utility from being able to influence the type of goods produced, can be considered to have greater amenity potential and they identify professional sports clubs and mass media firms as such companies. Families see their companies as an asset to pass on to their descendants and it can be argued that families' connection to their companies increases with the company's amenity potential even though there is no systematic way to identify this. Therefore, family firms should be more likely to exist in industries with greater amenity potential. In line with Demsetz and Lehn (1985), this chapter identifies newspaper publishing, periodical publishing, radio broadcasting, and television broadcasting (SIC codes 2711, 2721, 4832, 4833, respectively) as industries with greater amenity potential.

3.3 Experimental Design

Portion of industry's book value of assets accounted for by family firms can proxy for the level of family firms' existence in an industry. Because this ratio is between 0 and 1, it is more appropriate to utilize censored Tobit regressions. Also, analysis developed by Fama and MacBeth (1973) will be used in order to check for the consistency of coefficients over time. Median number of years a company existed in an industry (*Log(mnYear)*) and number of companies in an industry (*Log(nFirm)*) can proxy for industry's maturity. Median book value of assets in an industry (*Log(BVA)*) can proxy for industry's optimal

company size. Median market-to-book assets ratio (*mMVA/BVA*) can proxy for industry's growth opportunities. Median operating income before depreciation-to-book value of assets (*OIbD/BVA*) can proxy for industry's profitability. Median 5-year standard deviation of operating income before depreciation-to-book value of assets (*mEarnVol*) can proxy for industry's earnings volatility. Finally, a dummy variable which takes the value 1 if the industry is one of newspaper publishing, periodical publishing, radio broadcasting, and television broadcasting industries; and 0 otherwise (*AmeDum*) can proxy for industries with greater amenity potential. The empirical results of the univariate and multivariate analyses are discussed in the next section.

3.4 Results and Discussion

Panels A and B of Table 3.2 present the univariate results between the industries where the family firms hold nonzero portion of industry assets and industries where there are no family firms. In Panel A, the comparison is between industries with family firms and industries with no family firms while in Panel B, the comparison is between industries with family firms where the family's voting power is at least 25% and industries with no such family firms. Industries with family firms are grouped into quartiles based on family firms' presence in that industry. Thus, the groups are industries where family firms hold up to 25% of industry assets; industries where family firms hold between 25% and 50% of industry assets; industries where family firms hold between 50% and 75% of industry assets; and industries where family firms hold more than 75% of industry assets.

Univariate results suggest that industry's maturity is not significantly different between industries with family firms and industries with no family firms except for relatively few industries where family firms hold more than 75% of industry assets. These industries are significantly more mature than industries with no family firms. The optimal number of

companies in industries with family firms is significantly greater than that in industries with no family firms except for industries where family firms hold more than 75% of industry assets. Actually, there seems to be an inverse-U relationship between optimal number of companies in an industry and family firms' holdings in that industry.

Univariate analysis further suggests that optimal company size in an industry is not significantly different between industries with family firms and industries with no family firms. The median growth opportunities measure is, on the other hand, significantly greater in industries with no family firms than those with family firms. The median profitability measure is significantly less while the median earnings volatility measure is significantly greater in industries with no family firms than those with family firms. Finally, industries with greater amenity potential all have family firms.

Panels A and B of Table 3.3 present the results of multivariate analysis of industry distribution of family firms. In Panel A, the dependent variable is portion of industry assets accounted for by family firms while in Panel B, the dependent variable is portion of industry assets accounted for by family firms where the family's voting power is at least 25%. The analysis utilizes censored Tobit regressions because the dependent variable is restricted between 0 and 1 and also Fama-MacBeth style regressions run annually between 1992 and 2006 in order to check the consistency of coefficients over time.

The results in Panel A of Table 3.3 suggests that family firms are more likely to exist in more mature industries. The coefficient on *Log(mnYear)* is significant in 10 of 15 years at least at 10% while the average coefficient (0.0877) is significantly different from zero at 1%. There seems no relationship between the optimal number of companies in an industry and family firms' holdings in that industry. The coefficient on *Log(nFirm)* is not significant in any of the sample years;

however, the average coefficient (0.0183) is significantly different from zero at 1%. There is strong evidence that family firms are more likely to exist in industries where the optimal company size is smaller. The coefficient on *Log(BVA)* is significant in all years at least at 10% while the average coefficient (-0.0442) is significantly different from zero at 1%. There is also some evidence that family firms are more likely to exist in industries with fewer growth opportunities, higher profitability and lower earnings volatility. The coefficients on *mMVA/BVA*, *mOIbD/BVA*, and *mEarnVol* are significant in 9, 5, and 7 of 15 years, respectively, at least at 10% while the average coefficients (-0.0477, 0.2599, and -0.6745, respectively) are significantly different from zero at 1%. Finally, there is strong evidence that family firms are more likely to exist in industries with greater amenity potential (publishing and broadcasting industries) as the coefficient on *AmeDum* is significant in all years at least at 10% and the average coefficient (0.4956) is significantly different from zero at 1%.

The results in Panel B of Table 3.3 are somewhat different from those in Panel A. However, the average coefficients in Panel B are similar to their counterparts in Panel A. The results suggest that family firms where the family's voting power is at least 25% are more likely to exist in more mature industries. The coefficient on *Log(mnYear)* is significant in 14 of 15 years at least at 10% while the average coefficient (0.0854) is significantly different from zero at 1%. The results also suggest that such family firms are more likely to exist in industries, where the optimal number of companies is greater and the optimal company size is smaller. The coefficients on *Log(nFirm)* and *Log(mBVA)* are significant in 12 and 15 of 15 years, respectively, while the average coefficients (0.0426 and -0.0499, respectively) are significantly different from zero at 1%. There is also some evidence that family firms where the family's voting power is at least 25% are more likely to exist in industries with fewer growth opportunities but there is not much evidence that

such family firms are more likely to exist in industries with higher profitability and lower earnings volatility. The coefficients on *mMVA/BVA*, *mOIbD/BVA*, and *mEarnVol* are significant in 10, 3, and 3 of 15 years, respectively, at least at 10% while the average coefficients (-0.0535, 0.2272, and -0.5690, respectively) are significantly different from zero at 1%. Finally, there is strong evidence that family firms where the family's voting power is at least 25% are more likely to exist in industries with greater amenity potential (publishing and broadcasting industries). The coefficient on *AmeDum* is significant in 14 of 15 years at least at 10% and the average coefficient (0.3924) is significantly different from zero at 1%.

The observation that family firms are more likely to exist in more mature industries can be explained by the families' ability to raise their descendants in the business from early on. This family-initiated business experience is more valuable in traditional industries such as food and apparel than in modern industries such as computers and biotech, where formal education is required. Family firms are also more likely to exist in industries, where the optimal company size is smaller. This can be due to families' desire to keep control of their company with limited wealth. Having limited wealth it is easier for families to maintain control of a smaller company and thus, industries where small companies are optimal form of business organizations are more attractive for family-owned firms. There is also evidence that family firms are less likely to exist in industries with more growth opportunities, less profitability and higher earnings volatility. This observation can be due to higher risk aversion of families compared to atomistic shareholders as most of families' wealth is tied to their company's fortunes. Therefore, families may prefer industries where business risk is relatively lower. Finally, family firms are more likely to exist in industries with greater amenity potential (publishing and broadcasting industries). Such industries offer utility beyond wealth maximization such as through the ability

to create and affect public opinion, which may be more important for families as they see their companies as not just a business but an asset to pass on to their descendants.

3.5 Concluding Remarks

This chapter concentrates on the industry distribution of an important segment of U.S. economy. The industry distribution of public companies, in which families hold ownership stake and managerial and directorial positions, is studied. The empirical results are summarized below.

There is strong evidence that family firms are more likely to exist in industries where the optimal company size is smaller. This can be related to the limited wealth of a family and their desire to maintain control of the company. Moreover, family firms are more likely to exist in industries with greater amenity potential such as publishing and broadcasting industries.

There is also evidence that family firms are more likely to exist in mature industries. This can be related to family members' ability to get involved with company business at an earlier age and the experience requirement in mature industries. Evidence also suggests that family firms are less likely to exist in industries with more growth opportunities and with larger earnings volatility. This can be related to higher risk aversion of families compared to atomistic shareholders as more of their wealth is tied to their company's fortunes.

Overall, the evidence in this chapter suggests that families prefer setting up their companies in industries where less wealth is required to maintain control; in industries with greater amenity potential; and in industries with less business and cash flow risk.

4 Capital Structure Choices of Family Firms

The differences between family firms and non-family firms as well as between families and typical insiders and large stakeholders discussed in Chapter 1 make it interesting for a case whether family firms and non-family firms have systematic differences when it comes to their capital structure choices. Specifically, this chapter studies the level of debt, the maturity and priority structure of debt and the cash holdings and dividend policy based on a set of hypotheses developed in the literature.

Anderson and Reeb (2003a) analyze whether founding-family ownership is correlated to the firm's capital structure using non-utility and non-financial companies in the S&P 500 Index. They observe that founding-family ownership has little association with the firm's capital structure. They also observe that founding family's control of board seats is not associated with the corporation's financing decisions. Combined with their finding that family firms are more valuable on average than non-family firms, they conclude that family ownership, in fact, reduces conflicts of interest within the company in contrast to the common perception that families expropriate wealth from minority investors. This chapter extends their work in the following ways:

First, Anderson and Reeb concentrate only on the companies in the S&P 500 Index. The family firm sample in this chapter is derived from all exchange-listed public companies in the U.S. and is, therefore, more comprehensive. S&P 500 Index is performance based, i.e. companies have to satisfy certain performance criteria in order to be included in the Index. It is likely that capital structure of companies that satisfy such performance criteria is systematically different from that of companies in a more comprehensive sample. Therefore, this chapter will provide more comprehensive tests of the above-mentioned hypotheses.

Second, Anderson and Reeb measure an average level of debt, defined as long-term debt divided by book value of assets, of 19.0% for family firms and 18.4% for non-family firms in their sample and the difference is statistically not significant. Using the same leverage definition the sample in this chapter provides an average leverage (winsorized at 95%) of 17.5% for family firms and 19.0% for non-family firms for the years 1993 through 2002 and the difference is statistically significant at 1%. This result suggests that there is more to say about leverage in family firms than what is offered in Anderson and Reeb.

Last but not least, Anderson and Reeb report higher densities of family firms in all of the one-digit SIC codes than this chapter (except 0 and 9, in which they do not have any observation). Overall, 37% of 319 companies in their sample carry founding-family ownership while 14% of 7,900 companies in this chapter are family firms. Systematic differences in capital structure likely exist due to within and between industry variations; therefore, composition of samples may have an impact on the results. For example, Jensen and Meckling (1976) argue that corporations determine their capital structure by trading off the benefits against the costs of debt. In this framework, for example, industries, in which the asset substitution problem is more limited, likely have higher leverage. The family firms in this chapter seem to concentrate in such industries while such an observation is not obvious for Anderson and Reeb's sample.

The main findings of this chapter are summarized as follows: Agency theory suggests, on the one hand, that in the companies with concentrated ownership majority owners can extract private benefits from the company at the expense of minority owners. On the other hand, large shareholders are able to better monitor the management and reduce the agency costs of free cash flow. There is evidence that family firms carry more debt on average than non-family firms, which suggests that monitoring benefit of family ownership outweighs the likely expropriation.

Underinvestment argument suggests that companies with high growth opportunities tend to borrow at shorter maturities. Better monitoring ability, on the other hand, increases the family firms' ability to borrow at longer maturities as it decreases the underinvestment and asset substitution problems. Consistent with the monitoring argument, the evidence suggests that family firms use significantly less amount of short-term debt and more amount of long-term debt than non-family firms. However, this result is sensitive to the period used to define short- and long-term debt.

Consistent with the argument that large shareholders are more risk averse, there is evidence that family firms borrow significantly less of high priority debt and significantly more of low priority debt than non-family firms. In line with this argument, family firms also use significantly less of preferred stock financing than non-family firms.

Pecking order of financing suggests that companies use equity financing as a last resort and cover their financial deficit by issuing debt if internal cash flow is not sufficient. Neither debt financing nor equity financing seems desirable for family firms. Using debt to cover financial deficit may increase company's financial risk while using equity may dilute family's control in the company. Therefore, internal cash flow may be more valuable to a family firm than a non-family firm. If so, family firms are expected to accumulate more cash and short-term securities and pay out less of their earnings as dividends. Inconsistent with this argument, however, the evidence suggests that family firms hold significantly less cash and short-term securities on their balance sheets while they pay out more of their earnings as dividends.

The chapter proceeds as follows: Section 4.1 briefly describes the sample. Section 4.2 presents the analysis of capital structure choices of family firms and non-family firms. Specifically, each subsection of Section 4.2 provides the theory behind one of level of debt, maturity structure of

debt, priority structure of debt, and cash holdings and dividend policy and derives associated predictions and then describes the experimental design and finally presents and discusses the results. Section 4.3 concludes.

4.1 Sample Setup

The process used to setup the sample in this chapter is described in Chapter 2. Briefly, an array of familial relationships in or closer than the degree of first cousin is used to search through proxy statements to the SEC during 2003 to identify family firms. After matching with Compustat, there are 1,123 family firms and 6,777 non-family firms in the sample.

Capital structure literature uniformly uses panel data for analysis. Following this, this chapter uses panel data in multivariate settings. This is justifiable in the sense that family firms are long-term investments of families and thus, they do not change hands frequently. Therefore, family and non-family sample of 7,900 companies set as of 2002 is used as a basis and two samples of these companies, one that spans the 1993-2002 period (thus, making sure every firm survives in the sample) and the other that spans the 1996-2005 period (thus, the sampling year is almost equidistant from endpoints), are used in the univariate and multivariate analyses that follow.

Table 4.1 reports statistical distribution of the variables used in univariate and multivariate settings throughout this chapter. Panels A1 through A4 report statistics from 1993-2002 period while Panels B1 through B4 report statistics from 1996-2005 period for level of debt, maturity structure of debt, priority structure of debt, and cash holdings and dividend policy, respectively. The statistics, on average, suggest that there are many outliers in the sample. For example, return on assets (ROA) among 7,876 companies is -186% for the 1993-2002 period even at the 5th percentile (same statistic is -205% for the 1996-2005 period). Having many outliers have two

implications: (1) Comparison of medians should be preferred over means in univariate statistics, (2) Winsorization, trimming, or averaging over longer time series should be utilized in multivariate analyses. This chapter, therefore, concentrates on medians for univariate comparison of family firms and non-family firms while winsorization at 5% and 95% is utilized for some variables in multivariate analyses.

4.2 Capital Structure Choices

There has been extensive academic research to explain the variation in capital structure since the irrelevance theorems of Modigliani and Miller (1958, 1963). One of such explanations concentrates on the contracting costs that arise between shareholders and creditors. How ownership is structured in a corporation may be related to the likelihood that such potential conflict exists between these two stakeholders.

General perception is that large shareholders have greater incentive to monitor the company; however, they also have the ability to expropriate wealth from minority investors. Families share the same interests as other large shareholders to a significant extent. They also have some unique interests, though. One such interest is that families are likely less diversified than other large shareholders, i.e. most of their wealth is tied to the wealth of their company. This suggests that they are more risk averse than other large shareholders. Another unique interest is that families are more concerned about the survival of their companies. They see their corporations as an asset to pass onto their descendants. This implies that they likely have longer investment horizons than other large shareholders. Added to the similar interests shared with large shareholders, these unique interests of families may affect the capital structure choices their companies make as will be discussed in the following subsections.

4.2.1 Level of Debt

4.2.1.1 Theory and Predictions

Families like other large shareholders have the ability to better monitor the management. Demsetz (1983) and Demsetz and Lehn (1985) recognize that concentrated ownership makes it privately rational for the shareholder to monitor the management because the benefits of monitoring will be borne by fewer individuals. However, the fact that corporations with dispersed ownership structure also exist in the market, they argue, suggests that there are also costs associated with concentrated ownership. Shleifer and Vishny (1986) model that large shareholders are able to achieve two tasks through the ability to better monitor the management: (1) They discipline inefficient managements, (2) They increase the price paid in the case of a takeover. Jensen (1986) states that monitoring ability of large shareholders is likely to prevent the management from undertaking investments with returns below the corporation's cost of capital and thus reduce the agency costs of free cash flow. Therefore, large shareholders offer the benefit of better monitoring of the management, which, in turn, reduces non-pecuniary consumption and also increases free cash flow. Assuming that family firms have more concentrated ownership structure on average due to families' ownership,[10] this monitoring benefit will be greater and thus likely increase the debt capacity in such companies. One would then expect to see higher leverage for family firms than non-family firms.

Families like other large shareholders may choose to use their control to expropriate wealth from minority investors. Faccio, Lang and Young (2001) study wealth expropriation by large shareholders through lower dividend payouts in East Asia and argue that expropriation is especially severe if large shareholders' control rights are greater than their ownership rights. This

[10] This assumption begs for further analysis, though. Anderson and Reeb (2003a) report an average outside blockholder ownership of 11.75% for non-family firms and 8.08% for family firms in the S&P 500 Index and the difference is statistically significant at 1%.

relative control of a large shareholder can be strengthened if the top executive is related to him/her (as suggested by Anderson and Reeb (2003a)) and/or if there are more people related to him/her, who are employed in the company. Consequently, relative control is likely stronger for family firms because they are generally identified with a dual class ownership structure with the family holding the high voting class shares and family members usually occupying the top management positions. If families then aim at expropriation, one would expect to see lower leverage for family firms than non-family firms as this increases their free cash flow. However, if they want to signal that expropriation is not their goal, then family firms are likely to carry more debt on average.

Ellul (2008WP) reports that control motives influence capital structure decisions. Family firms, on average, have higher leverage than non-family firms and this differential increases in countries with weakest legal protection of minority shareholders. On the other hand, family firms use less debt when the family holds the control of the firm either through ownership or through a mechanism. Ellul, Guntay and Lel (2006WP) argue that family firms that originate in weak investor protection environments have higher cost of debt than non-family firms while family firms that originate in strong investor protection environments have lower cost of debt than non-family firms.

How large shareholders and thus families affect the investment decisions of companies is not quite clear. On the one hand, Fama and Jensen (1983) argue that large shareholders likely value uncertain cash flows lower than atomistic shareholders due to higher risk aversion of large shareholders. Then, they will aim to reduce financial risk and thus increase the probability of the firm's survival. Another implication of high risk aversion of large shareholders could be that they become like creditors in the firm. Harris and Raviv (1990) have a similar view: In their

model, debt mitigates the problem that managers will not accept to liquidate the company even though it is more profitable to do so by giving the creditors the option to force liquidation. On the other hand, Stein (1989) demonstrates that shareholders with long investment horizons help reduce the myopic decision-making by the management, i.e. such shareholders would prefer market value rules more than atomistic shareholders. If the survival of their firm is a family's prior goal or they do not want to be forced to liquidate their firm, then one would expect to see lower leverage for family firms. Also, family wealth is tied to the fortunes of the business the family is in to a significant extent. Therefore, it is to family's advantage to mitigate any costs due to suboptimal decision-making in the company. If families then use market value rules better than atomistic shareholders, family firms will be valued higher on average and this, in return, implies lower leverage for family firms for a given level of valuation. Thus, an observation that family firms carry less debt than non-family firms can be consistent both with families' high risk aversion and their ability to use market value rules better.

Overall, a high leverage for family firms when compared to non-family firms is consistent with family's ability to better monitor the management and thus to reduce non-pecuniary consumption of company insiders and increase company's debt capacity. A high leverage is also consistent with the family signaling the market that wealth expropriation is not their goal or committing itself to reduce the agency costs of free cash flow. A low leverage, on the other hand, is consistent with family's intention to expropriate wealth from minority shareholders. A low leverage is also consistent with family's higher risk aversion as most of their wealth is tied to the fortunes of the company.

4.2.1.2 Experimental Design

Harris and Raviv (1991) suggest that variables that proxy for firm size, growth opportunities, profitability, risk, and free cash flow are related to leverage. Common predictions are that leverage increases in firm size and risk and decreases in growth opportunities while its relation to firm profitability and free cash flow depends on the trade-off between agency cost and asymmetric information approaches. Leverage decreases in profitability and increases in free cash flow in the agency cost approach and these predictions are reversed in the asymmetric information approach.

Leverage measure will be based either on book value or market value even though market leverage is preferred in the literature. In either case, book value of debt is used in the numerator, which is sum of short-term debt and long-term debt. Book leverage then normalizes book value of debt by book value of assets while market leverage normalizes book value of debt by market value of assets. The natural logarithm of book value of assets is a proxy for firm size. Tobin's *q* ratio, which is measured as market value of assets divided by book value of assets, is a proxy for the company's growth opportunities. Return on assets is used to proxy firm's profitability. Firm's free cash flow can be measured using the formula in Lehn and Poulsen (1989) and normalized by book value of equity. Because the goal of this chapter is to see whether family existence has additional explanatory power in capital structure, a family firm dummy (1 for family firms; 0 otherwise) will be included in the multivariate settings.

4.2.1.3 Results and Discussion

Panels A1 through B3 of Table 4.2 present the univariate results of the variables used in the analysis of level of debt. Panels A1 through A3 report statistics from 1993-2002 period while Panels B1 through B3 report statistics from 1996-2005 period. The results are similar in either

period; therefore, only results from 1993-2002 period will be discussed below. Contrary to the common perception Panel A1 of Table 4.2 suggests that family firms are larger than non-family firms at the median. The median family firm has a book value of assets of $163.1 million while the median non-family firm's corresponding value is $149.5 million. Furthermore, family firms have fewer growth opportunities than non-family firms as measured by Tobin's *q* ratio (market-to-book assets). Median Tobin's *q* ratio for family firms is 1.31 while the corresponding ratio for non-family firms is 1.70. Family firms are also more profitable at the median than non-family firms. Median return on assets for family firms is 1.6% while it is 0.4% for non-family firms. Finally, family firms generate 16 cents of free cash flow per dollar of book equity while non-family firms generate 12 cents. The differences in the above variables are all statistically significant at 1%.

Book leverage and market leverage in Panel A1 of Table 4.2 have opposite results, however. Book leverage, defined as total debt divided by book value of assets, is less for family firms (19.9% at the median) than for non-family firms (22% at the median). Market leverage, defined as total debt divided by market value of assets, on the other hand, is greater for family firms (13.6% at the median) than for non-family firms (10.9% at the median). Both differences are statistically significant at the 1%. As the numerator is same in both ratios, this seemingly conflicting result suggests that family firms are valued less on average in the market than non-family firms. Multivariate analysis that follows may clarify this issue better.

Panels A1 through B2 of Table 4.3 present the results of various multivariate specifications, in which book leverage (Panels A1 and B1) and market leverage (Panels A2 and B2) are the dependent variables and they are regressed on proxies for size, growth opportunities, profitability and free cash flow plus a dummy variable that takes the value 1 if the observation is a family

firm. The sample period is either 1993-2002 (Panels A1 and A2) or 1996-2005 (Panels B1 and B2). The results in each panel are presented separately for the overall sample in models 1-3, for the sample that excludes utilities and financials in models 4-6, and for the sample that excludes utilities and financials and where family's voting power is at least 25% in models 7-9. Year controls and industry controls (either SIC manual divisions as defined in Kahle and Walkling (1996), or Fama-French 38 industries, or 2-digit SIC codes) are included in each model.

Book leverage regressions (Panels A1 and B1) produce mixed results regarding level of debt in family firms. The coefficient on *FFDum* is significant in only four models in either panel and the significance disappears as more restrictive industry controls are applied. The coefficients on *FFDum* become more significant as they become more positive and lose significance as they become close to zero or negative. This suggests that family firms carry on average more book debt than non-family firms. Also the coefficients on *FFDum* become more positive if the sample is restricted to non-utilities and non-financials and where family's voting power is at least 25%.

Market leverage regressions (Panels A2 and B2), on the other hand, quite strongly suggest that family firms carry more debt on average than non-family firms. The coefficient on *FFDum* is positive and highly significant in all models in either panel ranging from 0.5% to 2.8% for 1993-2002 period and 0.5% to 2.7% for 1996-2005 period. The coefficients increase as the sample becomes more restrictive; however, they decrease as the industry controls become more restrictive. This is consistent with empirical evidence that documents strong industry effects in debt ratios (Schwartz and Aronson (1967)). The results in the most restrictive sample (Model 9 in both time periods) suggest that family firms carry about 1.05% more debt than non-family firms at the mean (using 1993-2002 period). Considering that 14.85% of non-family firms'

market value of assets is debt on average a coefficient of 1.05% on the *FFDum* implies that family firms carry about 7.07% more debt on average than non-family firms.

Overall, the multivariate specifications suggest that family firms carry more debt, on average, than non-family firms and the difference becomes larger when utilities and financials are excluded. The evidence that family firms carry more debt than non-family firms is consistent with the agency hypothesis that family existence decreases the free cash flow problem and thus increases the company's debt capacity as well as the signaling hypothesis that commits families from wealth expropriation of minority shareholders.

4.2.2 Maturity Structure of Debt

4.2.2.1 Theory and Predictions

The choice for the maturity structure of debt for any company seems to be related mainly to its informational asymmetries. Myers (1977) demonstrates that the underinvestment problem is more severe for corporations with more growth options. Using restrictive covenants, setting a low leverage level or borrowing at shorter effective maturity can help mitigate the underinvestment problem. Therefore, other things being equal, companies with more growth opportunities either carry lower debt in their capital structures or borrow at shorter terms, as evidenced in Barclay and Smith (1995a). Moreover, Flannery (1986) argues that companies with large informational asymmetries tend to carry debt with shorter maturities as long-term debt has larger information costs. Family firms also likely prefer debt with fewer restrictive covenants as covenants may restrict the amenity potential of the business for the family. Moreover, insofar that family ownership helps reduce agency costs between shareholders and creditors, as evidenced in Anderson, Mansi and Reeb (2003), or informational asymmetries thereof, family firms will be able to carry more debt or borrow at longer maturities than non-family firms.

Overall, use of less short-term debt and more long-term debt in family firms compared to non-family firms is consistent with the ability of family ownership to reduce informational asymmetries and thus to borrow at longer maturities. Use of more short-term debt and less long-term debt, however, can be attributed to more growth opportunities of family firms compared to non-family firms. (Family firms have significantly lower Tobin's *q* ratios than non-family firms;[11] therefore, this latter argument is not likely to be supported.)

4.2.2.2 Experimental Design

In their study of determinants of maturity structure of debt, Barclay and Smith (1995a) use Tobin's *q* ratio, market value of assets, abnormal earnings and term structure in order to explain the characteristics of companies that carry debt with longer maturity.[12] First, firm's growth opportunities are related to its various policy choices, namely financing, compensation and dividend policies as evidenced by Smith and Watts (1992). Companies with more growth opportunities are likely to issue short-term debt in order to reduce the possible underinvestment and asset substitution problems. Second, issuing public debt has substantial fixed costs; therefore, larger companies can benefit from economies of scale. Smaller companies tend to borrow from banks, which generally lend at shorter maturities. Third, companies with larger informational asymmetries tend to issue short-term debt because of the larger information costs associated with long-term debt. Finally, Brick and David (1985) suggest that upward sloping yield curve increases the tax benefits of long-term debt over short-term debt and vice versa.

Insofar that family ownership helps reduce informational asymmetries between the company and various stakeholders, family firms are able to increase their debt capacity with longer maturity.

[11] See Panel A1 of Table 4.4.

[12] They also use a regulation dummy to identify regulated industries, but this variable is not relevant for the sample period used in this chapter.

Including a family firm dummy (1 for family firms; 0 otherwise) in the multivariate settings will help to answer this empirical question.

4.2.2.3 Results and Discussion

Panels A1 through B2 of Table 4.4 present the univariate results of the variables used in the analysis of maturity structure of debt for manufacturing firms (SIC codes 2000 through 5999). Panels A1 and A2 report statistics from 1993-2002 period while Panels B1 and B2 report statistics from 1996-2005 period. The results are similar in either period; therefore, only results from 1993-2002 period will be discussed below. The results in Panel A1 suggest that the choice for maturity structure of debt weakly differs between family firms and non-family firms. The choice is only different if short-term debt is defined as debt due in the next year and long-term debt is defined as debt due after next year. Under such definition family firms carry less short-term debt at the mean (33.8% vs. 35.9%) and more long-term debt both at the mean and the median than non-family firms (72.4% vs. 69.8% at the median). These numbers are significantly different at 5%. Using other periods to define short-term debt and long-term debt produce insignificant results as presented in the panel.

Panels A and B of Table 4.5 present the results of several multivariate specifications for manufacturing firms (SIC codes 2000 through 5999), in which various definitions of short- and long-term debt are regressed on proxies for growth opportunities, size, informational asymmetry, and effective marginal tax rate plus a dummy variable that takes the value 1 if the observation is a family firm. The definitions of short- and long-term debt vary from the traditional one, in which short-term debt is portion of debt due within next year while long-term debt is portion of debt due after next year to the less traditional ones, in which short-term debt is portion of debt due within the next 2 or 3 years while long-term debt is portion of debt due after 2 or 3 years.

The sample period is either 1993-2002 (Panel A) or 1996-2005 (Panel B). The results in each panel are presented separately for the overall sample and for the sample where family's voting power is at least 25%. Year controls and industry controls (2-digit SIC codes) are included in each model.

The results in Table 4.5 are mixed and depend on the definition of short- and long-term debt. The most consistent results are from the traditional definitions, in which short-term debt includes debt up to one year and long-term debt includes debt beyond one year. Irrespective of the period or the sample used in the regressions, family firms carry significantly less short-term debt and significantly more long-term debt than non-family firms. The coefficient on the *FFDum* is -1.92% in short-term debt regression while it is 2.60% in long-term debt regression (using overall sample during 1993-2002 period). Considering that 35.91% of non-family firms' debt is short term on average a coefficient of -1.92% on the *FFDum* implies that family firms hold about 5.35% less short-term debt than non-family firms. Similarly, considering that 60.79% of non-family firms' debt is long term on average a coefficient of 2.60% on the *FFDum* implies that family firms hold about 4.28% more long-term debt than non-family firms. These results are consistent with families' ability to reduce underinvestment and asset substitution problems through better monitoring and thus to borrow at longer maturities. Using other periods to define short- and long-term debt produce mostly insignificant results (except for the regressions for the overall sample during 1993-2002 period, in which coefficients on short-term debt are still significantly negative while they are significantly positive on long-term debt).

Overall, family firms tend to use less short-term and more long-term debt than non-family firms, which is consistent with their better monitoring ability.

4.2.3 Priority Structure of Debt

4.2.3.1 Theory and Predictions

The choice for priority structure of debt seems to have multiple determinants as discussed in the literature. In their analysis of industrial companies, Barclay and Smith (1995b) observe that the choice among debt with different priority structures such as capitalized leases, secured debt, ordinary debt, subordinated debt and preferred stock is strongly related to contracting hypothesis while there is limited support for tax hypothesis and low support for signaling hypothesis. They argue that companies that face underinvestment and asset substitution problems to a larger extent are more likely to issue senior debt – usually in the form of secured debt and capitalized leases. Companies in higher effective marginal tax brackets are more likely to issue low priority debt in order to benefit from the tax shield of interest payments. Finally, undervalued companies are more likely to issue high priority claims and overvalued companies are more likely to issue low priority claims. There is no reason to believe that family firms will be systematically in different effective marginal tax brackets or more/less undervalued than non-family firms. However, insofar that family ownership in firms helps reduce the agency costs related to underinvestment and asset substitution problems, family firms likely have more room to issue less senior debt than non-family firms. Also, higher risk aversion of families is likely to prevent family firms from issuing higher priority claims such as capitalized leases or secured debt or fixed claims with likely voting rights such as preferred stock.

Overall, both families' ability to reduce underinvestment and asset substitution problems through better monitoring and higher risk aversion than an atomistic shareholder suggest that family firms prefer issuing claims with lower priority. Their higher risk aversion also suggests that family firms refrain from issuing preferred stock as it may dilute their control of the firm.

4.2.3.2 Experimental Design

Barclay and Smith (1995b) use Tobin's *q* ratio, abnormal earnings, tax-loss carryforward dummy and market value of assets to explain the variation in priority structure of debt obligations.[13] First, companies with more growth opportunities can reduce the likely underinvestment and asset substitution problems by committing to debt with higher priority claims. Second, undervalued companies tend to issue debt with higher priority and overvalued companies tend to issue debt with lower priority. Third, companies with higher effective marginal tax rates tend to issue debt with lower priority and vice versa. Finally, larger companies are able to issue debt with lower priority due to their lower informational asymmetries.

If family existence helps to reduce underinvestment and asset substitution problems, family firms are able to issue more claims with lower priority than non-family firms. Also, if families are more risk averse than an average investor, family firms are likely to issue lower priority claims than non-family firms. Including a family firm dummy (1 for family firms; 0 otherwise) in the multivariate settings may test whether this is the case.

4.2.3.3 Results and Discussion

Panels A1 through B2 of Table 4.6 present the univariate results of the variables used in the analysis of priority structure of debt for manufacturing firms (SIC codes 2000 through 5999). Panels A1 and A2 report statistics from 1993-2002 period while Panels B1 and B2 report statistics from 1996-2005 period. The results are similar in either period; therefore, only results from 1993-2002 period will be discussed below. When compared to non-family firms, family firms use significantly more of secured debt (23.8% vs. 17.9%) and ordinary debt (64.6% vs. 51.5%) at the median while they use significantly less of preferred equity (5.6% vs. 11.3%) at the

[13] They also use a regulation dummy to identify regulated industries, but this variable is not relevant for the sample period used in this chapter.

mean. The significance level is 1% for all three variables. The usage of capitalized leases and subordinated debt does not seem to differ between family and non-family firms.

Panels A and B of Table 4.7 present the results of several multivariate specifications for manufacturing firms (SIC codes 2000 through 5999), in which claims in each priority class as a fraction of total fixed claims are regressed on proxies for growth opportunities, informational asymmetry, effective marginal tax rate and size plus a dummy variable that takes the value 1 if the observation is a family firm. These claims are capitalized leases, secured debt, ordinary debt, subordinated debt and preferred stock, ranked from highest to lowest priority. The sample period is either 1993-2002 (Panel A) or 1996-2005 (Panel B). The results in each panel are presented separately for the overall sample and for the sample where family's voting power is at least 25%. Year controls and industry controls (2-digit SIC codes) are included in each model.

The results in either panel of Table 4.7 suggest an inverted-U shape for family firms in their choice for claims with varying priority structure and they become stronger for the sample where family's voting power is at least 25%. Family firms use significantly less capitalized leases (highest priority claim) and preferred equity (lowest priority claim). Less use of capitalized leases is consistent with family's lower propensity towards financial risk while less use of preferred equity is consistent with family's unwillingness to dilute or lose control as preferred equity usually comes with voting and/or convertibility rights. Moreover, preferred equity has priority over common equity in dividends; therefore, families may prefer not losing their cash flows to preferred equity investors. The remainder of the results suggest that family firms also use significantly more secured debt, ordinary claims and subordinated debt (from second highest priority claim to second lowest) with ordinary claims having the largest coefficient. This altogether may be consistent with the ability of family ownership to reduce conflicts among

various stakeholders of the company; and therefore, family firm's ability to raise more debt. However, family firms prefer using ordinary claims (64.6% of total fixed claims at the median) to secured debt (23.8% of total fixed claims at the median), which suggests that there is still some component of higher risk aversion for families.

The coefficient on the *FFDum* in capitalized leases regression is -0.56% (using overall sample during 1993-2002 period). Considering that 3.63% of non-family firms' fixed claims is capitalized leases on average a coefficient of -0.56% on the *FFDum* implies that family firms use 15.43% less capitalized leases on average than non-family firms. Similar analysis suggests that family firms use 7.45% more secured debt, 9.41% more ordinary claims, 8.39% more subordinated debt while they use 15.96% less preferred stock on average than non-family firms. Overall, family firms use significantly less of highest and lowest priority claims and more of priority claims that lie in between. They prefer using ordinary claims, which has a medium priority, to any other fixed claim.

4.2.4 Cash Holdings and Dividend Policy

4.2.4.1 Theory and Predictions

Choice of financing for family firms is mainly a tradeoff between their willingness to carry more debt, which may be inconsistent with the family's higher risk aversion, and their willingness to issue equity, which may threaten family's control of the firm. The traditional pecking order of financing (Myers and Majluf (1984)) suggests that corporations cover their financial deficits by issuing debt and equity only comes to picture when issuing debt is near impossible. The tradeoff theory, on the other hand, suggests that corporations have a target capital structure and adjust their capital structure to that target over time. The evidence is mixed at best leaning towards the tradeoff theory (Shyam-Sunder and Myers (1999) and Chirinko and Singha (2000), Fama and

French (2002), Frank and Goyal (2003)). It is likely that family firms refrain from issuing neither debt nor equity because issuing debt may increase the company's financial risk and issuing equity may weaken the control of the family. This further suggests that family firms may rely more on their internal cash flow, which in turn may reduce their ability to pay dividends.

Overall, family firms' lower propensity to cover financial deficit using external financing is likely to lead them to accumulate more cash and short-term securities on their balance sheets than non-family firms. Moreover, if family firms rely more on their internal cash flow, their ability to pay dividends will be reduced; therefore, they will have lower dividend payout ratios than non-family firms.

4.2.4.2 Experimental Design

Smith and Watts (1992) develop a simple model to explain the variation in dividend policy of corporations. Firms retain part of their earnings to be reinvested and pay out the rest as dividends. Therefore, they argue that the greater the amount of investment in a given period, the smaller the dividend. That is, firms with many growth opportunities will have lower a dividend payout ratio. They use *Tobin's q* ratio to proxy for growth opportunities. They also use firm size as the other explanatory variable even though they admit that they have no reason to expect a relationship between firm size and dividend policy.

If family firms are more reluctant to use external financing because they are concerned about the increase in financial risk by issuing debt or the dilution of control by issuing equity, they will rely more on internal financing. This implies that (1) family firms will carry more cash and short-term securities on their balance sheets than non-family firms, and (2) family firms will have lower dividend payout ratios than non-family firms. Including in the model above a family firm dummy (1 for family firms; 0 otherwise) may clarify this empirical question.

4.2.4.3 Results and Discussion

The univariate results in Panel A1 of Table 4.8 show a significant difference between the cash holdings and the dividend policy of family firms and that of non-family firms. Family firms hold less cash and short-term securities than non-family firms (8.18% versus 9.33% at the median) and this difference is significantly different from zero at 1%. Moreover, family firms offer higher dividend yield than non-family firms (0.02% versus 0.00% at the median) and family firms pay out more of their earnings as dividends than non-family firms (5.68% versus 0.00% at the median) and both these differences are also significantly different from zero at 1%. (Common dividend is quite sticky while net income fluctuates year over year. Therefore, the dividend payout ratio tends to be a volatile number. If, in order to reduce this volatility, dividend payout ratio is redefined as common dividends-to-operating income before depreciation, the results persist. That is, family firms pay out significantly more dividends as a portion of their operating income before depreciation than non-family firms (1.76% versus 0.00% at the median) and this difference is significantly different from zero at 1%.)

Panels A1 through B4 of Table 4.9 present the results of various multivariate specifications, in which cash and short-term securities-to-book value of assets (Panels A1 and B1), dividend yield (Panels A2 and B2), dividend payout ratio (Panels A3 and B3) and common dividends-to-operating income before depreciation (Panels A4 and B4) are the dependent variables and they are regressed on proxies for size and growth opportunities plus a dummy variable that takes the value 1 if the observation is a family firm. The sample period is either 1993-2002 (Panels A1 through A4) or 1996-2005 (Panels B1 through B4). The results in each panel are presented separately for the overall sample in models 1-3, for the sample that excludes utilities and financials in models 4-6, and for the sample that excludes utilities and financials and where

family's voting power is at least 25% in models 7-9. Year controls and industry controls (either SIC manual divisions as defined in Kahle and Walkling (1996), or Fama-French 38 industries, or 2-digit SIC codes) are included in each model.

The cash holding regressions (Panels A1 and B1 of Table 4.9) suggest that family firms carry less cash and short-term securities than non-family firms. The coefficient on *FFDum* is significant at 1% in all the models in both time periods. The results in the most restrictive sample (Model 9 in both time periods) suggest that family firms carry about 1.54% less cash than non-family firms at the mean (using 1993-2002 period). Considering that non-family firms hold 22.16% on average of their assets in cash and short-term securities a coefficient of -1.54% on the *FFDum* implies that family firms hold about 6.95% less cash on average than non-family firms.

The dividend payout regressions (Panels A2 through A4 and B2 through B4 of Table 4.9) suggest that family firms have higher dividend payout ratios than non-family firms. The coefficient on *FFDum* is highly significant in all but 3 models. The results in the most restrictive sample (Model 9 in both time periods) suggest that family firms' dividend payout ratio is about 1.46% more than that of non-family firms at the mean (using 1993-2002 period). Considering that non-family firms pay 13.92% of their earnings as dividends on average a coefficient of 1.46% on the *FFDum* implies that family firms pay about 10.49% more of their earnings as dividends on average than non-family firms.

Overall, in contrast with the expectations in this section that family firms will hold more cash and short-term securities and have lower dividend payout ratios than non-family firms, the multivariate specifications suggest that family firms actually hold significantly less cash and pay out significantly more of their earnings as dividends.

4.3 Concluding Remarks

This chapter concentrates on an important segment of U.S. economy with respect to its capital structure choices. Public companies, in which families hold ownership stake and managerial and directorial positions, are studied in regards to their choices in level, maturity structure and priority structure of debt as well as cash holdings and dividend policy. The empirical results are summarized below.

First, evidence suggests that family firms carry more debt on average than non-family firms. Higher leverage is consistent with the family ownership's better monitoring ability and thus ability to reduce the free cash flow problem as well as the commitment of families not to expropriate wealth from minority shareholders.

Second, there is evidence that family firms use less short-term debt and more long-term debt even though this evidence is sensitive to the period that is used to define short- and long-term debt. This finding is consistent with family firms' ability to borrow at longer maturities insofar that family ownership better aligns the incentives of shareholders and creditors, i.e. reduces the underinvestment and asset substitution problems.

Third, the choice for debt with varying priority structure offers an inverted-U shape for family firms. Evidence suggests that family firms use less of capitalized leases (highest priority claim) and preferred equity (lowest priority claim) and more of secured debt, ordinary claims (whose coefficient is largest) and subordinated debt, whose level of priority lie in between. The evidence on capitalized leases provides support for family's desire to protect company's assets as they are intended to pass onto their descendants while the evidence on preferred equity provides support for family's desire to keep the control of the company as preferred equity is usually issued with voting and convertibility rights and it has priority over common equity in dividends. Higher use

of the remainder claims is consistent with family firm's ability to raise more debt through better monitoring of the company and thus reducing the agency problem. However, the preference of ordinary claims to secured debt suggests that there is still a higher risk aversion component.

Fourth, in contrast with the expectations in this chapter, family firms carry significantly less cash and short-term securities while they pay out significantly more of their earnings as dividends than non-family firms.

Overall, the capital structure choices of family firms differ significantly from those of non-family firms. These choices can be explained by the ability of family ownership to reduce agency conflicts as well as family's higher risk aversion regarding company's assets and control.

5 Performance and Survival of Family Firms after Sarbanes-Oxley Act of 2002

The differences between family firms and non-family firms as well as between families and typical insiders and large stakeholders discussed in Chapter 1 make it interesting for a case whether family firms and non-family firms react differently to a significant change in government regulation. Specifically, this chapter analyzes whether family firms and non-family firms differ in their performance and survival after Sarbanes-Oxley Act of 2002 (heretofore, the Act) as the Act is expected to have a significant impact on the workings of both family firms and non-family firms, details of which is below.

The Act is one of the most significant attempts in the name of protecting investors better since the establishment of Securities and Exchange Commission (SEC) in 1934. It aims at increasing the transparency of the financial statements and the accountability of managements and boards of directors. In addition, the Act sets up Public Company Accounting Oversight Board in order to

audit the audit firms and the costs associated with the Board are to be borne by the public companies in the United States in ratio to their market capitalization. The Act also prohibits companies from receiving audit and non-audit services from the same audit firm. Moreover, the Act holds the CEO and the CFO as well as the accounting committee of the company, which is to be composed of independent directors, financially responsible for the accuracy of the company's financial statements. Finally, the Act requires all material off-balance sheet transactions to be filed with the SEC and prohibits companies from extending credit lines to their managers and directors. In line with the spirit of the Act, NYSE and Nasdaq administrations require boards of directors of listed companies to be composed of majority independent directors. The success of the Act is expected to affect the performance of family firms compared to non-family firms. Because of their prolonged interest and frequent holding of top managerial positions in their companies, families are likely to act as better monitors in their companies than the counterparties in non-family companies. This, in turn, will reduce the various agency-related costs and thus, suggest that performance of family firms will be better than that of non-family firms. If, on the other hand, the Act achieves its goal of greater transparency, the differential better performance of family firms over non-family firms is expected to diminish as the Act becomes a monitoring agent for non-family firms.

Among the substantial material costs (i.e. fixed costs estimated at around half a million dollars at least in during the initial couple of years) and the immaterial costs (such as requirements about committees and boards of directors) of the Act, the latter is expected to affect the family firms significantly as family members occupy managerial and directorial positions in these companies. The choice for those companies that do not wish to be subject to the requirements of the Act is to delist from stock exchanges either via an acquisition or via an ordinary delisting. However, an

acquisition ends the survivability of the family firm and an ordinary delisting is likely to lead to a negative market reaction that will destroy family wealth since the firm reveals that it is not wishing to adhere to the higher standards of the Act. The tradeoff between the immaterial costs of the Act and the immaterial costs of an acquisition or the material costs of an ordinary delisting is then expected to determine the family firm's decision to stay public and listed on an exchange.

Main findings of this chapter are summarized as follows: First, family firms significantly outperform non-family firms up to 2.5 years before the Act. This better performance, however, disappears during the 1.5 years after the Act. However, use of longer intervals (up to 4.5 years before and after) does not reveal any significant results. Second, family firms are significantly less likely than non-family firms to delist from exchanges in the post-Act period suggesting that family firms are more concerned of survival and wealth effects of delisting than the immaterial costs of the Act. This lower likelihood is consistently significant in delisting via acquisition and is somewhat mixed in delisting via a reason other than an acquisition.

The chapter proceeds as follows: Section 5.1 briefly describes the sample. Section 5.2 presents the analysis of performance of family firms and non-family firms around the Act. Section 5.3 presents the analysis of survival of family firms and non-family firms after the Act. Section 5.4 concludes.

5.1 Sample Setup

The process used to setup the sample in this chapter is described in Chapter 2. Briefly, an array of familial relationships in or closer than the degree of first cousin is used to search through proxy statements to the SEC during 2003 to identify family firms. After matching with Compustat and CRSP, there are 1,053 family firms and 5,133 non-family firms in the sample.

Panel A of Table 5.1 presents an aggregated distribution of survival of family firms and non-family firms between January 2002 and December 2006 while Panel B of Table 5.1 presents a disaggregated distribution. According to the data, 792 family firms (75.21% of total) and 3,647 non-family firms (71.05%) survived through December 2006. 145 family firms (13.77% of total) and 824 non-family firms (16.05% of total), on the other hand, delisted via acquisition while 116 family firms (11.02% of total) and 662 non-family firms (12.90%) delisted via other reasons between January 2002 and December 2006. Initial evidence suggests that family firms are less likely to delist either via acquisition or via other reasons. Detailed analysis of survival takes place in Section 5.3.

5.2 Performance

5.2.1 Theory and Predictions

Burkart, Panunzi and Shleifer (2003) relate the quality of legal protection of outside investors to monitoring activity done by the family and look at that relation's impact on the choice of management in the company. Their model leads to following predictions: (1) Monitoring is not required in environments with good legal protection of outside investors and thus widely held professionally managed company becomes optimal; (2) With moderate legal protection of outside investors, family stays as the large shareholder and monitors the professional manager; (3) In environments with weak legal protection of outside investors, family's monitoring ability is limited; therefore, management stays with the family.

Empirical evidence about the valuation of family firms, on the other hand, is sensitive to how a family firm is defined. Anderson and Reeb (2003a) observe that family firms are valued at higher multiples than non-family firms. However, their sample includes founder-owned companies as

family firms as well. Villalonga and Amit (2006) report that family firms are valued at higher multiples if the founder is also the CEO or in the case of a descendant being the CEO, there are control enhancing mechanisms adopted. Miller *et al.* (2007) argue that when lone founder companies are not considered as family firms, there is no valuation differential between family firms and non-family firms.

If, as suggested, family ownership acts as an additional monitoring device on behalf of outside investors, performance of family firms is expected to be better than that of non-family firms during weaker legal protection of outside investors and this better performance is expected to diminish once the legal protection of outside investors becomes stronger. The goal of Sarbanes-Oxley Act of 2002 is to make company executives more responsible about company financials and company financials more transparent especially after a period of corporate scandals. The enactment of the Act, therefore, can prove to be a point where protection of outside investors becomes stronger. If this is the case, the performance of family firms should be better than that of non-family firms before the Act and this better performance should diminish or disappear once the Act is passed into law as the Act removes the marginal benefit of having family ownership as a monitoring agent on behalf of outside investors.

5.2.2 Experimental Design

Single-factor model that uses a proxy for the market portfolio has been utilized extensively in the academic literature to adjust for risk until Fama and French (1992) evidenced that the single factor was not sufficient to explain the variation in returns and Fama and French (1993) offered three factors that explain such variation significantly better. These three factors are a proxy for the market risk premium (*MKTRF*) and size (*SMB*) and book-to-market (*HML*). Carhart (1997) argues that momentum is a fourth factor. This study investigates whether the portfolio of family

firms outperformed the portfolio of non-family firms before the Act and if that is the case, whether this better performance diminished after the Act. Therefore, in addition to the factors mentioned above, a dummy variable (*FFDum*) that takes the value 1 if the observation is a portfolio of family firms and 0 otherwise, a dummy variable (*SOXDum*) that takes the value 1 if the observation is in post-Act period and 0 otherwise, and an interaction term (*FF*SOX*) of these two dummy variables are going to be utilized. Therefore, family firm dummy will measure the excess performance of family firms over non-family firms during the pre-Act period while the sum of family firm dummy and the interaction term will measure the excess performance of family firms over non-family firms during the post-Act period.[14]

5.2.3 Results and Discussion

Panel A of Table 5.2 compares the unadjusted average daily returns for various portfolios (all firms, survivors, delistings via acquisitions, delistings via other reasons) of family firms and non-family firms while Panel B of Table 5.2 compares the unadjusted average daily returns for various portfolios of family firms where the family's voting power is at least 25% and non-family firms over periods 0.5 years through 4.5 years at one-year intervals before and after the Act. The evidence does not show any significant difference except for the portfolios of family firms and non-family firms in both panels that delisted between January 2002 and December 2006 over 0.5 years before the Act. Family firms in this case generated 0.08% daily return while non-family firms generated -0.1% daily return and the difference is significant at 10%. Family firms where the family's voting power is at least 25% generated 0.12% daily return and the difference between this and the average daily return of non-family firms is significant at 5%.

[14] To see this, consider the model: $R = \beta_0 + \beta_1 x\ MKTRF + \beta_2 x\ SMB + \beta_3 x\ HML + \beta_4 x\ FFDum + \beta_5 x\ SOXDum + \beta_6 x\ FFDum\ x\ SOXDum$. If we take the partial derivative with respect to *FFDum*, we have $\partial R/\partial FFDum = \beta_4 + \beta_6 x\ SOXDum$. Then, during the pre-Act period, i.e. when *SOXDum* = 0, we have $\partial R/\partial FFDum = \beta_4$ and during the post-Act period, i.e. when *SOXDum* = 1, we have $\partial R/\partial FFDum = \beta_4 + \beta_6$.

Even though the remaining differences show no significance, the returns tend to be greater for family firms than non-family firms for the periods before the Act and they tend to be equal or less for the periods after the Act.

The different industry distributions of family firms and non-family firms suggest that these two portfolios of firms may be carrying different levels of risk; therefore, risk-adjusted returns may give a better picture as to whether there are any differences between the performances of family firms and non-family firms before and after the Act. Single-factor model that utilizes the market return, Fama-French three-factor model that utilizes size and book-to-market factors in addition to the market risk premium, and Fama-French-Carhart four-factor model that utilizes momentum effect in addition to the Fama-French three factors are used to adjust the returns for risk. Each year the factor loadings are generated and used to adjust the returns of the coming year in the data. For example, the factor loadings of 1997 are used to adjust the returns during 1998; the factor loadings of 1998 are used to adjust the returns during 1999, etc. Because the results are similar, only Fama-French three-factor adjusted returns are reported in the tables. The comparison of average adjusted returns for various portfolios of family firms and non-family firms is in Panels A and B of Table 5.3.

Panel A of Table 5.3 compares the adjusted average daily returns for various portfolios (all firms, survivors, delistings via acquisitions, delistings via other reasons) of family firms and non-family firms while Panel B of Table 5.3 compares the adjusted average daily returns for various portfolios of family firms where the family's voting power is at least 25% and non-family firms over periods 0.5 years through 4.5 years at one-year intervals before and after the Act. Average adjusted returns in Panels A and B of Table 5.3 suggest that family firms significantly outperform the non-family firms at least during the 0.5 years before the Act. Family firms

generate an average daily adjusted return of 0.09% during this period while non-family firms generate 0.01% and this difference is significant at 1%. Family firms where the family's voting power is at least 25% also generate an average daily adjusted return of 0.09% and the difference between this and the average daily adjusted return of non-family firms is significant at 5%. Using only the survivors produces a similar result. This outperformance of family firms disappears for any period after the Act. There are some other significant differences in Table 5.3; however, these are not consistent for all portfolios of family firms and non-family firms.

To better address the question whether family firms outperformed non-family firms before the Act and if that is the case, whether this differential diminished after the Act, a multivariate analysis is in order. Panels A1 through B5 of Table 5.4 present the results of multivariate settings where the daily returns of various portfolios of family firms and non-family firms are regressed on Fama-French three-factors plus dummy variables that take the value 1 if the observation is a family-firm portfolio and if the observation is in post-Act period and an interaction term of these dummy variables. Family firm dummy measures the excess performance of family firms over non-family firms during the pre-Act period while family firm dummy and the interaction term measures the excess performance of family firms over non-family firms during the post-Act period.[15] Panels A1 through A5 use portfolios of family firms and non-family firms during 2002, 2001-2003, 2000-2004, 1999-2005, and 1998-2006 periods, respectively while Panels B1 through B5 use portfolios of family firms where the family's voting power is at least 25% and non-family firms during the same periods.

Panel A1 of Table 5.4 presents a strong reversal during the one year around the Act. If only the family firm dummy is used in addition to the three factors, the coefficient turns out to be 0.0005, which is significant at 10%. However, if the full model is utilized, then the coefficient on the

[15] See *footnote 14* for clarification.

family firm dummy becomes 0.0012 and the coefficient on the interaction term becomes -0.0014, both of which are significant at 1%. The sum of the two coefficients is -0.0002 and not significantly different from zero. The results suggest that family firms outperformed non-family firms during the pre-Act period and this differential disappeared after the Act. The results are consistent for all portfolios of family firms and non-family firms even though the significance disappears for the portfolios of delistings via acquisition. The results in Panel B1 of Table 5.4 that compare family firms where the family's voting power is at least 25% and non-family firms during the one year around the Act are similar. The coefficient on the family firm dummy is 0.0006 and significant at 10% if only the family firm dummy is used in addition to the three factors. However, once the full model is utilized, the coefficient on the family firm dummy becomes 0.0012 and the coefficient on the interaction term becomes -0.0012, both of which are significant at 1%. The sum of the two coefficients is 0 and not significantly different from zero.

If we extend the interval to three years around the Act, the results persist but the coefficients and their significance decrease. In Panel A2 of Table 5.4, the coefficient on the family firm dummy is 0.0002 if only the family firm dummy is used in addition to the three factors and this coefficient is not significantly different from zero. However, with the full model the coefficient on the family firm dummy turns out to be 0.0005 and the coefficient on the interaction term becomes -0.0007, both of which are significant at 5%. The sum of the two coefficients is -0.0002 and not significantly different from zero. These results are consistent across all portfolios of family firms and non-family firms except for that the significance is unclear in portfolios of delistings via acquisition. The results in Panel B2 of Table 5.4 that compare family firms where the family's voting power is at least 25% and non-family firms during the three years around the Act are similar. If only the family firm dummy is used in addition to the three factors, the

coefficient is 0.0003, which is not significantly different from zero. However, if the full model is utilized, then the coefficient on the family firm dummy becomes 0.0006, which is significant at 5%, and the coefficient on the interaction term turns out to be -0.0006, which is significant at 10%. The sum of the two coefficients is 0 and not significantly from zero.

Further extension of the interval to five years, seven years, or nine years around the Act (Panels A3 through A5 and B3 through B5 of Table 5.4) does not produce any significant results even though the signs on the coefficients mostly persist. This suggests that family firms outperformed non-family firms in a relatively shorter long-run (up to 2.5 years before the Act) and this differential disappeared once the Act was enacted. It could be that investors preferred better monitored portfolio of companies during an era of corporate scandals and once the Act was enacted and started to act as an additional monitoring agent, investors felt safer again to invest in other companies. However, this argument is based on a joint hypothesis of family firms being better monitored and the Act being successful and this study does not disaggregate them.

5.3 Survival

5.3.1 Theory and Predictions

Firms benefit from listing in exchanges and thus, being subject to strict disclosure requirements. Some of these benefits are lower cost of capital (Hail and Leuz (2006)), higher firm valuation (Doidge, Karolyi and Stulz (2004)), higher liquidity (Easley, Hvidkjaer and O'Hara (2002)), and easier access to capital markets (Healy and Palepu (2001)). Therefore, a significant increase in disclosure costs is necessary for companies to choose delisting from exchanges.

Sarbanes-Oxley Act of 2002 can be said to have increased both material and immaterial costs of disclosure significantly. Some of the material costs of the Act are (1) financing of the Public

Company Accounting Oversight Board; (2) not being able to receive audit and non-audit services from the same audit firm, which prevents the company from achieving economies of scale; (3) holding management and accounting committee members financially responsible for company's financial statements, which increases their insurance premiums. Some of the immaterial costs of the Act are (1) requiring accounting committee members to be composed of independent directors; (2) not being able to extend credit lines to company managers and directors; (3) requiring board of directors to be composed of majority independent directors.

The material costs of the Act are estimated at around half a million dollars at least during the initial couple of years. This level of cost may be prohibitive especially for smaller public companies. The immaterial costs of the Act, on the other hand, are likely to affect companies that rely more on insider talent in managerial and directorial positions and family firms are good examples of such companies as numerous members of the family are employed at various positions in the company. Companies that do not wish to be subject to stricter disclosure of the Act can choose to delist from exchanges either by being acquired or by ordinary delisting. Families see their companies as an asset to pass on to their descendants, however. Therefore, they may not prefer being acquired as this ceases the company. Moreover, families' wealth is tied to the fortunes of their companies and ordinary delisting is likely to lead to a negative market reaction, which will reduce the value of the company. The tradeoff between losing the firm or significant amount of family wealth and the material and immaterial costs of the Act is expected to determine the family firm's decision to stay public and listed on an exchange.

5.3.2 Experimental Design

Logistic regression can be utilized to compare propensity to delist of family firms to that of non-family firms. There are numerous variables that may affect the decision of a company to delist

and these variables can act as controls. Larger firms are less likely to delist as size may increase the company's ability to generate and allocate internal cash flows and to access to public and private capital markets. Proxy for firm size can be natural logarithm of book value of assets (*Log(BVA)*). Firms that sell at low valuation multiples are more likely to delist as such low valuation multiples may imply financial distress. Market-to-book assets ratio (*MVA/BVA*) can be a proxy for the company's growth opportunities (high multiple) and level of company's financial distress (low multiple). Firms with high leverage are more likely to delist as high leverage may imply financial distress. Market leverage (*Debt/MVA*) can be a proxy for company's leverage. Profitable firms are less likely to delist as they can generate sufficient internal cash flows to evade from financial distress. Return on assets (*ROA*) can be a proxy for company's profitability. Leuz, Triantis and Wang (2006WP) offer several more variables that may explain the decision to delist in addition to the proxies for size, growth opportunities, leverage and profitability mentioned above. They argue that larger changes in the short-term portion of debt may imply financial distress and thus, increase the likelihood to delist. They use one-year change in short-term debt-to-book value of assets (*ChgSTD/BVA*) as a proxy. Also, they argue that firms with lower asset growth are more likely to delist, for which one-year percentage change in book value of assets (*ChgBVA/BVA*) can be a proxy. They expect firms with extreme accruals, which may imply higher levels of earnings management, to be more likely to delist. They use absolute value of accruals-to-absolute value of operating cash flow (*Accruals/OCF*) as a proxy. They argue that firms that lose market activity are more like to delist and use change in logarithm of annual trading volume (*ChgLog(Vol)*) as a proxy. Also, they expect that firms with weaker recent stock performance are more likely to delist. They use one-year run-up return prior to last trade (*Run-*

up1) as a proxy. This study also uses one-year run-up return three months prior to last trade (*Run-up2*) to exclude likely announcement effects of acquisitions and other reasons on delistings. This study investigates whether family firms act differently than non-family firms in the decision to delist due to the material and immaterial costs of the Act. In order to see this, a dummy variable (*FFDum*) that takes the value 1 if the observation is a family firm and 0 otherwise will also be added to the logistic regression analysis.

5.3.3 Results and Discussion

Table 5.5 presents the statistical distribution of the variables used in the univariate and multivariate analyses of survival. There is high variation in almost all the variables. For example, the minimum return on assets (*ROA*) in the sample is -6,120%. Even at the 5th percentile this ratio becomes only -78%. Similarly, one year percentage change in book value of assets (*ChgBVA/BVA*) is 177,800% at the maximum and this change becomes 77% at the 95th percentile. Due to this high volatility in the variables, (1) winsorization at 5th and 95th percentiles should be used in univariate and multivariate analyses, and (2) medians should be preferred over means in univariate analysis.

Panels A and B of Table 5.6 present the univariate analysis of the variables used in the analysis of survival. In Panel A, the comparison is between family firms and non-family firms while in Panel B, the comparison is between family firms where the family's voting power is at least 25% and non-family firms. The median family firm is smaller than the median non-family firm ($343.03 million versus $378.25 million as measured by book value of assets) even though this difference is not significant. This difference is significant between family firms where the family's voting power is at least 25% and non-family firms. The median family firm is characterized by fewer growth opportunities than the median non-family firm (1.31 versus 1.47

as measured by the market-to-book value of assets) and this difference is significant at 1%. Univariate statistics also suggest that the median family firm is more leveraged than the median non-family firm (11.29% versus 9.96% as measured by market leverage) and this difference is significant at 5%. The median family firm is more profitable than the median non-family firm (2.25% versus 1.37% as measured by return on assets) and this difference is significant at 1%. The one-year change in short-term debt as percentage of book value of assets, the one-year percentage change in book value of assets, and accruals-to-operating cash flow ratio are not significantly different between family and non-family firms. The median family firm's trading volume increased more than the median non-family firm's trading volume in the final year of trading (0.1435 versus 0.0894 as measured by the one-year difference in natural logarithm of annual volume) and this difference is significant at 1%. Finally, run-up returns (as measured by one-year stock return prior to last trading or one-year stock return three months prior to last trading) are greater for the median family firm than the median non-family firm (13.55% versus 10.43% or 8.05% versus 3.59%) and both these differences are significant at 1%. This univariate comparison is similar when family firms where family's voting power is at least 25% and non-family firms are used.

Panel A of Table 5.6 show some evidence that family firms are less likely to delist from exchanges either via acquisition or via other reasons during the post-Act era. Between January 2002 and December 2006 75.21% of family firms survived in contrast to 71.06% of non-family firms. This difference is significant at 1%. On the other hand, 13.77% of family firms delisted via acquisition and 11.02% of family firms delisted via a reason other than acquisition in contrast to 16.04% and 12.90% of non-family firms, respectively. Both these differences are significant at 10%. Panel B of Table 5.6 compare family firms where family's voting power is at least 25%

and non-family firms. The results are similar to ones in Panel A; however, only the difference between delistings via acquisition is significant, which is at 1%. Multivariate settings of logistic regressions that control for variables that are evidenced to be different between family firms and non-family firms and for industries that are likely distributed differently between family firms and non-family firms can answer this question better.

Panels A1 through B3 of Table 5.7 report the results of logistic regressions. The results are in the form of odd ratio estimates; therefore, they show the relative likelihood with respect to the event, which is delisting. Panels A1 through A3 compare family firms to non-family firms while Panels B1 through B3 compare family firms where the family's voting power is at least 25% and non-family firms. In Panels A1 and B1, the comparison is between survival and delisting (irrespective of the type of delisting); in Panels A2 and B2, the comparison is between survival and delisting via acquisition; and in Panels A3 and B3, the comparison is between survival and delisting via a reason other than acquisition. The basic model in all panels includes controls for size, growth opportunities, leverage and profitability and industry controls at the 2-digit SIC codes. Rest of the controls is added as appropriate.

The dependent variable in Panel A1 of Table 5.7 is 0 for survivors and 1 for delisted companies (irrespective of the type of delisting). The results suggest that size, growth opportunities (as opposed to financial distress) and profitability are correlated with lower likelihood to delist while leverage is correlated with higher likelihood to delist. Of the other controls, one-year percentage change in book value of assets is correlated with lower likelihood to delist while the ratio of accruals-to-operating cash flow, one-year change in annual trading volume and one-year run-up return three months prior to last trade are all correlated with higher likelihood to delist. Regardless of the combination of controls, the odd ratio estimate on the family firm dummy sits

between 0.655 and 0.734 and is always significant at 1% suggesting that family firms are about a quarter to one-third less likely to delist than non-family firms in the post-Act period. The odd ratio estimate on the family firm dummy in Panel B1 of Table 5.7 where the family firms with at least 25% family voting power are used is between 0.650 and 0.698 and always significant at 1% suggesting again about one-third less likelihood on behalf of family firms to delist. These findings are consistent with the argument that the likely loss of their companies or significant amount of their wealth is a more important issue for families than the material and immaterial costs of the Act.

The dependent variable in Panel A2 of Table 5.7 is 0 for survivors and 1 for delisted companies via acquisition. The results suggest that size, growth opportunities (as opposed to financial distress) and to some extent profitability are correlated with lower likelihood to delist via acquisition while leverage is correlated with higher likelihood to delist via acquisition. Of the other controls, one-year percentage change in book value of assets is correlated with lower likelihood to delist via acquisition and one-year run-up return prior to last trade and one-year run-up return three months prior to last trade are both correlated with higher likelihood to delist via acquisition. However, run-up returns may be including the announcement premium of the acquisition; therefore, results must be taken with caution. Regardless of the combination of controls, the odd ratio estimate on the family firm dummy is between 0.633 and 0.704 and always significant at 1%. In Panel B2 of Table 5.7 where the family firms with at least 25% family voting power are used the odd ratio estimate on the family firm dummy is between 0.582 and 0.616 and always significant at 1%. These results suggest that family firms about one-third to two-fifths less likely than non-family firms to delist via acquisition in the post-Act period.

This is consistent with the argument that survivability of their companies is a more important issue for families than the material and immaterial costs of the Act.

The dependent variable in Panel A3 of Table 5.7 is 0 for survivors and 1 for delisted companies via a reason other than acquisition. The results suggest that size, growth opportunities (as opposed to financial stress) and profitability are correlated with lower likelihood to delist via other reasons while leverage is correlated with extremely higher likelihood to delist via other reasons. Of the other controls, one-year percentage change in book value of assets, one-year run-up return prior to last trade and one-year run-up return three months prior to last trade are correlated with lower likelihood to delist via other reasons while the ratio of accruals-to-operating cash flow and one-year change in annual trading volume are correlated with higher likelihood to delist via other reasons. The odd ratio estimate on the family firm dummy is between 0.698 and 0.858 and five coefficients are significant at 10% while three coefficients are not significant. In Panel B3 of Table 5.7 where the family firms with at least 25% of family voting power are used the odd ratio estimate on the family firm dummy is between 0.766 and 0.987 and is not significant. These results suggest that there is weak evidence that family firms are less likely to delist via a reason other than acquisition in the post-Act period. Combined with the previous results, it can be argued that survivability of their companies is the most important issue for families. Then, loss of significant wealth is somewhat more important than the material and immaterial costs of the Act.

5.4 Concluding Remarks

This chapter concentrates on an important segment of U.S. economy around the enactment of a significant government regulation. Public companies, in which families hold ownership stake

and managerial and directorial positions, are studied with respect to their performance before and after and their survival after the Sarbanes-Oxley Act of 2002. The empirical results are summarized below.

First, evidence suggests that family firms outperformed non-family firms before the Act. However, this better performance is for a relatively shorter long-run (up to 2.5 years before the Act) and disappears beyond 2.5 years up to 4.5 years before the Act. Second, this better performance of family firms disappears after the Act. One explanation can be that investors sought for companies that were monitored better during the era of corporate scandals and these better monitored companies were family firms at the time. Once the Act was enacted, monitoring advantage of family firms diminished and thus their better performance disappeared. This is a joint test, however, of the Act's success and families' better monitoring ability and this study is not able to disaggregate them.

Third, evidence suggests that family firms are less likely to delist (irrespective of the type of delisting) than non-family firms after the Act. This finding is consistent with the argument that survival of their companies (as opposed to delisting via acquisition) and protection of their wealth (as opposed to delisting via a reason other than acquisition) is more important for families than material and immaterial costs of the Act. Fourth, there is stronger evidence for that family firms are less likely to delist via acquisition than for that family firms are less likely to delist via a reason other than acquisition. This finding puts the survival of their companies as the most important issue for families and the likely loss in family wealth as somewhat more important than material and immaterial costs of the Act.

Overall, Sarbanes-Oxley Act of 2002 turns out to be a significant government regulation that led two important segments of the economy – family firms and non-family firms – to perform and react differently to its associated material and immaterial costs.

6 Summary and Conclusions

Using a comprehensive sample of 1,123 publicly traded family firms in the United States this dissertation looks into various aspects of their corporate structure. Specifically, this dissertation studies their industry distribution, capital structure choices, and performance and survival after Sarbanes-Oxley Act of 2002. Empirical results are summarized below.

Chapter 3 presents the study on the industry distribution of family firms. The chapter presents evidence that family firms are less likely to exist in industries where optimal firm size is larger and more likely to exist in industries with greater amenity potential. Moreover, they are more likely to exist in more mature industries, less likely to exist in industries with more growth opportunities, and less likely to exist in industries with more volatile earnings. The evidence suggests that families choose to set up their companies in industries that require less wealth for control and in industries with less risk, which is consistent with families' higher risk aversion compared to atomistic shareholders.

Chapter 4 presents the study on the capital structure choices of family firms. The chapter presents evidence that family firms carry more debt on average than non-family firms. This result is consistent with the agency argument that large shareholders are able to better monitor the company and reduce the agency costs of free cash flow; and therefore, increase the capacity for debt financing. There is also evidence that family firms borrow significantly less of highest

and lowest priority debt and significantly more of debt with intermediate priorities than non-family firms. This result is consistent with higher risk aversion of families compared to atomistic shareholders. Furthermore, family firms carry significantly less short-term debt and significantly more long-term debt. Moreover, they hold significantly less cash and short-term securities while they pay out significantly more of their earnings as dividends.

Chapter 5 presents the study on the performance and survival of family firms after Sarbanes-Oxley Act of 2002. The chapter presents evidence that family firms significantly outperformed non-family firms during the 2.5 years before Sarbanes-Oxley Act of 2002 and this outperformance disappeared during the 1.5 years after the Act. This result can be an indication that family ownership in companies offers better monitoring. There is also evidence that family firms were less likely to delist from exchanges after the Act irrespective of whether the delisting was via acquisition or via other reasons. These results are consistent with the arguments that survival of their companies is important for families and family fortunes are tied to the wealth of their companies.

Overall, this dissertation presents evidence that the differences between family firms and non-family firms as well as between families and typical insiders and large stakeholders discussed in Chapter 1 are related to various corporate characteristics of such firms.

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Table 2.1 Sample Setup

Panel A summarizes the procedure used to identify publicly traded family firms in the United States. The keywords are entered into Thomson Research Database to search through the full filing of all proxy statements submitted to the SEC between January 1, 2003 and December 31, 2003. Panel B summarizes the procedure used to identify publicly traded companies in the United States for the year 2002.

Panel A

Step	**Hits**
Keyword search of familial relationships (*keywords*: father, mother, son, daughter, sibling, brother, sister, husband, wife, uncle, aunt, nephew, niece, cousin, grandparent, grandchild, grandfather, grandmother, grandson, granddaughter, father-in-law, mother-in-law, son-in-law, daughter-in-law, brother-in-law, sister-in-law *and their plural forms*)	6,330
Elimination of irrelevant matches	–4,929
Removal of trusts and funds	–19
Matching with Compustat	–222
Removal of companies incorporated outside the United States	–21
Removal of companies with zero assets reported on Compustat for 2002	–16
Final sample	**1,123**

Panel B

Step	**Hits**
Compustat universe for the year 2002	9,258
Removal of companies incorporated outside the United States	–1,261
Removal of duplicate entries	–19
Removal of companies with zero assets reported on Compustat for 2002	–78
Final sample	**7,900**

Table 3.1 Industry Distribution

Panel A1 presents the 50 industries as defined at the 4-digit SIC-code level with family firms holding the largest portion of industry assets as measured by the sum of book value of assets of all companies in that industry. Panel A2 presents the 50 industries as defined at the 4-digit SIC-code level with family firms holding the smallest portion of industry assets as measured by the sum of book value of assets of all companies in that industry. Panel B1 presents the 50 industries as defined at the 4-digit SIC-code level with family firms, where the family's voting power is at least 25%, holding the largest portion of industry assets as measured by the sum of book value of assets of all companies in that industry. Panel B2 presents the 50 industries as defined at the 4-digit SIC-code level with family firms where the family's voting power is at least 25% holding the smallest portion of industry assets as measured by the sum of book value of assets of all companies in that industry.

Panel A1 (Overall)

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
2085	DISTILLED AND BLENDED LIQUOR	1	1	2,264.00	2,264.00	100.00%
2611	PULP MILLS	2	2	1,639.76	1,639.76	100.00%
4013	RR SWITCHING, TERMINAL ESTAB	1	1	1,106.55	1,106.55	100.00%
3873	WATCHES, CLOCKS AND PARTS	2	2	827.68	827.68	100.00%
2052	COOKIES AND CRACKERS	1	1	305.87	305.87	100.00%
3950	PENS,PENCILS,OTH OFFICE MATL	2	2	187.25	187.25	100.00%
2790	SERVICE INDS FOR PRINT TRADE	1	1	160.47	160.47	100.00%
2013	SAUSAGE,OTH PREPARED MEAT PD	2	2	99.34	99.34	100.00%
900	FISHING,HUNTING & TRAPPING	1	1	98.98	98.98	100.00%
3567	INDL PROCESS FURNACES, OVENS	2	2	66.31	66.31	100.00%
3272	CONCRETE PDS, EX BLOCK,BRICK	1	1	13.50	13.50	100.00%
3678	ELECTRONIC CONNECTORS	6	3	3,676.16	3,648.30	99.24%
2070	FATS AND OILS	4	3	16,045.29	15,882.38	98.98%
2084	WINE,BRANDY & BRANDY SPIRITS	7	4	4,554.10	4,384.90	96.28%
200	AGRIC PROD-LVSTK,ANIMAL SPEC	5	1	257.88	235.39	91.28%
3730	SHIP & BOAT BLDG & REPAIRING	7	3	13,583.95	11,855.90	87.28%
2590	MISC FURNITURE AND FIXTURES	3	1	6,333.64	5,442.00	85.92%
5072	HARDWARE-WHOLESALE	3	1	635.07	540.22	85.06%
1520	GEN BLDG CONTRACTOR-RESIDNTL	5	2	1,304.87	1,060.30	81.26%
2540	PARTITIONS,SHELVING,LOCKERS	2	1	112.93	87.89	77.83%
2082	MALT BEVERAGES	5	2	18,632.99	14,226.31	76.35%
3562	BALL AND ROLLER BEARINGS	5	2	3,723.41	2,823.77	75.84%
5200	BLDG MATL,HARDWR,GARDEN-RETL	5	1	4,581.85	3,432.31	74.91%
4832	RADIO BROADCASTING STATIONS	21	8	46,871.97	34,545.02	73.70%
2731	BOOKS: PUBG, PUBG & PRINTING	10	4	11,083.52	7,952.21	71.75%
8351	CHILD DAY CARE SERVICES	5	2	1,290.88	914.07	70.81%
5130	APPAREL,PIECE GDS,NOTNS-WHSL	3	2	288.88	200.54	69.42%
2015	POULTRY SLAUGHTER & PROCESS	5	4	2,560.52	1,770.99	69.17%
2221	BRDWOVN FABRIC MAN MADE,SILK	4	1	1,464.12	1,011.52	69.09%
5331	VARIETY STORES	16	4	145,411.01	97,945.00	67.36%
5621	WOMEN'S CLOTHING STORES	21	8	13,813.30	9,191.25	66.54%
3081	UNSUPP PLASTICS FILM & SHEET	5	2	1,964.89	1,306.99	66.52%
6321	ACCIDENT & HEALTH INSURANCE	11	2	323,112.42	214,602.00	66.42%
7331	DIRECT MAIL ADVERTISING SVCS	4	1	1,115.03	736.73	66.07%
3823	INDUSTRIAL MEASUREMENT INSTR	20	2	9,217.63	6,035.42	65.48%
5651	FAMILY CLOTHING STORES	20	6	25,902.15	16,668.45	64.35%

Table 3.1 *(continued)*

Panel A1 *(continued)*

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
3448	PREFAB METAL BLDGS & COMP	4	1	1,181.90	721.27	61.03%
3452	BOLT,NUT,SCREW,RIVETS,WASHRS	6	4	2,191.76	1,328.39	60.61%
2033	CAN FRUIT,VEG,PRESRV,JAM,JEL	7	3	3,629.61	2,179.14	60.04%
2522	OFFICE FURNITURE, EX WOOD	5	2	3,983.24	2,367.60	59.44%
3537	INDL TRUCKS,TRACTORS,TRAILRS	6	1	3,678.06	2,123.90	57.75%
4833	TELEVISION BROADCAST STATION	25	8	225,943.57	127,461.94	56.41%
4841	CABLE AND OTHER PAY TV SVCS	25	6	286,372.77	161,160.30	56.28%
2011	MEAT PACKING PLANTS	6	2	21,044.64	11,653.14	55.37%
3442	METAL DOORS,FRAMES,MOLD,TRIM	4	2	1,354.13	733.09	54.14%
3433	HEATING EQ,EX ELEC,AIR FURNC	2	1	18.60	10.04	53.98%
3670	ELECTRONIC COMP, ACCESSORIES	10	2	8,130.69	4,372.49	53.78%
5093	SCRAP & WASTE MATERIALS-WHSL	5	2	1,217.88	653.66	53.67%
7500	AUTO REPAIR,SERVICES,PARKING	9	2	2,069.99	1,095.17	52.91%
1389	OIL, GAS FIELD SERVICES, NEC	13	3	38,454.47	19,733.05	51.32%

Panel A2 (Overall)

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
8090	MISC HEALTH & ALLIED SVC,NEC	17	0	4,673.94	0.00	0.00%
3790	MISC TRANSPORTATION EQUIP	10	0	4,752.60	0.00	0.00%
4100	TRANSIT & PASSENGER TRANS	3	0	4,889.86	0.00	0.00%
5171	PETROLEUM BULK STATIONS-WHSL	5	0	4,895.61	0.00	0.00%
4220	PUBLIC WAREHOUSING	3	0	5,023.62	0.00	0.00%
7996	AMUSEMENT PARKS	3	0	5,068.08	0.00	0.00%
1221	BITMNS COAL,LIGNITE SURF MNG	1	0	5,140.18	0.00	0.00%
2800	CHEMICALS & ALLIED PRODS	3	0	5,640.90	0.00	0.00%
2100	TOBACCO PRODUCTS	2	0	5,692.68	0.00	0.00%
3942	DOLLS AND STUFFED TOYS	7	0	6,207.97	0.00	0.00%
5700	HOME FURNITURE & EQUIP STORE	7	0	6,418.56	0.00	0.00%
5141	GROCERIES, GENERAL LINE-WHSL	9	0	6,605.02	0.00	0.00%
5140	GROCERIES & RELATED PDS-WHSL	14	0	7,089.66	0.00	0.00%
6200	SECURITY & COMMODITY BROKERS	12	0	7,276.12	0.00	0.00%
3612	PWR,DISTR,SPECL TRANSFORMERS	5	0	7,488.12	0.00	0.00%
4610	PIPE LINES, EX NATURAL GAS	11	0	7,501.56	0.00	0.00%
7841	VIDEO TAPE RENTAL	5	0	7,887.47	0.00	0.00%
3330	PRIM SMELT,REFIN NONFER METL	5	0	8,204.05	0.00	0.00%
5040	PROF & COML EQ & SUPPLY-WHSL	6	0	9,804.27	0.00	0.00%
1220	BITUMINOUS COAL, LIGNITE MNG	7	0	9,831.89	0.00	0.00%
3510	ENGINES AND TURBINES	9	0	9,860.34	0.00	0.00%
3221	GLASS CONTAINERS	2	0	10,425.70	0.00	0.00%
1040	GOLD AND SILVER ORES	21	0	11,895.52	0.00	0.00%
5399	MISC GENERAL MDSE STORES	2	0	13,101.22	0.00	0.00%

Table 3.1 *(continued)*

Panel A2 *(continued)*

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
3411	METAL CANS	4	0	13,590.65	0.00	0.00%
6099	FUNCTIONS REL TO DEP BKE,NEC	14	0	13,966.65	0.00	0.00%
3600	ELECTR, OTH ELEC EQ, EX CMP	1	0	14,545.00	0.00	0.00%
3357	DRAWNG,INSULATNG NONFER WIRE	12	0	15,474.19	0.00	0.00%
4932	GAS & OTHER SERV COMBINED	4	0	24,106.77	0.00	0.00%
3523	FARM MACHINERY AND EQUIPMENT	8	0	27,425.02	0.00	0.00%
7311	ADVERTISING AGENCIES	6	0	27,495.24	0.00	0.00%
3760	GUIDED MISSILES & SPACE VEHC	4	0	28,472.23	0.00	0.00%
4513	AIR COURIER SERVICES	6	0	29,570.13	0.00	0.00%
2400	LUMBER AND WOOD PDS, EX FURN	7	0	35,914.65	0.00	0.00%
3728	AIRCRAFT PARTS, AUX EQ, NEC	11	0	38,091.25	0.00	0.00%
3350	ROLLING & DRAW NONFER METAL	12	0	41,504.49	0.00	0.00%
2820	PLASTIC MATL,SYNTHETIC RESIN	6	0	41,781.34	0.00	0.00%
5211	LUMBER & OTH BLDG MATL-RETL	5	0	46,878.93	0.00	0.00%
3576	COMPUTER COMMUNICATION EQUIP	50	0	52,071.85	0.00	0.00%
3721	AIRCRAFT	6	0	52,467.75	0.00	0.00%
2600	PAPER AND ALLIED PRODUCTS	3	0	59,049.84	0.00	0.00%
7374	CMP PROCESSING,DATA PREP SVC	30	0	64,184.57	0.00	0.00%
4923	NATURAL GAS TRANSMIS & DISTR	22	0	68,229.65	0.00	0.00%
2000	FOOD AND KINDRED PRODUCTS	6	0	91,199.97	0.00	0.00%
2111	CIGARETTES	5	0	103,202.39	0.00	0.00%
4922	NATURAL GAS TRANSMISSION	22	0	185,046.10	0.00	0.00%
6172	FINANCE LESSORS	9	0	287,230.70	0.00	0.00%
4931	ELECTRIC & OTHER SERV COMB	60	0	447,528.58	0.00	0.00%
6199	FINANCE-SERVICES	5	0	1,258,709.80	0.00	0.00%
6111	FEDERAL CREDIT AGENCIES	6	0	1,720,020.39	0.00	0.00%

Panel B1 (Family Voting Power ≥ 25%)

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
2085	DISTILLED AND BLENDED LIQUOR	1	1	2,264.00	2,264.00	100.00%
3873	WATCHES, CLOCKS AND PARTS	2	2	827.68	827.68	100.00%
2790	SERVICE INDS FOR PRINT TRADE	1	1	160.47	160.47	100.00%
900	FISHING,HUNTING & TRAPPING	1	1	98.98	98.98	100.00%
3567	INDL PROCESS FURNACES, OVENS	2	1	66.31	62.18	93.77%
2084	WINE,BRANDY & BRANDY SPIRITS	7	3	4,554.10	4,184.71	91.89%
200	AGRIC PROD-LVSTK,ANIMAL SPEC	5	1	257.88	235.39	91.28%
5072	HARDWARE-WHOLESALE	3	1	635.07	540.22	85.06%
1520	GEN BLDG CONTRACTOR-RESIDNTL	5	1	1,304.87	1,034.89	79.31%
2540	PARTITIONS,SHELVING,LOCKERS	2	1	112.93	87.89	77.83%

Table 3.1 *(continued)*

Panel B1 *(continued)*

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
2013	SAUSAGE,OTH PREPARED MEAT PD	2	1	99.34	77.18	77.69%
5130	APPAREL,PIECE GDS,NOTNS-WHSL	3	2	288.88	200.54	69.42%
2015	POULTRY SLAUGHTER & PROCESS	5	4	2,560.52	1,770.99	69.17%
2221	BRDWOVN FABRIC MAN MADE,SILK	4	1	1,464.12	1,011.52	69.09%
5331	VARIETY STORES	16	2	145,411.01	95,074.00	65.38%
5651	FAMILY CLOTHING STORES	20	6	25,902.15	16,668.45	64.35%
3537	INDL TRUCKS,TRACTORS,TRAILRS	6	1	3,678.06	2,123.90	57.75%
4841	CABLE AND OTHER PAY TV SVCS	25	6	286,372.77	161,160.30	56.28%
2011	MEAT PACKING PLANTS	6	2	21,044.64	11,653.14	55.37%
3433	HEATING EQ,EX ELEC,AIR FURNC	2	1	18.60	10.04	53.98%
3670	ELECTRONIC COMP, ACCESSORIES	10	2	8,130.69	4,372.49	53.78%
6321	ACCIDENT & HEALTH INSURANCE	11	1	323,112.42	169,544.00	52.47%
3452	BOLT,NUT,SCREW,RIVETS,WASHRS	6	2	2,191.76	1,073.33	48.97%
7500	AUTO REPAIR,SERVICES,PARKING	9	1	2,069.99	998.88	48.26%
2520	OFFICE FURNITURE	2	1	1,441.61	674.11	46.76%
5712	FURNITURE STORES	5	2	965.56	448.46	46.45%
4833	TELEVISION BROADCAST STATION	25	6	225,943.57	101,183.54	44.78%
3950	PENS,PENCILS,OTH OFFICE MATL	2	1	187.25	82.11	43.85%
5094	JEWELRY & WATCHES-WHSL	3	1	378.54	160.41	42.38%
5045	COMPUTERS & SOFTWARE-WHSL	27	3	12,839.57	5,232.28	40.75%
4400	WATER TRANSPORTATION	14	2	31,496.19	12,741.60	40.45%
3678	ELECTRONIC CONNECTORS	6	2	3,676.16	1,394.38	37.93%
5600	APPAREL AND ACCESSORY STORES	9	3	3,206.63	1,213.62	37.85%
6799	INVESTORS, NEC	32	3	7,964.54	2,953.32	37.08%
2030	CAN,FROZNPRESRV FRUIT & VEG	13	2	16,569.17	5,739.20	34.64%
7371	COMPUTER PROGRAMMING SERVICE	22	2	2,117.13	713.53	33.70%
5093	SCRAP & WASTE MATERIALS-WHSL	5	1	1,217.88	405.01	33.26%
2761	MANIFOLD BUSINESS FORMS	5	1	2,273.29	754.86	33.21%
1540	GEN BLDG CONTRACTORS-NONRES	3	2	598.15	195.76	32.73%
6282	INVESTMENT ADVICE	27	2	21,253.66	6,669.55	31.38%
1623	WATER,SEWER,PIPE LINE CONSTR	5	1	2,054.25	623.79	30.37%
6513	OPERATORS-APARTMENT BLDGS	8	1	1,806.42	540.22	29.91%
3140	FOOTWEAR, EXCEPT RUBBER	15	4	3,653.72	1,076.69	29.47%
2731	BOOKS: PUBG, PUBG & PRINTING	10	3	11,083.52	2,920.03	26.35%
3634	ELECTRIC HOUSEWARES AND FANS	6	2	2,644.58	695.62	26.30%
3713	TRUCK AND BUS BODIES	5	2	487.39	122.53	25.14%
3580	REFRIG & SERVICE IND MACHINE	19	2	875.52	210.66	24.06%
2721	PERIODICAL:PUBG,PUBG & PRINT	13	2	8,734.21	2,096.03	24.00%
7340	SVCS TO DWELLINGS, OTH BLDGS	6	1	1,324.73	317.41	23.96%

Table 3.1 *(continued)*

Panel B1 *(continued)*

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
7011	HOTELS,MOTELS,TOURIST COURTS	31	5	51,125.65	11,718.81	22.92%

Panel B2 (Family Voting Power ≥ 25%)

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
1600	HEAVY CONSTR-NOT BLDG CONSTR	8	0	11,000.57	0.00	0.00%
5531	AUTO AND HOME SUPPLY STORES	7	0	11,308.53	0.00	0.00%
8721	ACCOUNT,AUDIT,BOOKKEEP SVCS	10	0	11,334.13	0.00	0.00%
8051	SKILLED NURSING CARE FAC	12	0	11,374.49	0.00	0.00%
6361	TITLE INSURANCE	5	0	11,481.53	0.00	0.00%
1040	GOLD AND SILVER ORES	21	0	11,895.52	0.00	0.00%
5399	MISC GENERAL MDSE STORES	2	0	13,101.22	0.00	0.00%
3411	METAL CANS	4	0	13,590.65	0.00	0.00%
6099	FUNCTIONS REL TO DEP BKE,NEC	14	0	13,966.65	0.00	0.00%
3600	ELECTR, OTH ELEC EQ, EX CMP	1	0	14,545.00	0.00	0.00%
3357	DRAWNG,INSULATNG NONFER WIRE	12	0	15,474.19	0.00	0.00%
3825	ELEC MEAS & TEST INSTRUMENTS	41	0	15,575.17	0.00	0.00%
5731	RADIO,TV,CONS ELECTR STORES	10	0	18,794.65	0.00	0.00%
2531	PUBLIC BLDG & REL FURNITURE	5	0	19,925.08	0.00	0.00%
3533	OIL & GAS FIELD MACHY, EQUIP	17	0	21,136.55	0.00	0.00%
3672	PRINTED CIRCUIT BOARDS	21	0	24,094.54	0.00	0.00%
4932	GAS & OTHER SERV COMBINED	4	0	24,106.77	0.00	0.00%
3523	FARM MACHINERY AND EQUIPMENT	8	0	27,425.02	0.00	0.00%
7311	ADVERTISING AGENCIES	6	0	27,495.24	0.00	0.00%
3760	GUIDED MISSILES & SPACE VEHC	4	0	28,472.23	0.00	0.00%
4513	AIR COURIER SERVICES	6	0	29,570.13	0.00	0.00%
2400	LUMBER AND WOOD PDS, EX FURN	7	0	35,914.65	0.00	0.00%
3531	CONSTRUCTION MACHINERY & EQ	7	0	37,982.56	0.00	0.00%
3728	AIRCRAFT PARTS, AUX EQ, NEC	11	0	38,091.25	0.00	0.00%
6794	PATENT OWNERS AND LESSORS	30	0	39,894.48	0.00	0.00%
3312	STEEL WORKS & BLAST FURNACES	23	0	40,196.90	0.00	0.00%
3350	ROLLING & DRAW NONFER METAL	12	0	41,504.49	0.00	0.00%
2820	PLASTIC MATL,SYNTHETIC RESIN	6	0	41,781.34	0.00	0.00%
5211	LUMBER & OTH BLDG MATL-RETL	5	0	46,878.93	0.00	0.00%
8062	GEN MED & SURGICAL HOSPITALS	12	0	48,473.68	0.00	0.00%
3576	COMPUTER COMMUNICATION EQUIP	50	0	52,071.85	0.00	0.00%
3721	AIRCRAFT	6	0	52,467.75	0.00	0.00%
4924	NATURAL GAS DISTRIBUTION	32	0	55,389.95	0.00	0.00%
2600	PAPER AND ALLIED PRODUCTS	3	0	59,049.84	0.00	0.00%
3663	RADIO,TV BROADCAST, COMM EQ	81	0	62,411.22	0.00	0.00%

Table 3.1 *(continued)*

Panel B2 *(continued)*

SIC	Industry Name	#All	#Family	IBVA	FFBVA	Ratio
7374	CMP PROCESSING,DATA PREP SVC	30	0	64,184.57	0.00	0.00%
4923	NATURAL GAS TRANSMIS & DISTR	22	0	68,229.65	0.00	0.00%
3570	COMPUTER & OFFICE EQUIPMENT	3	0	71,388.61	0.00	0.00%
4210	TRUCKING,COURIER SVC,EX AIR	11	0	88,469.86	0.00	0.00%
2000	FOOD AND KINDRED PRODUCTS	6	0	91,199.97	0.00	0.00%
2111	CIGARETTES	5	0	103,202.39	0.00	0.00%
4512	AIR TRANSPORT, SCHEDULED	27	0	183,220.48	0.00	0.00%
4922	NATURAL GAS TRANSMISSION	22	0	185,046.10	0.00	0.00%
6172	FINANCE LESSORS	9	0	287,230.70	0.00	0.00%
2911	PETROLEUM REFINING	23	0	394,488.09	0.00	0.00%
4931	ELECTRIC & OTHER SERV COMB	60	0	447,528.58	0.00	0.00%
3711	MOTOR VEHICLES & CAR BODIES	8	0	678,612.97	0.00	0.00%
4911	ELECTRIC SERVICES	135	0	1,024,823.77	0.00	0.00%
6199	FINANCE-SERVICES	5	0	1,258,709.80	0.00	0.00%
6111	FEDERAL CREDIT AGENCIES	6	0	1,720,020.39	0.00	0.00%

Table 3.2 Industry Distribution – Univariate Results and Definition of Variables

Panel A presents the univariate statistics of the variables that are used in multivariate settings of analysis of industry distribution of family firms. Panel B presents the univariate statistics of the variables that are used in multivariate settings of analysis of industry distribution of family firms, where the family's voting power is at least 25%. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. The tests are between industries, in which family firms hold a nonzero portion of industry assets (groups *0-25%*, *25-50%*, *50-75%*, and *75-100%*), and industries, in which there are no family firms (group *None*). Variable definitions are on page 70. ***, **, * denote significance levels of 1%, 5%, 10%, respectively.

Panel A	**Family Firm Assets / Industry Assets** (Overall)								
	None	**0-25%**		**25-50%**		**50-75%**		**75-100%**	
Log(mnYear)									
N	94	235		56		26		19	
Mean	2.4496	2.4940		2.5780		2.6484		2.9255	**
Median	2.5103	2.4250		2.5955		2.7041		3.1096	**
Log(nFirm)									
N	105	235		56		26		19	
Mean	0.9890	2.3261	***	1.8140	***	1.7570	***	0.8125	
Median	0.8651	2.2191	***	1.7286	***	1.6246	***	0.7010	
Log(mBVA)									
N	105	235		56		26		19	
Mean	19.0017	18.7792		19.0690		19.1628		18.6575	
Median	19.0231	18.6124		18.9505		19.1727		18.8446	
mMBA/BVA									
N	103	235		56		26		19	
Mean	3.5129	1.7181	*	1.6148	**	1.7017	*	1.5019	**
Median	1.6596	1.5346	**	1.4564	**	1.5843		1.3624	**
mOIbD/BVA									
N	104	235		56		26		19	
Mean	-0.0474	0.0896	*	0.1141	**	0.1141	**	0.1407	**
Median	0.0898	0.1079		0.1215	**	0.1197	**	0.1347	***
mEarnVol									
N	94	235		56		26		19	
Mean	0.1909	0.0591	**	0.0463	**	0.0418	**	0.0467	**
Median	0.0501	0.0444		0.0386	**	0.0388		0.0393	
AmeDum									
N	105	235		56		26		19	
Mean	0.0000	0.0000		0.0179		0.1154	*	0.0000	
Median	0.0000	0.0000		0.0000		0.0000	***	0.0000	

Table 3.2 *(continued)*

Panel B	**Family Firm Assets / Industry Assets** (Family Voting Power ≥ 25%)								
	None	**0-25%**		**25-50%**		**50-75%**		**75-100%**	
Log(mnYear)									
N	147	227		32		14		9	
Mean	2.5088	2.4885		2.5502		2.8468	*	3.0115	**
Median	2.5041	2.4291		2.5847		2.9177	**	3.1348	**
Log(nFirm)									
N	159	227		32		14		9	
Mean	1.2069	2.3848	***	1.5884	**	1.5238		0.8651	
Median	1.1764	2.3243	***	1.5918	**	1.3306		0.7010	
Log(mBVA)									
N	159	227		32		14		9	
Mean	19.0491	18.7752		18.8878		18.7857		18.9641	
Median	19.1447	18.7737	**	18.8229		18.9613		18.7602	
mMBA/BVA									
N	157	227		32		14		9	
Mean	2.8855	1.5276	*	1.6804	*	1.5884	**	1.6342	*
Median	1.5860	1.6963	**	1.5191		1.4652		1.4117	
mOIbD/BVA									
N	158	227		32		14		9	
Mean	0.0072	0.0908		0.1138	**	0.0959		0.1576	***
Median	0.1094	0.1076		0.1165		0.1091		0.1723	***
mEarnVol									
N	147	227		32		14		9	
Mean	0.1399	0.0585	**	0.0470	**	0.0477	**	0.0403	**
Median	0.0432	0.0441		0.0406		0.0379		0.0396	
AmeDum									
N	159	227		32		14		9	
Mean	0.0000	0.0088		0.0625		0.0000		0.0000	
Median	0.0000	0.0000		0.0000	***	0.0000		0.0000	

Table 3.2 *(continued)*

Variable	Definition
mnYear	median number of years a company existed in an industry as defined at 4-digit SIC-code level on Compustat
nFirm	number of companies in an industry as defined at 4-digit SIC-code level on Compustat
mBVA	median book value of assets in an industry as defined at 4-digit SIC-code level on Compustat
mMVA/BVA	median market-to-book assets in an industry as defined at 4-digit SIC-code level on Compustat
mOIbD/BVA	median operating income before depreciation-to-book value of assets in an industry as defined at 4-digit SIC-code level on Compustat
mEarnVol	median 5-year standard deviation of operating income before depreciation-to-book value of assets in an industry as defined at 4-digit SIC-code level on Compustat
AmeDum	dummy variable that takes the value 1 if the observation is newspaper publishing (SIC code 2711), periodical publishing (SIC code 2721), radio broadcasting (SIC code 4832), or television broadcasting industries (SIC code 4833) on Compustat; and 0 otherwise

Table 3.3 Industry Distribution – Multivariate Results

Panel A presents the results of censored Tobit regressions run annually between 1992 and 2006, where the dependent variable is the portion of an industry's book value of assets accounted for by family firms while Panel B presents the results of censored Tobit regressions run annually between 1992 and 2006, where the dependent variable is the portion of an industry's book value of assets accounted for by family firms, where the family's voting power is at least 25%. An industry is defined at 4-digit SIC-code level. *Log(mnYear)* is the natural logarithm of median number of years a company existed in an industry on Compustat. *Log(nFirm)* is the natural logarithm of number of companies in an industry on Compustat. *Log(mBVA)* is the median book value of assets in an industry on Compustat. *mMVA/BVA* is the median market value of assets-to-book-value of assets in an industry on Compustat. *mOIbD/BVA* is the median operating income before depreciation-to-book value of assets in an industry on Compustat. *mEarnVol* is the median standard deviation of 5-year operating income before depreciation-to-book value of assets in an industry on Compustat. *AmeDum* is a dummy variable, which takes the value 1 if the observation is newspaper publishing (SIC code 2711), periodical publishing (SIC code 2721), radio broadcasting (SIC code 4832), or television broadcasting (SIC code 4833) industries on Compustat; and 0 otherwise. *P*-values adjusted for heteroskedasticity are in square brackets. *#Sign.* is the number of sample years, in which the coefficient is significant at least at 10% level. *Average* is the average of the coefficient over sample years. *T-stat* and *p-value* are the results of the test whether *Average* is significantly different from zero.

Panel A Family Firm Assets / Industry Assets (Overall)

Year	Intercept	Log(mnYear)	Log(nFirm)	Log(mBVA)	mMVA/BVA	mOIbD/BVA	mEarnVol	AmeDum	N	LL
1992	0.5562	0.0464	0.0310	-0.0300	-0.0443	0.0620	-0.6703	0.5592	386	-202.49
	[0.0243]	[0.1257]	[0.1535]	[0.0194]	[0.0363]	[0.7107]	[0.0950]	[0.0019]		
1993	0.7244	0.0403	0.0322	-0.0353	-0.0695	0.0691	-0.8223	0.5742	390	-191.83
	[0.0048]	[0.1411]	[0.1250]	[0.0069]	[0.0078]	[0.7203]	[0.1041]	[0.0010]		
1994	1.2010	0.0653	0.0262	-0.0572	-0.1490	0.1386	-0.6751	0.5845	393	-193.31
	[0.0001]	[0.0243]	[0.2094]	[0.0001]	[0.0001]	[0.5192]	[0.1576]	[0.0011]		
1995	0.9740	0.0369	0.0002	-0.0455	-0.0481	0.0202	-0.5721	0.4913	402	-204.17
	[0.0002]	[0.1735]	[0.9932]	[0.0007]	[0.0939]	[0.9295]	[0.2283]	[0.0055]		
1996	0.8804	0.0473	0.0191	-0.0452	-0.0341	0.3033	-1.2968	0.4395	405	-189.11
	[0.0009]	[0.0739]	[0.3093]	[0.0009]	[0.1905]	[0.2147]	[0.0266]	[0.0266]		
1997	0.8704	0.0600	0.0087	-0.0465	-0.0063	0.1448	-1.1833	0.5558	408	-191.58
	[0.0013]	[0.0328]	[0.6391]	[0.0005]	[0.5555]	[0.4453]	[0.0364]	[0.0009]		
1998	0.6864	0.0456	0.0288	-0.0402	-0.0220	0.5326	-0.3827	0.4058	410	-192.79
	[0.0079]	[0.1274]	[0.1160]	[0.0016]	[0.4041]	[0.0051]	[0.3322]	[0.0163]		

Table 3.3 *(continued)*

Panel A *(continued)*

Year	Intercept	Log(mnYear)	Log(nFirm)	Log(mBVA)	mMVA/BVA	mOIbD/BVA	mEarnVol	AmeDum	N	LL
1999	0.9480	0.0382	0.0175	-0.0500	-0.0144	0.5367	-1.0215	0.4259	414	-172.91
	[0.0001]	[0.1713]	[0.3025]	[0.0001]	[0.3543]	[0.0107]	[0.0364]	[0.0076]		
2000	0.7719	0.0586	0.0148	-0.0421	-0.0471	0.6587	-0.5306	0.5930	420	-180.19
	[0.0018]	[0.0494]	[0.3798]	[0.0006]	[0.0475]	[0.0014]	[0.1421]	[0.0002]		
2001	0.5974	0.0724	0.0117	-0.0324	-0.0357	0.2010	-0.7847	0.5618	422	-175.74
	[0.0182]	[0.0169]	[0.4665]	[0.0080]	[0.1217]	[0.1980]	[0.0117]	[0.0004]		
2002	0.6051	0.1202	0.0158	-0.0385	-0.0567	0.1471	-0.7535	0.4756	424	-183.88
	[0.0194]	[0.0002]	[0.3313]	[0.0022]	[0.0608]	[0.4170]	[0.0253]	[0.0033]		
2003	0.4893	0.1610	0.0104	-0.0389	-0.0413	0.1228	-0.5161	0.4750	420	-197.07
	[0.0699]	[0.0001]	[0.5358]	[0.0031]	[0.0463]	[0.4014]	[0.0693]	[0.0053]		
2004	0.3931	0.1756	0.0189	-0.0408	-0.0176	0.3475	-0.4629	0.4534	419	-215.26
	[0.1844]	[0.0001]	[0.2832]	[0.0037]	[0.4018]	[0.0756]	[0.1160]	[0.0112]		
2005	0.8394	0.1948	0.0214	-0.0650	-0.0535	0.4102	-0.2413	0.4238	416	-234.17
	[0.0079]	[0.0001]	[0.2533]	[0.0001]	[0.0133]	[0.0315]	[0.3150]	[0.0254]		
2006	0.8290	0.1533	0.0173	-0.0556	-0.0758	0.2046	-0.2042	0.4153	401	-235.13
	[0.0092]	[0.0012]	[0.3971]	[0.0002]	[0.0027]	[0.2326]	[0.2525]	[0.0343]		
#Sign.	14/15	10/15	0/15	15/15	9/15	5/15	7/15	15/15		
Average	**0.7577**	**0.0877**	**0.0183**	**-0.0442**	**-0.0477**	**0.2599**	**-0.6745**	**0.4956**		
t-stat	13.95	6.02	8.04	-17.87	-5.39	5.12	-8.26	27.97		
***p*-value**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.0002**	**0.0000**	**0.0000**		

Table 3.3 *(continued)*

Panel B **Family Firm Assets / Industry Assets** (Family Voting Power ≥ 25%)

Year	Intercept	Log(mnYear)	Log(nFirm)	Log(mBVA)	mMVA/BVA	mOIbD/BVA	mEarnVol	AmeDum	N	LL
1992	0.5171	0.0629	0.0534	-0.0375	-0.0801	-0.0096	-0.5486	0.3454	386	-189.14
	[0.0590]	[0.0565]	[0.0244]	[0.0081]	[0.0028]	[0.9609]	[0.2413]	[0.0625]		
1993	0.7267	0.0440	0.0460	-0.0452	-0.0732	0.1014	-0.8263	0.3335	390	-188.54
	[0.0114]	[0.1383]	[0.0464]	[0.0021]	[0.0169]	[0.6526]	[0.1586]	[0.0706]		
1994	1.3781	0.0707	0.0337	-0.0743	-0.1724	0.2132	-0.7871	0.4342	393	-192.91
	[0.0001]	[0.0235]	[0.1396]	[0.0001]	[0.0001]	[0.3877]	[0.1592]	[0.0224]		
1995	0.7571	0.0497	0.0154	-0.0435	-0.0566	-0.0292	-0.4182	0.3945	402	-203.30
	[0.0062]	[0.0787]	[0.4581]	[0.0021]	[0.0637]	[0.9049]	[0.3984]	[0.0247]		
1996	0.9039	0.0593	0.0379	-0.0552	-0.0518	0.1890	-1.0138	0.2994	405	-186.04
	[0.0012]	[0.0306]	[0.0526]	[0.0001]	[0.0617]	[0.4684]	[0.0926]	[0.0669]		
1997	0.8011	0.0502	0.0289	-0.0502	-0.0260	0.2001	-0.7336	0.4157	408	-184.90
	[0.0046]	[0.0792]	[0.1296]	[0.0003]	[0.1981]	[0.3089]	[0.2121]	[0.0102]		
1998	0.6669	0.0518	0.0369	-0.0474	-0.0117	0.4690	-0.5103	0.3544	410	-189.26
	[0.0210]	[0.0919]	[0.0515]	[0.0007]	[0.6765]	[0.0198]	[0.4018]	[0.0315]		
1999	0.6536	0.0500	0.0367	-0.0462	-0.0050	0.5584	-0.7044	0.3158	414	-164.54
	[0.0088]	[0.0750]	[0.0311]	[0.0002]	[0.7478]	[0.0085]	[0.1475]	[0.0355]		
2000	0.6802	0.0764	0.0384	-0.0479	-0.0491	0.4784	-0.3781	0.5548	420	-176.40
	[0.0070]	[0.0124]	[0.0276]	[0.0001]	[0.0525]	[0.0197]	[0.2635]	[0.0004]		
2001	0.5928	0.0786	0.0351	-0.0426	-0.0324	0.1614	-0.5870	0.5153	422	-169.69
	[0.0204]	[0.0105]	[0.0319]	[0.0006]	[0.1636]	[0.2905]	[0.0540]	[0.0007]		
2002	0.7032	0.1127	0.0413	-0.0502	-0.0782	0.1575	-0.8054	0.4162	424	-165.45
	[0.0075]	[0.0005]	[0.0117]	[0.0001]	[0.0163]	[0.4124]	[0.0365]	[0.0058]		
2003	0.4637	0.1554	0.0443	-0.0478	-0.0433	0.1525	-0.4003	0.4194	420	-182.76
	[0.0945]	[0.0001]	[0.0109]	[0.0004]	[0.0608]	[0.3746]	[0.1782]	[0.0098]		

Table 3.3 *(continued)*

Panel B *(continued)*

Year	Intercept	Log(mnYear)	Log(nFirm)	Log(mBVA)	mMVA/BVA	mOIbD/BVA	mEarnVol	AmeDum	N	LL
2004	0.4751	0.1677	0.0573	-0.0544	-0.0196	0.1748	-0.5012	0.4197	419	-202.83
	[0.1327]	[0.0001]	[0.0025]	[0.0003]	[0.3799]	[0.3875]	[0.1353]	[0.0171]		
2005	0.5770	0.1454	0.0619	-0.0572	-0.0425	0.2982	-0.2394	0.3565	416	-212.26
	[0.0844]	[0.0014]	[0.0020]	[0.0003]	[0.0583]	[0.1217]	[0.3720]	[0.0538]		
2006	0.4961	0.1069	0.0719	-0.0483	-0.0601	0.2923	-0.0813	0.3111	401	-204.42
	[0.1446]	[0.0344]	[0.0013]	[0.0023]	[0.0236]	[0.1834]	[0.5558]	[0.1140]		
#Sign.	13/15	14/15	12/15	15/15	10/15	3/15	3/15	14/15		
Average	**0.6928**	**0.0854**	**0.0426**	**-0.0499**	**-0.0535**	**0.2272**	**-0.5690**	**0.3924**		
t-stat	11.78	7.89	11.77	-22.87	-5.15	5.22	-8.91	20.72		
***p*-value**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.0001**	**0.0000**	**0.0000**		

Table 4.1 Capital Structure Choices – Statistical Distribution and Definition of Variables

Below are the number of observations (*N*), mean, standard deviation (*Std. Dev.*), and various percentiles of the accounting variables that are used in univariate and multivariate settings throughout this chapter. Panel A1 through A4 presents statistics for the years 1993 through 2002 while Panel B1 through B4 presents statistics for the years 1996 through 2005. Definition of the variables is on page 79.

Panel A1	**Level of debt**			**Percentiles**						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	7,899	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Debt/BVA	7,882	0.59	6.57	0.00	0.00	0.00	0.22	0.92	4.34	305.51
Debt/MVA	6,984	0.16	0.16	0.00	0.00	0.00	0.11	0.49	0.70	0.93
BVA ($ mil)	7,882	2,484.42	18,115.01	0.01	0.20	1.90	151.55	6,963.75	34,660.07	530,518.20
Log(BVA)	7,882	18.47	2.60	8.53	11.65	14.03	18.62	22.55	24.16	26.83
MVA/BVA	6,984	8.06	81.79	0.10	0.71	0.94	1.61	13.52	100.47	4,056.93
ROA	7,876	-0.71	7.28	-341.19	-12.03	-1.86	0.01	0.12	0.22	74.44
FCF/BVE	7,355	-0.18	28.66	-428.29	-10.46	-2.25	0.12	0.62	2.39	2,356.11

Panel A2	**Maturity structure of debt**			**Percentiles**						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	4,632	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Debtin1yr	4,386	0.36	0.29	0.00	0.00	0.01	0.28	0.99	1.00	1.00
Debtin2yrs	4,080	0.52	0.32	0.00	0.00	0.05	0.49	1.00	1.00	1.00
Debtin3yrs	4,077	0.62	0.31	0.00	0.01	0.11	0.65	1.00	1.00	1.00
Debtin1+yrs	4,066	0.61	0.32	0.00	0.00	0.00	0.70	0.99	1.00	1.00
Debtin2+yrs	4,066	0.48	0.33	0.00	0.00	0.00	0.50	0.95	1.00	1.00
Debtin3+yrs	4,066	0.38	0.32	0.00	0.00	0.00	0.34	0.89	0.99	1.00
MVA/BVA	3,975	10.08	169.79	0.18	0.71	0.92	1.76	12.96	91.49	9,467.15
Log(MVA)	3,976	19.02	2.24	11.61	14.53	15.64	18.88	22.91	24.42	26.69
AbnEarn	3,842	7.20	208.83	-640.48	-4.02	-0.28	0.01	1.52	19.74	9,835.27
TermStr	4,610	1.26	0.38	-0.68	0.52	0.96	1.16	1.78	3.02	3.27

Table 4.1 *(continued)*

Panel A3	Priority structure of debt			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	4,632	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
CLeases/FixClm	4,342	0.04	0.07	0.00	0.00	0.00	0.00	0.20	0.34	0.50
Secured/FixClm	4,036	0.27	0.27	0.00	0.00	0.00	0.19	0.81	0.96	1.60
Ordinary/FixClm	4,065	0.50	0.33	0.00	0.00	0.00	0.54	0.98	1.00	1.70
Subord/FixClm	4,086	0.05	0.13	0.00	0.00	0.00	0.00	0.33	0.67	1.01
PrefEq/FixClm	4,342	0.10	0.22	0.00	0.00	0.00	0.00	0.65	1.00	1.00
MVA/BVA	3,975	10.08	169.79	0.18	0.71	0.92	1.76	12.96	91.49	9,467.15
AbnEarn	3,842	7.20	208.83	-640.48	-4.02	-0.28	0.01	1.52	19.74	9,835.27
Tax-LossDum	4,632	0.23	0.32	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Log(MVA)	3,976	19.02	2.24	11.61	14.53	15.64	18.88	22.91	24.42	26.69

Panel A4	Cash holdings and dividend policy			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	7,899	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Cash/BVA	7,882	0.18	0.21	0.00	0.00	0.01	0.09	0.66	0.86	1.00
DivYld	6,984	1.20	64.01	0.00	0.00	0.00	0.00	0.05	0.13	4,896.89
DivPay	6,371	0.74	25.14	0.00	0.00	0.00	0.00	1.21	4.80	1,988.50
Div/OIbD	6,464	0.15	1.60	0.00	0.00	0.00	0.00	0.39	1.40	99.69
BVA ($ mil)	7,882	2,484.42	18,115.01	0.01	0.20	1.90	151.55	6,963.75	34,660.07	530,518.20
Log(BVA)	7,882	18.47	2.60	8.53	11.65	14.03	18.62	22.55	24.16	26.83
MVA/BVA	6,984	8.06	81.79	0.10	0.71	0.94	1.61	13.52	100.47	4,056.93

Table 4.1 *(continued)*

Panel B1	Level of debt			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	7,899	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Debt/BVA	7,899	0.74	8.05	0.00	0.00	0.00	0.22	1.03	6.50	456.74
Debt/MVA	7,343	0.17	0.17	0.00	0.00	0.00	0.12	0.50	0.70	0.96
BVA ($ mil)	7,899	3,318.95	26,316.88	0.01	0.32	2.22	188.52	8,876.99	47,178.82	921,622.00
Log(BVA)	7,899	18.71	2.64	8.35	11.84	14.11	18.89	22.80	24.43	27.38
MVA/BVA	7,342	9.75	115.86	0.31	0.76	0.96	1.64	15.35	117.96	7,530.07
ROA	7,895	-1.43	36.14	-2,954.37	-15.87	-2.05	0.01	0.11	0.23	87.32
FCF/BVE	7,515	-0.33	23.75	-428.29	-12.36	-2.45	0.12	0.60	2.46	1,889.77

Panel B2	Maturity structure of debt			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	4,586	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Debtin1yr	4,416	0.35	0.29	0.00	0.00	0.01	0.27	0.99	1.00	1.00
Debtin2yrs	4,217	0.51	0.33	0.00	0.00	0.05	0.48	1.00	1.00	1.00
Debtin3yrs	4,216	0.61	0.32	0.00	0.01	0.10	0.64	1.00	1.00	1.00
Debtin1+yrs	4,203	0.62	0.32	0.00	0.00	0.00	0.71	0.99	1.00	1.00
Debtin2+yrs	4,203	0.48	0.33	0.00	0.00	0.00	0.52	0.95	1.00	1.00
Debtin3+yrs	4,203	0.38	0.32	0.00	0.00	0.00	0.36	0.90	0.99	1.00
MVA/BVA	4,154	9.11	98.93	0.30	0.76	0.93	1.80	15.32	96.56	4,739.18
Log(MVA)	4,156	19.18	2.28	11.61	14.43	15.72	19.08	23.15	24.63	26.96
AbnEarn	4,058	8.18	340.37	-5,184.57	-7.09	-0.30	0.01	1.32	19.69	19,444.33
TermStr	4,586	1.35	0.30	-0.68	0.35	1.06	1.28	1.78	2.34	3.27

Table 4.1 *(continued)*

Panel B3	Priority structure of debt			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	4,586	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
CLeases/FixClm	4,355	0.03	0.07	0.00	0.00	0.00	0.00	0.19	0.33	0.50
Secured/FixClm	4,076	0.26	0.27	0.00	0.00	0.00	0.19	0.80	0.96	1.69
Ordinary/FixClm	4,087	0.53	0.58	0.00	0.00	0.00	0.55	0.98	1.00	31.37
Subord/FixClm	4,102	0.05	0.45	0.00	0.00	0.00	0.00	0.34	0.66	27.64
PrefEq/FixClm	4,355	0.09	0.20	0.00	0.00	0.00	0.00	0.57	1.00	1.00
MVA/BVA	4,154	9.11	98.93	0.30	0.76	0.93	1.80	15.32	96.56	4,739.18
AbnEarn	4,058	8.18	340.37	-5,184.57	-7.09	-0.30	0.01	1.32	19.69	19,444.33
Tax-LossDum	4,586	0.29	0.34	0.00	0.00	0.00	0.10	1.00	1.00	1.00
Log(MVA)	4,156	19.18	2.28	11.61	14.43	15.72	19.08	23.15	24.63	26.96

Panel B4	Cash holdings and dividend policy			Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	7,899	0.14	0.35	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Cash/BVA	7,899	0.19	0.21	0.00	0.00	0.01	0.10	0.66	0.87	1.00
DivYld	7,342	1.46	67.61	0.00	0.00	0.00	0.00	0.05	0.13	3,484.26
DivPay	6,707	0.50	9.91	0.00	0.00	0.00	0.00	1.17	4.15	764.40
Div/OIbD	6,661	0.16	2.01	0.00	0.00	0.00	0.00	0.38	1.37	132.67
BVA ($ mil)	7,899	3,318.95	26,316.88	0.01	0.32	2.22	188.52	8,876.99	47,178.82	921,622.00
Log(BVA)	7,899	18.71	2.64	8.35	11.84	14.11	18.89	22.80	24.43	27.38
MVA/BVA	7,342	9.75	115.86	0.31	0.76	0.96	1.64	15.35	117.96	7,530.07

Table 4.1 *(continued)*

Variable	Definition
FFDum	dummy variable that takes the value 1 if the observation is a family firm; 0 otherwise
Level of debt	
Debt/BVA	total debt-to-book value of assets *[total debt = long-term debt + short-term debt]*
Debt/MVA	total debt-to-market value of assets
BVA	book value of assets
MVA/BVA	market-to-book assets
ROA	return on assets, i.e. net income-to-book value of assets
FCF/BVE	free cash flow-to-book value of equity *[free cash flow = operating income before depreciation – (income taxes – change in deferred taxes) – interest expense – preferred dividends – common dividends]*
Maturity structure of debt	
Debtin1yr	portion of debt that is due in the next year
Debtin2yrs	portion of debt that is due in the next 2 years
Debtin3yrs	portion of debt that is due in the next 3 years
Debtin1+yr	portion of debt that is due after next year
Debtin2+yrs	portion of debt that is due after next 2 years
Debtin3+yrs	portion of debt that is due after next 3 years
MVA/BVA	market-to-book assets
MVA	market value of assets
AbnEarn	abnormal earnings *[abnormal earnings $_t$ = (earnings per share excluding extraordinary items $_t$ – earnings per share excluding extraordinary items $_{t-1}$) / fiscal-year-end share price $_{t-1}$]*
TermStr	term structure *[term structure $_m$ = yield on a 10-year Treasury bond $_m$ – yield on a 6-month Treasury bill $_m$]*
Priority structure of debt	
CLeases/FixClm	portion of fixed claims that is capitalized leases
Secured/FixClm	portion of fixed claims that is secured debt
Ordinary/FixClm	portion of fixed claims that is ordinary debt
Subord/FixClm	portion of fixed claims that is subordinated debt
PrefEq/FixClm	portion of fixed claims that is preferred equity
MVA/BVA	market-to-book assets
AbnEarn	abnormal earnings *[abnormal earnings $_t$ = (earnings per share excluding extraordinary items $_t$ – earnings per share excluding extraordinary items $_{t-1}$) / fiscal-year-end share price $_{t-1}$]*
Tax-lossDum	dummy variable that takes the value 1 if the observation has a tax-loss carryforward; 0 otherwise
MVA	market value of assets
Cash holdings and dividend policy	
Cash/BVA	cash and short-term securities-to-book value of assets
DivYld	dividend yield
DivPay	dividend payout
Div/OIbD	common dividends-to-operating income before depreciation
BVA	book value of assets
MVA/BVA	market-to-book assets

Table 4.2 Level of Debt – Univariate Results

Panels A1 through A3 present the univariate statistics between family firms and non-family firms of the variables that are used in multivariate analysis of level of debt for the years 1993 through 2002 while Panels B1 through B3 present the same univariate statistics for the years 1996 through 2005. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. Variable definitions are on the previous page. ***, **, * denote significance levels of 1%, 5%, 10%, respectively. Variable *Debt/BVA* is winsorized between 0 and 1, and variables *MVA/BVA*, *ROA* and *FCF/BVE* are winsorized at 5th and 95th percentiles.

Panel A1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	1,123	0.2483	0.1988	6,759	0.2928	0.2199	***	***
Debt/MVA	1,118	0.1833	0.1364	5,866	0.1608	0.1092	***	***
BVA ($mil)	1,123	1,502.2118	163.0904	6,759	2,647.6145	149.5442	***	***
Log(BVA)	1,123	18.7638	18.7928	6,759	18.4220	18.5966	***	***
MVA/BVA	1,118	1.9668	1.3146	5,866	3.0747	1.6970	***	***
ROA	1,123	-0.0525	0.0157	6,753	-0.2333	0.0043	***	***
FCF/BVE	1,099	0.0482	0.1567	6,256	-0.1425	0.1172	***	***

Panel A2 (Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	851	0.2606	0.2194	5,168	0.3003	0.2234	***	
Debt/MVA	846	0.1829	0.1455	4,568	0.1485	0.0993	***	***
BVA ($mil)	851	1,021.2723	101.6814	5,171	1,123.0180	80.7932		***
Log(BVA)	851	18.3454	18.3163	5,168	17.8896	17.9386	***	***
MVA/BVA	846	2.2245	1.5012	4,565	3.4933	2.0680	***	***
ROA	851	-0.0729	0.0236	5,159	-0.3018	-0.0300	***	***
FCF/BVE	842	0.0258	0.1550	4,767	-0.2177	0.0890	***	***

Panel A3 (Family Voting Power ≥ 25% & Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	497	0.2634	0.2239	5,168	0.3003	0.2234	***	
Debt/MVA	496	0.1896	0.1554	4,568	0.1485	0.0993	***	***
BVA ($mil)	497	686.1201	91.3645	5,171	1,123.0180	80.7932	**	
Log(BVA)	497	18.2179	18.2410	5,168	17.8896	17.9386	***	**
MVA/BVA	496	2.0843	1.4280	4,565	3.4933	2.0680	***	***
ROA	497	-0.0473	0.0256	5,159	-0.3018	-0.0300	***	***
FCF/BVE	492	0.0465	0.1551	4,767	-0.2177	0.0890	***	***

Table 4.2 *(continued)*

Panel B1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	1,123	0.2495	0.1935	6,776	0.3007	0.2232	***	***
Debt/MVA	1,121	0.1850	0.1448	6,222	0.1629	0.1121	***	***
BVA ($mil)	1,123	2,021.4071	201.4021	6,776	3,533.9893	187.2593	***	***
Log(BVA)	1,123	19.0194	19.0298	6,776	18.6551	18.8665	***	***
MVA/BVA	1,121	2.0053	1.3340	6,221	3.2357	1.7309	***	***
ROA	1,123	-0.0572	0.0150	6,772	-0.2423	0.0036	***	***
FCF/BVE	1,092	0.0315	0.1463	6,423	-0.1750	0.1111	***	***

Panel B2 (Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	848	0.2565	0.2130	5,182	0.3081	0.2239	***	***
Debt/MVA	846	0.1815	0.1464	4,827	0.1480	0.0991	***	***
BVA ($mil)	848	1,311.6205	125.1601	5,185	1,414.9730	100.0227		***
Log(BVA)	848	18.5873	18.5028	5,182	18.1056	18.2035	***	***
MVA/BVA	846	2.2399	1.5199	4,823	3.6974	2.0989	***	***
ROA	848	-0.0766	0.0223	5,175	-0.3140	-0.0318	***	***
FCF/BVE	838	0.0049	0.1437	4,919	-0.2535	0.0773	***	***

Panel B3 (Family Voting Power ≥ 25% & Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debt/BVA	496	0.2578	0.2113	5,182	0.3081	0.2239	***	**
Debt/MVA	496	0.1865	0.1497	4,827	0.1480	0.0991	***	***
BVA ($mil)	496	958.5841	104.5398	5,185	1,414.9730	100.0227	*	
Log(BVA)	496	18.4119	18.3663	5,182	18.1056	18.2035	***	*
MVA/BVA	496	2.0900	1.4360	4,823	3.6974	2.0989	***	***
ROA	496	-0.0560	0.0218	5,175	-0.3140	-0.0318	***	***
FCF/BVE	489	0.0181	0.1438	4,919	-0.2535	0.0773	***	***

Table 4.3 Level of Debt – Multivariate Results

Panels A1 and A2 of the table present results of GLS models, where the Compustat universe over 1993-2002 period is used as a sample while Panels B1 and B2 present results for the years 1996 through 2005. In Panels A1 and B1, the dependent variable is book value of debt-to-book value of assets while the dependent variable is book value of debt-to-market value of assets in Panels A2 and B2. *BVA* is book value of assets. *MVA/BVA* is market value of assets-to-book value of assets. *ROA* is net income-to-book value of assets. *FCF/BVE* is free cash flow-to-book value of equity. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *Time* represents the dummy variables, which take the value 1 for each of the observation years; and 0 otherwise, excluding the year 2002. *Industry* represents either 10 SIC manual divisions as presented in Kahle and Walkling (1996) (*MD10*), 38 industries defined by Fama and French (*FF38*) or 2-digit SIC codes (*SIC2*). *P*-values adjusted for heteroskedasticity are in square brackets. Variable *Debt/BVA* is winsorized between 0 and 1 while variables *MVA/BVA*, *ROA* and *FCF/BVE* are winsorized at 5th and 95th percentiles.

Panel A1 **Debt/BVA** (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0181	0.0165	0.0200	0.0200	0.0182	0.0172	0.0199	0.0182	0.0171
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0174	-0.0159	-0.0153	-0.0185	-0.0170	-0.0151	-0.0181	-0.0166	-0.0148
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	-0.0091	-0.0113	-0.0353	-0.0274	-0.0264	-0.0322	-0.0165	-0.0167	-0.0222
	[0.0504]	[0.0130]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0005]	[0.0001]
FCF/BVE	-0.0239	-0.0255	-0.0190	-0.0144	-0.0176	-0.0168	-0.0205	-0.0230	-0.0221
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**0.0056**	**-0.0020**	**-0.0017**	**0.0139**	**0.0046**	**0.0005**	**0.0196**	**0.0054**	**0.0019**
	[0.0104]	**[0.3624]**	**[0.4136]**	**[0.0001]**	**[0.0587]**	**[0.8221]**	**[0.0001]**	**[0.0850]**	**[0.5470]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	46,217	46,387	46,387	33,858	36,137	35,863	31,141	33,262	33,016
Adj. R^2	0.1408	0.1623	0.2793	0.1253	0.1710	0.2226	0.1243	0.1708	0.2225

Table 4.3 *(continued)*

Panel A2 **Debt/MVA** (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0113	0.0097	0.0127	0.0114	0.0098	0.0087	0.0114	0.0099	0.0087
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0257	-0.0240	-0.0235	-0.0262	-0.0248	-0.0230	-0.0257	-0.0243	-0.0226
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	-0.0229	-0.0252	-0.0470	-0.0381	-0.0384	-0.0438	-0.0290	-0.0301	-0.0354
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FCF/BVE	-0.0023	-0.0046	0.0018	0.0085	0.0048	0.0062	0.0036	0.0005	0.0020
	[0.3429]	[0.0551]	[0.4267]	[0.0013]	[0.0541]	[0.0100]	[0.1828]	[0.8277]	[0.4047]
FFDum	**0.0107**	**0.0053**	**0.0052**	**0.0202**	**0.0118**	**0.0077**	**0.0279**	**0.0149**	**0.0105**
	[0.0001]	**[0.0061]**	**[0.0045]**	**[0.0001]**	**[0.0001]**	**[0.0002]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	46,217	46,386	46,386	33,858	36,136	35,862	31,141	33,261	33,015
Adj. R^2	0.1822	0.2063	0.3197	0.1919	0.2319	0.2851	0.1915	0.2323	0.2858

Table 4.3 *(continued)*

Panel B1 **Debt/BVA** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0185	0.0170	0.0202	0.0202	0.0187	0.0175	0.0201	0.0186	0.0174
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0150	-0.0137	-0.0137	-0.0158	-0.0145	-0.0131	-0.0154	-0.0142	-0.0127
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	-0.0003	-0.0021	-0.0241	-0.0136	-0.0143	-0.0170	-0.0048	-0.0062	-0.0086
	[0.9411]	[0.6113]	[0.0001]	[0.0022]	[0.0007]	[0.0001]	[0.2820]	[0.1491]	[0.0388]
FCF/BVE	-0.0322	-0.0340	-0.0293	-0.0265	-0.0282	-0.0286	-0.0316	-0.0330	-0.0333
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**0.0070**	**-0.0004**	**-0.0013**	**0.0149**	**0.0044**	**-0.0005**	**0.0195**	**0.0040**	**-0.0011**
	[0.0009]	**[0.8422]**	**[0.4136]**	**[0.0001]**	**[0.0605]**	**[0.8428]**	**[0.0001]**	**[0.1793]**	**[0.7038]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	51,356	51,591	51,591	37,231	39,896	39,617	34,375	36,849	36,600
Adj. R^2	0.1342	0.1588	0.2748	0.1206	0.1713	0.2234	0.1194	0.1705	0.2223

Table 4.3 *(continued)*

Panel B2 **Debt/MVA** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0111	0.0097	0.0124	0.0110	0.0096	0.0084	0.0110	0.0097	0.0084
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0222	-0.0206	-0.0206	-0.0224	-0.0212	-0.0199	-0.0220	-0.0208	-0.0195
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	-0.0212	-0.0229	-0.0425	-0.0319	-0.0331	-0.0357	-0.0245	-0.0262	-0.0286
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FCF/BVE	-0.0043	-0.0069	-0.0023	0.0030	0.0004	0.0006	-0.0011	-0.0033	-0.0031
	[0.0422]	[0.0010]	[0.2468]	[0.1794]	[0.8396]	[0.7735]	[0.6193]	[0.1256]	[0.1395]
FFDum	**0.0124**	**0.0066**	**0.0054**	**0.0210**	**0.0113**	**0.0065**	**0.0271**	**0.0130**	**0.0073**
	[0.0001]	**[0.0003]**	**[0.0016]**	**[0.0001]**	**[0.0001]**	**[0.0009]**	**[0.0001]**	**[0.0001]**	**[0.0034]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	51,356	51,590	51,590	37,231	39,895	39,616	34,375	36,848	36,599
Adj. R^2	0.1748	0.2025	0.3167	0.1826	0.2291	0.2842	0.1820	0.2293	0.2846

Table 4.4 Maturity Structure of Debt – Univariate Results

Panels A1 and A2 present the univariate statistics between family firms and non-family firms of the variables that are used in multivariate analysis of maturity structure of debt for the years 1993 through 2002 while Panels B1 and B2 present the same univariate statistics for the years 1996 through 2005. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. Variable definitions are on page 79. ***, **, * denote significance levels of 1%, 5%, 10%, respectively. Variable *MVA/BVA* is winsorized at 5th and 95th percentiles, and variable *AbnEarn* is winsorized between -5 and 5.

Panel A1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debtin1yr	645	0.3381	0.2644	3,741	0.3591	0.2835	*	
Debtin2yr	622	0.5158	0.4995	3,458	0.5223	0.4933		
Debtin3yr	621	0.6280	0.6658	3,456	0.6195	0.6504		
Debtin1+yr	620	0.6383	0.7235	3,446	0.6079	0.6984	**	*
Debtin2+yr	620	0.4826	0.5005	3,446	0.4749	0.5035		
Debtin3+yr	620	0.3705	0.3344	3,446	0.3777	0.3431		
MVA/BVA	658	2.0891	1.4441	3,317	3.1289	1.8625	***	***
Log(MVA)	658	19.0037	18.8342	3,318	19.0229	18.9037		
AbnEarn	647	0.1594	0.0117	3,195	0.1743	0.0137		
TermStr	660	0.0121	0.0116	3,950	0.0126	0.0116	***	

Panel A2 (Family Voting Power ≥ 25%)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debtin1yr	375	0.3364	0.2472	3,741	0.3591	0.2835		
Debtin2yr	363	0.5200	0.5000	3,458	0.5223	0.4933		
Debtin3yr	363	0.6367	0.6753	3,456	0.6195	0.6504		
Debtin1pyr	363	0.6390	0.7388	3,446	0.6079	0.6984	*	
Debtin2pyr	363	0.4775	0.4944	3,446	0.4749	0.5035		
Debtin3pyr	363	0.3626	0.3249	3,446	0.3777	0.3431		
MVA/BVA	383	1.9034	1.3542	3,317	3.1289	1.8625	***	***
Log(MVA)	383	18.8028	18.7006	3,318	19.0229	18.9037	**	
AbnEarn	377	0.1899	0.0180	3,194	0.1793	0.0141		
TermStr	385	0.0121	0.0116	3,950	0.0126	0.0116	***	

Table 4.4 *(continued)*

Panel B1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debtin1yr	639	0.3404	0.2576	3,777	0.3558	0.2760		
Debtin2yr	624	0.5170	0.5152	3,593	0.5138	0.4710		
Debtin3yr	623	0.6262	0.6654	3,593	0.6111	0.6309		
Debtin1pyr	623	0.6356	0.7205	3,580	0.6138	0.7094	*	
Debtin2pyr	623	0.4805	0.4903	3,580	0.4838	0.5245		
Debtin3pyr	623	0.3723	0.3311	3,580	0.3863	0.3659		
MVA/BVA	655	2.1288	1.4592	3,499	3.3662	1.9223	***	***
Log(MVA)	655	19.1818	19.0805	3,501	19.1834	19.0832		
AbnEarn	652	0.1342	0.0117	3,406	0.1371	0.0146		
TermStr	656	0.0132	0.0128	3,930	0.0135	0.0128	***	

Panel B2 (Family Voting Power ≥ 25%)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Debtin1yr	370	0.3398	0.2480	3,777	0.3558	0.2760		
Debtin2yr	364	0.5264	0.5259	3,593	0.5138	0.4710		
Debtin3yr	363	0.6362	0.6831	3,593	0.6111	0.6309		
Debtin1pyr	363	0.6364	0.7275	3,580	0.6138	0.7094		
Debtin2pyr	363	0.4711	0.4738	3,580	0.4838	0.5245		
Debtin3pyr	363	0.3629	0.3202	3,580	0.3863	0.3659		
MVA/BVA	381	1.9190	1.3883	3,499	3.3662	1.9223	***	***
Log(MVA)	381	18.9662	18.8659	3,501	19.1834	19.0832	**	*
AbnEarn	381	0.1283	0.0116	3,405	0.1458	0.0150		
TermStr	382	0.0132	0.0128	3,930	0.0135	0.0128	***	

Table 4.5 Maturity Structure of Debt – Multivariate Results

Panels A and B of the table present results of GLS models, where the Compustat universe with SIC codes 2000 through 5999 over 1993-2002 and 1996-2005 periods is used as a sample, respectively. The dependent variables are portion of total debt that is due in various years. *MVA/BVA* is market value of assets-to-book value of assets. *MVA* is market value of assets. *AbnEarn* is abnormal earnings measured as the difference between current year's and previous year's EPS (excluding extraordinary items) divided by previous year's share price. *TermStr* is term structure measured as the difference between the monthly yield on a 10-year Treasury bond and 6-month Treasury bill, which is then matched to a company by fiscal year and its fiscal-year-end month. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *Time* represents dummy variables, which take the values 1 for each of the observation years; and 0 otherwise, excluding the year 2002. *Industry* represents 2-digit SIC codes (*SIC2*). *P*-values adjusted for heteroskedasticity are in square brackets. The variable *MVA/BVA* is winsorized at 5th and 95th percentiles and *AbnEarn* is winsorized between -5 and +5.

Panel A	**Overall** (over 1993-2002 period)						**Family Voting Power ≥ 25%** (over 1993-2002 period)					
	Debt in 1 year	**Debt in 2 years**	**Debt in 3 years**	**Debt in 1+ years**	**Debt in 2+ years**	**Debt in 3+ years**	**Debt in 1 year**	**Debt in 2 years**	**Debt in 3 years**	**Debt in 1+ years**	**Debt in 2+ years**	**Debt in 3+ years**
MVA/BVA	0.0229	0.0296	0.0254	-0.0288	-0.0298	-0.0255	0.0226	0.0293	0.0249	-0.0287	-0.0296	-0.0250
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Log(MVA)	-0.0437	-0.0614	-0.0642	0.0476	0.0616	0.0642	-0.0438	-0.0615	-0.0641	0.0477	0.0617	0.0642
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
AbnEarn	0.0001	-0.0044	-0.0021	0.0021	0.0045	0.0026	0.0012	-0.0043	-0.0021	0.0010	0.0044	0.0026
	[0.9652]	[0.1143]	[0.4432]	[0.4336]	[0.1040]	[0.3440]	[0.6171]	[0.1297]	[0.4487]	[0.7197]	[0.1244]	[0.3611]
TermStr	0.6532	0.7964	0.7119	-0.5862	-0.7880	-0.6813	0.6753	0.8359	0.7399	-0.6184	-0.8342	-0.7098
	[0.0001]	[0.0001]	[0.0001]	[0.0012]	[0.0001]	[0.0002]	[0.0001]	[0.0001]	[0.0001]	[0.0010]	[0.0001]	[0.0001]
FFDum	**-0.0192**	**-0.0187**	**-0.0155**	**0.0260**	**0.0187**	**0.0153**	**-0.0168**	**-0.0107**	**-0.0080**	**0.0204**	**0.0104**	**0.0080**
	[0.0002]	**[0.0010]**	**[0.0055]**	**[0.0001]**	**[0.0012]**	**[0.0067]**	**[0.0108]**	**[0.1401]**	**[0.2579]**	**[0.0047]**	**[0.1566]**	**[0.2626]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	23,594	19,597	19,568	19,128	19,128	19,128	21,634	17,950	17,923	17,538	17,538	17,538
Adj. R^2	0.1777	0.2724	0.2931	0.2116	0.2771	0.2979	0.1794	0.2781	0.2983	0.2158	0.2829	0.3030

Table 4.5 *(continued)*

Panel B	**Overall** (over 1996-2005 period)						**Family Voting Power ≥ 25%** (over 1996-2005 period)					
	Debt in 1 year	**Debt in 2 years**	**Debt in 3 years**	**Debt in 1+ years**	**Debt in 2+ years**	**Debt in 3+ years**	**Debt in 1 year**	**Debt in 2 years**	**Debt in 3 years**	**Debt in 1+ years**	**Debt in 2+ years**	**Debt in 3+ years**
MVA/BVA	0.0201	0.0240	0.0200	-0.0255	-0.0243	-0.0201	0.0200	0.0237	0.0197	-0.0255	-0.0240	-0.0198
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Log(MVA)	-0.0469	-0.0633	-0.0643	0.0515	0.0635	0.0646	-0.0471	-0.0635	-0.0645	0.0518	0.0638	0.0648
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
AbnEarn	-0.0024	-0.0047	-0.0009	0.0049	0.0046	0.0012	-0.0020	-0.0048	-0.0009	0.0048	0.0046	0.0012
	[0.2818]	[0.0674]	[0.7137]	[0.0555]	[0.0779]	[0.6343]	[0.3671]	[0.0714]	[0.7301]	[0.0674]	[0.0838]	[0.6563]
TermStr	0.5526	0.8631	0.8134	-0.6951	-0.8821	-0.8042	0.5665	0.8582	0.8278	-0.7033	-0.8774	-0.8072
	[0.0002]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0002]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**-0.0131**	**-0.0082**	**-0.0059**	**0.0194**	**0.0084**	**0.0061**	**-0.0137**	**0.0009**	**0.0032**	**0.0169**	**-0.0000**	**-0.0022**
	[0.0105]	**[0.1454]**	**[0.2849]**	**[0.0005]**	**[0.1414]**	**[0.2805]**	**[0.0360]**	**[0.8961]**	**[0.6516]**	**[0.0181]**	**[0.9949]**	**[0.7620]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	25,413	21,041	21,014	20,499	20,499	20,499	23,390	19,336	19,310	18,853	18,853	18,853
Adj. R^2	0.1938	0.2840	0.2948	0.2378	0.2894	0.2996	0.1964	0.2902	0.3004	0.2425	0.2958	0.3063

Table 4.6 Priority Structure of Debt – Univariate Results

Panels A1 and A2 present the univariate statistics between family firms and non-family firms of the variables that are used in multivariate analysis of priority structure of debt for the years 1993 through 2002 while Panels B1 and B2 present the same univariate statistics for the years 1996 through 2005. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. Variable definitions are on page 79. ***, **, * denote significance levels of 1%, 5%, 10%, respectively. Variable *MVA/BVA* is winsorized at 5th and 95th percentiles, variables *CLeases/FixClm*, *Secured/FixClm*, *Ordinary/FixClm*, *Subord/FixClm* and *PrefEq/FixClm* are winsorized between 0 and 1, and variable *AbnEarn* is winsorized between -5 and 5.

Panel A1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
CLeases/FixClm	635	0.0353	0.0010	3,707	0.0363	0.0010		
Secured/FixClm	623	0.2982	0.2383	3,413	0.2591	0.1794	***	***
Ordinary/FixClm	627	0.5778	0.6463	3,438	0.4900	0.5152	***	***
Subord/FixClm	631	0.0394	0.0000	3,455	0.0465	0.0000		
PrefEq/FixClm	635	0.0558	0.0000	3,707	0.1134	0.0000	***	***
MVA/BVA	658	2.0891	1.4441	3,317	3.1289	1.8625	***	***
AbnEarn	647	0.1594	0.0117	3,195	0.1743	0.0137		
Tax-LossDum	660	0.2293	0.0000	3,972	0.2278	0.0000		
Log(MVA)	658	19.0037	18.8342	3,318	19.0229	18.9037		

Panel A2 (Family Voting Power ≥ 25%)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
CLeases/FixClm	369	0.0339	0.0010	3,707	0.0363	0.0010		
Secured/FixClm	365	0.3120	0.2527	3,413	0.2591	0.1794	***	***
Ordinary/FixClm	368	0.5772	0.6276	3,438	0.4900	0.5152	***	***
Subord/FixClm	369	0.0450	0.0000	3,455	0.0465	0.0000		
PrefEq/FixClm	369	0.0518	0.0000	3,707	0.1134	0.0000	***	***
MVA/BVA	383	1.9034	1.3542	3,317	3.1289	1.8625	***	***
AbnEarn	377	0.1899	0.0180	3,194	0.1793	0.0141		
Tax-LossDum	385	0.2245	0.1000	3,972	0.2278	0.0000		
Log(MVA)	383	18.8028	18.7006	3,318	19.0229	18.9037	**	

Table 4.6 *(continued)*

Panel B1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
CLeases/FixClm	631	0.0340	0.0008	3,724	0.0341	0.0010		
Secured/FixClm	625	0.2902	0.2171	3,451	0.2597	0.1843	**	**
Ordinary/FixClm	625	0.5781	0.6419	3,462	0.5068	0.5323	***	***
Subord/FixClm	627	0.0405	0.0000	3,475	0.0470	0.0000		
PrefEq/FixClm	631	0.0530	0.0000	3,724	0.0988	0.0000	***	***
MVA/BVA	655	2.1288	1.4592	3,499	3.3662	1.9223	***	***
AbnEarn	652	0.1342	0.0117	3,406	0.1371	0.0146		
Tax-LossDum	656	0.2860	0.1000	3,930	0.2898	0.1000		
Log(MVA)	655	19.1818	19.0805	3,501	19.1834	19.0832		

Panel B2 (Family Voting Power ≥ 25%)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
CLeases/FixClm	365	0.0327	0.0008	3,724	0.0341	0.0010		
Secured/FixClm	364	0.3083	0.2259	3,451	0.2597	0.1843	***	***
Ordinary/FixClm	365	0.5780	0.6323	3,462	0.5068	0.5323	***	***
Subord/FixClm	365	0.0444	0.0000	3,475	0.0470	0.0000		
PrefEq/FixClm	365	0.0514	0.0000	3,724	0.0988	0.0000	***	***
MVA/BVA	381	1.9190	1.3883	3,499	3.3662	1.9223	***	***
AbnEarn	381	0.1283	0.0116	3,405	0.1458	0.0150		
Tax-LossDum	382	0.2776	0.1000	3,930	0.2898	0.1000		
Log(MVA)	381	18.9662	18.8659	3,501	19.1834	19.0832	**	*

Table 4.7 Priority Structure of Debt – Multivariate Results

Panels A and B of the table present results of GLS models, where the Compustat universe with SIC codes 2000 through 5999 over 1993-2002 and 1996-2005 periods is used as a sample, respectively. The dependent variables are claims in each priority class as a fraction of total fixed claims. *MVA/BVA* is market value of assets-to-book value of assets. *AbnEarn* is abnormal earnings measured as the difference between current year's and previous year's EPS (excluding extraordinary items) divided by previous year's share price. *Tax-lossDum* is a dummy variable, which takes the value 1 if the firm has a tax-loss carryforward; and 0 otherwise. *MVA* is market value of assets. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *Time* represents dummy variables, which take the values 1 for each of the observation years; and 0 otherwise, excluding the year 2002. *Industry* represents 2-digit SIC codes (*SIC2*). *P*-values adjusted for heteroskedasticity are in square brackets. The dependent variables are winsorized between 0 and 1 while variable *MVA/BVA* is winsorized at 5th and 95th percentiles and *AbnEarn* is winsorized between -5 and +5.

Panel A	**Overall** (over 1993-2002 period)					**Family Voting Power ≥ 25%** (over 1993-2002 period)				
	Capitalized Leases	**Secured Debt**	**Ordinary Claims**	**Subordinated Debt**	**Preferred Stock**	**Capitalized Leases**	**Secured Debt**	**Ordinary Claims**	**Subordinated Debt**	**Preferred Stock**
MVA/BVA	0.0016	-0.0205	-0.0321	-0.0037	0.0190	0.0012	-0.0209	-0.0313	-0.0034	0.0185
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
AbnEarn	-0.0018	0.0026	0.0001	0.0016	0.0014	-0.0018	0.0018	-0.0011	0.0016	0.0016
	[0.0174]	[0.3538]	[0.9702]	[0.1367]	[0.3478]	[0.0210]	[0.5272]	[0.7102]	[0.1431]	[0.3133]
Tax-lossDum	0.0044	-0.0059	-0.0265	0.0079	0.0141	0.0037	-0.0053	-0.0256	0.0065	0.0145
	[0.0014]	[0.2501]	[0.0001]	[0.0001]	[0.0001]	[0.0109]	[0.3206]	[0.0001]	[0.0015]	[0.0001]
Log(MVA)	-0.0038	-0.0348	0.0505	0.0040	-0.0118	-0.0037	-0.0345	0.0502	0.0042	-0.0119
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**-0.0056**	**0.0193**	**0.0461**	**0.0039**	**-0.0181**	**-0.0078**	**0.0170**	**0.0462**	**0.0086**	**-0.0231**
	[0.0005]	**[0.0012]**	**[0.0001]**	**[0.0850]**	**[0.0001]**	**[0.0002]**	**[0.0254]**	**[0.0001]**	**[0.0034]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	22,619	20,526	21,319	21,660	22,619	20,741	18,791	19,524	19,819	20,741
Adj. R^2	0.0542	0.0885	0.1733	0.0309	0.0981	0.0559	0.0881	0.1723	0.0343	0.0941

Table 4.7 *(continued)*

Panel B	**Overall** (over 1996-2005 period)					**Family Voting Power ≥ 25%** (over 1996-2005 period)				
	Capitalized Leases	**Secured Debt**	**Ordinary Claims**	**Subordinated Debt**	**Preferred Stock**	**Capitalized Leases**	**Secured Debt**	**Ordinary Claims**	**Subordinated Debt**	**Preferred Stock**
MVA/BVA	0.0001 [0.4936]	-0.0206 [0.0001]	-0.0249 [0.0001]	-0.0031 [0.0001]	0.0151 [0.0001]	-0.0000 [0.8692]	-0.0208 [0.0001]	-0.0243 [0.0001]	-0.0030 [0.0001]	0.0147 [0.0001]
AbnEarn	-0.0001 [0.8370]	0.0043 [0.0866]	0.0006 [0.8331]	0.0007 [0.4806]	0.0016 [0.2519]	0.0000 [0.9679]	0.0039 [0.1205]	0.0002 [0.9391]	0.0007 [0.5072]	0.0016 [0.2747]
Tax-lossDum	0.0016 [0.1994]	-0.0114 [0.0146]	-0.0249 [0.0001]	0.0071 [0.0001]	0.0154 [0.0001]	0.0006 [0.6408]	-0.0116 [0.0168]	-0.0243 [0.0001]	0.0051 [0.0079]	0.0153 [0.0001]
Log(MVA)	-0.0024 [0.0001]	-0.0326 [0.0001]	0.0530 [0.0001]	0.0040 [0.0001]	-0.0129 [0.0001]	-0.0024 [0.0001]	-0.0321 [0.0001]	0.0528 [0.0001]	0.0042 [0.0001]	-0.0129 [0.0001]
FFDum	**-0.0041** **[0.0075]**	**0.0197** **[0.0007]**	**0.0319** **[0.0001]**	**0.0051** **[0.0272]**	**-0.0155** **[0.0001]**	**-0.0073** **[0.0002]**	**0.0301** **[0.0001]**	**0.0424** **[0.0001]**	**0.0062** **[0.0331]**	**-0.0195** **[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	24,456	22,748	23,231	23,598	24,456	22,522	20,922	21,380	21,697	22,522
Adj. R^2	0.0390	0.0848	0.1835	0.0319	0.1019	0.0406	0.0853	0.1837	0.0341	0.0977

Table 4.8 Cash Holdings and Dividend Policy – Univariate Results

Panels A1 through A3 present the univariate statistics between family firms and non-family firms of the variables that are used in multivariate analysis of cash holdings and dividend policy for the years 1993 through 2002 while Panels B1 through B3 present the same univariate statistics for the years 1996 through 2005. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. Variable definitions are on page 79. ***, **, * denote significance levels of 1%, 5%, 10%, respectively. Variable *MVA/BVA* is winsorized at 5th and 95th percentiles, and variables *DivYld*, *DivPay*, and *Div/OIbD* are winsorized at 95th percentile.

Panel A1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	1,123	0.1420	0.0818	6,759	0.1896	0.0933	***	***
DivYld	1,118	0.0105	0.0002	5,866	0.0084	0.0000	***	***
DivPay	1,045	0.2233	0.0568	5,326	0.2255	0.0000		***
Div/OIbD	1,040	0.0771	0.0176	5,424	0.0690	0.0000	**	***
BVA ($mil)	1,123	1,502.2118	163.0904	6,759	2,647.6145	149.5442	***	***
Log(BVA)	1,123	18.7638	18.7928	6,759	18.4220	18.5966	***	***
MVA/BVA	1,118	1.9668	1.3146	5,866	3.0747	1.6970	***	***

Panel A2 (Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	851	0.1569	0.0971	5,168	0.2216	0.1283	***	***
DivYld	846	0.0071	0.0000	4,586	0.0042	0.0000	***	***
DivPay	771	0.1744	0.0000	3,776	0.1392	0.0000	***	***
Div/OIbD	783	0.0624	0.0000	3,943	0.0441	0.0000	***	***
BVA ($mil)	851	1,021.2723	101.6814	5,171	1,123.0180	80.7932		***
Log(BVA)	851	18.3454	18.3163	5,168	17.8896	17.9386	***	***
MVA/BVA	846	2.2245	1.5012	4,565	3.4933	2.0680	***	***

Panel A3 (Family Voting Power ≥ 25% & Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	497	0.1500	0.0908	5,168	0.2216	0.1283	***	***
DivYld	496	0.0070	0.0000	4,586	0.0042	0.0000	***	***
DivPay	460	0.1623	0.0000	3,776	0.1392	0.0000		***
Div/OIbD	466	0.0634	0.0000	3,943	0.0441	0.0000	***	***
BVA ($mil)	497	686.1201	91.3645	5,171	1,123.0180	80.7932	**	
Log(BVA)	497	18.2179	18.2410	5,168	17.8896	17.9386	***	**
MVA/BVA	496	2.0843	1.4280	4,565	3.4933	2.0680	***	***

Table 4.8 *(continued)*

Panel B1 (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	1,123	0.1465	0.0792	6,776	0.1943	0.0992	***	***
DivYld	1,121	0.0103	0.0013	6,221	0.0081	0.0000	***	***
DivPay	1,063	0.2185	0.0520	5,644	0.2159	0.0000		***
Div/OIbD	1,052	0.0751	0.0151	5,609	0.0679	0.0000	**	***
BVA ($mil)	1,123	2,021.4071	201.4021	6,776	3,533.9893	187.2593	***	***
Log(BVA)	1,123	19.0194	19.0298	6,776	18.6551	18.8665	***	***
MVA/BVA	1,121	2.0053	1.3340	6,221	3.2357	1.7309	***	***

Panel B2 (Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	848	0.1652	0.0975	5,182	0.2286	0.1400	***	***
DivYld	846	0.0068	0.0000	4,825	0.0041	0.0000	***	***
DivPay	788	0.1616	0.0000	4,048	0.1252	0.0000	***	***
Div/OIbD	798	0.0587	0.0000	4,115	0.0413	0.0000	***	***
BVA ($mil)	848	1,311.6205	125.1601	5,185	1,414.9730	100.0227		***
Log(BVA)	848	18.5873	18.5028	5,182	18.1056	18.2035	***	***
MVA/BVA	846	2.2399	1.5199	4,823	3.6974	2.0989	***	***

Panel B3 (Family Voting Power ≥ 25% & Excluding Utilities and Financials)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
Cash/BVA	496	0.1587	0.0973	5,182	0.2286	0.1400	***	***
DivYld	496	0.0068	0.0000	4,825	0.0041	0.0000	***	***
DivPay	470	0.1584	0.0000	4,048	0.1252	0.0000	**	***
Div/OIbD	473	0.0615	0.0000	4,115	0.0413	0.0000	***	***
BVA ($mil)	496	958.5841	104.5398	5,185	1,414.9730	100.0227	*	
Log(BVA)	496	18.4119	18.3663	5,182	18.1056	18.2035	***	*
MVA/BVA	496	2.0900	1.4360	4,823	3.6974	2.0989	***	***

Table 4.9 Cash Holdings and Dividend Policy – Multivariate Results

Panels A1 through A4 of the table present results of GLS models, where the Compustat universe over 1993-2002 period is used as a sample while Panels B1 through B4 present results for the years 1996 through 2005. In Panels A1 and B1, the dependent variable is cash and short-term securities-to-book value of assets. In Panels A2 and B2, the dependent variable is dividend yield. In Panels A3 and B3, the dependent variable is dividend payout ratio. In Panels A4 and B4, the dependent variable is common dividends-to-operating income before depreciation. *BVA* is book value of assets. *MVA/BVA* is market value of assets-to-book value of assets. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *Time* represents the dummy variables, which take the value 1 for each of the observation years; and 0 otherwise, excluding the year 2002. *Industry* represents either 10 SIC manual divisions as presented in Kahle and Walkling (1996) (*MD10*), 38 industries defined by Fama and French (*FF38*) or 2-digit SIC codes (*SIC2*). *P*-values adjusted for heteroskedasticity are in square brackets. Variables *DivYld*, *DivPay* and *Div/OIbD* are winsorized at 95th percentile while variable *MVA/BVA* is winsorized at 5th and 95th percentiles.

Panel A1 Cash/BVA (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	-0.0143	-0.0123	-0.0117	-0.0140	-0.0111	-0.0108	-0.0136	-0.0108	-0.0105
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.0210	0.0166	0.0153	0.0205	0.0154	0.0144	0.0200	0.0148	0.0138
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**-0.0253**	**-0.0137**	**-0.0126**	**-0.0361**	**-0.0171**	**-0.0164**	**-0.0406**	**-0.0158**	**-0.0154**
	[0.0001]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	51,326	51,617	51,617	37,068	39,823	39,487	34,248	36,836	36,533
Adj. R^2	0.1828	0.2492	0.2703	0.1477	0.2277	0.2437	0.1424	0.2257	0.2420

Table 4.9 *(continued)*

Panel A2 **DivYld** (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0016	0.0013	0.0015	0.0015	0.0013	0.0013	0.0015	0.0013	0.0013
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0001	-0.0000	-0.0001	-0.0001	-0.0000	-0.0001	-0.0000	-0.0000	-0.0000
	[0.0001]	[0.0447]	[0.0003]	[0.0004]	[0.0177]	[0.0056]	[0.0248]	[0.1529]	[0.0819]
FFDum	**0.0008**	**0.0011**	**0.0012**	**0.0022**	**0.0015**	**0.0015**	**0.0023**	**0.0013**	**0.0013**
	[0.0001]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	51,321	51,612	51,612	37,068	39,824	39,488	34,249	36,838	36,535
Adj. R^2	0.2606	0.3457	0.4043	0.1369	0.1630	0.1801	0.1347	0.1597	0.1786

Table 4.9 *(continued)*

Panel A3 **DivPay** (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0270	0.0209	0.0305	0.0377	0.0325	0.0330	0.0379	0.0328	0.0333
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0003	0.0022	-0.0053	-0.0053	-0.0041	-0.0045	-0.0046	-0.0036	-0.0040
	[0.7815]	[0.0322]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0003]	[0.0001]
FFDum	**-0.0011**	**0.0028**	**0.0082**	**0.0304**	**0.0167**	**0.0170**	**0.0348**	**0.0148**	**0.0146**
	[0.7951]	**[0.4927]**	**[0.0277]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0055]**	**[0.0066]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	33,158	33,238	33,238	21,528	22,967	22,810	19,510	20,843	20,700
Adj. R^2	0.1646	0.2192	0.3740	0.1074	0.1273	0.1416	0.1082	0.1255	0.1425

Table 4.9 *(continued)*

Panel A4 **Div/OIbD** (over 1993-2002 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0084	0.0064	0.0086	0.0112	0.0093	0.0095	0.0113	0.0095	0.0097
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.0027	0.0034	0.0014	0.0008	0.0010	0.0008	0.0009	0.0011	0.0009
	[0.0001]	[0.0001]	[0.0001]	[0.0155]	[0.0013]	[0.0066]	[0.0034]	[0.0007]	[0.0029]
FFDum	**0.0039**	**0.0052**	**0.0069**	**0.0140**	**0.0096**	**0.0098**	**0.0151**	**0.0083**	**0.0084**
	[0.0019]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	37,602	37,632	37,632	26,146	28,045	27,823	23,796	25,566	25,361
Adj. R^2	0.1441	0.2037	0.2591	0.0957	0.1159	0.1337	0.0971	0.1157	0.1356

Table 4.9 *(continued)*

Panel B1 **Cash/BVA** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	-0.0129	-0.0114	-0.0105	-0.0121	-0.0099	-0.0093	-0.0115	-0.0094	-0.0088
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.0154	0.0116	0.0107	0.0152	0.0109	0.0102	0.0147	0.0104	0.0097
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum	**-0.0279**	**-0.0143**	**-0.0127**	**-0.0397**	**-0.0174**	**-0.0159**	**-0.0465**	**-0.0175**	**-0.0166**
	[0.0001]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	58,108	58,549	58,549	41,663	45,049	44,685	38,673	41,849	41,524
Adj. R^2	0.1723	0.2505	0.2755	0.1277	0.2234	0.2412	0.1212	0.2195	0.2378

Table 4.9 *(continued)*

Panel B2 **DivYld** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0014	0.0011	0.0013	0.0012	0.0010	0.0010	0.0012	0.0010	0.0010
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	-0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0001	0.0000	0.0000	0.0000
	[0.8498]	[0.0792]	[0.8594]	[0.2637]	[0.9272]	[0.6707]	[0.9875]	[0.4464]	[0.5936]
FFDum	**0.0011**	**0.0013**	**0.0014**	**0.0023**	**0.0016**	**0.0016**	**0.0026**	**0.0016**	**0.0015**
	[0.0001]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	58,101	58,541	58,541	41,662	45,048	44,684	38,673	41,849	41,524
Adj. R^2	0.2573	0.3332	0.4012	0.1155	0.1479	0.1635	0.1120	0.1433	0.1611

Table 4.9 *(continued)*

Panel B3 **DivPay** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0234	0.0184	0.0253	0.0314	0.0267	0.0269	0.0314	0.0270	0.0273
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.0019	0.0039	-0.0035	-0.0047	-0.0034	-0.0037	-0.0041	-0.0029	-0.0032
	[0.0384]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0010]	[0.0004]
FFDum	**0.0055**	**0.0101**	**0.0142**	**0.0350**	**0.0208**	**0.0202**	**0.0416**	**0.0219**	**0.0206**
	[0.1662]	**[0.0095]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	36,434	36,552	36,552	23,084	24,780	24,609	21,025	22,589	22,433
Adj. R^2	0.1706	0.2233	0.3656	0.0905	0.1166	0.1299	0.0890	0.1136	0.1308

Table 4.9 *(continued)*

Panel B4 **Div/OIbD** (over 1996-2005 period)

	Overall			**Excl. Utilities &Financials**			**Family Voting Power ≥ 25% and Excl. Utilities &Financials**		
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
Log(BVA)	0.0076	0.0060	0.0076	0.0097	0.0081	0.0082	0.0098	0.0082	0.0083
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.0030	0.0036	0.0019	0.0007	0.0009	0.0008	0.0008	0.0010	0.0009
	[0.0001]	[0.0001]	[0.0001]	[0.0195]	[0.0009]	[0.0043]	[0.0036]	[0.0003]	[0.0011]
FFDum	**0.0071**	**0.0085**	**0.0098**	**0.0161**	**0.0116**	**0.0116**	**0.0183**	**0.0113**	**0.0114**
	[0.0001]	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**	**[0.0001]**
Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	MD10	FF38	SIC2	MD10	FF38	SIC2	MD10	FF38	SIC2
N	41,506	41,554	41,554	28,315	30,542	30,311	25,902	27,965	27,754
Adj. R^2	0.1591	0.2132	0.2631	0.0860	0.1083	0.1246	0.0860	0.1064	0.1259

Table 5.1 Performance and Survival – Survival Statistics

Panel A presents the overall survival statistics and Panel B presents the disaggregated survival statistics for family firms and non-family firms between January 2002 and December 2006. Delisting codes 200-399 represent acquired companies and delisting codes 400-599 represent delisted companies for reasons other than acquisition.

Panel A

	Family		Non-family	
	N	**Percentage**	**N**	**Percentage**
Survivor	792	75.21%	3,647	71.05%
Delisting codes 200-399	145	13.77%	824	16.05%
Delisting codes 400-599	116	11.02%	662	12.90%
Total	1,053	100.00%	5,133	100.00%

Panel B

	Family		Non-family	
Delisting codes	**N**	**Percentage**	**N**	**Percentage**
100	792	75.21%	3,647	71.05%
231	26	2.47%	219	4.27%
232	1	0.09%	0	0.00%
233	100	9.50%	475	9.25%
241	16	1.52%	100	1.95%
242	0	0.00%	2	0.04%
244	0	0.00%	1	0.02%
251	0	0.00%	1	0.02%
261	0	0.00%	2	0.04%
331	1	0.09%	18	0.35%
332	0	0.00%	2	0.04%
333	1	0.09%	0	0.00%
341	0	0.00%	3	0.06%
342	0	0.00%	1	0.02%
450	1	0.09%	7	0.14%
470	0	0.00%	8	0.16%
504	0	0.00%	2	0.04%
520	15	1.42%	82	1.60%
551	4	0.38%	7	0.14%
552	7	0.66%	121	2.36%
560	7	0.66%	47	0.92%
561	6	0.57%	38	0.74%
570	24	2.28%	55	1.07%
573	6	0.57%	2	0.04%
574	5	0.47%	61	1.19%
580	11	1.04%	53	1.03%
582	1	0.09%	14	0.27%
583	0	0.00%	1	0.02%
584	21	1.99%	149	2.90%
585	6	0.57%	13	0.25%
587	2	0.19%	2	0.04%
Total	1,053	100.00%	5,133	100.00%

Table 5.2 Performance – Unadjusted Average Daily Returns

Panel A presents the average daily returns for various portfolios of family firms and non-family firms over various periods before and after Sarbanes-Oxley Act of 2002. Panel B presents the average daily return for various portfolios of family firms, where family's voting power is at least 25%, and non-family firms over various periods before and after Sarbanes-Oxley Act of 2002. *T-test* is utilized to test the difference in means. ***, **, * denote significance levels of 1%, 5%, 10%, respectively.

Panel A (Overall)

	All			Survivors			Delisting Codes 200-399			Delisting Codes 400-599		
Period	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**
0.5 years pre-SOX	0.0010	-0.0001		0.0010	0.0000		0.0007	0.0000		0.0008	-0.0010	*
0.5 years post-SOX	-0.0001	0.0000		-0.0002	-0.0002		-0.0001	0.0002		0.0003	0.0009	
1.5 years pre-SOX	0.0014	0.0009		0.0014	0.0009		0.0013	0.0010		0.0016	0.0006	
1.5 years post-SOX	0.0015	0.0017		0.0015	0.0016		0.0013	0.0018		0.0017	0.0021	
2.5 years pre-SOX	0.0010	0.0007		0.0010	0.0008		0.0009	0.0007		0.0009	0.0000	
2.5 years post-SOX	0.0013	0.0014		0.0013	0.0013		0.0013	0.0015		0.0012	0.0012	
3.5 years pre-SOX	0.0010	0.0009		0.0010	0.0010		0.0008	0.0009		0.0011	0.0008	
3.5 years post-SOX	0.0010	0.0011		0.0011	0.0010		0.0012	0.0013		0.0005	-0.0000	
4.5 years pre-SOX	0.0009	0.0008		0.0009	0.0009		0.0007	0.0007		0.0011	0.0008	
4.5 years post-SOX	0.0010	0.0010		0.0010	0.0010		0.0014	0.0015		-0.0007	-0.0006	

Table 5.2 *(continued)*

Panel B (Family Voting Power ≥ 25%)

	All			Survivors			Delisting Codes 200-399			Delisting Codes 400-599		
Period	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**
0.5 years pre-SOX	0.0010	-0.0001		0.0010	0.0000		0.0005	0.0000		0.0012	-0.0010	**
0.5 years post-SOX	0.0001	0.0000		-0.0000	-0.0002		0.0002	0.0002		0.0005	0.0009	
1.5 years pre-SOX	0.0015	0.0009		0.0014	0.0009		0.0014	0.0010		0.0018	0.0006	
1.5 years post-SOX	0.0017	0.0017		0.0016	0.0016		0.0018	0.0018		0.0017	0.0021	
2.5 years pre-SOX	0.0010	0.0007		0.0010	0.0008		0.0008	0.0007		0.0009	0.0000	
2.5 years post-SOX	0.0014	0.0014		0.0014	0.0013		0.0016	0.0015		0.0012	0.0012	
3.5 years pre-SOX	0.0010	0.0009		0.0010	0.0010		0.0008	0.0009		0.0010	0.0008	
3.5 years post-SOX	0.0011	0.0011		0.0011	0.0010		0.0015	0.0013		0.0005	-0.0000	
4.5 years pre-SOX	0.0009	0.0008		0.0009	0.0009		0.0008	0.0007		0.0010	0.0008	
4.5 years post-SOX	0.0011	0.0010		0.0011	0.0010		0.0017	0.0015		-0.0000	-0.0006	

Table 5.3 Performance – Adjusted Average Daily Returns

Panel A presents the average daily returns adjusted using Fama-French three-factor model for various portfolios of family firms and non-family firms over various periods before and after Sarbanes-Oxley Act of 2002. Panel B presents the average daily return for various portfolios of family firms, where family's voting power is at least 25%, and non-family firms over various periods before and after Sarbanes-Oxley Act of 2002. Factor loadings of year *t* are used to adjust the returns of year *t+1*. *T-test* is utilized to test the difference in means. ***, **, * denote significance levels of 1%, 5%, 10%, respectively.

Panel A (Overall)

	All			Survivors			Delisting Codes 200-399			Delisting Codes 400-599		
Period	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**
0.5 years pre-SOX	0.0009	0.0001	***	0.0010	0.0003	***	0.0006	0.0003		0.0010	-0.0007	*
0.5 years post-SOX	0.0008	0.0010		0.0007	0.0008		0.0007	0.0012		0.0010	0.0018	
1.5 years pre-SOX	0.0013	0.0009		0.0013	0.0009		0.0011	0.0010		0.0013	0.0004	
1.5 years post-SOX	0.0010	0.0010		0.0010	0.0009		0.0009	0.0011		0.0013	0.0015	
2.5 years pre-SOX	0.0009	0.0006		0.0009	0.0008		0.0007	0.0006		0.0007	-0.0001	*
2.5 years post-SOX	0.0008	0.0008		0.0008	0.0007		0.0009	0.0009		0.0008	0.0007	
3.5 years pre-SOX	0.0007	0.0007		0.0007	0.0007		0.0005	0.0006		0.0008	0.0005	
3.5 years post-SOX	0.0006	0.0006		0.0006	0.0006		0.0008	0.0009		0.0002	-0.0005	*
4.5 years pre-SOX	0.0007	0.0007		0.0007	0.0007		0.0005	0.0006		0.0009	0.0006	
4.5 years post-SOX	0.0006	0.0005		0.0006	0.0005		0.0010	0.0011		-0.0010	-0.0010	

Table 5.3 *(continued)*

Panel B (Family Voting Power ≥ 25%)

	All			Survivors			Delisting Codes 200-399			Delisting Codes 400-599		
Period	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**	**F**	**NF**	**Diff.**
0.5 years pre-SOX	0.0009	0.0001	**	0.0009	0.0003	**	0.0004	0.0003		0.0013	-0.0007	**
0.5 years post-SOX	0.0010	0.0010		0.0009	0.0008		0.0011	0.0012		0.0012	0.0018	
1.5 years pre-SOX	0.0013	0.0009		0.0013	0.0009		0.0012	0.0010		0.0016	0.0004	*
1.5 years post-SOX	0.0012	0.0010		0.0012	0.0009		0.0014	0.0011		0.0013	0.0015	
2.5 years pre-SOX	0.0008	0.0006		0.0009	0.0008		0.0007	0.0006		0.0008	-0.0001	*
2.5 years post-SOX	0.0010	0.0008		0.0010	0.0007	*	0.0012	0.0009		0.0008	0.0007	
3.5 years pre-SOX	0.0007	0.0007		0.0007	0.0007		0.0005	0.0006		0.0008	0.0005	
3.5 years post-SOX	0.0008	0.0006		0.0008	0.0006	*	0.0012	0.0009		0.0003	-0.0005	
4.5 years pre-SOX	0.0008	0.0007		0.0008	0.0007		0.0006	0.0006		0.0009	0.0006	
4.5 years post-SOX	0.0007	0.0005	**	0.0007	0.0005	**	0.0015	0.0011		-0.0003	-0.0010	

Table 5.4 Performance – Multivariate Results

Panels A1 through A5 present results of OLS models where the dependent variable is the daily returns of the portfolios of family firms and non-family firms. Panels B1 through B5 present results of OLS models where the dependent variable is the daily returns of portfolios of family firms, where the family's voting power is at least 25%, and non-family firms. Panels A1 and B1 present the results for the year 2002; Panels A2 and B2 present the results for the period 2001-2003; Panels A3 and B3 present the results for the period 2000-2004; Panels A4 and B4 present the results for the period 1999-2005; and Panels A5 and B5 present the results for the period 1998-2006. *MKTRF* is the market factor, *SMB* is the size factor, and *HML* is the book-to-market factor of Fama-French three-factor model. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *SOXDum* is a dummy variable, which takes the value 1 if the observation is in the post-Sarbanes-Oxley Act of 2002 period; and 0 otherwise. *FF*SOX* is an interaction term of the variables *FFDum* and *SOXDum*. *P*-values adjusted for heteroskedasticity are in square brackets.

Table 5.4 *(continued)*

Panel A1 (Overall & for 2002)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0006	0.0004	0.0003	-0.0002	0.0007	0.0004	0.0005	-0.0000
	[0.0001]	[0.0258]	[0.0747]	[0.3505]	[0.0001]	[0.0088]	[0.0021]	[0.8860]
MKTRF	0.7830	0.7830	0.7857	0.7857	0.8184	0.8184	0.8199	0.8199
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5725	0.5725	0.5785	0.5785	0.5701	0.5701	0.5732	0.5732
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.3606	0.3606	0.3717	0.3717	0.3529	0.3529	0.3587	0.3587
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0005**		**0.0012**		**0.0005**		**0.0011**
		[0.0708]		**[0.0016]**		**[0.0259]**		**[0.0008]**
SOXDum			0.0006	0.0013			0.0003	0.0009
			[0.0212]	[0.0005]			[0.1591]	[0.0055]
FF*SOX				**-0.0014**				**-0.0011**
				[0.0084]				**[0.0115]**
N	504	504	504	504	504	504	504	504
Adj. R^2	0.9266	0.9270	0.9273	0.9285	0.9496	0.9500	0.9497	0.9506

Panel A1 (Overall & for 2002)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0006	0.0005	0.0002	-0.0002	0.0006	0.0003	-0.0004	-0.0014
	[0.0006]	[0.0394]	[0.4437]	[0.5950]	[0.1208]	[0.6029]	[0.4132]	[0.0577]
MKTRF	0.7447	0.7447	0.7483	0.7483	0.6070	0.6070	0.6159	0.6159
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5963	0.5963	0.6044	0.6044	0.5517	0.5517	0.5715	0.5715
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.3773	0.3773	0.3924	0.3924	0.3759	0.3759	0.4127	0.4127
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0002**		**0.0008**		**0.0006**		**0.0020**
		[0.5783]		**[0.1241]**		**[0.4119]**		**[0.0607]**
SOXDum			0.0008	0.0014			0.0020	0.0034
			[0.0221]	[0.0058]			[0.0085]	[0.0016]
FF*SOX				**-0.0011**				**-0.0027**
				[0.1070]				**[0.0684]**
N	504	504	504	504	504	504	504	504
Adj. R^2	0.8571	0.8569	0.8583	0.8585	0.4578	0.4574	0.4642	0.4664

Table 5.4 *(continued)*

Panel A2 (Overall & for 2001-2003)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0011	0.0010	0.0011	0.0008	0.0010	0.0009	0.0011	0.0009
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7699	0.7699	0.7698	0.7698	0.8076	0.8076	0.8076	0.8076
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5930	0.5930	0.5928	0.5928	0.5902	0.5902	0.5897	0.5897
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2250	0.2250	0.2247	0.2247	0.2541	0.2541	0.2533	0.2533
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0002**		**0.0005**		**0.0002**		**0.0004**
		[0.3407]		**[0.0287]**		**[0.1934]**		**[0.0238]**
SOXDum			-0.0001	0.0003			-0.0001	0.0001
			[0.7138]	[0.2120]			[0.3119]	[0.5347]
FF*SOX				**-0.0007**				**-0.0005**
				[0.0327]				**[0.0582]**
N	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504
Adj. R^2	0.9034	0.9034	0.9034	0.9036	0.9297	0.9297	0.9297	0.9298

Panel A2 (Overall & for 2001-2003)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0010	0.0011	0.0011	0.0009	0.0012	0.0011	0.0010	0.0005
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0002]	[0.0005]	[0.2189]
MKTRF	0.7176	0.7176	0.7176	0.7176	0.5832	0.5832	0.5833	0.5833
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5957	0.5957	0.5955	0.5955	0.5763	0.5763	0.5776	0.5776
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2200	0.2200	0.2196	0.2196	0.0439	0.0439	0.0463	0.0463
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.2696]	[0.2697]	[0.2448]	[0.2445]
FFDum		**-0.0001**		**0.0003**		**0.0003**		**0.0010**
		[0.6561]		**[0.3691]**		**[0.4803]**		**[0.0794]**
SOXDum			-0.0001	0.0003			0.0004	0.0012
			[0.7897]	[0.3096]			[0.3201]	[0.0507]
FF*SOX				**-0.0007**				**-0.0015**
				[0.0879]				**[0.0767]**
N	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504
Adj. R^2	0.8150	0.8150	0.8149	0.8151	0.4819	0.4817	0.4819	0.4824

Table 5.4 *(continued)*

Panel A3 (Overall & for 2000-2004)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008	0.0009	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7617	0.7617	0.7617	0.7617	0.7972	0.7972	0.7972	0.7972
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5422	0.5422	0.5421	0.5421	0.5248	0.5248	0.5245	0.5245
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2670	0.2670	0.2668	0.2668	0.3034	0.3034	0.3027	0.3027
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0001**		**0.0003**		**0.0001**		**0.0002**
		[0.2957]		**[0.0725]**		**[0.3184]**		**[0.1523]**
SOXDum			-0.0000	0.0002			-0.0001	-0.0000
			[0.8039]	[0.3796]			[0.2413]	[0.9166]
FF*SOX				**-0.0004**				**-0.0003**
				[0.1354]				**[0.3046]**
N	2,512	2,512	2,512	2,512	2,512	2,512	2,512	2,512
Adj. R^2	0.8824	0.8824	0.8824	0.8825	0.9051	0.9051	0.9051	0.9051

Panel A3 (Overall & for 2000-2004)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0008	0.0008	0.0008	0.0007	0.0006	0.0004	0.0005	0.0001
	[0.0001]	[0.0001]	[0.0001]	[0.0002]	[0.0001]	[0.0682]	[0.0248]	[0.8190]
MKTRF	0.7000	0.7000	0.7000	0.7000	0.5849	0.5849	0.5850	0.5850
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5267	0.5267	0.5270	0.5270	0.6159	0.6159	0.6164	0.6164
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2367	0.2367	0.2373	0.2373	0.0558	0.0558	0.0569	0.0569
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0637]	[0.0636]	[0.0590]	[0.0589]
FFDum		**0.0000**		**0.0002**		**0.0004**		**0.0009**
		[0.9661]		**[0.4020]**		**[0.1955]**		**[0.0522]**
SOXDum			0.0001	0.0003			0.0002	0.0007
			[0.4557]	[0.1825]			[0.5085]	[0.1353]
FF*SOX				**-0.0004**				**-0.0009**
				[0.2543]				**[0.1466]**
N	2,512	2,512	2,512	2,512	2,512	2,512	2,512	2,512
Adj. R^2	0.7943	0. 7943	0. 7943	0. 7942	0.5175	0.5176	0.5174	0.5177

Table 5.4 *(continued)*

Panel A4 (Overall & for 1999-2005)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0007	0.0007	0.0008	0.0008	0.0007	0.0007	0.0008	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7626	0.7626	0.7627	0.7627	0.7969	0.7969	0.7971	0.7971
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5601	0.5601	0.5598	0.5598	0.5475	0.5475	0.5471	0.5471
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2915	0.2915	0.2913	0.2913	0.3287	0.3287	0.3284	0.3284
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0000**		**0.0001**		**0.0000**		**0.0000**
		[0.8803]		**[0.6714]**		**[0.8579]**		**[0.7908]**
SOXDum			-0.0002	-0.0002			-0.0003	-0.0002
			[0.0498]	[0.2845]			[0.0080]	[0.0825]
FF*SOX				**-0.0001**				**-0.0000**
				[0.6535]				**[0.8446]**
N	3,520	3,520	3,520	3,520	3,520	3,520	3,520	3,520
Adj. R^2	0.8816	0.8816	0.8817	0.8816	0.9021	0.9021	0.9023	0.9023

Panel A4 (Overall & for 1999-2005)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0008	0.0008	0.0007	0.0007	0.0003	0.0001	0.0008	0.0007
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0112]	[0.4562]	[0.0001]	[0.0181]
MKTRF	0.6937	0.6937	0.6935	0.6935	0.5719	0.5719	0.5727	0.5727
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5240	0.5240	0.5243	0.5243	0.5950	0.5950	0.5936	0.5936
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2428	0.2428	0.2431	0.2431	0.0586	0.0586	0.0576	0.0576
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0268]	[0.0267]	[0.0293]	[0.0293]
FFDum		**-0.0001**		**-0.0001**		**0.0004**		**0.0003**
		[0.3786]		**[0.6368]**		**[0.1353]**		**[0.3858]**
SOXDum			0.0002	0.0002			-0.0009	-0.0010
			[0.1641]	[0.2572]			[0.0007]	[0.0095]
FF*SOX				**-0.0001**				**0.0001**
				[0.8330]				**[0.7902]**
N	3,520	3,520	3,520	3,520	3,520	3,520	3,520	3,520
Adj. R^2	0.7802	0.7801	0.7802	0.7801	0.4560	0.4562	0.4576	0.4577

Table 5.4 *(continued)*

Panel A5 (Overall & for 1998-2006)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0006	0.0006	0.0008	0.0007	0.0006	0.0006	0.0008	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7753	0.7753	0.7756	0.7756	0.8068	0.8068	0.8071	0.8071
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5828	0.5828	0.5830	0.5830	0.5699	0.5699	0.5701	0.5701
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2857	0.2857	0.2860	0.2860	0.3197	0.3197	0.3200	0.3200
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0000**		**0.0001**		**0.0000**		**0.0001**
		[0.6694]		**[0.5909]**		**[0.5969]**		**[0.6570]**
SOXDum			-0.0002	-0.0002			-0.0003	-0.0003
			[0.0060]	[0.0893]			[0.0007]	[0.0199]
FF*SOX				**-0.0001**				**-0.0000**
				[0.7231]				**[0.9012]**
N	4,489	4,489	4,489	4,489	4,489	4,489	4,489	4,489
Adj. R^2	0.8907	0.8906	0.8908	0.8908	0.9084	0.9084	0.9086	0.9085

Panel A5 (Overall & for 1998-2006)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0008	0.0009	0.0006	0.0007	0.0000	-0.0001	0.0009	0.0007
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.9624]	[0.4808]	[0.0001]	[0.0149]
MKTRF	0.6921	0.6921	0.6915	0.6915	0.5860	0.5860	0.5883	0.5883
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5129	0.5129	0.5126	0.5126	0.6181	0.6181	0.6193	0.6193
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2162	0.2162	0.2157	0.2157	0.0560	0.0561	0.0580	0.0580
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0632]	[0.0629]	[0.0535]	[0.0533]
FFDum		**-0.0001**		**-0.0001**		**0.0003**		**0.0003**
		[0.5390]		**[0.7312]**		**[0.2938]**		**[0.4851]**
SOXDum			0.0004	0.0004			-0.0017	-0.0017
			[0.0075]	[0.0487]			[0.0001]	[0.0001]
FF*SOX				**-0.0000**				**0.0000**
				[0.9123]				**[0.9810]**
N	4,489	4,489	4,489	4,489	4,489	4,489	4,489	4,489
Adj. R^2	0.6760	0.6759	0.6764	0.6763	0.3667	0.3667	0.3714	0.3712

Table 5.4 *(continued)*

Panel B1 (Family Voting Power ≥ 25% & for 2002)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0007	0.0004	0.0003	-0.0003	0.0007	0.0004	0.0005	-0.0001
	[0.0001]	[0.0883]	[0.1509]	[0.3985]	[0.0001]	[0.0575]	[0.0226]	[0.8103]
MKTRF	0.7464	0.7464	0.7493	0.7493	0.7781	0.7781	0.7798	0.7798
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5608	0.5608	0.5674	0.5674	0.5560	0.5560	0.5598	0.5598
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.3519	0.3519	0.3642	0.3642	0.3494	0.3494	0.3564	0.3564
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0006**		**0.0012**		**0.0006**		**0.0011**
		[0.0665]		**[0.0076]**		**[0.0447]**		**[0.0075]**
SOXDum			0.0007	0.0013			0.0004	0.0009
			[0.0365]	[0.0044]			[0.1818]	[0.0280]
FF*SOX				**-0.0012**				**-0.0010**
				[0.0533]				**[0.0761]**
N	504	504	504	504	504	504	504	504
Adj. R^2	0.8842	0.8848	0.8850	0.8862	0.9126	0.9131	0.9127	0.9137

Panel B1 (Family Voting Power ≥ 25% & for 2002)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0006	0.0005	0.0001	-0.0002	0.0007	0.0003	-0.0003	-0.0015
	[0.0083]	[0.1470]	[0.7620]	[0.7240]	[0.0831]	[0.6363]	[0.6685]	[0.0853]
MKTRF	0.6967	0.6967	0.7013	0.7013	0.6178	0.6178	0.6263	0.6263
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5590	0.5590	0.5693	0.5693	0.5794	0.5794	0.5983	0.5983
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.3367	0.3367	0.3559	0.3559	0.3837	0.3837	0.4190	0.4190
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0003**		**0.0006**		**0.0009**		**0.0024**
		[0.5485]		**[0.4170]**		**[0.2844]**		**[0.0436]**
SOXDum			0.0011	0.0013			0.0019	0.0034
			[0.0326]	[0.0564]			[0.0233]	[0.0042]
FF*SOX				**-0.0005**				**-0.0030**
				[0.5847]				**[0.0756]**
N	504	504	504	504	504	504	504	504
Adj. R^2	0.7384	0.7381	0.7403	0.7396	0.4139	0.4140	0.4187	0.4214

Table 5.4 *(continued)*

Panel B2 (Family Voting Power ≥ 25% & for 2001-2003)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0011	0.0009	0.0011	0.0008	0.0011	0.0009	0.0011	0.0009
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7418	0.7418	0.7418	0.7418	0.7758	0.7758	0.7758	0.7758
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5854	0.5854	0.5854	0.5854	0.5838	0.5838	0.5835	0.5835
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2212	0.2212	0.2211	0.2211	0.2529	0.2529	0.2524	0.2524
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0003**		**0.0006**		**0.0003**		**0.0005**
		[0.1506]		**[0.0254]**		**[0.1220]**		**[0.0344]**
SOXDum			-0.0000	0.0003			-0.0001	0.0002
			[0.9663]	[0.2355]			[0.6174]	[0.5048]
FF*SOX				**-0.0006**				**-0.0005**
				[0.0849]				**[0.1482]**
N	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504
Adj. R^2	0.8638	0.8639	0.8638	0.8640	0.8891	0.8892	0.8891	0.8893

Panel B2 (Family Voting Power ≥ 25% & for 2001-2003)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0012	0.0011	0.0011	0.0009	0.0013	0.0011	0.0011	0.0005
	[0.0001]	[0.0001]	[0.0001]	[0.0010]	[0.0001]	[0.0007]	[0.0005]	[0.2698]
MKTRF	0.6993	0.6993	0.6993	0.6993	0.5860	0.5860	0.5861	0.5861
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5961	0.5961	0.5966	0.5966	0.5585	0.5585	0.5595	0.5595
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.1972	0.1972	0.1980	0.1980	0.0758	0.0758	0.0777	0.0777
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0790]	[0.0790]	[0.0726]	[0.0724]
FFDum		**0.0002**		**0.0003**		**0.0004**		**0.0013**
		[0.5928]		**[0.4194]**		**[0.3844]**		**[0.0497]**
SOXDum			0.0001	0.0003			0.0003	0.0012
			[0.6130]	[0.4315]			[0.4895]	[0.0669]
FF*SOX				**-0.0003**				**-0.0017**
				[0.5438]				**[0.0572]**
N	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504
Adj. R^2	0.7140	0.7138	0.7138	0.7136	0.4332	0.4331	0.4330	0.4339

Table 5.4 *(continued)*

Panel B3 (Family Voting Power ≥ 25% & for 2000-2004)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0008	0.0008	0.0008	0.0007	0.0009	0.0008	0.0009	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7303	0.7303	0.7303	0.7303	0.7625	0.7625	0.7625	0.7625
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5329	0.5329	0.5331	0.5331	0.5155	0.5155	0.5154	0.5154
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2556	0.2556	0.2559	0.2559	0.2906	0.2906	0.2904	0.2904
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0002**		**0.0003**		**0.0001**		**0.0002**
		[0.2543]		**[0.1482]**		**[0.3305]**		**[0.3096]**
SOXDum			0.0001	0.0002			-0.0001	0.0000
			[0.7202]	[0.3718]			[0.6969]	[0.9578]
FF*SOX				**-0.0003**				**-0.0001**
				[0.3651]				**[0.6416]**
N	2,512	2,512	2,512	2,512	2,512	2,512	2,512	2,512
Adj. R^2	0.8432	0.8432	0.8431	0.8431	0.8648	0.8648	0.8647	0.8647

Panel B3 (Family Voting Power ≥ 25% & for 2000-2004)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0009	0.0008	0.0007	0.0007	0.0006	0.0004	0.0005	0.0001
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0003]	[0.0981]	[0.0384]	[0.8856]
MKTRF	0.6848	0.6848	0.6848	0.6848	0.5759	0.5759	0.5759	0.5759
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5372	0.5372	0.5379	0.5379	0.5808	0.5808	0.5814	0.5814
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2229	0.2229	0.2245	0.2245	0.0829	0.0829	0.0842	0.0842
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0114]	[0.0114]	[0.0103]	[0.0103]
FFDum		**0.0001**		**0.0002**		**0.0005**		**0.0009**
		[0.5193]		**[0.5837]**		**[0.1844]**		**[0.0592]**
SOXDum			0.0003	0.0003			0.0002	0.0007
			[0.1703]	[0.2874]			[0.4829]	[0.1488]
FF*SOX				**-0.0001**				**-0.0009**
				[0.8950]				**[0.1798]**
N	2,512	2,512	2,512	2,512	2,512	2,512	2,512	2,512
Adj. R^2	0.6988	0.6988	0.6989	0.6988	0.4528	0.4529	0.4527	0.4530

Table 5.4 *(continued)*

Panel B4 (Family Voting Power ≥ 25% & for 1999-2005)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0007	0.0007	0.0008	0.0008	0.0007	0.0007	0.0008	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7320	0.7320	0.7322	0.7322	0.7630	0.7630	0.7631	0.7631
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5508	0.5508	0.5506	0.5506	0.5383	0.5383	0.5380	0.5380
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2767	0.2767	0.2765	0.2765	0.3125	0.3125	0.3123	0.3123
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0001**		**0.0001**		**0.0000**		**0.0000**
		[0.6492]		**[0.7201]**		**[0.6737]**		**[0.8607]**
SOXDum			-0.0001	-0.0001			-0.0002	-0.0002
			[0.2101]	[0.3958]			[0.0770]	[0.1700]
FF*SOX				**-0.0000**				**0.0000**
				[0.9579]				**[0.8634]**
N	3,520	3,520	3,520	3,520	3,520	3,520	3,520	3,520
Adj. R^2	0.8415	0.8415	0.8416	0.8415	0.8607	0.8607	0.8608	0.8607

Panel B4 (Family Voting Power ≥ 25% & for 1999-2005)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0008	0.0008	0.0007	0.0007	0.0004	0.0001	0.0008	0.0007
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0211]	[0.4877]	[0.0003]	[0.0321]
MKTRF	0.6789	0.6789	0.6787	0.6787	0.5638	0.5638	0.5645	0.5645
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5350	0.5350	0.5354	0.5354	0.5594	0.5594	0.5581	0.5581
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2250	0.2250	0.2254	0.2254	0.0808	0.0808	0.0798	0.0798
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0057]	[0.0057]	[0.0062]	[0.0062]
FFDum		**0.0001**		**-0.0000**		**0.0004**		**0.0003**
		[0.7372]		**[0.8995]**		**[0.1822]**		**[0.5484]**
SOXDum			0.0003	0.0002			-0.0009	-0.0010
			[0.0764]	[0.3730]			[0.0049]	[0.0196]
FF*SOX				**0.0002**				**0.0003**
				[0.6080]				**[0.6288]**
N	3,520	3,520	3,520	3,520	3,520	3,520	3,520	3,520
Adj. R^2	0.6704	0.6704	0.6706	0.6705	0.3881	0.3882	0.3893	0.3893

Table 5.4 *(continued)*

Panel B5 (Family Voting Power ≥ 25% & for 1998-2006)

	All				Survivors			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Intercept	0.0007	0.0006	0.0008	0.0007	0.0007	0.0006	0.0008	0.0008
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MKTRF	0.7473	0.7473	0.7476	0.7476	0.7760	0.7760	0.7763	0.7763
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5785	0.5785	0.5786	0.5786	0.5651	0.5651	0.5653	0.5653
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.2753	0.2753	0.2755	0.2755	0.3082	0.3082	0.3085	0.3085
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
FFDum		**0.0001**		**0.0001**		**0.0001**		**0.0000**
		[0.4331]		**[0.5905]**		**[0.4439]**		**[0.7417]**
SOXDum			-0.0002	-0.0002			-0.0002	-0.0003
			[0.0503]	[0.1638]			[0.0180]	[0.0608]
FF*SOX				**0.0000**				**0.0001**
				[0.9918]				**[0.7760]**
N	4,489	4,489	4,489	4,489	4,489	4,489	4,489	4,489
Adj. R^2	0.8540	0.8539	0.8541	0.8540	0.8705	0.8705	0.8706	0.8706

Panel B5 (Family Voting Power ≥ 25% & for 1998-2006)

	Delisting Codes 200-399				Delisting Codes 400-599			
	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**
Intercept	0.0010	0.0009	0.0007	0.0007	0.0001	-0.0001	0.0008	0.0007
	[0.0001]	[0.0001]	[0.0001]	[0.0033]	[0.6916]	[0.5582]	[0.0014]	[0.0510]
MKTRF	0.6796	0.6796	0.6788	0.6789	0.5800	0.5801	0.5821	0.5821
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
SMB	0.5223	0.5223	0.5220	0.5220	0.5917	0.5917	0.5927	0.5927
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
HML	0.1979	0.1979	0.1973	0.1973	0.0886	0.0887	0.0904	0.0905
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0172]	[0.0171]	[0.0149]	[0.0148]
FFDum		**0.0001**		**0.0000**		**0.0004**		**0.0002**
		[0.5032]		**[0.8878]**		**[0.2175]**		**[0.6555]**
SOXDum			0.0005	0.0004			-0.0015	-0.0017
			[0.0140]	[0.1609]			[0.0001]	[0.0008]
FF*SOX				**0.0002**				**0.0004**
				[0.6220]				**[0.5635]**
N	4,489	4,489	4,489	4,489	4,489	4,489	4,489	4,489
Adj. R^2	0.5062	0.5062	0.5068	0.5067	0.2603	0.2604	0.2630	0.2629

Table 5.5 Survival – Statistical Distribution and Definition of Variables

Below are the number of observations (*N*), mean, standard deviation (*Std. Dev.*), and various percentiles of the variables that are used in univariate and multivariate settings of analysis of family firm survival after Sarbanes-Oxley Act of 2002. Definitions of the variables are on the next page.

				Percentiles						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**1%**	**5%**	**Median**	**95%**	**99%**	**Max**
FFDum	6,185	0.17	0.38	0.00	0.00	0.00	0.00	1.00	1.00	1.00
SrvDum	6,185	0.72	0.45	0.00	0.00	0.00	1.00	1.00	1.00	1.00
MrgDum	6,185	0.16	0.36	0.00	0.00	0.00	0.00	1.00	1.00	1.00
DlsDum	6,185	0.13	0.33	0.00	0.00	0.00	0.00	1.00	1.00	1.00
BVA ($ mil)	5,767	5,488.65	44,630.58	0.18	3.53	10.49	371.77	15,413.32	73,025.68	1,494,037.00
Log(BVA)	5,767	19.72	2.21	12.09	15.08	16.17	19.73	23.46	25.01	28.03
MVA/BVA	5,705	2.19	3.76	0.30	0.62	0.90	1.44	5.25	11.90	128.95
Debt/MVA	5,705	0.16	0.18	0.00	0.00	0.00	0.10	0.54	0.80	0.98
ROA	5,760	-0.13	1.40	-61.20	-2.22	-0.78	0.01	0.16	0.29	13.74
ChgSTD/BVA	6,171	0.00	0.56	-42.00	-0.30	-0.08	0.00	0.11	0.42	4.59
ChgBVA/BVA	5,767	0.49	23.65	-0.99	-0.69	-0.39	0.05	0.77	2.07	1,778.00
Accruals/OCF	4,421	1.01	4.77	0.00	0.01	0.03	0.30	2.85	13.04	138.19
ChgLog(Vol)	6,086	0.13	0.72	-4.46	-1.77	-0.97	0.10	1.30	2.38	5.14
Run-up1	6,185	0.14	0.60	-1.00	-0.95	-0.78	0.11	1.06	2.23	8.43
Run-up2	6,175	0.08	0.61	-1.00	-0.91	-0.72	0.04	0.91	1.93	20.59

Table 5.5 *(continued)*

Variable	Definition
FFDum	dummy variable that takes the value 1 if the observation is a family firm; 0 otherwise
SrvDum	dummy variable that takes the value 1 if the observation survived between January 2002 and December 2006; 0 otherwise
MrgDum	dummy variable that takes the value 1 if the observation was acquired between January 2002 and December 2006; 0 otherwise
DlsDum	dummy variable that takes the value 1 if the observation was delisted for a reason other than acquisition between January 2002 and December 2006; 0 otherwise
BVA	book value of assets
MVA/BVA	market-to-book assets
Debt/MVA	total debt-to-market value of assets *[total debt = long-term debt + short-term debt]*
ROA	return on assets, i.e. net income-to-book value of assets
ChgSTD/BVA	one-year change in short-term debt-to-book value of assets
ChgBVA/BVA	one-year change in book-value of assets-to-book value of assets
Accruals/OCF	absolute value of accruals-to-absolute value of operating cash flow *[accruals = change in non-cash current assets – change in current liabilities (excluding short-term debt) – depreciation* and *operating cash flow = earnings before extraordinary items – accruals]*
ChgLog(Vol)	one-year change in natural logarithm of annual trading volume
Run-up1	one-year stock return prior to last trade
Run-up2	one-year stock return three months prior to last trade

Table 5.6 Survival – Univariate Results

Panel A presents the univariate statistics of the accounting variables between family firms and non-family firms that are used in multivariate settings of analysis of family firm survival. Panel B presents the univariate statistics of the accounting variables between family firms, where the family's voting power is at least 25%, and non-family firms that are used in multivariate settings of analysis of family firm survival. *T-test* is utilized to test the differences in means and *Wilcoxon test* is utilized to test the differences in medians. Variable definitions are on the previous page. ***, **, * denote significance levels of 1%, 5%, 10%, respectively. Variables *MVA/BVA*, *ROA*, *ChgSTD/BVA*, *ChgBVA/BVA*, and *Accruals/OCF* are winsorized at 5th and 95th percentiles.

Panel A (Overall)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
SrvDum	1,053	0.7521	1.0000	5,132	0.7106	1.0000	***	***
MrgDum	1,053	0.1377	0.0000	5,132	0.1604	0.0000	*	*
DlsDum	1,053	0.1102	0.0000	5,132	0.1290	0.0000	*	*
BVA ($mil)	961	3,330.2460	343.0300	4,806	5,920.2461	378.2500	***	
Log(BVA)	961	19.7162	19.6533	4,806	19.7154	19.7511		
MVA/BVA	954	1.8188	1.3117	4,751	2.2689	1.4725	***	***
Debt/MVA	954	0.1666	0.1129	4,751	0.1582	0.0996		**
ROA	961	-0.0359	0.0225	4,799	-0.1475	0.0137	***	***
ChgSTD/BVA	1,052	0.0020	0.0000	5,120	0.0005	0.0000		*
ChgBVA/BVA	961	0.1016	0.0510	4,806	0.5694	0.0554		
Accruals/OCF	716	1.0842	0.2893	3,705	0.9949	0.2986		
ChgLog(Vol)	1,051	0.1856	0.1435	5,035	0.1176	0.0894	***	***
Run-up1	1,053	0.1854	0.1355	5,132	0.1333	0.1043	***	***
Run-up2	1,052	0.1278	0.0805	5,123	0.0688	0.0359	***	***

Panel B (Family Voting Power ≥ 25%)

	Family			Non-family			Significance	
Variable	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**Mean**	**Median**
SrvDum	541	0.7431	1.0000	5,132	0.7106	1.0000		
MrgDum	541	0.1146	0.0000	5,132	0.1604	0.0000	***	***
DlsDum	541	0.1423	0.0000	5,132	0.1290	0.0000		
BVA ($mil)	487	2,564.2108	212.1560	4,806	5920.2461	378.2500	***	***
Log(BVA)	487	19.3561	19.1728	4,806	19.7154	19.7511	***	***
MVA/BVA	484	1.7723	1.3222	4,751	2.2689	1.4725	***	***
Debt/MVA	484	0.1608	0.1063	4,751	0.1582	0.0996	***	
ROA	487	-0.0344	0.0276	4,799	-0.1475	0.0137	***	***
ChgSTD/BVA	540	0.0073	0.0000	5,120	0.0005	0.0000		*
ChgBVA/BVA	487	0.0651	0.0333	4,806	0.5694	0.0554		*
Accruals/OCF	406	1.0227	0.2992	3,705	0.9949	0.2986		
ChgLog(Vol)	539	0.2122	0.1447	5,035	0.1176	0.0894	***	***
Run-up1	541	0.1750	0.1166	5,132	0.1333	0.1043		*
Run-up2	541	0.1227	0.0581	5,123	0.0688	0.0359	*	**

Table 5.7 Survival – Multivariate Results

Panels A1 through A3 present the odd ratios of logistic models of family firms and non-family firms, where the dependent variable is 1 if the observation did not survive between January 2002 and December 2006; and 0 otherwise. Panels B1 through B3 present the odd ratios of logistic models of family firms, where the family's voting power is at least 25%, and non-family firms, where the dependent variable is 1 if the observation did not survive between January 2002 and December 2006. Panels A1 and B1 present the odd ratios of logistic models using survivors and all delistings. Panels A2 and B2 present the odd ratios of logistic models using survivors and delistings due to acquisitions. Panels A3 and B3 present the odd ratios of logistic models using survivors and delistings due to a reason other than acquisitions. *BVA* is book value of assets. *MVA/BVA* is market value of assets-to-book value of assets. *Debt/MVA* is total debt-to-market value of assets. *ROA* is net income-to-book value of assets. *ChgSTD/BVA* is one-year change in short-term debt-to-book value of assets. *ChgBVA/BVA* is one-year change in book value of assets-to-book value of assets. *Accruals/OCF* is the absolute value of accruals to absolute value of operating cash flow. *ChgLog(Vol)* is one-year change in the natural logarithm of annual trading volume. *Run-up1* is one-year stock return prior to last trade. *Run-up2* is one-year stock return three months prior to last trade. *FFDum* is a dummy variable, which takes the value 1 if the observation is a family firm; and 0 otherwise. *Industry* represents 2-digit SIC codes (*SIC2*). *P*-values adjusted for heteroskedasticity are in square brackets. Variables *MVA/BVA*, *ROA*, *ChgSTD/BVA*, *ChgBVA/BVA*, and *Accruals/OCF* are winsorized at 5th and 95th percentiles.

Table 5.7 *(continued)*

Panel A1 (Overall & Survivor + All Delistings)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.752	0.752	0.756	0.765	0.762	0.765	0.764	0.761
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.700	0.700	0.745	0.747	0.725	0.747	0.750	0.728
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	9.386	9.510	9.785	15.870	15.303	15.820	16.430	15.850
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	0.076	0.076	0.127	0.116	0.114	0.117	0.106	0.105
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ChgSTD/BVA		0.729						
		[0.7122]						
ChgBVA/BVA			0.351	0.502	0.439	0.502	0.504	0.441
			[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Accruals/OCF				1.102	1.091	1.102	1.104	1.092
				[0.0750]	[0.1155]	[0.0762]	[0.0723]	[0.1125]
Chg(LogVol)					1.128			1.125
					[0.0197]			[0.0234]
Run-up1						0.988		
						[0.8323]		
Run-up2							1.133	1.132
							[0.0587]	[0.0620]
FFDum	**0.734**	**0.733**	**0.722**	**0.669**	**0.659**	**0.669**	**0.665**	**0.655**
	[0.0011]	**[0.0011]**	**[0.0007]**	**[0.0004]**	**[0.0003]**	**[0.0004]**	**[0.0003]**	**[0.0002]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	5,700	5,700	5,700	4,383	4,336	4,383	4,378	4,331
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 5.7 *(continued)*

Panel A2 (Overall & Survivor + Delistings via Acquisitions)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.897	0.897	0.895	0.890	0.888	0.911	0.902	0.900
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0024]	[0.0006]	[0.0006]
MVA/BVA	0.711	0.711	0.742	0.715	0.694	0.748	0.710	0.690
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	2.464	2.481	2.660	3.362	3.058	2.978	3.025	2.726
	[0.0016]	[0.0017]	[0.0007]	[0.0006]	[0.0018]	[0.0027]	[0.0022]	[0.0063]
ROA	0.570	0.569	0.854	0.753	0.743	0.685	0.541	0.536
	[0.0266]	[0.0263]	[0.5608]	[0.3194]	[0.3042]	[0.2058]	[0.0384]	[0.0383]
ChgSTD/BVA		0.818						
		[0.8565]						
ChgBVA/BVA			0.452	0.612	0.543	0.657	0.690	0.605
			[0.0001]	[0.0188]	[0.0056]	[0.0516]	[0.0823]	[0.0260]
Accruals/OCF				0.944	0.936	0.922	0.931	0.923
				[0.4257]	[0.3754]	[0.2859]	[0.3416]	[0.2922]
Chg(LogVol)					1.118			1.108
					[0.1046]			[0.1452]
Run-up1						2.217		
						[0.0001]		
Run-up2							2.112	2.135
							[0.0001]	[0.0001]
FFDum	**0.704**	**0.703**	**0.692**	**0.640**	**0.633**	**0.646**	**0.638**	**0.633**
	[0.0020]	**[0.0019]**	**[0.0012]**	**[0.0013]**	**[0.0011]**	**[0.0021]**	**[0.0015]**	**[0.0013]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	4,998	4,998	4,998	3,774	3,733	3,774	3,769	3,728
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 5.7 *(continued)*

Panel A3 (Overall & Survivor + Delistings via a Reason other than Acquisitions)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.470	0.470	0.473	0.515	0.510	0.496	0.509	0.503
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.517	0.518	0.574	0.619	0.599	0.579	0.635	0.613
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	105.341	116.260	109.936	179.516	189.928	147.631	154.952	163.966
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	0.008	0.008	0.017	0.014	0.014	0.035	0.024	0.023
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ChgSTD/BVA		0.128						
		[0.1079]						
ChgBVA/BVA			0.205	0.361	0.313	0.346	0.355	0.303
			[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Accruals/OCF				1.403	1.386	1.371	1.401	1.384
				[0.0001]	[0.0001]	[0.0004]	[0.0001]	[0.0001]
Chg(LogVol)					1.130			1.172
					[0.0939]			[0.0307]
Run-up1						0.165		
						[0.0001]		
Run-up2							0.422	0.413
							[0.0001]	[0.0001]
FFDum	**0.765**	**0.756**	**0.754**	**0.710**	**0.698**	**0.858**	**0.763**	**0.752**
	[0.0917]	**[0.0781]**	**[0.0785]**	**[0.0601]**	**[0.0504]**	**[0.4341]**	**[0.1471]**	**[0.1286]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	4,874	4,874	4,874	3,792	3,754	3,792	3,787	3,749
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 5.7 *(continued)*

Panel B1 (Family Voting Power ≥ 25% & Survivor + All Delistings)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.751	0.752	0.755	0.771	0.768	0.771	0.770	0.767
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.703	0.703	0.751	0.755	0.733	0.755	0.758	0.736
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	10.172	10.332	10.671	17.001	16.379	17.020	17.582	16.952
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	0.076	0.076	0.129	0.116	0.115	0.116	0.108	0.107
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ChgSTD/BVA		0.703						
		[0.6931]						
ChgBVA/BVA			0.343	0.483	0.422	0.483	0.482	0.421
			[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Accruals/OCF				1.126	1.114	1.126	1.125	1.113
				[0.0372]	[0.0606]	[0.0372]	[0.0387]	[0.0633]
Chg(LogVol)					1.118			1.115
					[0.0372]			[0.0423]
Run-up1						1.004		
						[0.9531]		
Run-up2							1.110	1.111
							[0.1250]	[0.1250]
FFDum	**0.698**	**0.697**	**0.685**	**0.672**	**0.656**	**0.672**	**0.666**	**0.650**
	[0.0053]	**[0.0053]**	**[0.0036]**	**[0.0060]**	**[0.0038]**	**[0.0060]**	**[0.0050]**	**[0.0032]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	5,230	5,230	5,230	4,075	4,028	4,075	4,071	4,024
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 5.7 *(continued)*

Panel B2 (Family Voting Power ≥ 25% & Survivor + Delistings via Acquisitions)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.894	0.895	0.893	0.897	0.894	0.920	0.908	0.906
	[0.0001]	[0.0001]	[0.0001]	[0.0004]	[0.0003]	[0.0078]	[0.0019]	[0.0018]
MVA/BVA	0.720	0.720	0.750	0.726	0.705	0.761	0.718	0.698
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	2.416	2.418	2.617	3.006	2.701	2.716	2.755	2.446
	[0.0033]	[0.0036]	[0.0014]	[0.0031]	[0.0085]	[0.0089]	[0.0076]	[0.0207]
ROA	0.556	0.556	0.826	0.715	0.708	0.645	0.517	0.513
	[0.0236]	[0.0236]	[0.4928]	[0.2488]	[0.2442]	[0.1525]	[0.0293]	[0.0304]
ChgSTD/BVA		0.975						
		[0.9827]						
ChgBVA/BVA			0.459	0.605	0.534	0.654	0.684	0.597
			[0.0001]	[0.0194]	[0.0059]	[0.0571]	[0.0845]	[0.0267]
Accruals/OCF				0.955	0.948	0.935	0.940	0.931
				[0.5478]	[0.4861]	[0.3989]	[0.4294]	[0.3711]
Chg(LogVol)					1.110			1.105
					[0.1380]			[0.1710]
Run-up1						2.298		
						[0.0001]		
Run-up2							2.109	2.139
							[0.0001]	[0.0001]
FFDum	**0.592**	**0.592**	**0.584**	**0.592**	**0.582**	**0.616**	**0.594**	**0.586**
	[0.0016]	**[0.0016]**	**[0.0012]**	**[0.0043]**	**[0.0033]**	**[0.0094]**	**[0.0051]**	**[0.0042]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	4,563	4,563	4,563	3,493	3,452	3,493	3,489	3,448
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 5.7 *(continued)*

Panel B3 (Family Voting Power ≥ 25% & Survivor + Delistings via a Reason other than Acquisitions)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Log(BVA)	0.478	0.478	0.482	0.521	0.515	0.498	0.513	0.506
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
MVA/BVA	0.514	0.516	0.576	0.622	0.602	0.585	0.641	0.618
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Debt/MVA	124.485	138.982	131.686	229.606	244.920	179.592	189.568	202.497
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ROA	0.008	0.007	0.017	0.014	0.014	0.033	0.024	0.023
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
ChgSTD/BVA		0.109						
		[0.0941]						
ChgBVA/BVA			0.187	0.328	0.281	0.310	0.321	0.270
			[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Accruals/OCF				1.455	1.440	1.399	1.443	1.429
				[0.0001]	[0.0001]	[0.0003]	[0.0001]	[0.0001]
Chg(LogVol)					1.124			1.170
					[0.1243]			[0.0409]
Run-up1						0.168		
						[0.0001]		
Run-up2							0.394	0.386
							[0.0001]	[0.0001]
FFDum	**0.854**	**0.844**	**0.836**	**0.789**	**0.766**	**0.987**	**0.880**	**0.853**
	[0.4337]	**[0.4007]**	**[0.3777]**	**[0.2968]**	**[0.2437]**	**[0.9561]**	**[0.5828]**	**[0.4984]**
Industry	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2	SIC2
N	4,470	4,470	4,470	3,520	3,482	3,520	3,516	3,478
Pr(LR)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001