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by
Ezgi Hallioglu Ottolenghi
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Examining Committee Members:

Ronald C. Anderson, Advisory Chair, Department of Finance
Philip C. English II, Department of Finance
Kose John, Department of Finance
Lalitha Naveen, Department of Finance
Oleg Rytchkov, Department of Finance
David M. Reeb, External Member, National University of Singapore

ABSTRACT

This dissertation, empirically examines ownership structure and its impacts on shareholder wealth. In the first chapter I examine the relation between ownership structure and M&A target selection when family firms purse acquisitions, focusing on the factors that influence family selection of targets. My results indicate that family firm acquirers select targets that are smaller and have low growth potential. I focus on short- and long-run stock market reactions to merger and acquisition announcements of family versus nonfamily bidders and their associated targets. I find that acquirers with family ownership have better cumulative average abnormal returns in the short run and higher buy-and-hold abnormal returns up to one year after the acquisition. Family firms also take a greater share of the merger synergy than do nonfamily bidders while the overall merger synergy is invariant to ownership structure. These results suggest that family firms pick different targets than nonfamily firms and benefit minority shareholders when they acquire. This chapter provides evidence that family ownership does not destroy value during M&A transactions; instead, the analysis indicates that family owners appear to choose better targets.

In the second chapter I examine firms with dual class structures. Firms with limited voting shares, dual class firms, persist over time in spite of the widespread view that they embody a "corruption of the governance system" (Calpers, 2011). I find that founders and their heirs control 89% of dual class firms, making it difficult to disentangle family control and voting rights. I document that family owners hold 30% greater economic exposure in dual class firms than in single class family firms. Investors place lower values on both single and dual class family firms relative to non-family firms. In contrast, non-family dual class firms exhibit a 19% premium relative to single class firms. Further analysis shows that 8 industries contain 58% of these limited voting share firms - industries that require high brand maintenance and intangible assets. Strikingly, I find that outside shareholders of dual class firms earn excess returns of about 350 basis points per year relative to single class nonfamily firms. Additional tests reveal that institutional investors hold more of the floated equity of dual class family firms than found in single class nonfamily firms. Exploring a succession risk premium perspective, I discover these lower values and greater excess returns primarily occur in descendent-controlled firms. Overall, my analysis suggests that limited voting shares provide an important mechanism used by controlling shareholders that arise in industries with specific characteristics.

This dissertation is dedicated to my husband, Alex Ottolenghi, my children, Derin and Ela Ottolenghi and my parents, Halil and Ayten Hallioglu.

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CHAPTER 1

TARGET SELECTION BY FAMILY FIRMS

Introduction

Mergers and acquisitions (M&A) constitute highly visible corporate investments, particularly when one public company acquires another public company. Prior literature indicates that M&A transactions exacerbate agency conflicts between managers and shareholders by allowing insider to extract private benefits of control (Berle and Means, 1932 and Jensen and Meckling, 1976). This evolving literature explores target characteristics and transaction details that affect bidder returns from a merger announcement. Morck et al. (1990) argues that acquisitions of high growth targets and diversifying acquisitions generate substantial benefits to managers while hurting shareholders. Similarly, Lang et al. (1989) and Servaes (1991) find that low Tobin's *Q* targets, proxying for low growth potential, positively influence bidder returns. Wang and Xie (2009) conversely find that target Tobin's *Q* (growth opportunity) does not have a significant impact on acquirer returns. Moeller et al. (2004) find that acquisitions with smaller deal size relative to the size of the acquirer result in better bidder announcement returns. Alexandridis et al. (2013) indicates that bidder returns are negatively related to the size of the target suggesting costly complexity associated with buying large targets. In terms of ownership structure of the bidder and its impact on bidder announcement returns, extant literature provides mixed evidence (Ben-Amar and Andre, 2006; Basu et al., 2009; Bauguess and Stegemoller, 2008).

One stream of the ownership structure research suggests that family firms extract benefits at the expense of non-family shareholders. Alternatively, another research stream argues that family ownership better aligns the incentives of corporate insiders and outside shareholders, suggesting family firms undertake more value accretive acquisitions than nonfamily firms. Family firms constitute one of the most prevalent and influential types of large shareholders in U.S. publicly-traded firms. Anderson et al. (2012) finds that over 38% of the 2,000 largest firms (based on market capitalization) in the U.S. have founding family presence. Li and Srinivasan (2011) find almost 25% of large U.S. companies have founders actively engaged with the company either as CEO or board member. Because of the tight linkage between firm health and family welfare, family owners arguably provide superior monitoring of the M&A process to ensure strong firm performance and long-term survival. Higher degrees of incentive alignment with the firm may help family owners to choose targets that provide greater benefits to their shareholders relative to nonfamily firms. Anderson and Reeb (2003) suggest a family's undiversified equity position, historical presence, control of management and director seats provide strong incentives for family owners to monitor and influence firm decision-making. James (1999) proposes that families have longer investment horizons that lead to greater investment efficiency. Stein (1988, 1989) argues that shareholders with relatively long investment horizons can mitigate the incentives for myopic investment decisions. Families rarely sell their controlling stakes to outsiders (Bauguess and Stegemoller, 2008; Holderness and Sheehan, 1988; Klasa, 2007), and thus have long-term interest with power to influence firm decision making and M&A targets that maximize shareholder wealth.

Family owners however, may choose targets that benefit the family at the expense of outside shareholders. Family owners may pursue acquisitions to accrue private benefits of control such as empire building (Rhoades, 1983 and Roll, 1986), risk reduction (Amihud and Lev, 1981) and pursuing pet projects (Shleifer and Vishny, 1989). Anderson and Reeb (2003) suggest that large, undiversified shareholders such as families may derive greater benefit from the survival of the company than from enhancing shareholder value as compared to minority shareholders desire to maximize their wealth. Bertrand and Schoar (2006) and Morck and Yeung (2003) argue that family owners often make decisions based on the interests of the family rather than interests of all firm shareholders, suggesting that M&A transactions provide ample opportunity for family owners to expropriate minority shareholder wealth.

I investigate the relation between acquirer equity-ownership structure and target firm selection. Specifically, this chapter examines whether family firms pursue M&A targets that systematically differ from nonfamily firm targets and whether different target selection, if any, influences shareholder wealth of the bidder firm. Literature identifies target Tobin's *Q*, target size, deal size, and diversifying acquisitions to be important determinants of bidder announcement returns. Prior literature indicates that family owners have different incentives than nonfamily owners because they have less diversified equity position, arguably care more about the survival of the firm than maximizing shareholder wealth, want to maintain control and are more influential in firm decisions relative to nonfamily owners. These differences in family owners' incentives may lead family firms to choose different types of targets. Family firms may avoid growing too fast through acquisitions to prevent dilution in their equity stake (Caprio et al., 2011), which suggests they may choose targets that are smaller and have lower growth potential. Family firms tend to be more mature (i.e. older) and risk averse relative to nonfamily firms which may lead them to choose targets within their industries more than nonfamily firms.

Using an original ownership dataset for Russell 3000 firms from 2001 through 2015, I investigate the relation between family firm (and nonfamily firm) target selection. My analysis indicates that family firms pursue smaller and lower growth targets than nonfamily firms. I analyze target selection by family firms using two approaches. First, I start by using a larger sample that includes Russell 3000 industrial firms (excluding financial and utility firms) with annual data from 2001 through 2015 resulting in 24,724 firm year observations. In this analysis, I assume all of these firms are potential firms that could be targeted in an M&A transaction. Then I expand this sample by adding 607 firms that were actual targets from M&A transactions listed in SDC database during the same time period. After dropping the 70 duplicate firms that were included both in the Russell 3000 and the M&A sample, my final sample has 25,261 firm year observations. This full sample has firms that are targets of family bidders (133 firms), firms that are targets of nonfamily bidders (474 firms) and firms that are not targets in an M&A transaction (24,654 firms). Using multinomial logistic model, the analysis examines target characteristics to identify what determines the likelihood of being acquired by a family bidder relative to the universe of Russell 3000 potential targets. The benefit of using this large sample and multinomial logistic regression is that it allows me to be able to use a third benchmark group of firms as potential targets that are not acquired. I investigate whether family owners appear more likely to acquire targets with: (i) low growth opportunities (Lang et al., 1989, Servaes, 1991 and Morck et al., 1990); (ii) are smaller (Alexandridis et al., 2013); (iii) lower risk and (iv) less leverage. My results indicate that family bidders are more likely to pursue smaller targets with low growth potential relative to nonfamily firms. This analysis indicates that family firms are only 67.7% as likely to acquire a firm with high growth potential relative to a lower growth potential target (when target Tobin's *Q* changes by 1). Also, family firms are 52.5% as likely to acquire a firm that is larger relative to a smaller firm.

As a second approach, I examine completed M&A deals using logistic regression techniques. Within this sample, family firms acquire 142 firms and nonfamily firms acquire 465 firms. This approach allows me to investigate target selection of family and nonfamily bidders and compare these ownership structures using completed M&A transactions. The results indicate that target Tobin's *Q* is associated with log odds ratio of 0.74, which can be interpreted as family firms are 74% as likely to acquire a higher Tobin's *Q* (when target Tobin's *Q* increases by 1) firm as a nonfamily firm. This finding indicates that as target's Tobin's *Q* increases, its likelihood of being acquired by a family firm decreases; suggesting family bidders choose targets with low growth potential. The size variable does not seem to be significantly different between family and nonfamily bidder targets when M&A only sample is used. The difference between two approaches is based on using different benchmark samples. The first approach using multinomial logistic model utilizes the full sample which allows me to have firms that are not targeted as a potential benchmark when identifying the determinants of a firm being acquired by a family bidder. However, in the second approach I use logistic regression for the completed M&A sample which provides a different benchmark group of targets of nonfamily bidders and size looses its significance.

The preceding analysis indicates that family firms choose different types of targets than nonfamily firms (i.e. smaller targets with low growth opportunities). I turn my attention to bidder returns to determine whether targets with different characteristics accrue greater value to family firm bidders versus their nonfamily counterparts. If family firms engage in M&A activity that increases shareholder wealth more (less), family-firm shareholders should accrue a larger (smaller) M&A abnormal returns than their nonfamily counterparts. To measure shareholder value effects, I use cumulative abnormal returns for the three days around the announcement event window for family bidders (ACAR). M&A announcements allow investors to incorporate synergistic gains or losses into the bidder's share price. Prior literature suggests that positive abnormal returns indicate a value enhancing acquisition for bidding firm shareholders. My results indicate that family firm acquirers are associated with a 1.25% ($342 million) higher announcement return, on average compared to nonfamily firm acquirers.

The analysis also examines wealth effects of founding family control on shareholders of the bidding firm up to one year horizon. Family-firm researchers often argue that these owners better monitor management, exhibit longer investment horizons, and seek to ensure the survival of the firm (James 1999, Anderson and Reeb 2003). If family firms chose M&A targets that enhance shareholder wealth more than nonfamily firms, then I expect family firms to generate superior returns after one year relative to nonfamily acquirers. I use a buy-and-hold long-term abnormal return metric that employs the Fama-French (1993) model as the reference portfolio capturing risk differences associated with size, book-to-market and returns to the overall market. Consistent with the short-term abnormal return conclusions, family-firm acquisitions generate average positive abnormal returns over the succeeding one-year horizon as compared to nonfamily acquisitions.

The previous analysis suggests family owned acquirers, on average, realize positive abnormal returns both in the short run and one year after the announcement by selecting smaller targets with low Tobin's *Q*, which I proxy for lower growth opportunities compared to nonfamily acquirer targets. If family firm bidders choose more value enhancing targets than nonfamily firms, I expect these acquisitions to result in better acquisition combined synergy gains. To examine this conjecture, I investigate whether family firm acquirers increase the overall deal synergy gains and benefit both their own and target shareholders. First, I calculate a value weighted average of acquirer and target announcement returns to measure the overall quality of the merger perceived by the market (DCAR) and argue that this represents the size of the aggregate synergy gains resulting from the merger as in Wang and Xie (2009) and Bradley, Desai, and Kim (1988). When examining DCARs, I do not find any difference in the size of the aggregate benefit when the acquirer has family ownership suggesting that the overall acquisition "pie" is the same on average when families or nonfamilies are bidders. Further investigation of cumulative abnormal returns for targets (TCAR) reveals that, while remaining positive, targets of family owned bidders are associated with lower TCARs (4.8%) than targets of nonfamily owned bidders. My results indicate that, deal synergy gains stays the same while family bidder CARs are higher and their target CARs are lower than nonfamily counterparts, suggesting family firm bidders negotiate a larger share of the acquisition synergy gains.

A concern may arise that my results are driven by industry traits. For instance, if family firms operate in low Tobin's *Q* industries more than nonfamily firms, then they may be more likely to choose targets within their own industries which may also have low Tobin's *Q*. My regressions include *same industry* variable (equals to one if acquirer and target have same Fama-French industry classification code, zero otherwise). Following prior literature (Morck et al. 1990; Officer, 2003; Alexandridis 2013) I use *same industry* in my analysis to examine this conjecture and find that it is not statistically significant suggesting my results are not driven by less (more) diversification of family firms relative to nonfamily firms.

Family owners are not the only type of large influential shareholder. Other large blockholders may have similar incentives as family shareholders; suggesting a general blockholder effect rather than a family firm effect. To examine this argument, I include a binary variable indicating the existence of nonfamily blockholders. My analysis suggests that the inclusion of the other large blockholder does not change the relation between family presence, target selection and M&A shareholder value effects. In addition, I also investigate whether my results hold when I control for serial acquirers because the prior experience of serial bidders might influence my results. To examine this possibility, I add a new variable, defined as the total number of acquisitions made by acquirers in the past three years prior to the current acquisition announcement. My analysis indicates that serial acquirers do not affect the main results.

My study suffers from an endogeneity problem as merger decisions do not randomly arise amongst the population of firms. Also, the analysis investigates ownership structure, investment decisions and performance that prior literature indicates are simultaneously determined. I acknowledge that the study does not eliminate concerns arising from the endogeneity caused by simultaneity. However I do attempt to address the omitted variable problem caused by using non-random M&A sample. M&As are deliberate decisions by firms to self-select into their preferred choices (Li and Prabhala, 2007). Since the decision to become an acquirer is not exogenous then my sample of acquiring firms may not be random and the results of my analysis could be biased. In order to correct for this bias, I use a Heckman (1979) two-stage model that conditions acquirer returns on the likelihood that a firm acquires. The process of correction for self-selection can be viewed as including an omitted variable (Li and Prabhala, 2007). While not ruling out all potential reasons that may cause endogeneity in my analysis, the Heckman correction addresses the omitted variable concern. The results hold using Heckman two-stage model suggesting family firm acquirers realize better abnormal returns both in the short and long run.

This chapter makes several important contributions to the literature. First, the analysis provides compelling evidence that family firms pick different types of targets that are smaller and have lower growth potential. To the best of my knowledge, this is the first study to investigate target selection by family firm acquirers in the U.S. I contribute to the literature by identifying a potential channel through which family firms perform well when they acquire. Buying smaller and lower growing firms appears to be beneficial for family firm shareholders. While building on literature regarding the impact of target Tobin's Q (i.e. growth options) on bidder returns (Lang et al., 1989; Morck et al., 1990; Servaes, 1991; Wang and Xie, 2009), this chapter expands the analysis and argues the importance of ownership structure and target selection on bidder returns.

Second, mergers done by family firms do not appear to be harmful for shareholders. Family firm versus nonfamily firm performance in M&A activity remains a largely open question in the literature. Ben-Amar and Andre (2006) shows that Canadian family-firm acquirers exhibit higher announcement returns than nonfamily firm acquirers. Basu, Dimitrova, and Paeglis (2009) examine newly public firms in the U.S. and find that family firms outperform nonfamily firms when undertaking M&A transactions at high levels of family ownership but performance deteriorates as family stakes decrease. While examining S&P 500 firms, Bauguess and Stegemoller (2008) find that family firms destroy value when they acquire and the magnitude of wealth loss is largest when the CEO is the founder. Building upon this stream of literature, this chapter provides evidence that short run abnormal returns to family firm acquisition announcements are higher (less negative) than shareholders of nonfamily firms.

Third, investigation reveals additional aspects of the family ownership and its impact on bidder shareholders. My results indicate that family ownership benefits its shareholders up to one year after the announcement. My analysis suggests overall synergy gains do not vary based on family ownership. I also find that targets of family firms realize lower abnormal returns (although still positive) relative to targets of nonfamily bidders. When family firms are bidders, they have better ACARs and their targets have lower TCARs relative to their nonfamily counterparts, suggesting family bidder shareholders take a larger share of the synergy gains while overall synergy remains unchanged.

The remainder of this chapter proceeds as follows. Next section provides a summary of the data and empirical design. Then in the following section I present the cross sectional analysis. Finally, I conclude and discuss research implications.

Empirical Design and Sample Construction

Sample Construction

My sample comprises the Russell 3000 firms (excluding financial and utility firms) from 2001 through 2015. For each firm year observation, I identify and hand collect family ownership through corporate proxy statements. If a company is delisted, goes bankrupt or gets sold during this time period then it drops out of the sample accordingly.

I include mergers and acquisitions with announcement dates from January 1, 2001 until December 31, 2015 that are included in the ThomsonOne data base (formerly SDC). I exclude deal values less than $1 million and deal types that are spinoffs, recapitalizations, self-tenders, exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest and privatizations. I also eliminate acquiring firms outside the set of the Russell 3000 Industrial firms along with private acquirers and bidders. To ensure the comparability of return data for all acquirers and targets, I keep only the U.S. acquirers and targets, and so exclude any international subsidiary acquisitions leaving 842 transactions. Finally, since I can only use completed and partially completed acquisitions which have stock market returns available on CRSP[1] and cross-sectional data available on Compustat, my sample is further reduced to 607 remaining transactions among which 381 are unique acquirers.

Primary Variable Measurement

Family firms are measured using a binary variable that equals one if the family holds five percent or more equity stake in the firm and zero otherwise. For the first target selection model using multinomial logistic regression, my primary dependent variable takes on a value of one if the firm is not a target in an M&A transaction, takes a value of two if the firm is acquired by nonfamily bidder and takes a value of three if the firm is acquired by a family bidder. For the second target selection model using logistic regression technique, my primary dependent variable is a family firm binary variable.

For the announcement period market reaction, my primary dependent variable is the cumulative abnormal returns (CARs) estimated for a three day period centered on the announcement date (the event window is from day -1 to day +1). Abnormal returns over

[1] Some of the targets are listed on international stock exchanges; some are listed on OTC and pink sheets, but are not listed in CRSP database and are therefore dropped from the sample.

the three-day event window are calculated using market model returns with the CRSP value-weighted index returns as the reference index. I also calculate abnormal returns using CRSP equal weighted index as robustness tests and my results carry through. The market model parameters are calculated over the period starting 301 trading days before the announcement and ending on the 46th trading day before the acquisition announcement. I calculate CARs for both the acquirer (ACAR) and the target (TCAR) around the announcement date. In addition, I value weight ACAR and TCAR and calculate a proxy for the combined synergy gains (DCAR).

Control Variable Measurement

M&A literature documents several factors affecting acquirer announcement returns. Moeller, Schlingemann, and Stulz (2004) find that acquisitions made by smaller acquirers and acquisitions with smaller deal size relative to the size of the acquirer result in better bidder announcement returns. Similarly, Travlos (1987) shows that acquisitions financed with cash also result in better bidder returns. Morck, Shleifer, and Vishny (1990) present evidence that acquisitions in which the acquirer and the target have the same two-digit SIC code seem to result in better acquirer announcement returns.[2] In my cross-sectional regressions, I control for these determinants of acquirer and deal performance. In addition, I include a set of firm and deal characteristics which are standard control variables in the M&A literature. Firm characteristics employed in this way include the market value of assets to book value of assets, leverage, risk measures, target pre-announcement stock price run-up, and target performance measure (ROA). In

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[2] Better in this context often means less negative not necessarily positive.

terms of deal characteristics, I include the method of payment, the relative deal size, and the target premium. Appendix A contains descriptions of the variables used in the cross-sectional analysis as variables of interest and controls.

Acquirer Characteristics

To investigate the role of the family firm ownership structure in acquirer announcement period effects, I use several different measures to control for acquirer ownership structure. I include an indicator variable that identifies if the acquirer firm is a family owned firm (5% and more founding family ownership). I also use indicator variables that identify the management characteristics in family firms to investigate the added role of family firm control of management which capture: 1) a firm with the founder as CEO (1 if the CEO of the family firm is also a founder of the company, 0 otherwise); 2) a firm with a family descendant as CEO (1 if the CEO of the family firm is a descendant of the founder of the company, 0 otherwise), and; 3) a nonfamily professional as CEO of a family firm (1 if the CEO of the family firm is a nonfamily outsider, 0 otherwise). The remaining observations belong to nonfamily firms which have, by definition, professional CEOs as the omitted class. To control for the relative wealth that a family has in the firm and the level of control a family maintains, I include the percentage of family ownership in my regressions. Finally, I also control for other types of blockholders with a blockholder indicator (1 when a hedge fund, private equity fund, mutual fund, pension fund, or insurance company holds a 5% or larger ownership stake in the firm and 0 otherwise).

Finally, I include the log of total assets of the acquirer at the previous fiscal year end before the merger to control for the differences in the size of the acquirer. Moeller, Schlingemann, and Stulz (2004) find that bidder size is negatively correlated with the acquirer's announcement CAR.

Since the market reaction to an acquisition can also be impacted by how much debt the acquirer has on its books, I also control for acquirer leverage by including the Long Term Debt/Total Assets ratio in my regressions. Existing literature finds that acquirer abnormal returns are positively related to acquirer leverage (Maloney, McCormick, and Mitchell, 1993).

Acquisition announcement returns can also be impacted by the riskiness of the acquirer. Therefore, I use the standard deviation of monthly returns for 36 months prior to the acquisition announcement as a measure of acquirer equity risk.

Harford (1999) finds that acquirer abnormal returns are lower when the bidder has large holdings of cash. In addition, according to Jensen (1986), high free cash flow tempts empire building acquisitions. Therefore, I also include the Cash/Total Assets ratio for the acquirer to control for free cash flow effects.

Finally, I also include the acquirer market to book value of assets in my regression analysis. Moeller, Schlingemann, and Stulz (2004) and Dong et al. (2006) show that the acquirer's market-to-book ratio is associated with negative effects on bidder returns.

Target Characteristics

I control for target prior year performance by including target return on assets (Net Income/Total Assets). I control for the target's performance, since recent performance could determine the target's bargaining power and the premium paid for the target. Announcement period returns can also be impacted by the recent stock performance of the target. Therefore, I also include the target's stock price run-up. Target stock run-up is calculated as a market-adjusted buy-and-hold return of the target firm's stock over the period beginning 90 days and ending 5 trading days prior to the announcement date from CRSP.

There is also evidence that target shareholders gain less when the target is larger (Officer, 2003). Alexandridis et al. (2013) suggests that target size is negatively related to the bidder returns suggesting there is costly complexity associated with buying large targets. Therefore, to control for any target size effect, I include the log of target total assets in the cross-sectional regressions. Target announcement returns can also be impacted by the riskiness of target. Accordingly, I include a measure to control for target risk which is calculated as the standard deviation of monthly returns for 36 months prior to the acquisition announcement. A target's leverage can also impact the announcement returns and the premium paid for targets. Hence, I include a leverage measure for targets, calculated as Long Term Debt/ Total Assets.

Finally, Dong et al (2006) finds a negative relationship between target market to book ratio for assets and target announcement returns. Accordingly, I also include the target's market to book to control for target's growth.

Deal Characteristics

Prior research suggests that the payment method for the acquisition has a significant effect on acquisition returns. Hansen (1987) proposes that bidders have greater incentives to finance with stock when the asymmetric information about target assets is high. Both Myers and Majluf (1984) and Hansen (1987) suggest that bidders prefer to finance with stock when they consider their stock overvalued by the market and prefer to finance with cash when they consider their stock undervalued. As uncertainty about bidder asset value rises, this adverse selection effect increases. Martin (1996) finds evidence consistent with this adverse selection prediction. Travlos (1987) finds that stock-financed M&A deals exhibit much larger negative announcement effects than cash-financed deals. Accordingly, I also control for acquisitions that are paid for completely with cash and the ones that are paid for completely with stock. The reference group is those acquisitions that are paid for with a mix of cash and stock and those acquisitions not reporting the payment method.

The M&A literature also suggests that relative deal size when compared to the size of the acquirer is one of the variables that affects acquisition returns. Asquith, Bruner, and Mullins (1983) and Moeller, Schlingemann, and Stulz (2004) find that bidder announcement returns increase in relative deal size for smaller firms, while the reverse is true for the subsample of large bidders in their sample. I, therefore, include relative deal size calculated as value of the transaction from ThomsonOne (SDC) divided by the bidder's market value of equity 20 trading days prior to the announcement from CRSP.

The premium paid for the target can also be an important determinant of the acquisition announcement returns since the premium paid can reflect deal specifics and also can be related to the prior performance of the target. Therefore, I include premium paid for target into my regressions as a control variable.

I also control for whether or not the acquirer and the target is in the same industry with an indicator variable that equals to 1 if they are in the same industry and 0 otherwise. The effect of diversifying acquisitions on announcement returns is not obvious. Morck, Shleifer, and Vishny (1990) find that diversifying acquisitions decrease shareholder value, while potentially benefiting self-interested managers. However, Villalonga (2004a, 2004b) and Campa and Kedia (2002) show that diversification does not necessarily lead to lower firm value and sometimes is associated with higher firm value. I capture the potential for this effect by using an indicator capturing acquiring firm and target firm coincident industry in my analysis. My cross-sectional regressions also include industry and year fixed effects.

Descriptive Statistics

Table 1 provides summary statistics for 607 family and nonfamily acquirers and their associated public targets from January 2001 and December 2015. The last three columns of Table 1 list the results of difference in mean tests between family and nonfamily firms. Based on these tests, family firm bidders in general, have lower leverage and do fewer acquisitions that are financed purely by stock. Family firm targets exhibit lower market to book ratios, suggesting lower growth potential than targets in nonfamily firm acquisitions.

Table 1. Descriptive statistics

Panel A. Dependent variables

	N	Mean	Median	Min.	Max.	*Family*	*Non family*	*p value*
ACAR (-1,+1)	607	-0.009	-0.005	-0.236	0.264	0.001	-0.012	0.034
TCAR (-1,+1)	607	0.281	0.238	-0.302	1.392	0.255	0.288	0.149
BHAR 1 year	596	-0.131	-0.077	-1.929	1.744	-0.077	-0.146	0.121
DCAR(-1,+1)	607	0.019	0.011	-0.199	0.324	0.019	0.018	0.834

Panel B. Categorical variables

%	N	Mean	Median	Min.	Max.			
Family firm	133	0.219	0	0	1	-	-	-
Family own.	133	0.192	0.154	0.05	0.818	-	-	-
Founder	52	0.391	0	0	1	-	-	-
Descendant	15	0.113	0	0	1	-	-	-
Professional	66	0.496	0	0	1	-	-	-

Panel C. Control variables

	N	Mean	Median	Min.	Max.	*Family*	*Non family*	*p value*
Blockholder	607	0.898	1	0	1	0.902	0.897	0.850
Acq cash/asset	607	0.196	0.129	0	0.803	0.203	0.194	0.605
Acq MVE	607	27,399	5,245	50	575,867	26,689	27,598	0.864
Acq assets	607	16,616	3,260	70	195,014	16,909	16,534	0.904
Acq leverage	607	0.162	0.138	0	0.731	0.122	0.173	0.000
Acq risk	607	0.125	0.102	0.026	0.533	0.133	0.123	0.195
Acq Tobin's *Q*	607	2.244	1.879	0.623	8.412	2.266	2.238	0.830
All cash	607	0.511	1	0	1	0.564	0.496	0.165
All stock	607	0.142	0	0	1	0.098	0.154	0.100
Same industry	607	0.684	1	0	1	0.714	0.675	0.391
Relative size	607	0.280	0.122	0.001	2.342	0.299	0.274	0.534
Target MVE	607	1,532	368	2	51,102	1,059	1,665	0.157
Target assets	607	1,146	267	11	14,444	923	1,208	0.242
Target leverage	607	0.144	0.037	0	0.946	0.140	0.145	0.815
Target roa	607	-0.054	0.026	-1.550	0.306	-0.061	-0.052	0.690
Target *Q*	607	1.939	1.608	0.550	6.815	1.687	2.009	0.004
Target risk	607	0.175	0.153	0.041	0.759	0.181	0.173	0.412
Target runup	607	0.158	0.08	-0.661	14.440	0.147	0.161	0.837
Target premium	607	0.602	0.501	0.007	1.987	0.637	0.592	0.264
Deal value	607	2,144	529	3	67,286	1,533	2,315	0.168

Acquirer average cumulative abnormal return (ACAR -1, +1) around the announcement date is slightly positive (but very close to zero) for family firm bidders, while it is negative for nonfamily firm bidders and statistically different at generally accepted levels for the difference (p-value of 0.03). This is the first indication I find that family firm acquirers are received differently from nonfamily firm acquirers. CARs for targets of family firms (TCAR -1, +1) on average are smaller than for those of nonfamily firms with a difference that is not statistically significant. Next I focus on long run acquirer returns to examine whether family firm acquisitions continue to benefit its shareholders after the announcement. Consistently with the short run results, one year buy and hold abnormal returns (BHAR) since acquisition announcement seems to be less negative than nonfamily firms, although the difference is not statistically different in these univariate tests. My aggregate market reaction measure, Deal Cumulative Abnormal Returns (DCAR=value weighted average of acquirer and target cumulative abnormal announcement returns) around the announcement date (DCAR -1, +1), is not statistically different from zero but the estimate is positive overall and for both family firm and nonfamily firm acquisitions. Although the average DCAR for family firms seems to be larger, the difference is not statistically significant.

Family firms represent 22% of the sample when defined as those firms that have at least 5% founding family ownership (Villalonga and Amit (2006)). Founders are CEOs in 39% of the family firms while the descendant of the founder is CEO in 11% of the firms. Outside professional managers are the CEOs for 50% of the family firms.

I observe that acquirers use all cash for about 51% of the acquisitions, all stock for 14% of the deals, and fail to report terms or use a combination of both for the remaining 35% (mixed deals). Nonfamily firms use all stock as the method of payment more often than family firms do, though the difference is only significant at the p-value = 10% level. Mean relative deal size (transaction value/ bidder market value) is 28% in my sample. Relative deal size does not seem to vary between family owned and nonfamily owned acquirers. Average deal value in my sample is $2.1 billion. Family firms on average perform acquisitions that have smaller target asset-based market to book ratios than nonfamily firm bidders. Family firm bidders have lower leverage. Family firm bidders and nonfamily firm bidders do not differ statistically in terms of their size, risk, market to book ratio and cash/asset ratio in my sample.

Targets exhibit an average runup of 15.8% while the median runup is 8%. Runups do not seem to vary between family owned and nonfamily owned firms suggesting that market speculation about impending takeovers does not impact family takeovers differently than nonfamily takeovers. Family firms on average acquire firms in their same two digit SIC code (which is a proxy for non-diversifying deals) 71% of the time, while nonfamily firms acquire from the same industry 67% of the time. I find that targets of family owned bidders have a lower market to book ratio for assets relative to targets of nonfamily bidders. A lower market to book could be explained by low growth opportunities. Targets of family firm bidders and nonfamily firm bidders do not differ in terms of their size, leverage, ROA or risk profile.

Cross Sectional Analysis

Target Selection

Having established that family firm bidders and nonfamily firm bidders have some differences in the types of deals they make in a univariate setting, I continue my investigation by examining the differences in the targets they identify in a multivariate setting. My first hypothesis proposes that due to differences in their incentives and management styles, family firm bidders engage in mergers with target firms that are different than the target firms in non-family firm mergers. I assume shareholder wealth increases if family firms pick targets against which they can negotiate better, or if they choose targets with low growth potential, or if they keep the deal quiet and have fewer competing bids. Or alternatively, shareholder wealth decreases if family firm bidders pick targets that have more negotiating power, or if they choose targets with high growth potential or there are many competing bids which would increase the price paid. I investigate these potential channels in this chapter while trying to answer my research question of whether family firms pick more value enhancing targets than nonfamily firms.

First, I start by using a larger sample that includes Russell 3000 industrial firms (excluding financial and utility firms) with annual data from 2001 through 2015 resulting in 24,724 firm year observations. In this analysis, I assume all of these firms are potential firms that could be targeted in an M&A transaction. Then I expand this sample by adding 607 firms that were actual targets from M&A transactions listed in SDC database during the same time period. After dropping the 70 duplicate firms that were included both in the

Russell 3000 and the M&A sample, my final sample has 25,261 firm year observations. This full sample includes firms that are targets of family bidders (133 firms), firms that are targets of nonfamily bidders (474 firms) and firms that are not targets in an M&A transaction (24,654 firms).

Using multinomial logistic model, the analysis examines target characteristics to identify what determines the likelihood of being acquired by a family bidder relative to the universe of Russell 3000 potential targets. The benefit of using this large sample and multinomial logistic regression is that it allows me to be able to use a third benchmark group of firms as potential targets that are not acquired. I investigate whether family owners appear more likely to acquire targets with: (i) low growth opportunities (Lang et al., 1989, Servaes, 1991 and Morck et al., 1990); (ii) are smaller (Alexandridis et al., 2013); (iii) lower risk and (iv) less leverage. Dependent variable takes on a value one if the firm is not a target in M&A (base category), two if the firm is acquired by a nonfamily bidder and three if it is acquired by a family bidder. The coefficient estimates are presented as relative risk ratios. With relative risk ratios, I measure the association between an exposure (target characteristics) and an outcome (equity structure of the bidder). The coefficient estimate thus represents the odds that a firm is being acquired by a family bidder exists given its characteristics compared to the odds of a firm not being acquired relative to the same firm characteristics. I estimate multinomial logistic model in the following form.

$$Prob\ (Target) = \alpha + \beta 1\ (Tobin's\ Q) + \beta 2\ (Size_i) + \beta 3 (Risk_i) + \beta 4 (Leverage_i) + u_{i,}\ (1)$$

The examination indicates that family firms are substantially more likely to select a target that has low growth opportunities and is smaller. Column 2 of Table 2, (under the subtitle Target of Family Bidder), the coefficient estimate on Tobin's *Q* is 0.677 (significant at 1% or better), suggesting that family firms are only 67.7% as likely to acquire a firm with high growth potential relative to a lower growth potential target (when target Tobin's *Q* changes by 1). Similarly, the coefficient estimate on size is 0.525 (significant at 1% or better), suggests that family firms are 52.5% as likely to acquire a firm that is larger compared to a smaller firm. These results suggest that on average, family firms appear to acquire firms that have lower growth potential and are smaller.

Table 2. Multinomial logistic regression and organizational form

	Coef.	*z-stat*	*Coef.*	*z-stat*	*Coef.*	*z-stat*	*Coef.*	*z-stat*
Target of Nonfamily Bidder								
β_1(Size)	0.624[a]	11.14	-	-	-	-	-	-
δ_1(Tobin's Q)	-	-	0.882[a]	3.42	-	-	-	-
η_1(Risk)	-	-	-	-	1.172	0.25	-	-
θ_1 (Leverage)	-	-	-	-	-	-	0.791	0.81
Target of a Family Bidder								
B_2 (Size)	0.525[a]	7.91	-	-	-	-	-	-
δ_2 (Tobin's Q)	-	-	0.677[a]	4.61	-	-		
η_2 (Risk)	-	-	-	-	0.690	0.30	-	-
θ_2 (Leverage)	-	-					0.899	0.26
Year Controls	Yes		Yes		Yes		Yes	
Observations	25,261		25,261		25,261		25,261	
χ^2 – tests of equality	$\beta_1 = \beta_2$	3.88[b]	$\delta_1 = \delta_2$	8.75[a]	$\eta_1 = \eta_2$	0.15	$\theta_1 = \theta_2$	0.07

[a ,b, c] notations in all tables indicate significance at the 1%, 5% and 10% levels, respectively.

The multinomial logit setup allows me to rank the family firm and nonfamily firm target selection choices with respect to potential target firm characteristics. Table 2, column 1, shows that nonfamily firms also choose targets with low growth potential and that are smaller than the full Russell 3000 firms as potential target benchmark. Wald-χ^2 tests shown at the bottom of the Table 2 test the equality of coefficient estimates for the potential target characteristics. The χ^2 - tests allow us to reject the null hypothesis of equal coefficient estimates and I can thus infer that family firms choose firms that have lower growth potential and that are smaller when compared to the targets of nonfamily bidders and the other potential firms that could be targeted in Russell 3000 sample.

Previous analysis indicates that family firms choose targets that have lower growth potential and smaller using full sample. It compares family bidder targets relative to nonfamily bidder targets and other firms that are not targets at all. Next, I focus on the differences in the target selection in the M&A only sample of 607 observations and estimate a logistic model to investigate which of the target characteristics determine the propensity of these firms being acquired by family firm bidders. The dependent variable is a binary variable that takes a value of one if the target is acquired by a family firm bidder and zero otherwise. The logistic regression estimated is as follows:

$$Prob\ (Target\ of\ a\ family\ firm) = \alpha + \beta 1\ (Target\ Tobin's\ Q) + \beta 2\ (Target\ Size_i) + \beta 3\ (Blockholder\ Dummy_i) + \beta 4\ (Target\ Leverage_i) + \beta 5\ (Target\ Roa_i) + \beta 6\ (Target\ Risk_i) + \beta 7\ (Relative\ Deal\ Size_i) + Industry_t + u_{i,}\ (2)$$

The independent variables are as defined in Appendix A. Table 3 shows my analysis of target selection by family firms using M&A sample. These results indicate that target Tobin's *Q* is associated with log odds ratio of 0.74, which can be interpreted as family bidders are 74% as likely to acquire a higher Tobin's *Q* (when target Tobin's *Q* increases by 1) firm as a nonfamily bidder. This finding indicates that as target's Tobin's *Q* increases, its likelihood of being acquired by a family bidder decreases; suggesting family bidders choose targets with low growth potential. Surprisingly no other variable seems to be a key determinant of family firm bidders' decision to acquire a target. Size, leverage, roa and risk of target, existence of other nonfamily blockholder and relative deal size are not statistically significant in the logistic estimation. This analysis suggests that family firms are identifying targets that have low growth potential.

Table 3. Logistic regression and ownership structure

Dependent variable. Target of a family firm acquirer

	Marginal effects	Odds ratio
Target M/B	-0.045[b]	0.74 [b]
	(0.012)	(0.015)
Log (Target Total Assets)	-0.028	0.833
	(0.15)	(0.179)
Blockholder Dummy	0.019	1.132
	(0.800)	(0.801)
Target Leverage	0.061	1.487
	(0.579)	(0.585)
Target Roa	0.022	1.153
	(0.760)	(0.760)
Target Risk	-0.245	0.202
	(0.268)	(0.259)
Same Industry	0.016	1.114
	(0.740)	(0.739)
Relative Deal Size	0.052	1.402
	(0.169)	(0.197)
N	607	607

Having established that family firms choose targets with low growth potential and that are smaller, I continue my investigation of whether these are value creating targets for family firm shareholders. Next I study short run impacts of family firm acquisitions.

Acquirer M&A Announcement Returns

Preceding analysis indicates that family bidders pick targets with lower growth potential compared to nonfamily bidders. Does this mean family firms pick more value enhancing targets than nonfamily firms for their shareholders? If family owned firms identify targets that create more value for their shareholders than nonfamily firm bidders, I would expect to see better announcement returns (ACAR) for family firm acquirers. Building on the findings of earlier studies buying low growth targets is expected to result in better announcement returns. On the other hand, if families undertake acquisitions due to a focus on diversifying family owner portfolios even though they are performing sub optimal acquisitions then I expect to see lower announcement returns for family firm bidders (ACAR).

To measure the market reaction to the acquirer announcement, I use cumulative abnormal returns around the announcement date measured from 1 trading day prior to the announcement date to 1 trading days after, as the primary dependent variable. My regression model is as follows:

$$Acquirer\ Cumulative\ Abnormal\ Returns_i = \alpha + \beta 1\ (Family\ Firm\ Acquirer_i) + \delta Z_i + Industry_t + u_{i,}\ (3)$$

The independent variables are as defined in Appendix A. In addition to the above regression model, I also present alternative models using binary indicator variables to represent different types of family management (founder CEO, descendant CEO, professional CEO). Furthermore, I cluster on firm-level identifier and use industry and year fixed effects.

The multivariate regression results contained in Table 4 indicate that acquiring firms with family ownership exhibit higher CARs than other types of firms (1.25% higher ACAR) and that this effect increases with the level of family ownership (coefficient estimate of 0.045). Based on average acquirer market value of equity, this corresponds to $342 million higher value for the family firm acquirers. I interpret this as evidence that family firms have a better (less negative) market reaction when they announce M&As. There is no difference between family involvement in the management through holding CEO positions and professional nonfamily managers holding CEO positions. Consistent with prior research findings, deals that are financed by all cash result in higher ACARs, while the acquirer cash/asset ratio is associated with lower ACARs. Target size and target market to book ratio are negatively related to acquirer CARs, which supports the negative relationship identified previously between buying higher growth targets and bidder returns. The presence of other nonfamily blockholders and control variables do not seem to have significant impact on the acquirer announcement CARs.[3]

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[3] I also calculate abnormal returns using CRSP equal weighted index as robustness tests and my cross-sectional results hold.

Table 4. Acquirer CARs and organizational structure

Dependent variable. ACAR(-1,+1)

	1	2	3
Family own.	0.0450[b]		
	(0.034)		
Family Firm		0.0125[c]	
		(0.080)	
Founder CEO			0.00754
			(0.296)
Family Descendant CEO			0.0289
			(0.277)
Professional CEO			0.0128
			(0.215)
Target Runup	0.00314	0.00332	0.00364
	(0.322)	(0.301)	(0.270)
Premium	-0.00433	-0.00484	-0.00571
	(0.542)	(0.496)	(0.421)
Blockholder	0.00522	0.00447	0.00438
	(0.464)	(0.529)	(0.531)
Acq Cash/Asset	-0.0528[b]	-0.0523[b]	-0.0508[b]
	(0.024)	(0.026)	(0.037)
Ln (Acq Assets)	-0.00209	-0.00201	-0.00189
	(0.361)	(0.382)	(0.420)
Acq Leverage	0.0343	0.0357	0.0348
	(0.137)	(0.129)	(0.134)
Acq Risk	-0.000224	-0.00227	0.00148
	(0.997)	(0.971)	(0.981)
Acq M/B	0.000486	0.000417	0.000493
	(0.848)	(0.869)	(0.846)
All Cash	0.0142[b]	0.0142[b]	0.0140[c]
	(0.045)	(0.047)	(0.051)
All Stock	-0.0193	-0.0194[c]	-0.0194[c]
	(0.100)	(0.100)	(0.100)
Same Industry	0.00412	0.00432	0.00407
	(0.455)	(0.433)	(0.462)
Relative Size	-0.0163	-0.0157	-0.0167
	(0.177)	(0.200)	(0.181)
Log (Target Assets)	-0.00484[c]	-0.00480[c]	-0.00467[c]
	(0.063)	(0.067)	(0.078)
Target Leverage	0.0180	0.0183	0.0175
	(0.312)	(0.303)	(0.317)
Target Roa	-0.0129	-0.0126	-0.0127
	(0.384)	(0.391)	(0.386)
Target M/B	-0.00762[a]	-0.00755[a]	-0.00758[a]
	(0.005)	(0.005)	(0.005)
Target Risk	-0.0185	-0.0169	-0.0166
	(0.648)	(0.680)	(0.685)

Table 4. (continued)

	1	2	3
Intercept	0.0508	0.0498	0.0482
	(0.120)	(0.129)	(0.149)
N	607	607	607
adj. R-sq	0.125	0.126	0.125

Table 4 is consistent with my hypothesis that family owned firms acquire targets that provide greater benefits to shareholders than targets of nonfamily firms suggesting family bidders buy smaller targets with lower growth potential and market reacts positively to their acquisition announcements.

Acquirer Abnormal Returns One Year After Announcement

A central argument of the family-firm body of research is that family firms are better able to monitor management, have longer investment horizons and are more committed to firm success than nonfamily firms. Positive announcement period reactions to family firm acquisitions may arise because shareholders anticipate that family-firms will be better able to realize the potential of the combined firms. If this anticipation is correct, the realization of such gains should appear in firm long-run returns.[4] The univariate evidence in Table 1 as well as a number of the coefficient estimates in Tables 2 through Table 4 suggests that there are some systematic differences between family firm targets and nonfamily firm targets as well as between family firm acquirers and nonfamily firm acquirers. Differences are readily apparent in firm sizes, levels of market-to-book and leverage, among others. Accordingly, to assess the long-run performance of

[4] The announcement period abnormal returns are expected superior stock price performance while the long-term returns, as estimated using an appropriate asset pricing model, represent the realization of such returns.

family firm equity returns in family-firm acquisitions, I use a buy-and-hold abnormal return metric that employs the Fama-French (1993) model as the reference portfolio capturing risk differences associated with size, book-to-market and returns to the overall market. I estimate these returns for one-year, two-year, and three-year horizons. Table 5 presents the cross-sectional regression results for one-year return horizons. Consistent with the short-term abnormal return conclusions, family-firm acquisitions generate average positive abnormal returns over the succeeding one-year horizon as compared to nonfamily acquisitions. The two and three-year abnormal return horizon results show no difference between family-firm acquisitions and nonfamily firm acquisitions. The overall long-term performance of both family and non-family acquirers, as captured in the intercept estimate, is statistically significant and positive for the one-year horizon. In terms of management positions being held, founder CEOs and professional nonfamily CEOs seem to be the key drivers of the better long term abnormal returns. Consistently with the short run results, long term abnormal return analysis results also suggests family owned firms acquire targets that provide greater benefits to shareholders than the targets of nonfamily firms up to one year after the announcement.

Table 5. Acquirer 1 year BHARs and organizational structure

Dependent variable. BHAR (0,+12).

	1	2	3
Family Ownership	0.398^{c}		
	(0.054)		
Family Firm Dummy		0.107^{b}	
		(0.019)	
Founder CEO			0.117^{c}
			(0.053)
Family Descendant CEO			0.0111

Table 5. (continued)

	1	2	3
			(0.935)
Professional CEO			0.120[c]
			(0.068)
Target Runup	-0.00917	-0.00769	-0.00869
	(0.571)	(0.637)	(0.599)
Premium Combined	-0.0688	-0.0732	-0.0686
	(0.159)	(0.130)	(0.167)
Blockholder Dummy	-0.00305	-0.0109	-0.0123
	(0.954)	(0.833)	(0.811)
Acquirer Cash/Asset	-0.0243	-0.0182	-0.0145
	(0.855)	(0.889)	(0.911)
Log (Acquirer Total Assets)	0.00116	0.00187	0.00169
	(0.935)	(0.895)	(0.907)
Acquirer Leverage	0.248	0.259[c]	0.266[c]
	(0.103)	(0.091)	(0.087)
Acquirer Risk	-2.552[a]	-2.573[a]	-2.589[a]
	(0.000)	(0.000)	(0.000)
Acquirer M/B	-0.0961[a]	-0.0969[a]	-0.0978[a]
	(0.000)	(0.000)	(0.000)
All Cash	0.0683	0.0675	0.0680
	(0.106)	(0.118)	(0.116)
All Stock	0.143[b]	0.142[b]	0.142[b]
	(0.020)	(0.020)	(0.020)
Same Industry	-0.00621	-0.00394	-0.00320
	(0.857)	(0.909)	(0.925)
Relative Deal Size	0.0605	0.0667	0.0720
	(0.457)	(0.428)	(0.396)
Log (Target Total Assets)	-0.0407[a]	-0.0405[b]	-0.0413[a]
	(0.009)	(0.010)	(0.009)
Target Leverage	-0.0283	-0.0253	-0.0195
	(0.800)	(0.819)	(0.857)
Target Roa	-0.166[c]	-0.164[c]	-0.161[c]
	(0.086)	(0.086)	(0.086)
Target M/B	-0.0376 [b]	-0.0372 [b]	-0.0371 [b]
	(0.034)	(0.036)	(0.036)
Target Risk	-0.622[b]	-0.611[b]	-0.613[b]
	(0.020)	(0.021)	(0.021)
Intercept	1.276[a]	1.272[a]	1.281[a]
	(0.000)	(0.000)	(0.000)
N	596	596	596
adj. R-sq	0.311	0.312	0.311

Combined M&A Announcement Returns

I continue my investigation and examine the overall deal synergies between acquirer and target as reflected in the combined M&A announcement returns as has been done in prior research. More specifically, I study the difference between the overall deal quality (synergistic benefits) of family firm acquisitions versus nonfamily firm acquisitions. If family-owned firms engage in better value creating acquisitions, I expect to see combined announcement returns (value weighted deal CAR (-1, +1) of bidder and target market values = DCARs) to be higher (less negative) for family firm acquisitions. This would be consistent with family ownership increasing the overall acquisition benefit pie. By contrast, if I see lower DCARs for family firm acquisitions, then I provide evidence supporting family firm acquisitions resulting in a lower acquisition benefit pie.

I use Deal Cumulative Abnormal Return (DCARs) around the announcement date measured as the value weighted average of Acquirer Cumulative Abnormal Returns (ACAR) and Target Cumulative Abnormal Returns (TCAR) measured from 1 trading day prior to the announcement date to 1 trading days after, as the primary dependent variable for this test. Following previous studies, I also argue that this is a proxy for how the market views the overall quality of the transaction (size of the potential deal synergy benefits). The regression model is as follows:

$$\textit{Deal Cumulative Abnormal Returs}_i = \alpha + \beta 1\ (\textit{Family Firm Acquirer}_i) + \delta Z_i + \textit{Industry}_t + u_{i,}\ (4)$$

The control variables (Z_i) are as defined in Appendix A. In addition to the above regression model, I estimate additional models using binary indicator variables to represent different types of family-firm management (founder CEO, descendant CEO, professional CEO). I cluster on firm-level identifier and use industry and year fixed effects.

Multivariate regression results in Table 6 imply that there are no significant differences between the overall DCARs in family firm acquisitions and nonfamily firm acquisitions. Regression results provide evidence that family ownership does not have any significant impact on the overall market reaction to the combined deal CARs. I interpret this evidence as suggesting that the overall quality or size of the acquisition benefit pie is the same regardless of the presence or absence of families in the ownership structure. When I further examine the estimated coefficients in my regression, I observe that acquisitions using equity as the only compensation are associated with lower DCARs, while using only cash is positively related to DCARs. Acquirer size is negatively related to DCARs, while acquirer leverage is positively related though only at a lower statistical level (p-value < 0.10). Previous evidence suggests that family firm bidders benefit their shareholder both in the short run and long run by identifying targets with low growth potential and that are smaller. Results from Table 6 shows that family firms do not increase the overall deal synergy pie.

Table 6. Combined deal CARs and organizational structure

Dependent variable. DCAR(-1,+1).			
	1	2	3
Family Ownership	-0.0002 (0.999)		

Table 6. (continued)

	1	2	3
Family Firm Dummy		0.00141	
		(0.827)	
Founder CEO			-0.000307
			(0.970)
Family Descendant CEO			0.0280
			(0.129)
Professional CEO			-0.00302
			(0.733)
Target Runup	-0.000392	-0.000364	-0.000169
	(0.890)	(0.899)	(0.953)
Premium Combined	0.00705	0.00703	0.00580
	(0.315)	(0.315)	(0.416)
Blockholder Dummy	0.00516	0.00512	0.00550
	(0.496)	(0.496)	(0.464)
Acquirer Cash/Asset	-0.0423[c]	-0.0422 [c]	-0.0437 [c]
	(0.052)	(0.052)	(0.052)
Log (Acquirer Total Assets)	-0.00726[a]	-0.00727[a]	-0.00725[a]
	(0.002)	(0.002)	(0.002)
Acquirer Leverage	0.0388 [c]	0.0394 [c]	0.0372[c]
	(0.074)	(0.076)	(0.097)
Acquirer Risk	0.0131	0.0127	0.0159
	(0.833)	(0.838)	(0.798)
Acquirer Tobin's Q	-0.00141	-0.00144	-0.00119
	(0.553)	(0.544)	(0.619)
All Cash	0.0140[b]	0.0140[b]	0.0139[b]
	(0.033)	(0.034)	(0.035)
All Stock	-0.0229[b]	-0.0228[b]	-0.0227[b]
	(0.030)	(0.031)	(0.032)
Same Industry	0.00506	0.00504	0.00491
	(0.341)	(0.344)	(0.360)
Relative Deal Size	0.0203	0.0201	0.0187
	(0.124)	(0.124)	(0.160)
Log (Target Total Assets)	0.00147	0.00151	0.00173
	(0.559)	(0.547)	(0.494)
Target Leverage	-0.00749	-0.00774	-0.00938
	(0.641)	(0.630)	(0.559)
Target Roa	-0.00372	-0.00374	-0.00483
	(0.797)	(0.796)	(0.738)
Target Tobin's Q	-0.00469[b]	-0.00463[c]	-0.00466[b]
	(0.049)	(0.051)	(0.050)
Target Risk	-0.00521	-0.00467	-0.00407
	(0.890)	(0.901)	(0.914)
Intercept	0.0478	0.0475	0.0454
	(0.119)	(0.121)	(0.137)
N	606	606	606
Adj. R-sq	0.154	0.154	0.156

Target M&A Announcement Returns

If family owned firms are better monitors of the deal process and/or better negotiators, if they do not overpay as much as nonfamily owned firms, or their mergers are expected to be more successful, I would expect to see lower announcement CARs for the targets of the family firms (TCARs). Similar to the short run acquirer abnormal return analysis, I use CARs around the announcement date measured from 1 trading day prior to the announcement date to 1 trading days after, for target firms, as my primary dependent variable. TCAR is a proxy for how the market views the transaction in terms of target shareholders. The regression model using TCAR as independent variable that is estimated as follows:

$$Target\ Cumulative\ Abnormal\ Returns_i = \alpha + \beta 1\ (Family\ Firm\ Acquirer_i) + \delta Z_i + Industry_t + u_i,\ (5)$$

The variables are as defined in Appendix A. In addition to the above regression model, I also use additional binary variables to represent different types of family-firm acquirer management (founder CEO, descendant CEO, professional CEO). Furthermore, I cluster on firm-level identifier and include year and industry fixed effects.

Multivariate regression results in Table 7 (Column 2) imply that targets of family owned firms, in general, exhibit lower CARs than other types of firms (4.8% lower). Consistently with the results in Table 4 where ACARs increase with family ownership, TCARs decrease in family ownership (Column 1). Further, different types of family firm acquirer management lead to differentially smaller gains for targets particularly when the acquirer CEO is a founder. These results suggest that family owned bidders identify targets that are smaller and have lower growth potential which enhances value accrued to family bidder shareholders. Hence, family bidders have better announcement returns while their targets have lower (still positive) announcement returns.

Table 7. Target CARs and organizational structure

Dependent variable. TCAR (-1,+1).

	1	2	3
Family Ownership	-0.170[b]		
	(0.031)		
Family Firm Dummy		-0.0479[b]	
		(0.029)	
Founder CEO			-0.0796[b]
			(0.018)
Family Descendant CEO			-0.0158
			(0.822)
Professional CEO			-0.0300
			(0.280)
Target Runup	-0.0541	-0.0548	-0.0530
	(0.136)	(0.132)	(0.139)
Premium Combined	0.224[a]	0.226[a]	0.224[a]
	(0.000)	(0.000)	(0.000)
Blockholder Dummy	0.0169	0.0198	0.0177
	(0.638)	(0.585)	(0.626)
Acquirer Cash/Asset	0.0325	0.0305	0.0468
	(0.653)	(0.676)	(0.534)
Log (Acquirer Total Assets)	0.00951	0.00924	0.0101
	(0.244)	(0.258)	(0.219)
Acquirer Leverage	-0.0197	-0.0253	-0.0246
	(0.766)	(0.701)	(0.715)
Acquirer Risk	0.108	0.116	0.133
	(0.640)	(0.618)	(0.568)
Acquirer M/B	-0.00118	-0.000900	-0.00121
	(0.899)	(0.923)	(0.896)
All Cash	0.0828[a]	0.0831[a]	0.0825[a]
	(0.000)	(0.000)	(0.000)
All Stock	-0.00362	-0.00334	-0.00366
	(0.886)	(0.895)	(0.885)
Same Industry	0.0257	0.0250	0.0235
	(0.141)	(0.152)	(0.180)
Relative Deal Size	-0.0681[b]	-0.0704[b]	-0.0731[b]
	(0.042)	(0.033)	(0.030)
Log (Target Total Assets)	-0.0155[c]	-0.0157[c]	-0.0155[c]
	(0.083)	(0.079)	(0.086)
Target Leverage	0.0271	0.0261	0.0257

Table 7. (continued)

	1	2	3
	(0.653)	(0.663)	(0.667)
Target Roa	-0.0578	-0.0589	-0.0558
	(0.296)	(0.288)	(0.316)
Target M/B	-0.0101	-0.0104	-0.0105
	(0.382)	(0.367)	(0.359)
Target Risk	0.0349	0.0286	0.0286
	(0.796)	(0.830)	(0.831)
Intercept	-0.103	-0.0995	-0.104
	(0.355)	(0.374)	(0.345)
N	607	607	607
adj. R-sq	0.266	0.267	0.267

As expected, all cash deals are associated with higher TCARs. TCAR decreases with target size. Also as expected, a higher target premium results in higher TCARs, while recent target stock price run up is negatively related to TCARs. I also observe that relative deal size is negatively related to TCARs. Other control variables do not have statistically different impacts on TCARs.

My results so far indicate that, deal synergy gains stays the same while family bidder CARs are higher and their target CARs are lower than nonfamily counterparts, suggesting family firm bidders negotiate a larger share of the acquisition synergy gains. Next I directly test this conjecture.

Relative Acquirer Gain

To directly test whether or not family firm acquirers capture the larger share of the acquisition pie, I use a relative acquirer gain measure similar to that developed by Ahern (2012) and Bauguess et al. (2009). Δ$CAR (relative acquirer gain) is calculated as “acquirer abnormal $ returns - target abnormal $ returns, divided by the sum of the acquirer's and target's market value of equity 6 trading days prior to the announcement date". The regression model is as follows:

$$\Delta\$CAR_i = \alpha + \beta 1\ (Family\ Firm\ Acquirer_i) + \delta Z_i + Industry_t + u_{i,}\ (6)$$

In addition to the family firm indicator variable, I also use additional binary variables to represent the different types of family management (founder CEO, descendant CEO, professional CEO). Furthermore, I cluster on firm-level identifier.

Multivariate regression results in Appendix B demonstrate that family owned acquirers, in general, capture a larger relative share of the acquisition gains. I interpret the results as indicating that for each dollar in pre-merger combined market equity of the merging firms, family firm acquirers lose about 1 cent less than nonfamily acquirers on average. I also observe Δ$CAR (acquirer relative gain) is negatively related to the premium paid and relative deal size. Acquirer relative gain increases with acquirer size while it decreases. By contrast, Δ$CAR is negatively related to target's size.

Having established that family-firm acquisitions are more favorably greeted by the marketplace, I now turn to investigate some of the potential channels other than target selection that can drive these results.

Other Potential Channels

According to my analysis, family firm acquirers have positive stock market reaction both in the short run and up to one year after the announcement. I identify acquiring targets with lower growth potential and that are smaller as the primary channel that family firm bidders benefit their shareholders through. Next I explore other potential channels through which family firm acquirers may benefit their shareholders. First, family firms potentially better manage the acquired assets resulting in greater profitability than nonfamily acquirers. Following Cai and Sevilir (2012) and Healy, Palepu, and Ruback (1992), I use change in industry adjusted ROA (ΔROA) to examine the difference in operating performance between family and nonfamily merger outcomes. I calculate the industry-adjusted ROA of the acquirer and the target by subtracting the median industry ROA based on the two-digit SIC codes. Similar to Healy, Palepu, and Ruback (1992), I construct a portfolio of the acquirer and the target, and calculate the industry-adjusted ROA of the portfolio for a given fiscal year as the weighted average of acquirer's and target's industry-adjusted ROA. I use the three-year average of the industry-adjusted ROA as a measure of the pre-merger ROA of the acquirer and the target. I then calculate the three-year average of the combined firm's industry-adjusted ROA as my measure of post-merger ROA. Last, I calculate the change in operating performance of the combined company ΔROA as the difference between post-merger ROA and pre-merger ROA. Appendix C shows the multivariate analysis using (ΔROA) and my standard control variables. I find no significant differences between family and nonfamily firms' operating performance after the merger, suggesting better asset management does not explain the better abnormal returns captured by family firms.

As a second potential channel, I examine whether family firms keep the deal relatively quiet as compared to nonfamily firms. If family firms keep the deal quiet better than nonfamily firms then family firms should have fewer competing bids and, hence, pay lower prices for targets. I use the number of bidders from the ThomsonOne SDC database to examine this question. I use a logistic model to see if the probability of having multiple bidders is higher or lower for family firms. I generate a new multiple bidder dummy variable, which is equal to 1 if there are 2 or more competing bidders, and zero otherwise. My main independent variable is the family firm dummy in Appendix D. The lack of statistical significance for the coefficient estimate indicates that family firms do not seem to be better at keeping the deal quiet than nonfamily firms. Please note that there are only 28 firms that had multiple bidders in my sample likely leading to low power for the test.

Third, family firms potentially capture better abnormal returns by paying less than nonfamily firms. Accordingly, I also examine acquisition premiums to investigate whether family firms pay lower premiums compared to nonfamily firm acquirers (Officer 2003). I start with univariate tests and do not find any statistical significance in the difference in premium (t statistics of 1.55). I then investigate if there is any difference between family and nonfamily firms in a multivariate setting. My analysis in Appendix E shows no difference in acquisition premiums paid by family and nonfamily firms; indicating better negotiation is not the primary channel for family firms realizing better abnormal returns.

Evidence from Table 2 and Table 3 suggests that family firms pick acquisition candidates that have low growth potential and that are smaller than nonfamily firms. None of the other alternative channels seems to be explaining positive market reaction to family firm bidders both in the short and long run. Because of the strong link between firm health and family welfare, family owners may engage in more market surveillance and value increasing target selection than their nonfamily counterparts. In addition, family firms might not want to grow by acquiring fast growing firms in order to prevent dilution of their ownership stake. Therefore I posit that family acquirers target firms with significantly lower Tobin's *Q* which I proxy for lower growth potential, as gauged by market participants relative to nonfamily acquirers. Next I address some of the endogenity problems related to my analysis.

Endogeneity

My study suffers from an endogeneity problem as merger decisions do not randomly arise amongst the population of firms. Also, the analysis investigates ownership structure, investment decisions and performance that prior literature indicates are simultaneously determined. I acknowledge that the study does not eliminate concerns arising from the endogeneity caused by simultaneity. However I do attempt to address the omitted variable problem caused by using non-random M&A sample. M&As are deliberate decisions by firms to self-select into their preferred choices (Li and Prabhala, 2007). Since the decision to become an acquirer is not exogenous then my sample of acquiring firms may not be random and the results of my analysis could be biased. In order to correct for this bias, I use a Heckman (1979) two-stage procedure that conditions acquirer returns on the likelihood that a firm acquires. First stage of the two stage Heckman selection model uses a selection equation. In the second stage, inverse mills ratio from the first stage is included to correct for self-selection and can be viewed as including an omitted variable (Li and Prabhala, 2007). Table 8 shows that my positive short run abnormal returns and one year buy and hold abnormal return results remain similar after the correction. Lambda shows the coefficient estimate of the non-selection hazard (inverse mills ratio). I include the level of capital expenditures as an instrument in the first stage. Level of capital expenditures is highly correlated with acquisition likelihood, while it does not explain bidder returns (Bauguess and Stegemoller, 2008). Other variables included in the first stage logistic selection equation are acquirer cash/asset ratio, acquirer leverage, natural log of acquirer total assets, acquirer's Tobin's *Q* and acquirer risk. Other variables included in the second stage are shown in Table 8. My results hold using Heckman two-stage model which suggests family firm acquirers realize better abnormal returns both in the short and long run and the coefficient for the inverse mills ratio (Lambda) is not statistically significant. These second stage regressions also include industry and year fixed effects.

Table 8. Acquirer CAR, BHAR and heckman selection model

Dependent variable	ACAR	ACAR	BHAR	BHAR
	1	2	3	4
Family Ownership	0.0499[a]		0.432[a]	
	(0.051)		(0.005)	
Family Firm		0.0139 [b]		0.111[a]
		(0.031)		(0.005)
Target Runup	0.00345	0.00365	-0.00905	-0.00756
	(0.357)	(0.330)	(0.696)	(0.744)
Premium	-0.00604	-0.00638	-0.0810[c]	-0.0837 [b]
	(0.390)	(0.363)	(0.058)	(0.050)
Blockholder	0.00393	0.00343	-0.00752	-0.0125
	(0.680)	(0.718)	(0.899)	(0.832)
Acq. Cash/Asset	-0.0401[b]	-0.0391[b]	0.0170	0.0259
	(0.039)	(0.044)	(0.886)	(0.828)
Ln (Acq. Assets)	0.000561	0.00144	0.0132	0.0205
	(0.925)	(0.810)	(0.719)	(0.578)
Acq. Leverage	0.0366[c]	0.0369[c]	0.213[c]	0.214[c]
	(0.083)	(0.081)	(0.096)	(0.095)
Acq. Risk	-0.0140	-0.0156	-2.503[a]	-2.524[a]
	(0.788)	(0.764)	(0.000)	(0.000)
Acq. M/B	0.000710	0.000825	-0.0984[a]	-0.0975[a]
	(0.785)	(0.751)	(0.000)	(0.000)

Table 8. (continued)

	1	2	3	4
All Cash	0.0136[b]	0.0136[b]	0.0703[c]	0.0700[c]
	(0.038)	(0.038)	(0.078)	(0.080)
All Stock	-0.0196 [b]	-0.0195[b]	0.145[a]	0.146[a]
	(0.023)	(0.023)	(0.006)	(0.006)
Same Industry	0.00313	0.00341	-0.00971	-0.00646
	(0.591)	(0.556)	(0.784)	(0.855)
Relative Size	-0.0153[c]	-0.0145[c]	0.0645	0.0726
	(0.084)	(0.099)	(0.231)	(0.174)
Ln(Target Assets)	-0.00549[b]	-0.00540[b]	-0.0381[b]	-0.0378[b]
	(0.035)	(0.038)	(0.016)	(0.017)
Target Leverage	0.0237	0.0239	-0.00992	-0.00708
	(0.150)	(0.147)	(0.922)	(0.944)
Target Roa	-0.0125	-0.0120	-0.155[b]	-0.151[b]
	(0.310)	(0.328)	(0.039)	(0.044)
Target M/B	-0.00846[a]	-0.00834[a]	-0.0382[b]	-0.0376[b]
	(0.001)	(0.001)	(0.018)	(0.020)
Target Risk	-0.0199	-0.0172	-0.610[a]	-0.591[a]
	(0.598)	(0.648)	(0.008)	(0.010)
Intercept	0.0154	-0.00164	1.085	0.948
	(0.899)	(0.989)	(0.151)	(0.210)
Lambda	0.0112	0.0150	0.0403	0.0720
	(0.662)	(0.557)	(0.800)	(0.651)
N	24698	24698	24688	24688

Robustness Tests

An assumption of my analysis is that the specifications and proxies adequately capture the appropriate attributes. I find that my results are also robust to various alternative specifications.

Family owners are not the only type of large influential shareholder. Other large blockholders may have similar incentives as family shareholders; suggesting a general blockholder effect rather than a family firm effect. To examine this argument, I include a binary variable indicating the existence of nonfamily blockholders. My analysis suggests that the inclusion of the other large blockholder does not change the relation between family presence, target selection and M&A shareholder value effects.

My results could also be driven by the previous experience of serial acquirers rather than family-ownership structure if family firms are more likely to be serial acquirers. Therefore, as a robustness test, I investigate whether my results hold when controlling for serial acquirers. To examine this possibility, I add a new variable, pre3YR, to my main regressions. This variable is defined as the total number of acquisitions an acquirer has made in the past three years before the current acquisition announcement. Pre3YR variable is not significant in my regressions for all my main dependent variables: ACAR, BHAR, and TCAR suggesting that serial acquirers with M&A experience are not driving my findings.

A concern may arise that my results are driven by industry traits. For instance, if family firms operate in low Tobin's *Q* industries more than nonfamily firms, then they may be more likely to choose targets within their own industries which may also have low Tobin's *Q*. My regressions include *same industry* variable (equals to one if acquirer and target have same Fama-French industry classification code, zero otherwise). Following prior literature (Morck et al. 1990; Officer, 2003; Alexandridis 2013) I use *same industry* in my analysis to examine this conjecture and find that it is not statistically significant suggesting my results are not driven by less (more) diversification of family firms relative to nonfamily firms.

When measuring cumulative abnormal returns to calculate ACAR, BHAR, DCAR and TCAR, I use the CRSP value weighted index as a reference portfolio. To check the robustness of my results, I also use CRSP equal weighted index and my results do not change.

Conclusion

Family firms acquire different types of targets. This chapter examines an array of target characteristics and shows that the key difference determining the likelihood of being acquired by a family firm is having low growth potential and being smaller. Specifically, family firm bidders select targets that have lower Tobin's *Q*, which I proxy for low growth potential and are smaller. My analysis also suggests that choosing these low growing and smaller targets enhance shareholder value for family firm bidders as evidenced by both short run abnormal returns as well as abnormal returns up to one year after M&A announcement. When family firms engage in acquisitions, on average, acquirer CARs are less negative than for nonfamily firms engaging in acquisitions. Similarly, family firm acquirers' one year BHAR is also less negative than nonfamily firm acquirers. Results show that when family firms are involved in an acquisition, there is not a significant difference in the size of the overall deal synergy "pie" when compared to nonfamily firm acquisitions. I interpret this as indicating that the market views overall acquisition quality and the size of the benefit pie to be invariant to family presence in the ownership structure. In addition, family firms' target CARs on average are lower than nonfamily firm target CARs, while remaining positive. My findings suggest that while family firm acquirers take a bigger slice of the acquisition pie, their targets have to give up a part of their share. These findings overall support my hypothesis that by acquiring targets with lower growth potential, family firm acquirers benefit their shareholders both in the short run and up to one year after the announcement.

This chapter makes several important contributions to the literature. First, the analysis provides compelling evidence that family firms pick different types of targets that are smaller and have lower growth potential. To the best of my knowledge, this is the first study to investigate target selection by family firm acquirers in the U.S. I contribute to the literature by identifying a potential channel through which family firms perform well when they acquire. Buying smaller and lower growing firms appears to be beneficial for family firm shareholders. While building on literature regarding the impact of target Tobin's Q (i.e. growth options) on bidder returns (Lang et al., 1989; Morck et al., 1990; Servaes, 1991; Wang and Xie, 2009), this chapter expands the analysis and argues the importance of ownership structure and target selection on bidder returns.

Second, mergers done by family firms do not appear to be harmful for shareholders. Family firm versus nonfamily firm performance in M&A activity remains a largely open question in the literature. Building upon prior literature, this chapter provides evidence that short run abnormal returns to family firm acquisition announcements are higher (or less negative) than shareholders of nonfamily firms.

Third, investigation reveals additional aspects of the family ownership and its impact on bidder shareholders. These results indicate that family ownership benefits its shareholders both in the short run and up to one year after the announcement. My analysis suggests overall synergy gains do not vary based on family ownership. I also find that targets of family firms realize lower abnormal returns (although still positive) relative to targets of nonfamily bidders. When family firms are bidders, they have better ACARs and their targets appear to have lower TCARs relative to their nonfamily counterparts, suggesting family bidder shareholders take a larger share of the synergy gains while overall synergy remains unchanged. Family firms do not appear to harm outside shareholders when they acquire other firms.

CHAPTER 2

THE EXTREME CONTROL CHOICE

Introduction

Firms issue a variety of distinctive securities or claims on the firm's assets, creating conflicts of interest among the firm's claimants (Aghion and Bolton, 1992). Issuing common stock with limited voting rights, labeled as dual class shares, represents a notorious example that the media routinely criticizes. Both the academic and business press describe limited voting shares as severely harming outside investors, highlighting that insiders with superior voting rights enjoy substantial firm control with limited economic exposure. [5] Masulis et al. (2009) indicate that these additional control rights lead to value destroying acquisitions and allow managers to extract private benefits from the firm. Zingales (1995) documents that the different share classes trade at different prices even though both classes maintain equal cash flow rights. Gompers et al. (2010) report that after controlling for firm and industry characteristics, firms with multiple share classes exhibit lower valuations than single class firms. In short, a prominent academic literature documents that issuing limited voting shares produces substantial conflicts of interest among firm shareholders and harms outside shareholders. Yet,

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[5] A Forbes (2012) article suggests that dual class share structures benefit corporate insiders at a severe expense to outside shareholders. A Bloomberg report, in 2013, indicated that dual class share firms exhibit weak internal controls and experience more external conflicts, concluding "Buyers Beware". Calpers, in 2011, announced that dual class shares are a "corruption of the governance system", while the Wall Street Journal declared the following year that super voting shares undercut outside shareholders.

surprisingly dual class structures persist over time and comprise almost 1 in 11 listed firms in the U.S. (Hong, 2013).

Given the common disparagement surrounding dual class shares, why do firms establish these structures? I begin by analyzing the owners or originators of these multiple equity class firms. Focusing on the industrial firms (i.e. excluding utilities and financial firms) of the Russell 3000, I collect information on ownership composition, differential voting rights, and capital structure. My sample comprises 2,379 firms or 24,724 firm-year observations spanning from 2001 through 2015. Dual class firms comprise 9.4% (2,333 firm-year observations) of the Russell 3000 industrial firms. Notably, founders or their heirs (controlling- or family- shareholder firms) constitute nearly 89% of all dual class firms.[6] The remaining 11% of dual class firms fall within two categories. First, about 7% arise in firms with diversified shareholder bases or due short-term corporate restructurings (Mondelez International). Second, the remaining 4% represent legacy structures where the founders initiated multiple security classes, exited the firm, and the firm continues with dual class shares (e.g., Hershey Corporation).

My analysis points to several immediate differences between dual class family firms and other firm types (nonfamily firms and single class family firms). Notably, dual class family firms tend to be substantially larger, older and exhibit superior operating performance than single class firms (family or nonfamily). Strikingly, dual class family firms are comparable in size and age to atomistically held nonfamily firms. Family

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[6] The remaining 22,391 (90.6%) of the Russell 3000 industrial firms comprise single-class firms with family firms and nonfamily firms constituting 28.3% and 71.7%, respectively, of this total.

owners in dual class firms hold substantially *greater* cash flow rights than family owners in single class firms. Specifically, dual class family owners hold, on average, about 30.5% more of their firm's cash flow rights versus their single class family counterparts. Dual class family owners retain, on average, 58% of firms' voting power. Thus, family owners in dual class firms hold both greater cash flow and voting rights than found in single class family firms. Controlling shareholders in dual class share firms possess significant economic exposure to the firm, which they couple with dual class structures to retain formal control of firm decision-making (Aghion and Tirole, 1997). [7]

To assess investor perceptions of dual and single class firms, I use Tobin's *Q* as a proxy for outside investors' valuation of the firm. Because of the nearly inseparable link between family ownership and dual class share structures, I divide my sample into four groups: dual class family firms (8.4% of observations); single class family firms (25.6%); dual class nonfamily firms (1.1%) and; single class nonfamily firms (65.0%). Relative to a benchmark of single class nonfamily firms, I find that dual class family firms exhibit valuation discounts of 11.8%, followed by single class family firms with a discount of 3.7%. Notably, dual class nonfamily firms, although a minute subset of all firms (about 1.1%) experience valuation *premiums* of 20.8%.[8] Using a matched sample rather than the Russell 3000 industrials, I find similar results. Outside investors appear to place discounts

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[7] I obtain IPO data for both single class and dual class issuances from Jay R. Ritter's website, providing an IPO sample that has 81,369 firm year observations spanning from 1980 through 2014. I find that dual class initial public offerings (IPOs), as a percentage of total IPOs, steadily increased over the last three decades.

[8] I calculate these valuation discounts and premiums based on the coefficient estimates from the multivariate regression in Table 4, column1 divided by the average Tobin's Q for the full sample (1.9626).

on the family firm organizational structure with particularly deep discounts on the family firm/dual class combination. Yet, once dual class structures become separate from family ownership, outside investors tend not to discount this organizational form.

Because entrepreneurs and descendent shareholders originate the super voting structure, these owners appear to bear the cost of valuation discounts when selling their firm's stock to outside investors. Early literature highlights that dual class structures protect investment opportunities from hostile takeovers and potentially encourage entrepreneurs and family owners to invest in organization specific capital whose returns may otherwise be appropriable by outside shareholders (Williamson, 1975; Klein, Crawford, and Alchian, 1978; DeAngelo and DeAngelo, 1985). More recently, Banerjee and Masulis (2016) argue that dual class shares allow insiders to garner private benefits while still raising funds to invest in positive NPV projects. To gain insights into the argument that competitive market forces influence the dual class choice, I examine dual-class equity structures relative to industry traits or characteristics. Casual observation indicates a clustering of dual class firms across a small number of industries. Specifically, over 53% of all dual class firms reside in just seven of the 48 Fama-French industry groups, e.g., communications (19.0%), retail (8.5%), business services (6.7%), print and publishing (5.3%), electronic equipment (5.0%), apparel (4.5%), and food products (4.2%). Firms within these industries often maintain high visibility with customers and the consuming public, suggesting that these industries offer private benefits of control or alternatively, may require high levels of monitoring to ensure product and service integrity (Gompers, 1995; Giroud and Mueller, 2010).

No dual class firms exist in eight of the Fama-French industry groups that the media often characterizes as traditional or old-line industries (i.e., tobacco, shipbuilding, railroad, etc.).[9] The concentration of dual class firms across a small number of industry groups suggests that industrial structure and/or opportunities play an important role in family owners' decision in establishing firm control rights.

These industry patterns lead us to examine the industrial traits associated with the dual class decision. Founder and their families have a choice in establishing an equity ownership structure. Appendix F provides a discussion of family owners' equity structure choice when making the choice to go public. I investigate whether family owners appear more likely to employ dual class structures (relative to exiting or single class structures) when firms face: (i) high growth opportunity potentials; (ii) long-term investment environments (Aaker and Jacobson, 1994); (iii) high levels of product quality or image (Phillips et al., 1983); and (iv) capital intensive environments (Kogut, 1985). In my analysis, I do not preclude that family owners use dual class structures to exploit minority shareholders, which could occur in a variety of industrial settings. Rather, my analysis seeks to evaluate industrial and competitive traits associated with dual class share structures.

I find the dual class family firms are only 40% as likely to exist in high growth potential industries relative to single class nonfamily firms (base case). Using industry growth rates or innovation, I find similar results; suggesting that dual class family firms

[9] These industry groups are; tobacco products, fabricated products, shipbuilding and railroad equipment, defense, precious metals, coal, real estate, and 'almost nothing'.

appear to shun high growth industries. Similarly, I find little evidence to suggest that dual class family firms arise in industries with long investment horizons. My analysis however, indicates that dual class structures are nearly four times as likely to reside in industries requiring high branding levels and over three times more likely to reside in industries with high levels of intangible assets relative to single class nonfamily firms. Dual class firms are also nearly 2.7 times more likely to exist in industries with high operating profit margins (Karuna, 2007). My results generally indicate that family owners do not use dual class shares to protect future growth opportunities but instead imply a mechanism that protects firm-specific investments such as branding and product market power from outside investors and/or interference.

The analysis thus far, suggests that outside investors, with little influence in firm decision-making, purchase shares in dual class firms at significant discounts relative to their single class family- and nonfamily- peers. Further, I document a clustering of dual class structures in industries with high levels of branding, intangible assets, and operating profit margins; suggesting an extreme governance choice to protect firm specific investments. Given the large discount when buying shares, the question arises as to whether outside shareholders fare any worse for investing in dual class firms than their single class counterparts. I investigate this question by examining stock price returns.

The stock return analysis presents a striking contrast to the Tobin *Q* results. Dual class family firms significantly and economically outperform their counterparts. Using industry adjusted returns, market adjusted returns, and size and book-to-market adjusted returns, the results indicate that a simple that a buy-and-hold strategy of dual class family firms earns excess returns of about 350 basis points per year relative to single class nonfamily firms. The analysis allows a rank ordering of stock price returns relative to firm organizational structure. Dual class family firms provide the highest returns followed by single class family firms, with nonfamily firms – single and dual – providing similar returns but at the bottom of the ranking. In the matched sample analysis, I confirm my return results by finding that dual class family firms earn excess of about 500 basis points over that of single class nonfamily firms.

The stock return analysis yields two notable inferences. First, outside investors appear to be no worse-off investing in dual class family firms versus other firm types. Rather, my results suggest that dual class shareholders earn superior returns relative to single class firms. Second, although family owners establish the dual class structures and appear to bear the cost of super voting shares, the results indicate that families potentially recapture (at least some of) the initial discount through subsequent superior returns on their shares. To provide additional insights on this issue, I investigate the ownership of the floated shares in dual and single class family firms. I find that institutional investors hold significantly more of the floated equity of limited voting family firms relative to single class family firms. Rather than atomistic shareholders willing to bear the greater apparent risk in dual class family firms, it appears that institutional owners invest in dual class firms.

Taken together, the results suggest a risk premium in dual class share firms. One potential explanation centers on premiums for outside investors for bearing 'succession risk". Family owners in both single and dual class shares can potentially extract private benefits from the firm. However, in dual class share firms, outside investors have limited influence in succession if the controlling family injects an incompetent family member to manage the firm. Thus, the formal control afforded to the family from dual class shares potentially exacerbates the succession conflict in family controlled firms. To explore this channel, I investigate Tobin's *Q* and excess returns across founder, descendent, and professionally managed family firms. I find that in both single and dual class family firms, lower Qs and higher excess returns primarily occur in descendent controlled firms. In short, the results seem to imply that outside investors require a risk premium for holding shares in descendent controlled family firms, which is steeper with the existence of dual class structures.

This chapter makes several important contributions to the literature. First, I find that nearly all dual class structures arise from entrepreneur and family ownership. Across the Russell 3000 industrial firms from 2001 through 2015, I show that 93% of dual class firms either still have the founding family (89%) as owners or the founding family initiated the structure and then exited (4%). Dual class family firms are significantly larger than are their single class counterparts, appearing similar in size to non-family firms. Moreover, these controlling shareholders hold substantially greater economic exposure to the firm in dual class firms relative to single class firms.

Second, both single and dual class firms exhibit greater valuation discounts relative to non-family firms. In contrast, among non-family firms, dual class share firms exhibit a 20% premium relative to their single class peers. Taken together these results imply that dual class share firms arise in firms with strong balance sheets (Tirole, 2005).

Because family owners establish the dual class structure and sell their shares into the market at a substantial discount, these owners appear to bear the cost arising from their organizational structure.

Third, the analysis highlights that dual class share structures yield both costs and benefits. The observable costs appear to arise from valuation discounts on dual class family firms. The benefit arises from the superior buy-and-hold returns that outside (and family) investors accrue from holding shares in dual class family firms. I find excess returns of about 350 basis points per year for holding dual class family shares relative to single class nonfamily shares. These lower valuations and higher returns primarily arise in descendent controlled firms, suggesting outside investors require a succession risk premium for holding these shares. Rather than being held by atomistic shareholders, dual class share firms appear to attract substantially greater institutional ownership than their single class peers.

Fourth, the evidence suggests that dual class organizations do not randomly arise at the whim of corporate insiders but rather appear in industries with high levels of branding, high levels of intangible assets, and industries producing high operating profit margins; suggesting that firm-specific capital investment influences the dual class choice. Dual class structures allow the founding owners an opportunity to take “their investment to market”, raise capital, but still protect the investment from outside interference. In contrast, to conventional wisdom in the governance literature that dual class structures exploit outside investors and destroy firm value, the analysis implies that family owners use super voting shares to protect firm specific investments and that outside equity holders earn superior returns on their investment.

The remainder of the paper is organized as follows. Next section provides a summary of the data and descriptive statistics. Following section presents the empirical results. In the last section, I conclude.

Data and Descriptive Statistics

Sample

For my empirical analysis, I start with the Russell 3000 firms as of December 31, 2001. I exclude regulated public utilities (SIC codes 4812, 4813, 4911 through 4991) and financial firms (SIC codes 6020 through 6799) because government regulation potentially affects firm equity ownership structure. Data on equity ownership structure (i.e., single- and dual- class), inside owners' cash flow and voting rights, and the family's role in management comes from annual corporate proxy statements. I gather firm specific control and primary variables from CompuStat and stock return information from the Center on Research in Security Prices (CRSP). To control for survivorship basis, I allow firms to exit and re-enter the sample. My final sample consists of 2,379 industrial firms (non-financial and non-utility) or 24,724 firm-year observations, spanning from 2001 through 2015. Notably, as the base sample starts in 2001, my data does not include many of the recent technology firms such as Google, Facebook, or Alibaba that went public as dual class shares and experienced impressive and sustained stock returns.

Equity Ownership Structure

Firms issue one or multiple classes of common equity. I define single class firms as those where the firm establishes one class of common equity that grants shareholders equal cash flow and voting rights on a per share basis. Dual class firms are those issuing two or more outstanding classes of common stock. The class with the largest number of shares outstanding typically receives equivalent cash flow and voting rights, e.g., one share, one vote, one dividend. The class with the smaller number of outstanding shares most frequently receives 10-votes per share and one cash flow right per share, e.g., one share, 10-votes, one dividend. I find the most prevalent voting-right differential to be 10-to-1 between the two classes. My analysis uses a binary variable that equals one for dual-class firms and zero otherwise (i.e., single class firms).

Family firms are those where the family (founders and/or their descendants) continues to maintain a 5% or larger voting stake in the firm. Notably, Shleifer and Vishny (1986) and Villalonga and Amit (2006) use a definition of 5% or more of the cash flow rights. For the single class firms in my sample (90.6%), using cash flow or voting rights yields the same level of family influence because one share provides one vote and one cash flow right. For dual class firms (9.4%) however, I note that family owners, on average, hold 30.2% of the cash flow rights and 58.2% of the voting rights. To ascertain the effect of family influence on firm characteristics, I focus next on voting power.

To be classified as a family firm, a family member does not necessarily need to hold the COB, CEO or director position. The classification refers to families maintaining a minimum voting stake of 5%. The initial analyses use a binary variable that equals to one when families hold a 5% or larger voting right in the firm and zero otherwise. In subsequent analysis, I also use a continuous measure of family ownership and voting power. Firms through their public filings frequently do not provide information on whether founding-family members retain equity stakes or hold managerial posts and director seats. Although regulations stipulate that firms disclose any shareholder with a 5% stake or larger equity stake, firms do not typically disclose if the shareholder is part of the original founding family. To ascertain founders and their subsequent lineage and involvement in the firm, I examine corporate histories for each of the 2,379 firms in my sample. Corporate histories come from ReferenceforBusiness.com, FundingUniverse.com, Gale Business Resources, and from individual companies.

Valuation and Performance Measures

To assess outside investors' perception of firm value, I develop a proxy for Tobin's *Q* by using the ratio of the market value of total assets to the book value of assets (Masulis et al., 2009; Fahlenbrach, 2009). The market value of total assets is the sum of the book value of assets and the market value of common stock less the book value of common stock. I measure the market value of common equity at the end of each calendar year. Notably, for dual class firms, I measure the market value of common equity as the sum of the two outstanding classes multiplied by the share price of each class. If one of the classes does not publicly trade (i.e., entirely owned by corporate insiders), then I use the share price of the traded class. By using the share price of the traded class, I likely understate the market value of dual class firms as the superior voting class typically trades at a premium to the other voting class.

I measure firm performance using three measures of stock price returns. First, I use industry-adjusted returns that equal each firm's annual return less the annual return of the corresponding return of the Fama-French (1997) industry code (based on the 48 industries). Second, I calculate market adjusted returns as the firm's annual return less the return on the CRSP value-weighted market return (De Bondt and Thaler, 1985). Third, I use size and book-to-market adjusted returns that equal each firm's annual stock return less the Fama-French size and book-to-market benchmark portfolios (Faulkender and Wang, 2006).

Control Variable Measurement

Previous literature indicates that dual class firm performance varies with firm characteristics. I measure firm size as the natural logarithm of total assets at fiscal year-end. Firm age is the natural log of the number of years since the firm's inception and captures firm and industry maturity as well as the family's investment period with the firm. I use return on assets to control for operating performance and measure it as operating income before depreciation scaled by total assets. Firm risk is the standard deviation of stock returns for the previous 36-months. Because family shareholders may be more reluctant to use debt in the firm's capital structure (Anderson and Reeb, 2004) and because debt exhibits a strong relation to Tobin's *Q*, I control for leverage with the ratio of long-term debt to total assets. I control for firm growth opportunities with the ratio of R&D expense to sales. In the multivariate analyses, I control for industry effects with the Fama-French 48-industry codes and for time effects with year binary variables.

Matched Sample

Dual class firms comprise less than 10% of my firm-year observations. To assess the robustness of my results with better comparability in sample size between my four firm categories and to control for other firm characteristics potentially influencing equity structure, I develop a matched sample using coarsened exact matching (CEM) (Iacus, King, and Porro, 2009). The matching criteria are exact Fama-French industry code, total assets and firm age. I conduct three matches. These are dual class family firms to; (i) single class nonfamily firms, (ii) single class family firms, and (iii) dual class nonfamily firms. The first match between dual class family firms and single class nonfamily results in 2,868 firm-year observations evenly split between the two firm categories. The second match between dual class family firms and single class family provides 2,278 firm-year observations evenly split between the two groups. The third match between dual class family firms and dual class nonfamily firms yields 288 firm-year observations, again, evenly split between the two firm groups. I then combine the three matches in a single sample that yields a total of 4,258 firm-year observations. The final, combined matched sample consists of 1,541 dual class family firm observations (36.19%), 1,139 single class family firm observations (26.75%), 1,434 single class nonfamily firm observations (33.68%), and 144 dual class nonfamily firm observations (3.38%).[10]

[10] Assuming a unique match for each dual class family to each of the three different firm categories, my final sample would consist of 2,717 dual class family firms. My final sample however, consists of 1,541 dual class family firms, indicating that 1,176 dual class family firms match in two or more of the other firm categories.

Columns 5 through 7 of Table 9, Panel A present the summary statistics for the matched sample and indicate a relatively homogeneous match between single and dual class firms. Mean tests indicate no difference in firm size, firm age, firm risk, leverage, return on assets, and R&D to sales for the matched single and dual class firms.

Table 9. Summary statistics of the full sample and the matched sample

Panel A

	Full Sample				Matched Sample			
	All	Dual Class	Single Class	t-test	All	Dual Class	Single Class	t-test
	1	2	3	4	5	6	7	8
Observations	24,724	2,333	22,391	-	4,258	1,685	2,573	-
Family Firm	33.97	88.73	28.27	28.68	61.84	88.66	44.27	15.89[a]
Family Own.	8.63	26.82	6.73	0.28	17.69	27.47	11.28	9.38[a]
Family Votes	10.97	51.63	6.73	13.94[a]	27.89	53.30	11.28	18.24[a]
Founder CEO	17.54	28.33	16.42	3.86[a]	23.86	32.64	18.11	3.87[a]
Heir CEO	8.09	31.50	5.65	8.04[a]	19.16	30.68	11.62	5.11[a]
Outside CEO	17.83	31.42	16.42	4.98[a]	25.46	30.68	22.04	2.45[a]
Total Assets	5,102	5,553	4,918	22.01[a]	1,880	1,995	1,805	0.82
Firm Age	45.86	53.46	45.07	3.20[a]	46.90	47.93	46.23	0.63
Firm Risk	14.54	14.20	14.58	0.91	14.69	14.85	14.58	0.52
Leverage	19.81	25.10	19.26	3.76[a]	21.78	22.59	21.25	0.71
Tobin's Q	1.96	1.71	1.99	4.15[a]	1.82	1.72	1.88	1.98[b]
ROA	8.65	10.33	8.48	2.44[b]	10.56	9.96	10.96	0.48
R&D/Sales	23.24	6.23	25.01	6.01[a]	10.02	7.44	11.71	1.35
Ex. Ind. Ret.	5.01	6.97	4.80	2.27[b]	5.36	7.64	3.87	2.56[b]
Ex. Mkt. Ret.	6.74	8.57	6.55	2.10[b]	9.67	13.00	7.49	2.75[a]
Ex. FF Ret.	1.80	3.43	1.62	1.68[c]	1.25	3.77	-0.40	2.82[a]
# of Ind.	48	38	48	-	38	38	38	-

Panel B

	Fam Dual	NFam Dual	Fam Sing.	NFam Sing.	t-tests					
	1	2	3	4	1-2	1-3	1-4	2-3	2-4	3-4
Family Own.	31.30	0.41	22.93	0.35	20.49	4.56	20.75	32.18	-	32.83
Family Votes	58.12	0.59	22.93	0.35	30.66	17.92	31.31	31.18	-	32.86
Founder CEO	31.30	0.00	44.13	0.00	5.99	3.42	7.76	11.32	-	21.07
Heir CEO	34.49	0.00	17.35	0.00	4.24	4.58	9.69	1.68	-	11.16
Outside CEO	34.20	0.00	38.52	0.00	4.51	1.20	8.22	5.87	-	17.44
Total Assets	5,554	5,547	2,750	5,963	0.00	1.41	0.20	1.37	0.21	4.78
Firm Age	53.88	50.11	36.37	48.49	0.50	6.00	1.90	1.92	0.23	7.82

Table 9. Panel B. (continued)

	Fam Dual	NFam Dual	Fam Sing.	NFam Sing.	t-tests					
Firm Risk	13.83	17.14	15.90	14.06	2.15	4.47	0.55	0.82	2.05	6.48
Leverage	24.89	26.75	15.97	20.55	0.35	5.22	2.66	2.12	1.23	5.89
Tobin's Q	1.639	2.27	1.99	1.99	2.25	4.95	5.51	1.00	1.03	0.07
ROA	10.84	6.32	8.25	8.57	1.31	3.31	3.42	0.54	0.64	0.50
R&D/Sales	4.05	23.43	24.56	25.19	1.91	5.46	7.60	0.10	0.16	0.17
Ex. Ind. Ret.	7.26	4.65	7.26	3.84	0.86	0.01	3.34	0.89	0.28	4.83
Ex. Mk. Ret.	8.85	6.36	9.00	5.58	0.84	0.13	3.15	0.93	0.28	4.74
Ex. FF Ret.	3.61	2.02	2.18	1.41	0.53	1.26	2.17	0.06	0.21	1.05
# of Ind.	37	23	44	48	-	-	-	-	-	-

Descriptive Statistics

Table 9, Panel A provides summary statistics for the full sample of 24,724 firm-year observations. I show mean values for the full sample (column 1), dual class firms (column 2), single class firms (column 3) and also *t*-values for difference of mean tests between single- and dual- class firms (column 4). Across the Russell 3000 industrials from 2001 through 2015, dual class firms and single class firms constitute 9.44% (2,333 observations) and 90.56% (22,391 observations), respectively, of the sample. Dual class firms exhibit substantial differences from single class firms. Notably, I observe that dual class firms are larger (total assets: \$5,553 billion versus \$4,918 billion), older (53.5 versus 45.1 years) and substantially more levered (25.1% versus 19.3% of total assets) than their single class counterparts.

Dual class firms also exhibit better operating performance and stock return performance their single class firms. On average, dual class firms exhibit operating performance (ROA) of 10.33% per year while single class firms' performance comes in at 8.48%. Using industry adjusted returns and market adjusted returns, I find the dual class stocks outperform single class firms by over 200 basis points per years. In stark contrast to the operating and stock return results, I find that the dual class firms exhibit steep valuation discounts relative to single class firms. Specifically, the univariate results indicate, on average, Tobin *Q*'s of 1.71 and 1.99 respectively, for dual class and single class firms. The differences between dual class and single class firms for size, age, debt levels, operating performance, stock returns, and Tobin's *Q* are significant at the 5% level or better. My univariate analysis suggests that dual class firms tend to be larger, also tend to be older firms with superior accounting and market performance – although seems to be suffering significant valuation discounts – relative to their single class counterparts.

Dual class firms appear to be a manifestation of founders and their families. Within the dual class set, family firms comprise 88.7% (2,070) of firms with the remaining 11.3% (263 observations) falling under a nonfamily categorization. In further analysis, I examine corporate histories for the 264 firm-year observations that comprise the dual class nonfamily firms. A substantial number of these observations (99 observations, 38%) are originally family firms where the family owners exited their equity stake and the firm continues to operate with the dual class structure. For instance, Milton Hershey established the firm bearing his name in the late 1800's. With no heirs to leave his fortune, in 1909, he bestowed ownership of the firm to the Hershey School Trust that controls the firm (76% of votes) through the super-voting B shares. The remaining dual class nonfamily firms (165 observations, 62%) appear to arise from special corporate transactions such as Cooper Industries, Inc. where one of their subsidiaries holds the entirety of the B shares, which have no voting rights, thereby preventing voting-power dilution of class A-shareholders. The univariate analysis clearly points to dual class firms originating from founders and their families.

The analysis also points to significant differences between dual class family firms and single class family firms. Table 9, Panel B provides summary statistics for single and dual class firms segregated into family and nonfamily firms. Dual class family firms are significantly older (53.9 vs. 36.4 years), larger ($5,554 vs. 2,751), less risky (13.83% vs. 15.90%), and use substantially more debt (24.9% vs. 16.0%) than single class family firms. I also find that dual class family firms exhibit significantly better operating performance relative to single class family firms (10.84% vs. 8.25%). The descriptive statistics show that family shareholders in dual class firms own 31.3% of the firm's cash flow rights and control 58.1% of firm voting power. Single class family owners in contrast, hold 22.9% of the cash flow and voting rights.

Figures 1 and 2 show the distribution of family cash flow and voting rights for dual class and single class firms. Although voting control of dual class family owners outstrips their economic interests, my analysis does not indicate that these influential owners hold small equity stakes. Rather, I find that dual class family owners hold significantly larger equity stakes than their single class counterparts.

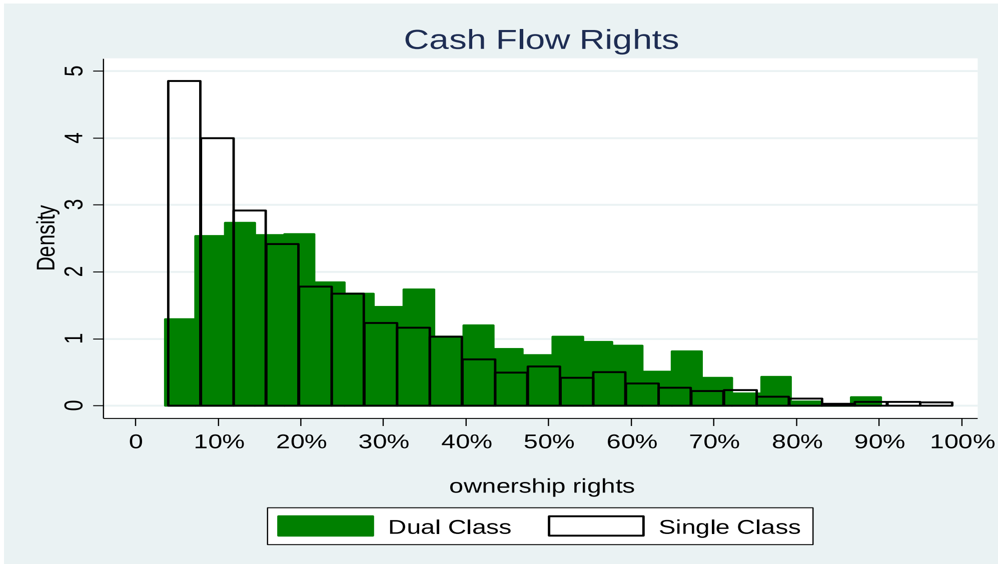

Figure 1. Cash flow rights for dual-class and single-class family firms.

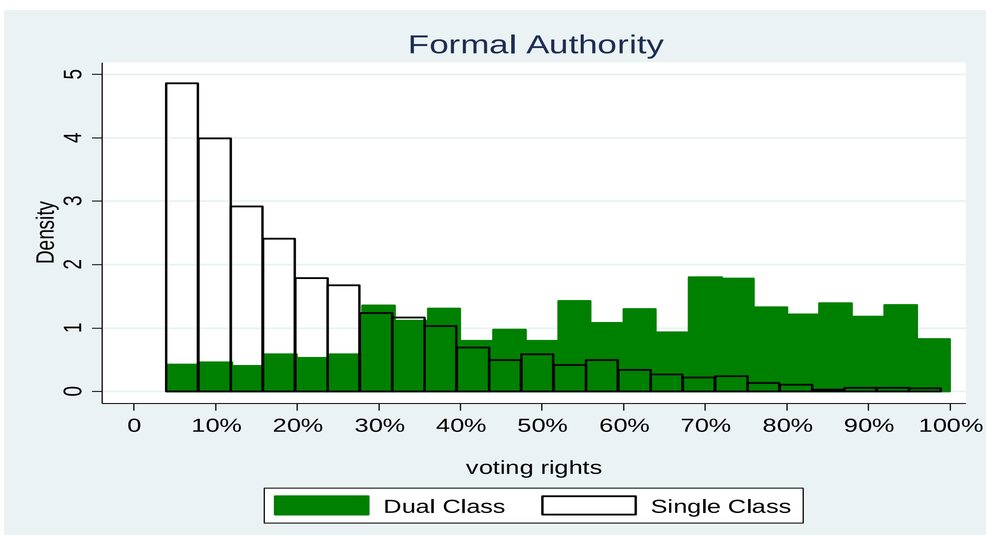

Figure 2. Voting rights for dual-class and single-class family firms.

Appendix G segregates dual class and single class firms by the Fama-French industry codes. I observe a clustering of dual class firms in a small number of industries. Specifically, nearly 38% of dual-class firms reside in just four of the 48 Fama-French industry codes. The communications industry (FF48=32) accounts for over 19% of dual-class firm observations, followed by retail (FF48=42) with 8.5%, print and publishing (FF48=8) with 5.3%, and electronic equipment (FF48=36) with 5.0% of dual class observations.

Ten industry groups based on Fama French 48 industry classification account for 64.4% of dual class firm observations.[11] Another ten industries that the media often characterizes as 'old line' (i.e., railroad, tobacco) contain no dual class firms.[12] The clustering of dual class firms suggests that industry characteristics appear to play an important role in entrepreneurs' and family owners' decision to establish and maintain dual class structures.

Overall, the univariate analysis indicates dual class firms tend to be larger, older, and less risky; use substantially more debt, and exhibit superior operating and stock return performance relative to their single class peers. The results further indicate that nearly all dual class structures arise from founder and family ownership. Finally, I find a clustering of dual class firms among a small number of industries, suggesting that industrial structure arguably plays into the dual class choice.

[11] These are; communications (FF48=32), retail (FF48=42), print and publishing (F48=8), electronic equipment (FF48=36), apparel (FF48=10), business services (FF48=34), entertainment (FF48=7), wholesale (FF48=41), food products (FF48=2), and transportation (FF48=40).

[12] These are; tobacco products (FF48=5), fabricated products (FF48=20), shipbuilding and railroad equipment (FF48=25), defense (FF48=26), precious metals (FF48=27), coal (FF48=29), utilities (FF48=31), banking (FF48=44), real estate (FF48=46), and almost nothing (FF48=48).

Empirical Results

Dual Class Shares, Family Owners, and Firm Valuation

The univariate analysis indicates that dual class structures and family ownership represent important covariates – that is, dual class structures tend only to exist with family ownership. Prior literature indicates that firms' issuing two classes of equity securities suffer from governance problems that negatively affect firm valuation and performance (Masulis et al., 2009; Gompers et al., 2010). Extant research however, remains relatively silent on the relation between family ownership and dual class shares and their effects, if any, on firm performance and valuation. I begin my multivariate analysis by examining the relation between family influence and dual class shares on firm valuation. To examine the association, I use the following specification;

$$Tobin's\ Q_{it} = \alpha + \beta_1(Dual\ Class) + \beta_2(Family\ Firm) + \beta_3(Dual\ Class * Family\ Firm) + \beta_X X + \varepsilon_{t,}\ (7)$$

Appendix H provides the variable definitions. *X* represents a vector of control variables that include natural log of total assets, natural log of firm age, leverage, return on assets, firm risk, and R&D expense to sales. The analysis uses binary variables to capture dual class firms and family firms. The reference variable for the regression specification is single class firms. I control for serial correlation and heteroskedasticity using the Huber-White sandwich estimator (clustered on firm-level identifier) for the standard errors on the coefficient estimates.

Table 10 presents the regression results. Consistent with prior research, I find that dual class firms exhibit significant valuation discounts relative to single class firms. The coefficient estimate on dual class in column 1 indicates that firms with dual-class structures experience valuation discounts of 6.4% versus single class firms. I calculate this percent difference as the coefficient estimate on dual class divided by average Tobin's *Q* value for the full sample (=-0.126/1.96 = 6.43%).

Table 10. Firm valuation, share structure and ownership structure

Dependent variable. Tobin's Q

	Full Sample				Matched Sample	No Family Firms
	1	2	3	4	5	6
Intercept	2.916[a]	3.003[a]	2.987[a]	2.985[a]	2.869[a]	4.787[a]
	(22.22)	(22.16)	(22.21)	(22.22)	(9.16)	(4.96)
β_1(Dual-Class)	-0.126[c]	-0.075	0.261	-	-	0.549[b]
	(1.82)	(0.99)	(1.22)			(2.51)
β_2(Family Firm)	-	-0.099[b]	-0.072[c]	-	-	-
		(2.22)	(1.65)			
β_3(Dual *Family)	-	-	-0.416[c]	-	-	-
			(1.91)			
β_4(Single Family)	-	-	-	-0.072	-0.166[b]	-
				(1.64)	(2.12)	
β_5(Dual Family)	-	-	-	-0.231[a]	-0.238[a]	-
				(3.61)	(3.00)	
β_6(Dual Nonfamily)	-	-	-	0.408	0.409	-
				(1.57)	(1.27)	
Ln(Total Assets)	-0.091[a]	-0.097[a]	-0.097[a]	-0.096[a]	-0.134[a]	-0.337[a]
	(5.88)	(6.11)	(6.12)	(6.11)	(3.66)	(3.28)
Ln(Firm Age)	-0.066[b]	-0.069[b]	-0.067[b]	-0.066[b]	-0.054[c]	-0.086
	(2.34)	(2.47)	(2.36)	(2.35)	(0.92)	(0.57)
Leverage	-0.273[b]	-0.288[b]	-0.288[b]	-0.291[b]	-0.497[b]	0.526
	(2.14)	(2.25)	(2.26)	(2.28)	(2.68)	(1.31)
ROA	1.203[a]	1.220[a]	1.221[a]	1.219[a]	2.362[a]	-0.121
	(4.36)	(4.43)	(4.45)	(4.45)	(3.71)	(0.09)
Firm Risk	-0.055	-0.065	-0.081	-0.091	0.081	-2.845[a]
	(0.23)	(0.27)	(0.34)	(0.38)	(0.20)	(2.72)
R&D/Sales	0.188[a]	0.188[a]	0.188[a]	0.187[a]	0.438[a]	0.340[b]
	(5.47)	(5.47)	(5.46)	(5.45)	(4.35)	(2.40)
Yr./Ind. Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,724	24,724	24,724	24,724	4,258	452
Adj. R^2 (%)	20.33	20.22	20.34	20.40	20.56	31.85

Table 10. (continued)

	1	2	3	4	5	6
$\beta_1+\beta_2+\beta_3 = 0$ (F-test)	-	-	12.07[a]	-	-	-
$\beta_4 = \beta_5$ (F-test)	-	-	-	5.33[b]	0.84	-
$\beta_4 = \beta_6$ (F-test)	-	-	-	3.32[c]	3.06[c]	-
$\beta_5 = \beta_6$ (F-test)	-	-	-	5.98[b]	-	-

The regression specification in column 2 includes the family firm variable along with the dual class variable. Notably, after controlling for family presence, I no longer find a significant relation between Tobin's *Q* and dual class firms. The family firm variable however, bears a negative and significant relation to firm performance; suggesting that family firms exhibit valuation discounts of about 5.1% relative to the reference or benchmark variable (single class nonfamily firms).[13]

Column 3 presents a regression specification with variables for dual class, family firm, and an interaction term between dual class and family firm. Although not significant at conventional levels, I find that the standalone dual class variable exhibits a positive relation to firm performance. That is, after controlling for family presence and the interaction of dual class and family presence, the coefficient on dual class changes from a negative to positive estimate. The standalone family firm continues to bear a negative relation (at the 10% level) to firm performance. Finally, I find a large, negative coefficient estimate on the interaction term between dual class and family firm; suggesting that firm valuations particularly suffer from the combination of family ownership and dual class structures. In an *F*-test examining whether Tobin's *Q* differs

[13] I calculate this as the coefficient estimate on family firm divided by the average Tobin's *Q* for the full sample; -0.099/1.96 = -5.05%.

between dual class family firms versus single class nonfamily firms ($\beta_1+\beta_2+\beta_3=0$), I reject the null ($F$=12.07, p=0.001) and conclude that dual class family firms exhibit significant firm valuation discounts relative to single class nonfamily firms.

The analysis with the interaction term (column 3) suffers from a relatively severe multicollinearity problem because nearly all dual class firms are also family firms. I find a correlation coefficient of 93.65% between the standalone dual class variable (β_1) and the interaction term between dual class and family firm (β_3). Consequently, the coefficient estimates on the variables of interest in the specification with an interaction term are relatively unstable.[14] To mitigate the multicollinearity issue, I segregate the sample firms into four mutually exclusive firm groups; dual class family firms (8.4% of observations), dual class nonfamily firms (1.1% of observations), single class family firms (25.6% of observations), and single class nonfamily firms (65.0% of observations). Column 4 of Table 10 presents an alternative specification that delineates the four firm types relative to Tobin's *Q* with single class nonfamily firms as the reference (omitted) variable in the regression. There are three notable points from this specification. First, dual class nonfamily firms exhibit a marginally positive relation to firm performance; suggesting that a dual class structure – in and of itself – does not appear to be a detrimental factor in influencing firm valuations. Second, family firms with a single class of common equity exhibit a negative relation to Tobin's *Q (p*-value=11%*)*, indicating that outside investors marginally discount the family organizational form. Third, consistent

[14] The variance inflation factors on dual class and the interaction of dual class and family firm are 6.52 and 6.90, respectively.

with the earlier results, I find that firm performance particularly suffers under the family firm-dual class combination. The coefficient estimate on dual class family firm suggests that this organizational form experiences an 11.8% discount relative to single class nonfamily firms.[15]

The earlier univariate analysis documents that dual class firms tend to cluster in a small number of industries, tend to be larger, and tend to be older than single class firms; suggesting that industrial or firm characteristics potentially influence the valuation results. To investigate this possibility, I repeat the analysis using the matched sample. Table 10, column 5 shows the multivariate analysis for the matched sample. Again, I find little evidence that a dual class structure – in and of itself – negatively influences firm performance. The dual class nonfamily firm variable bears a positive coefficient estimate (β_6), although not significant at conventional levels, suggesting that dual class structures sans family ownership appear to have little effect on firm valuations. Family presence however, exhibits a negative and significant relation to Tobin's *Q* with a particularly large discount for the combination of dual class and family firm. The results of the matched sample largely reflect those of the full sample.

As noted earlier, the vast majority of dual class firms (89%) are also family firms, thus blurring the effect of family ownership and dual class structures on firm valuation. To provide further insights into the effect of dual class structures on valuation, I develop a matched sample of dual class nonfamily firms and single class nonfamily firms. That

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[15] I calculate this as the coefficient estimate on family firm divided by the average Tobin's *Q* for the full sample; -0.231/1.96 = -11.79%.

is, I drop family firms from the analysis and create a matched sample of single- and dual-class nonfamily firms, thus allowing me to separate the family effect from the dual class effect. The sample consists of 452 firm-year observations, providing 226 single class firms and 226 dual class firms (all nonfamily).[16] After removing the family firm effect from the analysis, I find that dual class structures exhibit better valuations than their single class peers. Specifically, the coefficient estimate on dual class in column 6 of Table 4 is positive and significant at the 5% level or better, indicating that dual class firms carry valuation premiums of 27.4% versus single class firms. I calculate this premium as the coefficient estimate on dual class divided by the average Tobin's *Q* for this subsample (=0.549/2.000 = 27.4%). The analysis paints a somewhat different picture from conventional wisdom on the effects of dual class structures on firm valuation. The results suggest that dual class structures *without* family owners exhibit a positive relation to Tobin's *Q*. Dual class shares only exhibit a detrimental influence on firm valuations in the presence of family shareholders, suggesting that family ownership accounts for an important covariate in estimating the effect of dual class structures on firm valuations.

The Russell 3000 captures nearly 98% of total U.S. market capitalization, suggesting that my sample of dual class firms likely provides a relatively fair representation of the prevalence of dual class firms. Although I find that dual class firms – without family owners – exhibit a positive relation to equity valuations, I note an

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[16] In developing this matched sample of dual- and single- class nonfamily firms, I use coarsened exact matching (CEM) with an exact match on Fama-French industry code and closest match on firm size (total assets) and firm age. All firms match on industry. The difference in match on total assets (firm age) between dual- and single class firms as a percent of average firm size (firm age) in the subsample is 9.94% (4.33%).

important qualification to my analysis in that the vast majority of dual class firms are also family firms (89%). The dual-class family-firm organizational form bears significant valuation discounts relative to other organizational forms.

The Dual Class Choice

My analysis thus far, indicates dual class structures appear to be a manifestation and continuance of founder and family ownership, and that these influential owners bear substantial valuation discounts when selling shares to outside investors. To gain a sense of the magnitude of the discount that dual class family owners suffer when selling shares to the investing public, I conduct a few simple calculations with my data. The average market capitalization for a dual class family firm in my sample is \$3.463 billion with the family holding 30.1% of the cash flow rights and 58% of the voting rights. Assuming that a hypothetical firms goes from private ownership to a dual class family firm (overnight) with similar characteristics to my sample averages, the family would leave about \$324 million "on the table" in the offering.[17] Dual class family owners maintain their stakes, on average, for about 54 years, potentially allowing ample time for these influential owners to extract the "loss" from outside shareholders through private benefits of control (e.g., prerequisites, excess compensation, nepotism, empire building, etc.) (Gompers et al., 2010). Yet, extant literature indicates that family owners can control the firm with far less than 58% of the firm's voting power and still extract substantial private benefits. My

[17] I calculate this as: (Avg. Q/(Avg. Q * (1 – Dual class family discount)) * Mkt cap dual class family * 0.70) – (Mkt Cap of Dual Class Family *0.70) = (1.96/(1.96 * (1-0.118))*3,463.57*0.70) – (3,463.7 * 0.70) = \$324.22 million.

own analysis further indicates that that these influential owners can leave far less “on the table” by establishing single class structures.

The earlier univariate analysis indicates that dual class structures cluster in a relatively small number of industries with 10 of the Fama-French industry groups accounting for nearly 65% of dual class firms; suggesting that factors beyond moral hazard influence the dual class choice. I undertake an exploratory investigation and ask whether the industrial or business environment affects family owners’ decision to establish super voting share classes. The analysis uses a set of industry structure variables that potentially relate to families’ decision to retain an ownership stake and dual class shares. As large, concentrated shareholders with the majority of their wealth tied to a single firm (average dual class family stake is $1.04 billion), family owners arguably possess strong incentives to protect their investment. I use the following specification to examine the relation between the business environment and equity ownership structure;

$$Equity\ Structure = \alpha + \beta(Industry\ Characteristics) + X\beta + \varepsilon, \quad (8)$$

Where;

Equity structure = binary variables for single class nonfamily firms, dual class nonfamily firms, single class family firms, and dual class family firms, i.e., four dependent variables.

Industry characteristics = growth opportunities, sales growth, innovation, branding, asset (in)tangibility, asset intensity, and profitability. All measured at the Fama-French 48 industry level, excluding dual-class firms.

Firm-level control variables – size (natural log of total assets), firm age (natural log years since inception), firm leverage (long term debt to assets), firm performance (return on assets), firm risk (standard deviation of stock returns for the prior 36 months), and innovation (R&D-to –sales).

I have four dependent variables in my specification, covering the four possible combinations between dual and single class firms, and family and nonfamily firms. To allow for a statistical comparison of industry traits on the four different equity structure choices, I use multinomial logistic regressions.[18] With this technique, I choose a base case (single class nonfamily firms) and then compare the other three cases (dual class nonfamily, single class family, and dual class family) against the base case in a system of simultaneous logistic regressions. Thus, the system of equations is;

$$\textit{Dual class nonfamily to single class nonfamily} = \alpha + \beta_1(\textit{Ind. Charac.}) + X\beta + \varepsilon, \quad (9)$$

$$\textit{Single class family to single class nonfamily} = \alpha + \beta_2(\textit{Ind. Charac.}) + X\beta + \varepsilon, \quad (10)$$

$$\textit{Dual class family to single class nonfamily} = \alpha + \beta_3(\textit{Ind. Charac.}) + X\beta + \varepsilon, \quad (11)$$

The coefficient estimates from equation 9 compares dual class nonfamily firms to single class nonfamily firms (base case). Similarly, equation 10 and equation 11 compare single class family firms and dual class family firms, respectively, to the base case. Because I estimate the regressions in a system of equations, I can then conduct Wald χ^2-

[18] A straightforward method to obtain consistent and asymptotically efficient coefficient estimates would be to run individual logistic regressions for each equity structure choice (e.g., dual class family firm) relative to each industry trait (e.g., industry growth rate). Individual logistic regressions however, create a drawback because I cannot statistically compare coefficient estimates between the different regression specifications and thus, cannot make economic inferences as to the effect of industry traits on the four different equity structures. Notably, the coefficient estimates from the individual logistics regressions and multinomial logistics are nearly identical in magnitude and significance.

tests to examine the equality of coefficient estimates between the equations (e.g., $\beta_1 = \beta_2$, from Eq. 9 and Eq. 10).

Table 11 and Table 12 presents the results of the multinomial logistic regressions. I exclude dual-class firms when calculating the industry measures to remove confounding effects, if any, of dual class firms on aggregate industry averages.[19] Table 11 investigates three measures of industry growth relative to equity structure. These are; industry growth opportunities (average Tobin's for firms in each industry), industry sales growth (five year rolling industry sales growth), and industry innovation (average industry R&D to sales). To simplify interpretation of the multinomial logit regressions, I develop binary variables that equal one for the top quartile of the industry trait and zero otherwise. The coefficient estimates are presented as relative risk ratios. With relative risk ratios, I measure the association between an exposure (industry trait) and an outcome (equity structure). The coefficient estimate thus represents the odds that a dual class structure exists given an industry characteristic compared to the odds of finding a single class nonfamily relative to the same industry trait. An odds ratio of one indicates that the industry characteristics do not significantly influence the choice between a dual class structure and a single class nonfamily firm. An odds ratio greater (less) than one indicates that industry traits exhibit a greater (lower) likelihood of influencing the dual class choice relative to a single class nonfamily firm.

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[19] The regressions with the inclusion of dual class firms in the industry averages show that he coefficient estimates and the significance of the coefficient estimates are nearly identical to those when excluding dual class firms from the industry averages.

Table 11. Equity structure and industry growth characteristics

	Coef.	z-stat	Coef.	z-stat	Coef.	z-stat
NonFamily Dual Class						
β_1(Ind. Growth Opp.)	0.636[c]	1.65	-	-	-	-
δ_1(Ind. Sales Growth)	-	-	1.153	0.59	-	-
η_1(Ind. Innovation)	-	-	-	-	0.172[a]	3.56
Firm Size	1.075	0.53	1.080	0.56	1.064	0.44
Firm Age	0.983	0.06	0.017	0.06	0.947	0.20
Leverage	2.758	1.26	2.948	1.35	2.274	1.00
ROA	0.550	0.58	0.568	0.55	0.455	0.78
Firm Risk	21.612[b]	2.14	21.389[b]	2.09	30.324[b]	2.40
R&D/Sales	0.923	0.85	0.885	1.25	-	-
Family Single Class						
β_2 (Industry Q)	0.743[a]	3.34	-	-	-	-
δ_2(Ind. Sales Growth)	-	-	0.971	0.52	-	-
η_2(Ind. Innovation)	-	-	-	-	0.548[a]	5.43
Firm Size	0.735[a]	7.69	0.739[a]	7.61	0.734[a]	7.69
Firm Age	0.787[a]	3.66	0.807[a]	3.27	0.777[a]	3.84
Leverage	0.554[a]	2.76	0.579[b]	2.57	0.500[a]	3.19
ROA	3.372[a]	4.60	3.428[a]	4.68	3.062[a]	4.24
Firm Risk	0.479	1.56	0.479	1.56	0.588	1.12
R&D/Sales	0.969	0.78	0.946	1.38	-	-
Family Dual Class						
β_3 (Industry Q)	0.405[a]	4.59	-	-	-	-
δ_3(Ind. Sales Growth)	--	-	0.667[a]	4.70	-	-
η_3(Ind. Innovation)	-	-	-	-	0.412[a]	3.13
Firm Size	0.858[b]	2.64	0.870[b]	2.39	0.859[b]	2.60
Firm Age	1.264[b]	2.00	1.321[b]	2.30	1.275[b]	2.12
Leverage	2.469[b]	2.69	2.561[a]	2.76	2.286[b]	2.50
ROA	0.789	0.38	0.688	0.58	0.772	0.44
Firm Risk	0.806	0.26	1.003	0.01	1.021	0.02
R&D/Sales	0.327	0.78	0.169	0.93	-	-
Year Controls	Yes		Yes		Yes	
pseudo – R^2	5.45		5.14		5.92	
Observations	24,724		24,724		24,724	
χ^2 – tests of equality of coefficients	$\beta_1 = \beta_2$	0.30	$\delta_1 = \delta_2$	0.50	$\eta_1 = \eta_2$	5.31
	$\beta_1 = \beta_3$	1.89	$\delta_1 = \delta_3$	4.82	$\eta_1 = \eta_3$	2.78
	$\beta_2 = \beta_3$	8.70	$\delta_2 = \delta_3$	16.33	$\eta_2 = \eta_3$	0.94

The analysis indicates that dual class family firms are substantially less likely to reside in industries with high growth opportunities, high sales' growth rates, and high levels of innovation. Column 1 of Table 11 (under the subtitle Family Dual Class), the coefficient estimate on industry *Q* is 0.405 (significant at 1% or better), suggesting that dual class firms are only 40.5% as likely to exist in industries with high growth potential relative to single class nonfamily firms. Using the other measures of industry growth potential – sales growth in column 3 and R&D-to-sales in column 5 – I reach a similar inference. Dual class family firms are only 67% as likely to arise in industry with high sales growth and 41.2% as likely to exist in high R&D industries as single class nonfamily firms. Contrary to conventional wisdom that dual class structures arise to protect firms' growth options, I find that on average, dual class family firms appear to reside in industries with lower growth potential versus single class nonfamily firms.

The multinomial logit setup allows us to rank the four combinations arising from the single-dual class choice and family-nonfamily firm choice with respect to industry growth potential. Nonfamily firms (single and dual class) sit atop the list (statistically the same) followed by single class family firms and then, finally, dual class family firms at the bottom. Wald-χ^2 tests shown at the bottom of the Table 11 test the equality of coefficient estimates for the industry growth potential traits. The χ^2 - tests allow us to reject the null hypothesis of equal coefficient estimates and I can thus infer the rank ordering of equity structures with respect to industry growth potential; starting with nonfamily firms (single and dual), single class family firms, and then lastly, dual class family firms. Although family firms – both single and dual class – tend to shun high growth industries relative to nonfamily firms, my analysis suggests that, the high-growth avoidance effect appears to be quite pronounced in dual class family firms.[20]

[20] I do not find that dual class family firms reside in low-growth industries. Specifically, when including a dummy variable for the bottom quartile of industry growth opportunities, industry

My analysis does not point towards protecting industry-level growth opportunities as an explanation for the dual class choice. I turn my attention to another potential explanation for family owners to choose a dual class structure; specifically, protecting assets-in-place. Dual class shares may arise in industries that require substantial investment into existing assets, thereby incentivizing family owners to use super voting shares to shield investments from outside appropriation. I examine four measures of assets-in-place; branding (industry advertising/sales); asset intangibility (intangible assets /total assets); asset intensity (sales/total assets) and; product market power (EBITDA / sales). Again, to simplify interpretation of the multinomial logit regressions, I develop binary variables that equal one for the top quartile of the industry trait and zero otherwise.

Table 12 presents the results of the analysis. I find that dual class family firms are nearly 3.8 times more likely to exist in industries with high advertising (branding) than nonfamily firms (single or dual class). Similarly, family dual class structures are over 3.1 times more likely to occur in industries with high-levels of intangible assets relative to nonfamily firms. The coefficient estimates on industry branding and intangible assets, columns 1 and 3, are both significant at the 1% level or better. The analysis also points to dual class family firms arising in industries with significant product market power. Specifically, column 7 of Panel B, indicates that the dual class family structure is 2.74 times more like to occur in industries with high levels of product market power than nonfamily firms (single or dual class). When aggregating the three industry traits of high

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sales growth, and industry innovation, I do not find a significant relation between dual class family firms and growth.

branding, high intangible assets, and high product market power into a single variable, I find that dual class family firms are 6.08 times more likely to exist in such a business environment as compared to single class nonfamily firms. Industries meeting the criteria of high branding, high intangible assets, and high product market power are pharmaceutical products, communications, business services, and print and publishing. These four industry groups comprise 33% of the dual class family firms in my sample.

Table 12. Equity structure and industry asset protection

	Coef.	z-stat	Coef.	z-stat	Coef.	z-stat	Coef.	z-stat
Nonfamily Dual Class								
θ_1(Ind. Branding.)	1.19	0.50	-	-	-	-	-	-
λ_1(Ind. Int. Assets)	-	-	2.099[b]	2.18	-	-	-	-
α_1(Ind. Asset Intens.)	-	-	-	-	0.963	0.11	-	-
ω_1(Ind. Profitability)	-	-	-	-	-	-	0.874	0.42
Firm Size	1.086	0.60	1.083	0.60	1.082	0.58	1.085	0.59
Firm Age	1.104	0.05	1.047	0.17	1.015	0.05	1.004	0.01
Leverage	2.754	1.37	2.468	1.19	2.899	1.33	3.042	1.35
ROA	0.574	0.54	0.596	0.51	0.570	0.55	0.568	0.55
Firm Risk	23.60[b]	2.17	27.82[b]	2.40	21.752[b]	2.13	22.610[b]	2.11
R&D/Sales	0.867	1.40	0.869	1.39	0.882	1.26	0.896	1.07
Family Single Class								
θ_2(Ind. Branding.)	1.117	1.00	-	-	-	-	-	-
λ_2(Ind. Int. Assets)	-	-	1.012	0.11	-	-	-	-
α_2(Ind. Asset Intens.)	-	-	-	-	1.359[a]	3.10	-	-
ω_2(Ind. Profitability)	-	-	-	-	-	-	0.804[b]	2.12
Firm Size	0.739[a]	7.58	0.738[a]	7.63	0.736[a]	7.65	0.736[a]	7.65
Firm Age	0.808[a]	3.25	0.808[a]	3.25	0.794[a]	3.50	0.795[a]	3.48
Leverage	0.558[b]	2.71	0.576[a]	2.57	0.587[b]	2.49	0.610[b]	2.39
ROA	3.432[a]	4.65	3.414[a]	4.65	3.256[a]	4.46	3.365[a]	4.58
Firm Risk	0.486	1.52	0.484	1.54	0.486	1.52	0.438	1.73
R&D/Sales	0.935	1.60	0.945	1.40	0.953	1.19	0.967	0.84
Family Dual Class								
θ_3(Ind. Branding.)	3.803[a]	8.47	-	-	-	-	-	-
λ_3(Ind. Int. Assets)	-	-	3.120[a]	6.62	-	-	-	-
α_3(Ind. Asset Intens.)	-	-	-	-	0.877	0.70	-	-
ω_3(Ind. Profitability)	-	-	-	-	-	-	2.741[a]	6.01
Firm Size	0.886[b]	2.11	0.871[b]	2.42	0.864[b]	2.53	0.862[b]	2.60
Firm Age	1.315[b]	2.29	1.382[b]	2.67	1.327[b]	2.34	1.435[a]	2.99
Leverage	1.585	1.40	2.067[b]	2.21	2.596[a]	2.77	1.872[c]	1.88
ROA	0.522	1.00	0.600	0.76	0.674	0.62	0.528	0.98

Table 12. (continued)

	Coef.	z-stat	Coef.	z-stat	Coef.	z-stat	Coef.	z-stat
Firm Risk	1.659	0.63	1.780	0.71	0.909	0.11	1.367	0.38
R&D/Sales	0.102	1.25	0.119	1.02	0.153	0.92	0.088	1.15
Year Controls	Yes		Yes		Yes		Yes	
pseudo – R^2	6.61		6.10		5.23		6.01	
Observations	24,724		24,724		24,724		24,724	
χ^2 – tests of equality of coefficients	$\theta_1 = \theta_2$	0.03	$\lambda_1 = \lambda_2$	4.34	$\alpha_1 = \alpha_2$	0.94	$\omega_1 = \omega_2$	0.06
	$\theta_1 = \theta_3$	10.31	$\lambda_1 = \lambda_3$	1.13	$\alpha_1 = \alpha_3$	0.06	$\omega_1 = \omega_3$	10.3
	$\theta_2 = \theta_3$	49.78	$\lambda_2 = \lambda_3$	35.89	$\alpha_2 = \alpha_3$	4.85	$\omega_2 = \omega_3$	44.9

The industry traits surrounding dual- and single- class family firms appear to be quite different. Dual class firms are far more likely to arise in industries with high branding, high intangible assets, and high product market power than are their single class counterparts. Using Wald tests to examine the equality of coefficient estimate for these three industry traits, I reject the null and infer that dual class firms are far more likely to exist in industries bearing these characteristics than single class family firms. The analysis suggests that dual class family firms tend not be an extension of their single class cousins but rather industry characteristics play an important role in family owners' choice of equity structure.

Outside Investors and the Dual Class Choice

The analysis thus far suggests that outside shareholders, with little to no voice in firm decision-making, buy into dual class firms at substantial discounts relative to other organization forms. Further, the analysis suggests that dual class family firms do not randomly arise across business environments but arguably appear to be a response to protect assets-in-place from outside appropriation or interference. As an outside investor buying shares at a substantial discount in firms with extreme governance mechanisms, the question arises as to whether these shareholders fare worse for investing in dual class family firms versus other organizational forms. I investigate this issue by using the following specification to examine buy-and-hold stock returns.

$$Stock\ Returns_{it} = \alpha + \beta_1(Single\ Class\ Family\ Firm) + \beta_2(Dual\ Class\ Family\ Firm) + \beta_3(Dual\ Class\ Nonfamily\ Firm) + \beta_X X + \varepsilon_{t,} \quad (12)$$

For my analysis, I use three measures of stock returns; industry excess returns, market excess returns, and Fama-French size and book-to-market excess returns. Industry excess returns are buy-and-hold stock returns that I measure as each firm's annual stock return less the annual return for the respective Fama-French industry classification code (48 industries). Similarly, market excess returns are buy-and-hold returns that I calculate as each firm's annual return less the CRSP value-weighted market return. My last measure, Fama-French size and book-to-market returns are each firm's stock return less the Fama-French size and book-to-market benchmark portfolios (Faulkender and Wang, 2006). As noted in the valuation analysis, because nearly all dual class firms are also family firms, I encounter a multicollinearity problem that inflates the standard errors of the coefficient estimates on the variables of interest. To mitigate multicollinearity concerns, I use binary variables to denote organizational structure. These are single class family firms (25.6% of observations), dual class family firms (8.4% of observations), single class nonfamily firms (65.0% of observations), and dual class nonfamily firms (1.1% of observations). I control for serial correlation and heteroskedasticity using the Huber-White sandwich estimator (clustered on firm-level identifier) for the standard errors on the coefficient estimates. Single class nonfamily firms are the reference frame or benchmark for the regression.

Table 13 presents the results of the excess stock return regressions. Columns 1 through 3 present the results for the full sample when using industry excess returns, market excess returns, and size/book-to-market excess returns. Columns 4 through 6 show the results for the matched sample. In stark contrast to the valuation results, I find that dual class family firms earn significantly superior returns relative to other organization forms. Using the full sample, I document that dual class family firms earn excess returns of about 370 basis points per year when using industry-adjusted returns as the dependent variable. The coefficient estimate is significant at the 1% level or better and suggests that a simple buy-and-hold strategy of dual class family firms in the Russell 3000 outperforms single class nonfamily firms by 72.5% (over my sample period of 2001 – 2015). Similarly, when using market-adjusted returns or size and book-to-market adjusted returns, I find annual excess returns of 350 and 290 basis points, respectively.

Table 13. Stock return, share structure and ownership structure

	Full Sample			Matched Sample		
	Industry	Market	Fama-French	Industry	Market	Fama-French
	1	2	3	4	5	6
Intercept	0.061[b]	0.158[a]	-0.085[a]	0.052	0.171[c]	-0.115
	(2.08)	(5.53)	(2.86)	(0.56)	(1.85)	(1.23)
β_1(Single Family)	0.014[b]	0.012	0.006	0.021	0.019	0.018
	(2.06)	(1.63)	(0.81)	(1.07)	(0.99)	(0.93)
β_2(Dual Family)	0.037[a]	0.035[a]	0.029[b]	0.057[a]	0.059[a]	0.059[a]
	(3.28)	(3.06)	(2.56)	(3.40)	(3.47)	(3.43)
β_3(Dual Nonfamily)	-0.002	-0.001	0.017	-0.004	0.002	0.025
	(0.06)	(0.04)	(0.53)	(0.09)	(0.05)	(0.52)

Table 13. (continued)

	1	2	3	4	5	6
Ln(Total Assets)	-0.007[a]	-0.012[a]	-0.005[b]	-0.011	-0.014[c]	-0.007
	(3.29)	(5.12)	(2.28)	(1.49)	(1.73)	(0.88)
Ln(Firm Age)	0.004	0.004	0.006	0.019	0.022[c]	0.023[c]
	(0.80)	(0.96)	(1.19)	(1.42)	(1.65)	(1.73)
Leverage	0.029	0.039[b]	0.029	0.010	0.022	0.010
	(1.58)	(2.10)	(1.54)	(0.22)	(0.45)	(0.21)
ROA	0.566[a]	0.584[a]	0.613[a]	0.410[a]	0.425[a]	0.510[a]
	(17.78)	(18.03)	(17.85)	(4.54)	(4.68)	(5.43)
Firm Risk	0.621[a]	0.484[a]	0.463[a]	0.528[a]	0.344[b]	0.368[b]
	(9.07)	(6.93)	(6.57)	(3.40)	(2.18)	(2.32)
R&D/Sales	0.010[b]	0.010[b]	0.012[b]	0.013	0.007	0.015
	(2.13)	(2.09)	(2.45)	(0.72)	(0.38)	(0.81)
Yr./Ind. Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,724	24,724	24,724	4,258	4,258	4,258
Adj. R^2 (%)	6.95	8.41	4.59	5.74	7.45	3.22
$\beta_1 = \beta_2$ (F-test)	3.37[c]	3.64[b]	3.61[c]	3.87[b]	4.66[b]	4.72[b]
$\beta_1 = \beta_3$ (F-test)	1.51	0.17	0.12	0.30	0.14	0.02
$\beta_2 = \beta_3$ (F-test)	0.29	1.29	0.13	1.91	1.67	0.54

The matched sample results provide additional – and stronger – evidence that dual class family firms outperform other organizational forms. I employ coarsened exact matching (CEM) (Iacus, King, and Porro, 2009) and match dual class family firms to single class family- and nonfamily- and also dual class nonfamily firms using an exact industry match (Fama-French 48 industry groups) and also match on firm size (total assets) and firm age. I describe the matching process in the previous section. Using industry-adjusted returns, I find that dual class family firms outperform single class nonfamily firms by 570 basis points per year using a buy-and-hold strategy. Market-adjusted returns and size/book-to-market adjusted returns indicate that dual class family firms earn 590 and 590 basis points per year, respectively, of additional returns over the reference group (single class nonfamily firms). The coefficient estimates for each of the three returns measures are significant at the 1% level or better. Again, using a buy-and-hold strategy, the results indicate that a portfolio of dual class family firms would outperform single class nonfamily firm portfolio by about 130% over the 15-year sample period.

I conduct a series of robustness tests on my return analyses. First, to ensure that no single (or small number of years) accounts for my results, I run Fama-MacBeth (1973) regressions for the full- and matched- sample over the three return measures (Petersen, 2009). This analysis indicates that dual class firms outperform single nonfamily firms by about 260 and 400 basis points for the full and matched sample, respectively. Second, because small absolute dollar increases in low price stock can result in large percentage increases in stock returns, I exclude all firm-year observations with stock prices less than $5.00. The results indicate that dual class family firms outperform single class family firms. For the full and matched sample respectively, I find excess industry returns of 200 and 410 basis points per year respectively. Overall, the results strongly indicate that dual class family firms earn superior excess returns relative to other organizational forms.

A substantial legal and finance literature as well as the popular press argue that dual class share structures harm outside shareholders. Although outside shareholders have little voice in firm decision-making, my analysis in this chapter indicates that these investors are no worse-off for investing in dual class family firms than single class firms. These investors rather, appear to earn superior returns on their investment. Given the negative views and press on dual class structures, institutional shareholders – with greater resources and sophistication – potentially shun these shares relative to retail investors. I examine the composition of the outside shareholder base relative to equity structure. For the analysis, I compute the fraction of institutional shareholdings as;

Fraction of Institutional Shareholdings = Total Shares held by Institutions/(Total Outs. Shares – Total Shares held by the Family), (13)

In calculating institutional shareholding, I reduce the amount of total shares outstanding by the shares held by the family. This measure captures the fraction of freely traded shares held by institutions. Table 14 provides the result of the analysis using equation 3 but replacing the dependent variable with fraction of institutional shareholdings. Column 1 shows the results for the full sample and column 2 shows the results for the matched sample. In contrast to the notion that sophisticated investors avoid dual class family firms, I find that institutional shareholders hold significantly more of the freely floated shares in these firms. The coefficient estimate on family dual class for the full sample (matched sample) in column 1 (2) indicates that institutional investors hold 27.4% (24.5%) more of the outstanding shares in dual class family firms than in single class nonfamily firms. Intuitively, institutional investors hold 87.4% of the free float in dual class family firms and 60.0% of the free float in single class nonfamily firms.[21] As an additional reference point, I find that institutional investors do not hold substantially greater fractions of single class family firms relative to the benchmark (single class nonfamily). The results, although significant at the 10% level, suggest that

[21] In the regression specification, the intercept captures the fraction of institutional holdings in single class nonfamily firms (the reference variable) while the intercept plus the coefficient estimate on dual class family firm captures institutional holdings in dual class family firms, all else equal.

institutions hold only about 2% more of the free float in single class family firms versus single class nonfamily firms. Overall, my analysis does not support the notion that institutions avoid or shun dual class family firms, rather, I document that these sophisticated investors appear to hold nearly the entire free float in super-voting family firms.

Table 14. Institutional shareholdings and equity structure

Dependent variable. fraction of institutional shareholdings

	Full Sample	Matched Sample
	1	2
Intercept	0.600[a]	0.523[a]
	(13.88)	(4.08)
β_1(Single Family)	0.023[c]	0.012
	(1.79)	(0.48)
β_2(Dual Family)	0.274[a]	0.245[a]
	(9.00)	(7.48)
β_3(Dual Nonfamily)	-0.07	-0.067
	(1.47)	(0.90)
Ln(Total Assets)	0.009[b]	0.012
	(2.04)	(0.94)
Ln(Firm Age)	-0.027[a]	-0.011
	(2.84)	(0.45)
Leverage	-0.036	-0.152[b]
	(1.34)	(2.42)
Return on Assets	0.510[a]	0.555[a]
	(15.57)	(6.16)
Firm Risk	-0.695[a]	-0.535[a]
	(10.71)	(3.40)
R&D/Sales	0.021[a]	0.016
	(3.97)	(1.36)
Yr./Ind. Dummies	Yes	Yes
Observations	24,724	4,258
Adj. R^2 (%)	23.07	24.61
$\beta_1 = \beta_2$ (F-test)	63.39[a]	44.08[a]
$\beta_1 = \beta_3$ (F-test)	3.59[c]	1.08
$\beta_2 = \beta_3$ (F-test)	37.15[a]	15.87[a]

Dual Class Structures, Founders, Descendants and Professional Managers

Academic studies often advocate that the benefits to family ownership, if any, stem primarily from founder control (Fahlenbrach, 2009). Villalonga and Amit (2006) further argue that descendant control often leads to poor corporate execution and financial performance because of weak ability and work ethic. Although I control for firm age in all of my empirical specifications that partially captures the delineation between founders and descendants, I more closely examine the effect of founders and their subsequent lineage on the dual class structure choice. My analysis segregates family firms into three subcategories based on the CEO status; founder firms, descendant firms, and professionally managed firms. Founder and descendant firms are those where the founder or one of the founder's descendants, respectively, holds the CEO position. Professional managed firms are family firms where an outside executive holds (nonfamily affiliated) holds the CEO post. Within dual class firms, I find an equal distribution of the three firm types. Founder firms constitute 31.3% of the total with descendant and professional managed firms comprising 34.5% and 34.2%, respectively. As a reference frame, within single class family firms, I document that founders, descendants, and professional managers hold 44.1%, 17.3%, and 38.5% of the CEO posts.

Table 15, columns 1 and 2, presents valuation analyses for the full sample across dual- and single- class firms categorized by founder, descendants, and professionally managed. My analysis of dual class firms indicates that all three subcategories exhibit a negative relation to Tobin's Q. Notably however, I find that descendant dual class firms suffer from significantly larger discounts relative to their founder and professionally managed peers. In *F*-tests examining the equality of the coefficient estimates across founder, descendant, and professionally managed, I reject the null and conclude the descendant firms experience larger valuation discounts than either founder or professional firms.

Table 15. firm valuation, excess stock returns and family management

	Full Sample				Matched Sample	
	Tobin's Q	Tobin's Q	Excess Ind. Ret.	Excess Ind. Ret.	Tobin's Q	Excess Ind. Ret.
	1	2	3	4	5	6
Intercept	2.797	2.977[a]	0.071[a]	0.064[b]	2.840[a]	0.068
	(20.38)	(21.78)	(2.74)	(2.16)	(8.58)	(0.72)
β_1(Single Founder)	-0.043	-0.063	0.010	0.011	-0.120	0.014
	(0.70)	(1.01)	(0.93)	(0.98)	(0.81)	(0.46)
β_2(Single Descendant)	-0.284[a]	-0.270[a]	0.053[a]	0.052[a]	-0.302[a]	0.041
	(4.37)	(4.14)	(4.05)	(4.03)	(2.84)	(1.54)
β_3(Single Professional)	0.005	0.006	0.001	0.011	-0.138	0.013
	(0.08)	(0.10)	(0.16)	(0.15)	(1.64)	(0.47)
β_4(Dual Founder)	-0.169	-0.186[c]	0.028[c]	0.028[c]	-0.223[c]	0.047[b]
	(1.60)	(1.75)	(1.67)	(1.70)	(1.95)	(2.02)
β_5(Dual Descendant)	-0.386[a]	-0.363[a]	0.042[b]	0.041[b]	-0.335[a]	0.045[b]
	(5.50)	(5.08)	(2.59)	(2.53)	(3.66)	(2.11)
β_6(Dual Professional)	-0.163[c]	-0.151	0.043[b]	0.042[b]	-0.159	0.080[b]
	(1.76)	(1.63)	(2.33)	(2.30)	(1.41)	(3.10)
β_7(Nonfamily Dual)	0.409	0.406	-0.002	-0.002	0.419	-0.005
	(1.59)	(1.57)	(0.06)	(0.06)	(1.31)	(0.11)
Ln(Total Assets)	-0.104[a]	-0.099[a]	-0.007[a]	-0.007[a]	-0.139[a]	-0.012
	(6.97)	(6.25)	(3.18)	(3.17)	(3.76)	(1.58)
Ln(Firm Age)	-	-0.058[b]	-	0.002	-0.035	0.017
		(1.99)		(0.47)	(0.55)	(1.20)
Leverage	-0.294[b]	-0.290[b]	0.029	0.029	-0.495[b]	0.012
	(2.30)	(2.28)	(1.61)	(1.60)	(2.65)	(0.26)
Return on Assets	1.208[a]	1.221[a]	0.566[a]	0.566[a]	2.362[a]	0.414[a]
	(4.44)	(4.46)	(17.82)	(17.78)	(3.75)	(4.60)
Firm Risk	-0.009	-0.122	0.622[a]	0.626[a]	0.037	0.521[a]
	(0.03)	(0.51)	(9.17)	(9.14)	(0.09)	(3.35)

Table 15. (continued)

	1	2	3	4	5	6
R&D/Sales	0.188[a]	0.188[a]	0.010[b]	0.010[b]	0.440	0.014
	(5.47)	(5.46)	(2.15)	(2.15)	(4.41)	(0.78)
Yr./Ind. Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,724	24,724	24,724	24,724	4,258	4,258
Adj. R^2 (%)	20.49	20.57	6.97	6.97	20.71	5.70
$\beta_4 = \beta_5$ (F-test)	3.78[b]	2.42	0.44	0.34	0.93	0.01
$\beta_4 = \beta_6$ (F-test)	0.00	0.08	0.40	0.34	0.21	1.13
$\beta_5 = \beta_6$ (F-test)	5.23[b]	4.70[b]	0.00	0.00	2.66[c]	1.63

Columns 3 and 4 of Table 15 present excess industry stock returns regressions for the full sample. Consistent with my earlier results, I find that all three subcategories of dual-class family firms earn superior excess returns versus single class nonfamily firms. That is, the coefficient estimate on founder, descendant, and professionally managed dual-class firms exhibit positive and significant relations to excess industry returns; suggesting that these firms earn excess returns of about 280 basis points more per year than single class nonfamily firms. *F*-tests indicate that excess industry returns between the three subcategories do not significantly differ from one another. Columns 5 and 6 of Table 15 show valuation and returns analyses for the matched sample and these largely reflect the results of the full sample.

Although I find variations across founder, descendant, and professionally managed dual class firms, my inferences from the primarily analyses tend to remain unchanged. Specifically, dual class family firms experience large valuation discounts relative to other organizational forms but investors in these firms earn significantly greater excess returns versus investors in single class nonfamily firms.

Conclusion

Extant academic literature documents significant costs arising from the firms issuing more than single class of common equity. The business press also frequently laments that corporate insiders use super voting shares as a mechanism to extract private benefit of corporate control at the expense of outside shareholders. Yet, dual class structures constitute an increasing fraction of new firms entering public markets with minority investors willing to buy shares. The dichotomy arising between common knowledge and investor actions arguably indicates that minority shareholders fail to understand the costs and benefits arising from firms issuing multiple equity classes, suggesting a disequilibrium in the pricing of these securities.

I investigate a simple question; why do firms establish dual class shares? To understand better the role or reason for issuing dual class shares, I begin by investigating the owners or originators of these multiple equity class firms. Using the Russell 3000 industrial firms from 2001 through 2015, I find that the dual class firms appear to be a manifestation of family ownership. Nearly all dual class structures arise from founders and their families (93%) with family owners continuing to control 89% of these super voting structures. Consistent with prior research, my analysis indicates that family owners bear a large cost in establishing these dual equity classes relative to single class firms. In particular, using both the full sample and a matched sample, I document that dual class family firms suffer valuation discounts of about 12% relative to single class nonfamily firms; suggesting that the firm’s initial investors (family owners) carry a large part of the cost of issuing two classes of common equity classes rather than outside investors.

If family investors bear the cost of dual class structures, the question arises as to whether outside investors are worse-off for buying shares in a dual class family firm relative to another organizational structure. Further, although the exploitation of minority shareholders provides a strong incentive for family owners to establish super voting shares, dual class structures may still be consistent with the goal of shareholder wealth maximization. For instance, due to asymmetric information problems, long-term investment horizons, and high levels of firm specific risk, family owners may use dual class shares to shield valuable projects from outside interference and thus allow investments to come to fruition. To investigate whether dual class shares harm outside investors and are inconsistent with shareholder wealth maximization, I examine stock price returns.

In striking contrast to the valuation results, my analysis of stock price returns suggests that dual class family firms significantly and economically outperform single class family- or nonfamily- firms. Using industry- or market- adjusted returns, I find that a buy-and-hold strategy of dual class family firms earns excess returns of about 350 basis points per year relative to single class nonfamily firms. Results from the matched sample paint an even more positive picture by suggesting excess returns of 460 basis points per year for dual class family firms relative to their single class firms (family or nonfamily). The stock return analysis provides two important inferences. First, outside investors appear to be no worse-off investing in dual class firms relative to single class firms.

Rather, the results suggest superior returns for firm investors in dual class firms relative to their single class counterparts. Second, although family owners establish dual class structures and appear to bear the cost of these super voting shares, my results suggest that families potentially recapture much of their initial discount through subsequent superior returns on their shares.

Family owners have a choice when establishing equity ownership structures. These large, concentrated investors can choose to exit their stakes, establish single class structures in their firms, or setup dual class shares. My analysis provides evidence that dual class organization does not randomly arise at the whim of corporate insiders but arises from the nature of investment opportunities that family owners face. Specifically, I find that the dual class firms (relative to single family or nonfamily firms) are significantly more likely to reside in industries with long investment horizons, capital intensive sectors, high growth areas, and industries requiring product differentiation; suggesting family owners use super voting shares to shield their investment decisions from outside inference.

My analysis indicates that dual class structures provide both costs and benefits to the firms. On the cost side, family owners – as originators of two classes of common equity – appear to bear significant discounts when selling their shares to the investing public and bear a high level of negative media attention for continuing with this equity ownership structure. On the benefit side, dual class shares appear to be a structure that large, concentrated shareholder deploy in an effort to protect their investments from outside interference and to maximize shareholder wealth. In total, this chapter documents that dual class shares are a manifestation of family control, allowing family owners the ability to sell cash flow rights while still maintaining formal firm control, yielding economic benefits to family- and outside- shareholders.

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APPENDICES

APPENDIX A.

CHAPTER 1 VARIABLE DEFINITIONS

Acquirer Cumulative Abnormal Returns (ACAR (-1, +1)): Cumulative abnormal return of the bidding firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return.
Target Cumulative Abnormal Returns (TCAR(-1,+1): Cumulative abnormal return of the target firm's stock in the 3-day event window (−1, +1) where 0 is the announcement day. The returns are calculated using the market model with the market model parameters estimated over the period starting 301 days and ending 46 days prior to the announcement. The CRSP value-weighted index return is the market return.
Deal Cumulative Abnormal Returns (DCAR (-1,+1): The deal return (DCAR) is the value-weighted average of the bidder's (ACAR) and the target's announcement CARs (TCAR). Market values are measured 6 trading days prior to M&A announcement dates.
Δ$CAR (Relative Acquirer Gain): acquirer market value of equity * acquirer CAR(-1,+1) minus target market value of equity *target CAR (-1,+1), divided by the sum of the acquirer's and target's market value of equity. Market values are measured at 6 trading days prior to the announcement date.
1 year Buy and Hold Abnormal Returns (BHAR (0, +12)): Buy and Hold Abnormal Return of the bidding firm's stock in the 12 month event window (0, +12) where 0 is the announcement month. BHARs are calculated by compounding successive monthly raw returns and then adjusting the raw returns with benchmark returns. Benchmark returns are calculated using Fama French (1993) time series model estimated over the period starting 66 months and ending 6 months prior to the announcement month.
Family Firm: Equals one when the family holds a 5% or larger ownership stake.
Founder CEO, Descendant CEO, Professional CEO: Equals one when a founder, descendant, or professional outside CEO, respectively, holds the CEO position in a family firm and zero otherwise.
Blockholders: Equals one when either a hedge fund, private equity, mutual fund, pension fund, or insurance company holds a 5% or larger ownership stake in the firm.
Target: Binary variable equals one if a firm is not targeted in an M&A, equals two if a firm is targeted by a nonfamily and equals three if a firm is targeted by a family bidder.
Acquirer Risk: Standard deviation of monthly returns for 36 months (calculated for month -40 through month -5 relative to the month of the acquisition announcement).
Acquirer Tobin's Q: Market value of assets over book value of assets (compustat item6-compustat item60 + compustat item25 * compustat item l99) / compustat item 6. All financials are measured at the previous FYE before the merger announcement.
Acquirer Cash/Asset Ratio: Cash and cash equivalents measured at the previous FYE before the merger divided by total assets measured at the previous FYE.

APPENDIX A .(CONTINUED)

Acquirer Size: Natural log of total assets of the acquirer measured at the previous FYE before the merger.	
Acquirer Leverage: Long Term Debt measured at the previous FYE before the merger / Total Assets measured at the previous FYE before the merger.	
Target Leverage: Long Term Debt measured at the previous FYE before the merger / Total Assets measured at the previous FYE before the merger.	
Target Size: Natural log of total assets of the target measured at the previous FYE before the merger.	
Target Risk: Standard deviation of monthly returns for 36 months (standard deviation is calculated for month -40 through month -5 relative to the month of the acquisition announcement) calculated for each target firm.	
Target Performance (Roa): Net income measured at the previous FYE before the merger divided by total assets measured at the previous FYE before the merger.	
Target Tobin's Q: Market value of assets over book value of assets (compustat item6- compustat item60 + compustat item25 * compustat item l99) / compustat item 6. All financials are measured at the previous FYE before the merger announcement.	
Target Stock Price Runup: Market-adjusted buy-and-hold return of the bidding firm's stock over the period beginning 90 trading days and ending 5 trading days prior to the announcement date from CRSP.	
All Stock Deals: Equals one for deals in which consideration is pure stock.	
All Cash Deals: Equals one for deals in which the sole consideration is cash.	
Mixed Deals: Equals one for deals in which consideration is neither all-cash nor all-stock, zero otherwise. If there was not detailed information on the payment method then it is assumed to be mixed deal.	
Relative Size: Value of the transaction from ThomsonOne SDC divided by the bidder's market value of equity 20 trading days prior to the announcement from CRSP.	
Premium Combined: Calculated premium similar to Officer (2003). First calculated a premium measure (Premium 1) based on SDC deal value divided by target's market value of equity from CRSP, 43 trading days prior to the acquisition announcement minus one. Second premium measure (Premium 2) is based on SDC price data, which equals to the initial offer price divided by target's share price from CRSP, 43 trading days prior to the announcement minus one. Combined premium measure equals to Premium 1 if Premium1 is between 0 and 2, if not, equals to Premium 2 if Premium 2 is between 0 and 2. Otherwise the combined premium is left as a missing observation.	
Same Industry: Equals one if bidder and target share same two digit sic code.	
ΔROA: Industry-adjusted ROA of the acquirer and the target is calculated by subtracting the median industry ROA based on the two-digit SIC. The industry-adjusted ROA of the portfolio is the weighted average of acquirer's and target's ind-adj. ROA. Pre-merger ROA is the three-year average of the industry-adjusted ROA. Post-merger ROA is the three-year average of the combined firm's industry-adjusted ROA. ΔROA as the difference between post-merger ROA and pre-merger ROA.	

APPENDIX A. (CONTINUED)

Multiple Bidder: Equals one if there are two or more competing bidders, zero otherwise. Number of bidders is from ThomsonOne SDC database.
Pre3YR: Defined as the total number of acquisitions an acquirer has made in the past three years before the current acquisition announcement.
Capital Expenditure: Level of annual capital expenditure from Compustat.

APPENDIX B.

RELATIVE ACQUIRER GAIN AND OWNERSHIP STRUCTURE

Dependent Variable. Δ$CAR			
	1	2	3
Family Ownership	0.0389[b]		
	(0.022)		
Family Firm Dummy		0.0101[c]	
		(0.079)	
Founder CEO			0.00544
			(0.469)
Family Descendant CEO			0.0163
			(0.443)
Professional CEO			0.0125[c]
			(0.092)
Target Runup	0.00286	0.00300	0.00328
	(0.429)	(0.411)	(0.385)
Premium Combined	-0.0131[b]	-0.0135[b]	-0.0139[b]
	(0.047)	(0.041)	(0.036)
Blockholder Dummy	0.00280	0.00218	0.00193
	(0.715)	(0.780)	(0.800)
Acquirer Cash/Asset	-0.0344[c]	-0.0341	-0.0317
	(0.095)	(0.101)	(0.136)
Log (Acquirer Total Assets)	0.00352[c]	0.00360[c]	0.00372[c]
	(0.062)	(0.058)	(0.054)
Acquirer Leverage	0.0172	0.0182	0.0182
	(0.350)	(0.335)	(0.325)
Acquirer Risk	-0.0198	-0.0214	-0.0189
	(0.758)	(0.739)	(0.769)
Acquirer Tobin's *Q*	0.00186	0.00181	0.00177
	(0.445)	(0.460)	(0.470)
All Cash	0.00389	0.00386	0.00380
	(0.501)	(0.503)	(0.511)
All Stock	-0.0159[c]	-0.0161[c]	-0.0161[c]
	(0.086)	(0.084)	(0.084)
Same Industry	0.00169	0.00187	0.00166
	(0.705)	(0.676)	(0.709)
Relative Deal Size	-0.0299[a]	-0.0292[a]	-0.0297[a]
	(0.002)	(0.003)	(0.002)
Log (Target Total Assets)	-0.00860[a]	-0.00860[a]	-0.00855[a]
	(0.000)	(0.000)	(0.000)
Target Roa	(0.147)	(0.140)	(0.136)
	-0.0148	-0.0145	-0.0141

APPENDIX B. (CONTINUED)

	1	2	3
	(0.257)	(0.263)	(0.270)
Target Tobin's *Q*	-0.00564[a]	-0.00561[a]	-0.00563[a]
	(0.008)	(0.008)	(0.008)
Target Risk	-0.00458	-0.00357	-0.00375
	(0.905)	(0.926)	(0.922)
Intercept	0.0309	0.0302	0.0295
	(0.286)	(0.298)	(0.310)
N	594	594	594
adj. R-sq	0.182	0.183	0.181

APPENDIX C.

OPERATING PERFORMANCE AND OWNERSHIP STRUCTURE

Dependent Variable. ΔROA			
	1	2	3
Family Ownership	-0.0355		
	-0.357		
Family Firm Dummy		-0.00419	
		-0.622	
Founder CEO			-0.0111
			-0.38
Family Descendant CEO			0.0202
			-0.271
Professional CEO			-0.00411
			-0.691
Target Runup	0.00465	0.00635	0.00703
	-0.658	-0.532	-0.504
Premium Combined	0.00591	0.0061	0.00449
	-0.577	-0.566	-0.676
Blockholder Dummy	0.00416	0.00609	0.00677
	-0.716	-0.586	-0.54
Acquirer Cash/Asset	0.0741[b]	0.0749[b]	0.0769[b]
	-0.015	-0.014	-0.014
Log (Acquirer Total Assets)	0.00309	0.00358	0.00382
	-0.358	-0.269	-0.241
Acquirer Leverage	0.00968	0.0111	0.00888
	-0.763	-0.729	-0.783
Acquirer Risk	-0.0176	-0.0112	-0.0122
	-0.835	-0.894	-0.884
Acquirer M/B	-0.0112[a]	-0.0112[a]	-0.0111[a]
	-0.001	-0.001	-0.001
All Cash	0.0118	0.0127	0.0129
	-0.21	-0.176	-0.17
All Stock	0.0121	0.0129	0.0133
	-0.392	-0.361	-0.355
Same Industry	-0.00608	-0.00497	-0.00523
	-0.405	-0.493	-0.47
Relative Deal Size	-0.00518	-0.00311	-0.0038
	-0.683	-0.795	-0.746
Log (Target Total Assets)	-0.00077	-0.000852	-0.000791
	-0.821	-0.8	-0.814
Target Leverage	0.0206	0.0227	0.0215

APPENDIX C. (CONTINUED)

	1	2	3
	-0.444	-0.389	-0.412
Target Roa	0.0149	0.0141	0.0131
	-0.471	-0.497	-0.526
Target M/B	0.0047	0.00474	0.00461
	-0.144	-0.148	-0.156
Target Risk	0.00376	0.00229	0.0023
	-0.92	-0.951	-0.951
Intercept	-0.048	-0.0576	-0.0597
	-0.284	-0.189	-0.177
N	375	380	380
adj. R-sq	0.074	0.071	0.07

APPENDIX D.

MULTIPLE BIDDERS AND OWNERSHIP STRUCTURE

Dependent Variable. Multiple bidder dummy			
	1	2	3
Family Ownership	-0.613		
	(0.465)		
Family Firm Dummy		0.0466	
		(0.814)	
Founder CEO			0.159
			(0.553)
Family Descendant CEO			-0.417
			(0.404)
Professional CEO			0.0364
			(0.908)
Target Runup	0.223	0.307	0.305
	(0.260)	(0.121)	(0.142)
Premium Combined	0.586[b]	0.541[b]	0.559[b]
	(0.022)	(0.030)	(0.027)
Blockholder Dummy	0.121	0.114	0.0850
	(0.740)	(0.752)	(0.814)
Acquirer Cash/Asset	-0.505	-0.546	-0.604
	(0.447)	(0.412)	(0.384)
Log (Acquirer Total Assets)	0.0809	0.0874	0.0789
	(0.344)	(0.293)	(0.352)
Acquirer Leverage	1.216	1.214	1.295[c]
	(0.115)	(0.117)	(0.085)
Acquirer Risk	-0.122	0.288	0.321
	(0.954)	(0.890)	(0.877)
Acquirer M/B	0.196[a]	0.188[a]	0.184[a]
	(0.003)	(0.003)	(0.004)
All Cash	0.331	0.391[c]	0.392
	(0.151)	(0.099)	(0.102)
All Stock	-0.346	-0.318	-0.345
	(0.428)	(0.465)	(0.425)
Same Industry	0.333	0.336	0.341
	(0.119)	(0.112)	(0.107)
Relative Deal Size	0.552	0.642[c]	0.663[c]
	(0.160)	(0.065)	(0.053)
Log (Target Total Assets)	0.0603	0.0541	0.0545
	(0.506)	(0.546)	(0.550)
Target Leverage	-0.745	-0.725	-0.673

APPENDIX D. CONTINUED

	1	2	3
	(0.363)	(0.367)	(0.407)
Target Roa	0.196	0.155	0.143
	(0.741)	(0.797)	(0.819)
Target M/B	-0.139	-0.126	-0.122
	(0.113)	(0.148)	(0.157)
Target Risk	-0.352	-0.493	-0.524
	(0.714)	(0.623)	(0.600)
Intercept	-4.259[a]	-4.367[a]	-4.334[a]
	(0.001)	(0.001)	(0.001)
N	524	530	530

APPENDIX E.

ACQUISITION PREMIUM AND OWNERSHIP STRUCTURE

Dependent Variable. Acquisition premium			
	1	2	3
Family Ownership	-0.111		
	(0.515)		
Family Firm Dummy		0.0108	
		(0.819)	
Founder CEO			-0.0488
			(0.488)
Family Descendant CEO			0.281[b]
			(0.048)
Professional CEO			-0.00262
			(0.965)
Target Runup	0.109[a]	0.110[a]	0.112[c]
	(0.000)	(0.000)	(0.000)
Blockholder Dummy	0.0884	0.0899	0.0912
	(0.146)	(0.148)	(0.122)
Acquirer Cash/Asset	0.0957	0.0994	0.115
	(0.357)	(0.335)	(0.274)
Log (Acquirer Total Assets)	0.0426[a]	0.0423[a]	0.0427[a]
	(0.008)	(0.009)	(0.007)
Acquirer Leverage	-0.0133	0.00198	-0.0104
	(0.904)	(0.986)	(0.926)
Acquirer Risk	0.317	0.310	0.324
	(0.348)	(0.361)	(0.339)
Acquirer M/B	0.00824	0.00745	0.00853
	(0.595)	(0.635)	(0.588)
All Cash	-0.0422	-0.0435	-0.0442
	(0.296)	(0.280)	(0.264)
All Stock	-0.109[b]	-0.107[b]	-0.105[b]
	(0.029)	(0.033)	(0.035)
Same Industry	0.0212	0.0204	0.0172
	(0.525)	(0.543)	(0.602)
Relative Deal Size	0.126[c]	0.119[c]	0.102
	(0.052)	(0.069)	(0.107)
Log (Target Total Assets)	-0.0641[a]	-0.0628[a]	-0.0592[a]
	(0.000)	(0.000)	(0.001)
Target Leverage	0.300[a]	0.292[a]	0.272[b]
	(0.005)	(0.007)	(0.012)
Target Roa	-0.0951	-0.0976	-0.102

APPENDIX E. (CONTINUED)

	1	2	3
	(0.379)	(0.365)	(0.336)
Target M/B	-0.0574[a]	-0.0557[a]	-0.0544[a]
	(0.000)	(0.000)	(0.000)
Target Risk	0.459[c]	0.468[c]	0.448[c]
	(0.061)	(0.058)	(0.065)
Intercept	0.569[a]	0.560[a]	0.533[a]
	(0.001)	(0.002)	(0.003)
N	607	607	607
adj. R-sq	0.152	0.152	0.161

APPENDIX F.

EQUITY STRUCTURE CHOICES

At the time of the firm's IPO, family owners first choose to retain an equity stake and subsequently, choose their cash flow and voting rights. Entrepreneurs and their families can choose to hold a relatively small equity stake with equal cash flow and voting rights. Centra Software, Inc. illustrates this route with the founder retaining slightly more than 8% of the firm's cash flow and voting rights. Entrepreneurs can also choose to maintain a substantially larger stake in a single class of equity, thereby providing nearly complete firm control to the family and eliminating the threat of interference by outside investors. Interactive Intelligence. Inc. exemplifies this structure with the founding group holding nearly 63% of the firm's shares. In this structure, outside investors hold equity but possess little or no voice in firm decisions as the founding entrepreneurs maintain formal firm control. Finally, the founding group can choose to hold a minority cash-flow stake (less than 50%) but retain formal control of the firm through a special class of stock with superior voting rights. Entercom Communications Corp. provides an example of this model where the Field family-group retains formal control with 71% of the firm's voting rights but only about 32% of the economic or cash flow rights.

Academic literature and the business media provide relatively clear evidence of large discounts on equity valuations arising from dual class structures (Masulius et al., 2009). The question thus arises as to why entrepreneurs and family owners pursue this equity ownership structure. Extracting private benefits of control at the expense of minority shareholders provides one explanation (Gompers et al. 2010). Yet, family owners can achieve exploitation goals without suffering dual class discounts by holding 50.1% of the equity or even substantially smaller stakes. For instance, the Grass family of Rite Aid held only about 5% of the equity and but essentially ‘ruled’ the firm before the second generation CEO was ousted in 1999 and subsequently convicted of fraud (Luciew, 2015).

APPENDIX G.

INDUSTRY BREAKDOWN OF SINGLE AND DUAL CLASS FIRMS

			Family Firms		Nonfamily	
	Industry	Full	Single	Dual	Single	Dual
1	Agriculture	0.38	0.13	0.72	0.42	1.14
2	Food Prod.	2.07	2.31	3.72	1.67	7.60
3	Candy & Soda	0.30	0.49	0.82	0.11	3.42
4	Beer & Liquor	0.42	0.21	3.09	0.16	0.00
5	Tobacco Prod.	0.21	0.24	0.00	0.23	0.00
6	Recreation	0.57	0.74	0.53	0.51	0.00
7	Entertainment	1.61	2.16	4.15	1.06	1.14
8	Print & Publish	0.98	0.55	5.80	0.52	1.14
9	Consumer Goods	1.86	1.66	2.51	1.81	4.94
10	Apparel	1.55	2.21	5.02	0.86	0.00
11	Healthcare	1.79	1.37	0.77	2.11	0.00
12	Medical Eq.	2.87	2.69	0.72	3.27	0.00
13	Pharma. Prod.	7.64	6.19	2.46	8.97	1.90
14	Chemicals	2.75	2.29	0.10	3.29	1.14
15	Rubber & Plastic	0.61	0.77	0.39	0.59	0.00
16	Textiles	0.47	0.76	2.17	0.14	0.00
17	Construction Mat.	2.36	2.37	1.93	2.36	5.32
18	Construction	1.84	2.65	1.45	1.59	0.00
19	Steel Works Etc	1.73	1.36	0.24	2.09	0.76
20	Fabricated Prod.	0.23	0.32	0.00	0.22	0.00
21	Machinery	5.04	3.48	1.69	6.14	1.52
22	Electrical Eq.	2.03	1.83	1.45	2.18	2.66
23	Autos and Trucks	1.96	1.67	1.69	2.10	1.90
24	Aircraft	0.77	0.47	1.21	0.78	4.18
25	Shipbuild, RR Eq.	0.24	0.22	0.00	0.28	0.00
26	Defense	0.42	0.32	0.00	0.52	0.00
27	Precious Metals	0.12	0.00	0.00	0.19	0.00
28	Mining	0.38	0.21	0.00	0.49	0.76
29	Coal	0.34	0.00	0.00	0.52	0.00
30	Petro. & Nat. Gas	4.30	3.74	0.48	4.92	9.89
31	Utilities	0.32	0.08	0.00	0.47	0.00
32	Communication	3.18	1.61	20.29	1.49	9.13
33	Personal Services	1.56	1.69	2.85	1.37	0.0
34	Business Services	13.16	18.47	4.93	12.01	20.53
35	Computers	3.79	3.92	0.63	4.21	0.00
36	Electronic Eq.	7.56	6.51	5.07	8.36	4.18
37	Measure/Cont. Eq.	2.72	2.01	1.21	3.24	0.00
38	Business Supplies	1.55	0.90	2.03	1.76	0.00

APPENDIX G. (CONTINUED)

	Industry	Full	Family Firms Single	Family Firms Dual	Nonfamily Single	Nonfamily Dual
39	Shipping Containers	0.59	0.57	0.82	0.59	0.00
40	Transportation	3.21	3.93	3.29	2.86	6.46
41	Wholesale	3.69	4.16	3.86	3.49	3.04
42	Retail	7.38	9.34	8.84	6.44	6.08
43	Rest, Hotels, Motels	1.72	1.96	0.92	1.76	0.00
44	Banking	0.02	0.00	0.00	0.03	0.00
45	Insurance	0.30	0.33	0.53	0.26	0.00
46	Real Estate	0.27	0.43	0.00	0.25	0.00
47	Trading	1.09	0.68	1.59	1.19	1.14
48	Almost Nothing	0.06	0.00	0.00	0.09	0.00
	Total Observations	*24,724*	*6,329*	*2,070*	*16,062*	*263*

APPENDIX H.

CHAPTER 2 VARIABLE DEFINITIONS

Dual Class: Binary variable equals to one if the Company has multiple common stock classes, equals to zero otherwise.
Single Class: Binary variable equals to one if the Company has one common stock and zero otherwise.
Family Firm: Binary variable that equals to one when the family holds a 5% or larger voting rights and zero otherwise.
Dual Class Family Firm: Binary variable equals to one when the family holds a 5% or larger voting stake and the firm maintains two outstanding classes of common stock.
Dual Class Nonfamily Firm: Binary variable equals to one when the founding family holds no equity stake (or less than 5% voting) and the firm maintains two outstanding classes of common stock, and zero otherwise.
Single Class Family Firm: Binary variable equals to one when the family holds a 5% or larger voting stake and the firm has one outstanding class of common stock.
Single Class Nonfamily Firm: Binary variable equals to one when the founding family holds no equity stake (or less than 5% voting) and the firm has one outstanding class of common stock, and zero otherwise.
Family Ownership: Total ownership of common stock held by founding family members.
Family Vote: Total voting rights of the common stock held by founding family members.
Vote to Ownership: Total family voting rights divided by total family ownership rights.
Dual Class Excess Family Vote: Total family voting rights minus total family ownership rights.
Formal Authority: Binary variable that equals to one if family owners' voting rights exceed 40% and zero otherwise.
Informal Authority: Binary variable that equals to one if family owners' voting rights is less than 40% and zero otherwise.
Tobin's Q: Market value of assets over book value of assets: (item# 6 − item# 60 + item# 25 × item# 199) / item# 6. Source: Compustat.
Industry Excess Return: Annual return (CRSP) minus the annual returns based on Fama–French (1997) 48-industry classification (Ken French's website).
Market Excess Return: Buy-and-hold stock returns minus buy-and-hold CRSP value-weighted market returns. Source: CRSP.
Product Market Fluidity: Local Product Market Fluidity. Source: Hoberg, Phillips, Prabhala (2014).
Industry Level Net Financing: New equity issues (Item 108- Item 115) + net new debt issues (Item 111-Item 114).
Industry Cash Flow: Operating income before depreciation based on Fama–French (1997) 48-industry classification.

APPENDIX H. (CONTINUED)

Industry Sales Growth: Rolling five year growth of industry total sales based on Fama–French (1997) 48-industry classification.
Industry Asset Growth: Rolling five year growth of industry total assets based on Fama–French (1997) 48-industry classification.
*Gross Investment: G*ross property, plant, and equipment (item# 7) divided by beginning-of-year total assets (item# 6). Source: Compustat.
Net Investment: Net property, plant, and equipment (item# 8) divided by beginning-of-year total assets (item# 6). Source: Compustat.
Investment Horizon: Natural log of Net property, plant and equipment (item# 8) divided by beginning of year depreciation (item# 14). Source: Compustat.
R&D/Sales: Research and development (item# 46, set to 0 if missing) divided by sales/turnover net (item# 12). Source: Compustat.
Industry R&D to Sales: Research and development (item 46, set to 0 if missing) divided by sales/turnover net(item #12) averaged based on Fama–French 48-industry excluding family firms. Source: Compustat.
SG&A to Sales: Selling, general and administrative (item #132, set to 0 if missing) divided by sales/turnover net (item # 12). Source: Compustat.
Industry SG&A to Sales: Selling, general and administrative (item #132, set to 0 if missing) divided by sales/turnover net (item # 12) averaged based on Fama–French 48-industry excluding family firms. Source: Compustat.
Adv to Sales: Advertisement (item#45, set to 0 if missing) divided by sales/turnover net (item # 12). Source: Compustat.
Industry Adv to Sales: Advertisement (item#45, set to 0 if missing) divided by sales/turnover net (item # 12). averaged based on Fama–French 48-industry excluding family firms. Source: Compustat.
Missing R&D: Binary variable equals to one if research and development (item# 46) is missing in Compustat, equals to zero if it is reported in Compustat.
Patents: Number of patents granted to the firm during the year. Source: USPTO.
Market Share: Herfindahl-Hirschman Index (HHI) = sum of squared market shares of firms in a 3 digit SIC industry. Sale (item# 12) in Compustat.
Institutional Ownership: Total Stock Ownership Percentage held by institutions. Source: Thomson Reuters Institutional Ownership.
Institutional Ownership Floated: Total Stock Ownership held by institutions divided by total shares outstanding excluding family shares. Source: Thomson Reuters Institutional Ownership.
Firm Risk: Standard deviation of monthly stock returns during past three years. Source: CRSP.
Firm Age: Number of years since firm's foundation.

APPENDIX H. (CONTINUED)

Firm Risk: Standard deviation of monthly stock returns during past three years. Source: CRSP.
Total Assets: Book value of total assets (item#6). Source: Compustat.
Firm Age: Number of years since firm's foundation.
Return on Assets: Operating Income Before Depreciation (item# 13)/total assets (item# 6). Source: Compustat.
Price-Cost Margin: Operating profit (sale-cogs-xsga) divided by sales of each firm minus the value-weighted (based on sales) industry average (based on Fama–French 48 industry). If cogs or xsga are missing, then operating profit is defined as operating income after depreciation (oiadp). Source: Compustat. Following Kubick et al. 2014 and Peress 2010.
Product Power: Value-weighted (based on sales) industry average (Fama–French 48 industry) of operating profit (sale-cogs-xsga) divided by sales ratio. If cogs or xsga are missing, then operating profit is defined as operating income after depreciation (oiadp).
IPO Proceeds: Cash proceeds raised during initial public equity offerings in $ millions.
SEO Proceeds: Cash proceeds raised during seasoned equity offerings (SEO) in $ millions.
SEO Discount: Stock price one trading day prior to the SEO issuance date (Source: CRSP) divided by SEO Offer price (Source: Thomson Reuters SDC).
Total Revenue: Total revenue (revt). Source: Compustat.