

Does Founding Family Ownership Affect Firm Performance?

Evidence from the Evolution of Family Firms

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Abstract

We use a unique hand-collected sample of 524 firms to follow the evolution of founding family ownership and firm performance from the IPO for up to 18 years. Family ownership decreases firm value but increases accounting returns. Family ownership also decreases the probability of seasoned equity offerings and increases the time from IPO to the first seasoned equity offering. In contrast, family ownership increases the firm's reliance on financial leverage. The investment of firms with higher family ownership is significantly more sensitive to internal cash flow. Altogether, these results support the premise that family manager-owners use their influence to preserve family control, even though their unwillingness to dilute ownership leads to a constrained investment opportunity set and a lower firm value.

JEL classification: G30; G32; L20

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1. Introduction

Does founding family ownership affect firm performance? The influence of founding family ownership, control, and management on firm performance is an important but unresolved research question. The ability of researchers to resolve this question is confounded by sample selection bias related to the family's decision to exit or retain control of the firm, performance bias related to meeting requirements for inclusion in commonly used indexes, and survivorship bias related to potentially different failure rates among family and nonfamily firms. To mitigate these concerns, we use a unique sample of 524 IPO firms and firm fixed effects regressions to study the evolution of family ownership in these firms from the initial public offering (IPO) for up to 18 years or until the firm is delisted from the stock exchange. This approach allows us to examine how changes in family ownership influence firm value and performance. Our results suggest that firm value increases as family ownership declines. The value discount associated with family ownership derives from controlling families' reluctance to tap the equity markets through seasoned equity offerings, which leads to a constrained investment opportunity set.

A manager-shareholder agency perspective suggests that concentrated family ownership and family involvement can mitigate the incentive conflicts between managers and diffuse shareholders that arise from the separation of ownership and control (Berle and Means, 1932; Jensen and Meckling, 1976). Concentrated ownership provides families with intense incentives to monitor the actions of both family and nonfamily managers, and active family involvement in the management of the firm eliminates the separation of ownership and control. Moreover, family trust and intergenerational loyalty can extend the investment horizons of the family firm compared to the investment horizons of widely-held corporations managed by professional managers with limited career horizons (James, 1999; Bertrand and Schoar, 2006). These arguments imply that family ownership and control lead to superior firm performance. On the other hand, combining ownership and control can allow family manager-owners to extract private benefits that

create family-nonfamily agency conflicts and reduce value for nonfamily shareholders (Fama and Jensen, 1983). For instance, family owners may structure the business to maximize personal amenity potential (Demsetz and Lehn, 1985) or family loyalty may lead to costly nepotism (Bertrand and Schoar, 2006). Given the large proportion of family firms in the U.S. and around the world, the potential economic impact of these contrasting agency conflicts is sizable.¹

The empirical evidence on the effect of family ownership, control, and management on firm performance is inconclusive. Studies of large family firms in the S&P 500 (Anderson and Reeb, 2003) or the Fortune 500 (Villalonga and Amit, 2006) indicate that the net effect of founding family presence on firm performance is positive, but that the positive relation largely results from the presence of the founder as the CEO. Additional evidence suggests that the founder-CEO effect is robust (see, e.g., Fahlenbrach, 2009). Value appears to be destroyed in the second generation of family control and there is no effect in later generations (Villalonga and Amit, 2006). Consistent with these findings and suggestive of inefficient nepotism in family firms, Pérez-González (2006) documents underperformance in family firms after a family heir succeeds the founder as CEO. Further illustrating the potential negative influence of family control, researchers also document that firm value is lower when the founding family has enhanced control (Villalonga and Amit, 2006, 2009; Gompers, Ishii, and Metrick, 2010) or the board is less independent (Anderson and Reeb, 2004).

Although a net positive influence of family presence on firm performance among the largest firms may exert a large effect on aggregate value creation, recent research by Anderson, Duru, and Reeb (2009) suggests a value discount for most family firms. Specifically, they find that both founder and heir ownership is negatively related to firm value in all but the largest or most transparent firms. The negative

¹ Founding family ownership is present in about one-third of the S&P 500 firms from 1992-1999 (Anderson and Reeb, 2003) and 37% of the Fortune 500 firms from 1994-2000 (Villalonga and Amit, 2006). Anderson, Duru, and Reeb (2009) examine the largest 2,000 U.S. firms over 2001-2003 and find that 48% are family firms. Villalonga and Amit (2010) find family presence in 55% of a random sample of 2,110 U.S. firms in 2000. Studies based on non-U.S. data suggest that families control about 44% of the public companies in Western Europe (Faccio and Lang, 2002), and over two-thirds of the firms in nine East Asian countries (Claessens, Djankov, and Lang, 2000).

relation between firm value and family control intensifies as the firm becomes more opaque and difficult to monitor, which supports the premise that controlling families receive private benefits at the expense of nonfamily shareholders. They also present additional evidence that suggests that opacity is more important in explaining the influence of founder and heir ownership than either enhanced control or board independence. Moreover, a growing body of research reveals a variety of channels through which founding families appear to receive private benefits of control, including amenity potential (Demsetz and Lehn, 1985; Gompers, Ishii, and Metrick, 2010), tunneling (Bertrand, Mehta, and Mullainathan, 2002), and insider trading (Anderson, Reeb, and Zhao, 2012). In contrast to these studies, Villalonga and Amit (2010) use a randomly selected sample of 2,110 firms in the year 2000 to examine founding family control within and across industries and conclude that founding families retain control when their involvement gives the firm a competitive advantage, which benefits all shareholders.

A significant challenge faced by researchers who examine family influence in publicly held firms is that samples represent a cross-section of firms during relatively short periods of time. In addition, these samples are frequently drawn from indexes that are contingent on firms reaching a certain level of performance or firm size. As a result, researchers face a number of selection issues that complicate the interpretation of the empirical results. Empirical research suggests that concern about these sample selection issues is valid. For instance, Kaplan, Sensoy, and Strömberg (2009) examine 106 U.S. nonfinancial IPOs in 2004 and find that the founder is employed by the firm or a director of the firm at the time of the initial offering in 84% of the firms. Thus, a large majority of publicly traded firms initially have active founding family presence. In comparison, studies estimate that family presence in U.S. firms, which may represent 5% block ownership but not necessarily involvement as an employee or director, ranges from about one-third to one-half of the publicly traded firms in the United States.

There are several potential sources of sample selection bias present in the cross-sectional data. First, families may choose to exit firms because they have created significant wealth and wish to cash out, because they are performing poorly and recognize that they cannot efficiently operate the firm, or because

they possess inside information about the future prospects of the firm and believe the firm's equity to be overvalued in the marketplace. If the rationale for exit is random or unrelated to performance, then inferences regarding value should be unaffected. However, if one rationale dominates, value estimates will either be upwardly or downwardly biased. Second, the extraction of private benefits may prevent family firms from achieving the growth or financial performance necessary for inclusion in various indexes. In this case, estimates of family influence on firm value would be overstated relative to the population of publicly traded family firms. Third, family firms may fail at a greater rate than nonfamily firms. If this is the case, estimates of the influence of family ownership and control on firm performance based on cross-sectional samples would be upwardly biased.

To alleviate these survivorship and self-selection concerns, we follow the evolution of family ownership from the IPO to the end of 2011 or until the firm is delisted. We do not require the firms to be included in any index in their post-IPO years. The time series changes in family ownership allow us to estimate firm fixed effects regressions on the sample of family firm-years, which explicitly control for unobserved firm characteristics that could simultaneously explain family ownership retention and firm performance and policy. We follow Anderson and Reeb (2003) and Villalonga and Amit (2006) to broadly classify firms as family firms if the founder or any of the founder's relatives or descendants is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. We obtain a list of IPOs from 1993, 1997, and 2000, and require that a firm be publicly traded for at least three years to ensure sufficient time variation for firm fixed effects estimations, which results in a sample of 524 IPO firms: 284 firms go public in 1993, 206 firms go public in 1997, and 34 firms go public in 2000. The percentage of family firms declines from 85% at the IPO to 54% at the end of 2011, which underscores the potential survivorship and selection bias in cross-sectional samples.

Our approach is similar in spirit to analysis of the evolution of corporate boards by Boone, Field, Karpoff, and Raheja (2007), who face similar selection and endogeneity issues related to the characteristics of boards of directors. Although our data are not entirely free of selection issues since we observe the

evolution of family ownership and control from the IPO and not the inception of the firm, our sample substantially mitigates the selection problems associated with the analysis of family ownership and control in *publicly held* firms. In addition, our 18-year time period is significantly longer than time periods from most other studies that examine family presence and firm performance. For instance, the sample in Anderson and Reeb (2003) spans eight years, the period studied by Villalonga and Amit (2006) covers seven years, and the sample used in Anderson, Duru, and Reeb (2009) comprises six years. On the other hand, the firms in our sample are younger and smaller than the firms studied by other researchers, and the results may not generalize to larger or more seasoned firms.

After controlling for unobserved firm and year heterogeneity, we find a negative relation between Tobin's Q and family ownership, but a positive relation between ROA and family ownership. The contrasting effects imply that in our sample, family ownership leads management to focus on short-term accounting profitability at the expense of long-term market value. We also examine whether our findings are sensitive to the definition of family firm. We follow eight more stringent definitions of family firms proposed by Villalonga and Amit (2006). All our results are robust across all these alternative categorizations. We next use the entire sample to examine the influence of certain family characteristics on firm performance while controlling for industry, year, and IPO cohort fixed effects. The findings confirm our firm fixed effects results, and present additional evidence on the negative impact of family excess voting rights on firm performance and reduced firm value associated with descendant family CEOs. Our results complement the value-decreasing effects of excess control and descendant management documented by Villalonga and Amit (2006). However, we do not find any positive effect of family ownership or founder CEO on firm value.

We explore firms' financing decisions as a potential channel through which family managers affect firm performance. If the family places a high value on its private benefits of control and is unwilling to dilute its ownership, management will be reluctant to issue additional equity, which suggests potentially a constrained investment opportunity set and eventually lower firm value. The reluctance to tap

the equity markets will also force the firm to rely more heavily on debt financing. Indeed, we find a negative effect of family ownership on the propensity to issue equity and a positive effect of family ownership on the duration between the firm's IPO and its first seasoned offering. In contrast, we document a positive effect of family ownership on financial leverage. As family ownership declines, so does the level of financial leverage. Our results are consistent with Jain and Shao (2015), who examine the relation between family presence and firms' financing policy.

Since a greater family control of stock ownership and top management leads to a stronger reliance on debt financing and a less likelihood of accessing the equity markets, we expect that the firm's investment decisions will be highly dependent on its internal cash flow. We examine the interaction effects between cash flow and family ownership on the firm's total investment in R&D and capital expenditures. We find a reduced investment-cash flow sensitivity when family ownership decreases over time, and this positive relation persists across different definitions of family firms. These results reveal the direct impact of the family firm's suboptimal financing choices and suggest that the firm value discount is likely caused by the related suboptimal investment behavior.

Altogether, our results based on the evolution of family ownership best support the premise that family ownership negatively influences firm value. Using a sample that is largely free of sample selection problems and that allows us to track the evolution of family ownership, we find that firm value actually increases as family ownership declines. Thus, we complement the results in Anderson, Duru, and Reeb (2009), which suggest that family ownership and control result in a value discount for most firms. On the other hand, higher family ownership leads to higher accounting returns, which suggests a focus on short-term projects that increase earnings since the family firm's investment is highly dependent on internal cash. Consistent with the existence of private founding family benefits, the reluctance to raise additional capital in the equity markets likely leads to a suboptimal firm growth at the expense of total shareholder value.

2. Sample and Data

2.1. Sample of IPOs

To construct a data sample that avoids the selection challenges associated with relying on firms in indexes and that allows us to follow the evolution of family ownership while keeping the costs of hand collecting data manageable, we obtain a sample of all IPOs in 1993, 1997, and 2001 from Thomson SDC Platinum's Global New Issues database. We choose these three cohort years for several reasons. First, the three years largely avoid special macro-economic conditions, such as the market crash in the late 1980s, the recession in the early 1990s, and the dot-com boom in the late 1990s.² Second, the average industry distribution of the three years' IPOs does not show special clustering and the distribution is comparable to the average industry distribution of all IPOs between 1980 and 2010. The average first-day return of the three years' IPOs is 11.5%, which compares to the average 13% first-day return of all IPOs between 1980 and 2010.³ Third, these years allow access to electronic filings via the SEC's EDGAR search engine, which facilitates the collection of ownership and management data.

From this sample, we exclude spinoffs, carve-outs, foreign issuers, partnerships, trusts, unit offerings, savings and loans, financial and utility firms (primary SIC Codes 6000-6999 and 4900-4999), and IPOs with an offer price less than five dollars or proceeds less than five millions. We also exclude firms that were public earlier in their history and rollup IPOs.⁴ Sample firms must have Compustat data after the public offering and must be listed on CRSP within three months of the offering. The initial sample has 604 IPOs. We remove an additional 80 IPOs that exist in the public market for less than three years to ensure sufficient time variation to correctly estimate firm fixed effects.⁵ The final sample consists of 284

² The 2001 IPO cohort is small, likely as a result of the impact of the do-com "bubble" burst in 2000.

³ The data are from Jay Ritter's IPO data website: <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.

⁴ Ritter (2015) states that "Rollup IPOs are defined as IPOs in which the company has made significant acquisitions in the recent past and stating an intention of using acquisitions as a major source of growth in the future. Frequently the prospectus states that the company was recently created from the merger of several companies in the same industry and/or that part of the company's strategy is to consolidate a fragmented industry." The list of rollup IPOs is from Jay Ritter's IPO data website: <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.

⁵ Prior research suggests that such firms are likely to have gone public for the purpose of being acquired (Zingales, 1995; Brau and Fawcett, 2006) and therefore are unlikely to represent an intent to operate as publicly owned family

firms that go public in 1993, 206 firms that go public in 1997, and 34 firms that go public in 2001. We follow these firms from their respective IPO years to the end of 2011 or until the firm is delisted and no longer reported in CRSP. In total, the sample comprises 524 IPO firms and 5,618 firm-year observations.

2.2. Identification of family firms and family data collection

As a baseline definition, we define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. This broad definition follows previous studies (e.g., Anderson and Reeb, 2003; Villalonga and Amit, 2006) and identifies the largest possible number of firms with founder and family presence. We hand collect data on the identity of founders and their families from IPO prospectuses. A prospectus normally contains a History Section, a Business Section, and a Management Section, from which we obtain information on the founder(s) and family relationship(s) between the managers and directors of the firm. If founder information is unavailable in the prospectus (e.g., possibly all family members are in the second or later generation), we search online for the history of the firm to add family information or to confirm the nonfamily status of the firm when it goes public.

In the identification stage, we follow Villalonga and Amit (2006) to identify founders as individuals who play an important role in transforming and developing the businesses, even though they did not directly start the businesses. These indirect founders usually take control of the predecessor businesses at an early stage and oversee the growth of the businesses.⁶ For instance, Central Garden & Pet was incorporated in California in 1955 as Central Garden Supply. William E. Brown purchased the company in 1980, became its Chairman and CEO, and led the fast growth of the company in the late 1980s. He is generally perceived as the founder and is also mentioned as the founder of Central Garden & Pet in *The Wall Street Journal*.⁷ When there are co-founding families, we use information of the majority family that has the highest

controlled firms. We estimate all our regressions on a sample that includes these firms and find similar results, albeit with marginally weaker significance in some tests.

⁶ In total, these firms comprise approximately 5% of the family IPOs.

⁷ <http://online.wsj.com/article/SB10001424127887324669104578205862297923222.html>.

aggregate family ownership or controls the most director and management positions in the case of equal ownership. For example, Urban Outfitters was founded in 1970 by Richard Hayne and Scott Belair. When the firm went public, Richard Hayne's ownership was 51% and Scott Belair's ownership was 8%. Throughout the post-IPO years, the Hayne family always has higher ownership. Therefore, we consider the Hayne family as the controlling family.

Among the 524 IPOs, we classify 443 firms (85%) as family firms at the time of IPO based on the broad baseline definition of a family firm and the other 81 firms (15%) as nonfamily firms. In the group of nonfamily IPOs, most firms experienced founder or family exit at some point early in the firm's history. For instance, Gymboree was founded in 1976 by Joan Barnes when she started her first commercial children's workout center. Joan Barnes exited the firm in the late 1980s and the firm became a nonfamily firm. The rest of the nonfamily IPOs are firms not founded by individuals. For instance, Illinois Superconductor was founded by the ARCH Development Corporation, a not-for-profit corporation whose sole member is The University of Chicago.

For each family IPO, we collect data on family characteristics at the IPO from the prospectus and from the proxy statement or annual report in each post-IPO year. We continue to collect these data until the family exits the firm or the family firm is delisted from the public market and exits the sample. In the data collection stage, we also use various sources such as corporate websites and news reports obtained from online searches to confirm family relationships. For each family member disclosed in the SEC filings, we record the individual's ownership, employment (director, executive, or other types of employee), relationship with the founder(s), and family generation. We aggregate all family members' information to obtain total family ownership, management positions, and board directorships. If the family sets up estate planning vehicles, such as family trusts and estates, we also record these entities' ownership information. Sometimes the same family trust's holdings are reported more than once under multiple family members' holdings. We remove these duplicated holdings in calculating total family ownership to ensure the accuracy of total family ownership.

2.3. Variables

We collect family data and the data on stock structure and blockholders from corporate SEC filings and various online sources such as corporate websites and news reports. Besides family ownership, nonfamily blockholders can also affect corporate policies and events. Shleifer and Vishny (1986) suggest that large shareholders can play an active role in monitoring the management and facilitating takeovers. We measure the influence of nonfamily blockholders by their aggregate voting rights. We obtain accounting and financial data from Compustat, stock return and delisting data from CRSP, seasoned equity offering data from SDC Platinum, and data on firms' founding dates from Jay Ritter's IPO data website. To reduce the influence of extreme values, we winsorize all continuous variables at the 1% and 99% percentiles.

We measure firm performance by Tobin's Q and return on assets (ROA). We calculate Tobin's Q as the ratio of market value of assets to book value of assets. The market value is the sum of book value of assets and market value of common stock minus the sum of book value of common stock and deferred taxes. We calculate ROA as the ratio of Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) to total assets. We measure firms' capital structure by financial leverage, which is computed as the ratio of long-term debt plus debt in current liabilities to total assets. We define investment as the sum of R&D expenses and capital expenditures (CAPEX) divided by property, plants, and equipment (PP&E) at the beginning of the year. We define cash flow as income before extraordinary items plus depreciation divided by PP&E at the beginning of the year. We measure firm risk by stock return volatility. Annual stock return volatility is the standard deviation of daily CRSP stock returns in a given calendar year multiplied by the square root of 252. The proxy for firm size is total book assets and the proxy for firm age is the number of years since the firm's founding. To reduce skewness of the distributions, we use the natural logarithm of one plus firm size and one plus firm age, respectively.

2.4. Evolution of sample firms

Exhibit 1 presents the time-series changes of our initial sample of 604 IPOs. In each graph, the horizontal axis denotes time, which starts from the IPO year and ends in the year 2011. The left vertical axis denotes the number of firms and the right vertical axis denotes the percentage of family firms or surviving firms. For each year, the upper bar represents the number of nonfamily firms and the lower bar represents the number of family firms. The dotted line represents the percentage of surviving firms and the solid line represents the percentage of family firms. Over time, the sample size decreases as firms leave the sample and the percentage of family firms in the sample also decreases.

[Insert Exhibit 1 about here.]

For the 1993 IPO cohort (Exhibit 1.A), the number of firms decreases from 310 at the IPO to 123 in 2003, 10 years after the IPO, and further decreases to 63 in 2011, 18 years after the IPO. The survival rate is 40% in 2003 and 20% in 2011. The percentage of family firms decreases from 83% to 67% in 2003 and then to 51% in 2011. The time-series changes of the 1997 cohort (Exhibit 1.B) show similar pattern to the 1993 cohort, though over a shorter time span. The number of firms decreases from 254 at the IPO to 77 in 2007, 10 years after the IPO, and further decreases to 55 in 2011, 14 years after the IPO. The survival rate is 30% in 2007 and 22% in 2011. The percentage of family firms decreases from 87% to 70% in 2007 and then to 64% in 2011. The 2001 cohort (Exhibit 1.C) differs somewhat from the 1993 and 1997 cohorts, but exhibits a similar trend over time. Out of the 40 IPOs in 2001, 48% (19 firms) survive until 2011, 10 years after the IPO, but the percentage of family firms decreases from 75% at the IPO to only 37% in 2011. It is likely that these more recent IPOs after the fast high-tech development differ from the firms that go public earlier. The 2001 cohort might conform less to our understanding of traditional family firms and have weaker family control intention than the other two cohorts. Thus, we verify that all our results hold if we exclude the 2001 cohort from the sample.

3. Descriptive statistics

3.1. Summary statistics for firm characteristics and stock ownership

Table 1 provides the summary statistics for firm characteristics and family ownership in our final sample of 524 firms. Panel A presents the data on firm characteristics. In our sample, 73% of the firm-years have founding family presence. The average (median) firm has total assets of 424 (110) million dollars and is 20 (16) years old. The average (median) investment in R&D and fixed assets normalized by beginning-of-year capital is 2.15 (0.63). The average (median) firm has a financial leverage of 21% (12%). The maximum leverage exceeds 100% because some firms are in distress and their book equity reduces to negative values. Approximately 2% of the sample firm-years have leverage greater than 100%, indicating negative book equity. All our results hold if we exclude these firm-years. Only 5% of the sample firm-years have dual class stock structure.

[Insert Table 1 about here.]

The average (median) firm has a Tobin's Q of 2.3 (1.6) and ROA of 1.8% (10.4%). Consistent with the documented underperformance of IPO firms (e.g., Jain and Kini, 1994), we find in untabulated results that 26% of the firm-years are unprofitable with a negative ROA. Reflecting this frequent unprofitability, the cash flow measure (income before extraordinary items plus depreciation divided by PP&E at the beginning of the year) on average is negative. The average (median) sales growth is 26.0% (14.5%), the largest growth is 371.4%, and the largest decrease is 60.5%. The average annual stock return volatility is 0.72 with a median of 0.6. Seasoned equity offerings are infrequent among the sample firms: only 7% of the firm-years have issued seasoned equity. The one year market-adjusted buy-and-hold stock return is 8.3% before the offering and 6.4% after the offering.

Panel B of Table 1 provides summary statistics for family and blockholder ownership. The average family cash flow rights (voting rights) are 16.4% (17.5%) of the shares (votes) outstanding. The maximum family cash flow rights (voting rights) are 77.7% (88.1%). Founders control most of the family shares: 12.9% (13.8%) of the family cash flow rights (voting rights) is held by the founder. Nonfamily blockholders

such as mutual funds and financial institutions also control a significant proportion of shares outstanding. They hold an average of 23.4% (23.2%) of the shares (votes) outstanding. In untabulated results, we find that 78% of the firm-years have passive blockholders who do not control board seats or management positions. Only 30% of the firm-years have active blockholders who are involved in the top management.

3.2. Summary statistics for founding family characteristics over time

Table 2 presents the summary statistics of the evolution of family firms over time (Panel A) and the correlation matrix between key variables (Panel B). At the IPO, there are 443 family firms, which is 85% of the sample IPOs. Six years later, the number of family firms declines to 218 firms and only 67% of the sample. Twelve years after the IPO, we have 108 family firms in our sample comprising 63% of the available firms. Eighteen years after the IPO, only 32 of the original 236 family firms in the 1993 cohort survive, having declined from 83% of the cohort at the IPO to 51% of the cohort 18 years later. As of 2011, there are 74 family firms from all three cohorts in the sample, representing 54% of the surviving firms. Thus, a basic perusal of the data reveals the importance of examining the evolution of family ownership and the effect of cohorts.

[Insert Table 2 about here.]

Among family firms, the cash flow rights of the founding family decline over time from a mean (median) of about 29.2% (21.3%) at the IPO to 11.6% (6.1%) 18 years later. As of 2011, all the cohorts average about 13.2% with a median of 7.0%. Although relatively few family firms in our sample have excess control rights, the wedge between voting rights and cash flow rights grows slightly over time. Founders' cash flow rights and voting rights decrease steadily over time, in a pattern similar to total family ownership. The combined number of family executives and directors is relatively stable, but the involvement of the founding family in the firm's management declines over time as the firm evolves. For instance, about one family member is an executive, on average, at the IPO compared to 0.84 family member 18 years after the IPO. Not surprisingly, the number of firms led by founder CEOs declines significantly as the firms evolve. Fifty-six percent have founder CEOs at the IPO, but only 38% have founder CEOs 18

years later. As of 2011, about 41% of all the firms combined have founder CEOs. As the firm evolves, a family descendant is more likely to be involved in the business.

In Panel B, the correlation matrix shows the basic relations between family characteristics and measures of firm performance and policy. First, Tobin's Q is negatively related to both family cash flow rights and voting rights. The excess voting rights also shows a strong negative relation to Tobin's Q. In addition, when the CEO is a family descendant in the second or later generation, Tobin's Q appears to be negatively affected (correlation of -12%). Second, ROA is highly correlated with family ownership (21% with family cash flow rights and 20% with family voting rights). We further explore the influence of family ownership on firm value and accounting profitability in Section 4. Third, the correlation matrix also suggests that family ownership has a negative relation to the likelihood of the firm issuing seasoned equity, a positive relation to the use of financial leverage, and a negative relation to the investment activity. We explore these firm policies as possible channels through which the founding family affects firm performance in Section 5.

4. The influence of family ownership, control, and management on firm performance

As the first step in our multivariate regression analysis, we investigate the influence of founding family ownership, control, and management on firm performance. We first use firm fixed effects regressions to examine the influence of the evolution of family ownership over time on changes in firm performance. We also apply alternative family firm definitions to validate the robustness of our results. Next, we exploit our entire panel data to examine how family ownership, excess control, and management influence firm performance in the cross-section. This analysis allows us to compare our results with the seminal studies by Anderson and Reeb (2003) and Villalonga and Amit (2006), which suggest that founding family presence and ownership increase firm value and improve firm performance.

4.1. Analysis of firm performance and family ownership in firm fixed effects regressions

Our time-series data allow us to employ firm fixed effects regressions to remove the unobserved heterogeneity across firms. To use firm fixed effects properly, the variables need to have enough within firm variation over time. Therefore, we specify our tests in the following way. First, the test sample only includes family firm-years to ensure variation in the measures of family characteristics. Second, we require that the sample firms have post-IPO observations for at least three years to correctly estimate regressions with firm fixed effects. Third, we only use family ownership as our main variable of interest. Family ownership has both time-series variation and cross-sectional variation, whereas the other family characteristics, such as CEO's family generation status, have little time-series variation.

Table 3 presents the results from regressions with firm fixed effects and year fixed effects of firm performance measures on founding family cash flow rights. We examine Tobin's Q and industry-median adjusted Tobin's Q in columns (1) and (2). We examine ROA and industry-median adjusted ROA in columns (3) and (4). Family ownership exhibits contrasting effects on the two sets of performance measures. Among family firms, firm value is negatively influenced by family ownership (significant at the 1% level), whereas accounting performance is positively influenced by family ownership (significant at the 5% level). The results suggest that as family ownership declines, the firm achieves higher firm value but lower accounting performance. A one percent decrease in family ownership will lead to a two percent increase in firm value and an 11 basis point decrease in ROA. In untabulated analysis, we use founding family total voting rights and obtain similar results. Since firm value improves as the family dilutes its ownership, our results are not subject to a reverse causality concern that the family foresees worsening firm value and chooses to sell its shares ahead of time. Nonetheless, in untabulated analysis, we use lagged family ownership in the tests and find similar results.

[Insert Table 3 about here.]

The contrasting effects of family ownership on the market-based measure and the accounting-based measure of firm performance indicate that family firms in our sample tend to pursue short-term accounting

results rather than long-term firm value. The findings provide support for the premise that family ownership and management *per se* does not create firm value, and instead, tends to negatively affect firm value. It is possible that a family affects firm policy in a way to ensure family control and protect the private benefits of control, even if the policy is not in the best interest of general shareholders. For instance, firms under strong family control could forego equity financing to preserve family control and hence are unable to pursue all value-adding investment opportunities. As a result, the firm tends to pick projects that potentially generate the most operating profits instead of all positive NPV projects that create firm value in the long run. We explore the firm's financing choices and investment decisions as possible channels through which the family exerts influence on firm performance in Section 5.

4.2. Robustness of performance analysis under alternative family firm definitions

Our conceptual understanding of family firms is that the founding family bears a strong commitment to the firm, maintains active involvement in the firm, fosters and protects family members' interests, and plans for the long term. Our baseline definition follows Anderson and Reeb (2003) and Villalonga and Amit (2006), which is a broad definition and classifies as many family firms as possible. In this subsection, we explore the sensitivity of our results to different definitions of family firms. We follow the eight alternative definitions used by Villalonga and Amit (2006), all of which put additional restrictions on the classification of family firms.

Table 4 presents the results from robustness tests based on the alternative definitions of family firms. We use the same fixed effects regressions described in the previous subsection. The sample size decreases as the definition becomes more stringent. The first column provides the definitions and the second column provides the numbers of family firm-year observations as well as the numbers of family firms that meets the specific definition. The first definition is our baseline definition and the results are the same as reported in Table 3. Definitions 2 to 9 are the alternatives and are more stringent than the baseline definition. For instance, Definition 9 has the most restrictions, including requirements on family ownership, management, and involvement of family descendants. One example of family firms in our sample that

meet this definition is Boyd Gaming Corporation. In fiscal year 2011, founder William S. Boyd serves as the Executive Chairman, his son William R. Boyd serves as the Vice President and Director, and his daughter Marianne Boyd Johnson serves as the Vice Chairman and Executive Vice President. Together, the Boyd family owns about 40% of the stock and is the largest shareholder (votesholder).

[Insert Table 4 about here.]

Table 4 shows that our analysis of firm performance and family ownership yields highly persistent results. Tobin's Q is negatively related to family cash flow rights in all the alternative definitions (significant at the 1% or 5% level) except Definition 8, under which the firm does not have family involvement in the management. ROA is positively related to family cash flow rights in all the alternative definitions except Definitions 8 and 9. Based on the results in column (3), the largest effect comes from the family firms where descendants are present in Definition 5: a one percent decrease in family ownership will lead to a 28 basis point reduction in ROA. The robust results of Table 4 suggest that regardless of the restrictions we put on the definition of family firms, family ownership leads management to focus on short-term accounting metrics instead of the firm's market value, which reveals the agency conflicts between family shareholders and nonfamily shareholders. In addition, the family influence is most obvious when family members are part of the management.

4.3. Firm performance and measures of family ownership, control, and management

To explore the influence of the family's excess voting power and management and to facilitate a comparison between our results and cross-sectional results for large firms in major indexes (Anderson and Reeb, 2003; Villalonga and Amit, 2006), we test the relations between Tobin's Q, ROA, and measures of family ownership, excess control, and management in cross-sectional panel regressions. We release the restriction of family firm-years and include every firm-year observation, while controlling for industry, year, and IPO cohort fixed effects. Since our time series data include all the post-IPO observations of the firm, our tests largely avoid the selection and survivorship concerns faced by public firms in cross-sectional samples that span a relatively short time period.

Table 5 presents the results on Tobin's Q and ROA, including the industry median adjusted measures. We use total family cash flow rights and family voting rights in excess of its cash flow rights in the odd-numbered columns and we examine family control of the CEO position in the even-numbered columns. In perusal of Tobin's Q in columns (1) through (4), we do not find any positive relation between the family's cash flow rights and firm value. However, we document a negative relation between the family's excess voting rights and firm value (significant at the 1% level). When the family maintains a voting stake that is one percent higher than its cash flow stake, total firm value shows a two percent decrease. In addition, family descendant CEOs have a negative and significant relation (at the 1% level) with firm value. The results suggest that when a family descendant takes on the CEO role, firm value is significantly reduced by 43 percent.

[Insert Table 5 about here.]

Our results on Tobin's Q coincide with Villalonga and Amit (2006), who find that excess voting rights have a negative and significant relation to Tobin's Q. They suggest that the family's excess control is costly to minority shareholders who are not from the founding family. When the family achieves greater voting rights than its cash flow rights, the excess control indicates extraction of private benefits of control by the family and is costly to nonfamily shareholders. However, in contrast to Villalonga and Amit (2006), we find no relation between family ownership and Tobin's Q in the panel regressions, and instead a negative impact of family ownership on firm value in family firms after controlling for firm fixed effects. Therefore, our findings suggest that in smaller and younger firms that are at their initial public stage, the change in family ownership and control likely represents the founding family's intention of exploiting firm value for family shareholders at the cost of outside nonfamily shareholders.

In terms of family management, our finding of family descendant CEOs' negative influence on firm value is consistent with Villalonga and Amit (2006), who find a negative impact of second-generation family CEOs on firm value. When family descendants take over the CEO position, firm value is reduced compared to their nonfamily counterparts, possibly because the inherited power excludes outside talent and

causes the management to be inept. However, we do not find any positive influence of founder CEOs, which is in contrast to Villalonga and Amit (2006) and Anderson and Reeb (2003). Therefore, the documented founder premium seems to reside in the sample of larger and more successful firms, possibly because only the talented and motivated founders are able to lead the firms to go through the initial public stage and grow into established firms.

When examining ROA in columns (5) through (8), we document a positive relation between accounting returns and the family's total cash flow rights (significant at the 1% level), which provides additional support for the results of Table 3 and Table 4. We also identify a negative influence of the family's excess voting rights on ROA (significant at the 5% level). A one percent increase in excess voting rights will cause ROA to decrease by 13 basis points, which is roughly the same magnitude as the positive change in ROA from the increase in the family's cash flow rights. In addition, columns (6) and (8) show that ROA is not affected by whether the founder, a family descendant, or a professional manager hired from outside the family assumes the CEO role. In contrast, Anderson and Reeb (2003) show that ROA is higher in family firms led by founder CEOs and descendant CEOs. Therefore, in newly public firms, family management does not appear to be superior to nonfamily management in affecting the firm's accounting performance.

In general, the tests in Section 4.3 do not replicate the higher firm value associated with family ownership and founder management documented in the Fortune 500 firms or S&P 500 firms. In addition, we find a negative effect of descendant CEOs on firm value and a negative effect of the family's excess voting rights on both the market-based and accounting-based performance measures. We also document a greater focus on accounting earnings as family ownership increases. These results suggest that the influence of family ownership and management in larger and more successful firms is likely caused by survivorship and self-selection issues that take place at the initial stage of the firm's evolution process. For instance, as firms evolve, the nonperforming families exit the firms or cause the firms to fail, and in the long run, leaving

the more capable families in the surviving firm sample and hence creating the positive association between firm performance and family control.

5. Analysis of firms' financing decisions and investment policy

We next examine whether family manager-owners affect the firm's financing choices in a certain way that limits the growth and development of the firm. We explore the possibility that the family's intention of keeping the control of the firm within the family will shape how the firm funds its investments and future growth. If the founding family values control and is unwilling to dilute its ownership of the firm, we expect the firm to rely less on equity financing and more on debt financing. In this section, we first examine the probability of seasoned equity offerings after a firm goes public and then examine the use of financial leverage. We also conduct a series of robustness tests based on alternative definitions of family firms.

5.1. Analysis of SEOs and family ownership in firm fixed effects regressions

We use the SDC Platinum database to gather all SEOs except pure secondary offerings of our sample firms between their IPO dates and December 31, 2011. Since our sample is young IPO firms, SEOs are not a frequent financing activity: only 7% of the firm-years report equity issuing. However, 228 (43%) out of the 524 IPO firms have at least one equity offering in their post-IPO years. Similar to our analysis of the family's influence on firm performance, we use firm fixed effects (i.e., conditional) logistic regressions on the sample of family IPOs to examine the influence of family ownership on the probability of SEOs. We use family cash flow rights as the variable of interest since the other family characteristics, such as excess voting rights and family CEO indicator, lack time-series variation within the same firm and are difficult to estimate in firm fixed effects models.

Table 6 presents the results of our conditional logistic analysis with coefficients expressed as the odds ratio of conducting an SEO. We report both the baseline result and the results under alternative family firm definitions. Alternative definitions (2 to 9) are provided in Table 4. The dependent variable is a

dummy variable that equals one if the family firm has at least one offering in a year and zero otherwise. Following DeAngelo, DeAngelo, and Stulz (2010), we control for the firm's market timing opportunities by the prior year market-to-book ratio (adjusted by dividing industry median value) and market-adjusted buy-and-hold stock returns in the past year and in the future year. We use the logarithm of one plus firm age to control for the firm's lifecycle stage. Additional control variables include firm size, ROA, total investment in R&D and capital expenditures, nonfamily blockholders' voting rights, and sales growth. The conditional logistic regressions are stratified by firm to include firm fixed effects, and we also include year indicator variables in the regressions to account for time-varying market conditions.

[Insert Table 6 about here.]

We find a persistent negative effect of family cash flow rights on the firm's probability of conducting an SEO across eight of the nine family firm definitions, and all the results are significant at the 1% level. According to our baseline definition, which includes 147 family firms that have at least one SEO during the post-IPO years, a one percent decrease in family ownership will result in a six percent increase in the probability of issuing seasoned equity. The one exception is again Definition 8, for which the estimation result is insignificant. As previously noted, Definition 8 includes only firms in which family members are not active in the management of the firm. Thus, family management again appears to be a crucial factor that affects the firm's seasoned equity issuance and firm value. In general, the robust results of Table 6 support the notion that greater the potential for the family to accrue private benefits of control, lower the probability that the family firm accesses the equity markets for external financing. Combined with our previous findings that a decrease in family ownership leads to higher firm value but lower accounting profits, the evidence in this subsection supports our projection that as the founding family control weakens, the firm is more likely to use equity financing to support firm growth and create firm value.

5.2. Time from IPO to first SEO and measures of family ownership and control

In addition to the firm fixed effects (i.e., conditional) logistic tests, we also conduct duration analysis to examine the effects of family ownership and excess control on the firm's SEO decisions, on both the whole IPO sample and the family IPO subsample. We use Cox proportional hazard models to estimate the hazard ratio of conducting an SEO at time t conditional on the firm having not issued new equity until time t . We measure time duration as the number of years from a firm's IPO date to its first SEO date (or last sample year if the firm never issues seasoned equity). We include the same control variables as in Table 6 and we use strata to include industry, year, and IPO cohort fixed effects.⁸ The results are reported in Table 7.

[Insert Table 7 about here.]

We have argued previously that the probability of conducting SEOs is negatively related to family ownership, therefore, we expect a similar pattern when examining the time from a firm's IPO to its first SEO. Consistent with our expectation, the influence of family ownership on the probability of having the first SEO is comparable to its influence on having an SEO in general. Both family cash flow rights and voting rights decrease the likelihood of issuing the first seasoned equity, which suggests a longer duration from IPO to first offering and indicates the family's unwillingness to dilute its ownership. In addition, the results hold in both the whole IPO sample and the family IPO sample.

In columns (1) and (3), a one percent decrease in family cash flow rights will increase the SEO probability by two percent (significant at the 1% level). A similar effect is shown for family voting rights in columns (2) and (4). The results complement our finding of the negative influence of family ownership on the probability of SEOs in Table 6. By contrast, the family's excess voting rights do not appear to be a critical factor in affecting the firm's SEO decisions. In other words, as long as family ownership is reduced, the firm is more likely to bring in external equity to finance investment opportunities. Therefore, when the

⁸ Here we are unable to use firm fixed effects in the analysis, because a firm is either an issuing firm or a non-issuing firm and there is no within firm variation.

family intends to maintain its ownership and control of the firm, the family manager-owners are likely to refuse accessing the stock market and as a result, forgo the potential external capital.

5.3. Analysis of financial leverage and family ownership in firm fixed effects regressions

We have established in the previous subsections that more concentrated the founding family ownership is, less equity financing the firm uses. Accordingly, we expect to see a positive influence of family ownership and the use of financial leverage. We test our prediction in firm fixed effects regressions based on the family firm-years. We calculate financial leverage as long-term debt plus debt in current liabilities divided by book assets. We control for nonfamily blockholders' voting rights, the firm's total investment in R&D and capital expenditures, Tobin's Q, sales growth, ROA, stock return volatility, firm size, and firm age. Table 8 presents the results from firm fixed effects regressions based on different definitions of family firms.

[Insert Table 8 about here.]

The results of Table 9 show that family cash flow rights have the opposite effect on financial leverage compared to SEOs. The coefficient on family cash flow rights is negative and significant at the 1% across all the family firm definitions with one exception of Definition 8. The insignificant coefficient under Definition 8 is consistent with the previous results on firm performance and SEOs. Since this definition stipulates that there are no family executives, the results suggest that family managers play an essential role in setting the firm's financing policy. As shown in column (1), under our baseline definition, a one percent decrease in family ownership will cause a 30 basis point increase in the firm's debt level. Under the most restrictive definition (Definition 9), where the family is required to have the strongest control of the firm, a one percent decrease in family ownership is associated with a 60 basis point increase in leverage. Thus, the evidence supports the premise that when family manager-owners possess the highest potential for consumption of private family benefits, they protect family control by using debt financing instead of equity financing to avoid diluting family ownership.

The opposite patterns of debt financing and equity financing across the board validate our conjecture that the family manager-owners affect the firm's financing decisions in a systematic way to ensure family shareholders' control of the firm and protect the family's private benefits of control, even if such financing choices are suboptimal. Since the founding family values private benefits of control, its unwillingness to dilute control results in a lower likelihood of issuing additional equity and accordingly a greater use of debt financing. It stands to reason that these financing choices serve as a channel through which the founding family affects firm performance by limiting the firm's ability to fully exploit its investment opportunity set. Instead, the family firm strives to achieve higher accounting profits, possibly to supply internal financial slack as a substitute for insufficient external financing. We explore the firm's investment decisions in the next section.

5.4. Analysis of investment on cash flow and family ownership in firm fixed effects regressions

To gain an understanding of the influence of founding family' preference for debt financing over equity financing on the firm's investment decisions, we study how family characteristics change the sensitivity of investment to cash flow. Since firms with stronger family presence are more restricted in using equity financing, we expect that these firms' investment decisions are tied closely to cash flow so that they invest more when internal funds are sufficient and they invest less when internal funds are tight, even if underinvestment means forgoing value-adding projects. We measure the firm's total investment as R&D expenses plus capital expenditures divided by beginning-of-year capital. We measure cash flow as income before extraordinary items plus depreciation divided by beginning-of-year capital. We construct our main variable as the interaction term between cash flow and measures of family ownership, control, and management.

Table 9 presents the results from firm fixed effects regressions based on different family firm definitions. We interact cash flow with total family cash flow rights and also include the two independent variables in the tests to control for their individual effects. The results show that under six of the nine family firm definitions, the coefficient on the interaction term is positive and significant (at the 1% or 5%

level). The coefficient is insignificant under the other three definitions. Therefore, the findings are consistent with our expectation that firms with higher family ownership exhibit a higher sensitivity of total investment to cash flow. To the extent that higher family ownership leads to a reduced probability of tapping the equity markets, the heightened investment-cash flow sensitivity provides evidence for the distortion in investment due to the family's control intention.

[Insert Table 9 about here.]

Since our sample consists of newly public firms that are relatively younger, smaller, and less profitable, it is likely that the greater investment-cash flow sensitivity comes from frequent underinvestment rather than overinvestments. As the summary statistics in Table 1 present, the average firm has negative cash flow and almost 30% of the firm-year observations have negative cash flow. Therefore, insufficient internal funds plus a reluctance to use external equity can be the source of suboptimal investment in firms with high family ownership, and the tendency towards underinvest suggests a lower firm value as the outcome of forgoing positive NPV projects. On the other hand, these firms are expected to undertake the investment projects that potentially generate the most accounting earnings as a way to supply internal funds, which results in a higher ROA. As family control becomes weaker over time, the firm is more likely to use equity financing and the relaxed financing options reduce the firm's reliance on internal funds for investment, and in turn make it possible for the firm to undertake more positive NPV projects and achieve a higher firm value.

6. Conclusion

The academic literature on family firms suggests that ownership, control, and management by the founding family have both positive and negative effects on firm performance. On the one hand, concentrated ownership, family managers' active involvement in the management of the firm, and family shareholders' commitment to the firm mitigate the traditional manager-owner agency conflicts, which should result in better firm performance. On the other hand, the ability of the founding family to consume private benefits of control at the expense of nonfamily shareholders creates agency conflicts that result in

inefficient contracting, which can negatively influence firm performance. The empirical evidence on the net effect of family influence is mixed, and the ability of researchers to examine the effects of family ownership and control on firm value in empirical analyses of cross-sectional samples is impeded by sample selection issues.

To provide additional insight into the influence of founding family on the firm that is less sensitive to the influence of sample selection, we collect a unique longitudinal dataset of firms that go public in 1993, 1997, and 2001. We follow the evolution of family ownership, management, and control of each firm until the end of 2011 or until the firm is delisted from the stock exchange. Our data suggest the potential for both survivorship bias and self-selection bias in cross-sectional samples. Only 36% of the IPO firms survive 10 years after the IPO. The percentage of family firms decreases from 85% at the IPO to 66%, 10 years after the IPO. At the end of 2011, the percentage of family firms among the surviving firms is 54%, representing only 17% of the original family IPOs. Therefore, it is rather difficult to unbiasedly understand the influence of founding families in *pooled cross-sectional samples*, since we cannot observe the family firms that have been delisted from the stock exchange or the family characteristics before the firms become nonfamily firms.

Our analysis based on the sample that is largely free of selection issues suggests that family ownership and control lead management to focus on short-term accounting performance but not total firm value. In comparison, cross-sectional analysis of older and larger firms generally document better performance of family firms. Consistent with the premise that family owners seek to ensure family control and protect private family benefits, we document that family firms are hesitant to raise capital in the equity markets, exhibit higher financial leverage, and accordingly, a higher investment to cash flow sensitivity. Thus, based on our analysis of the evolution of family ownership and firm performance, we conclude that that family ownership and control negatively influence firm value after the firm's public offering. Our results also suggest that researchers should be aware of the limitations in generalizing the net effects of family control obtained from cross-sectional studies.

The results of our study indicate that considering firms in similar evolution stages can help alleviate the concerns associated with selection issues. If firms in different evolution stages are pooled together in empirical tests, it is likely that the conclusions are influenced by the existence of firms in which the founding family plans to exit, nonfamily firms that were once family firms with inefficient family control, and successful family firms in which the families plan to maintain long-term control. Thus, without differentiating firms in different phases of family control, our understanding of the influence of founders and families is incomplete at best and biased at worst.

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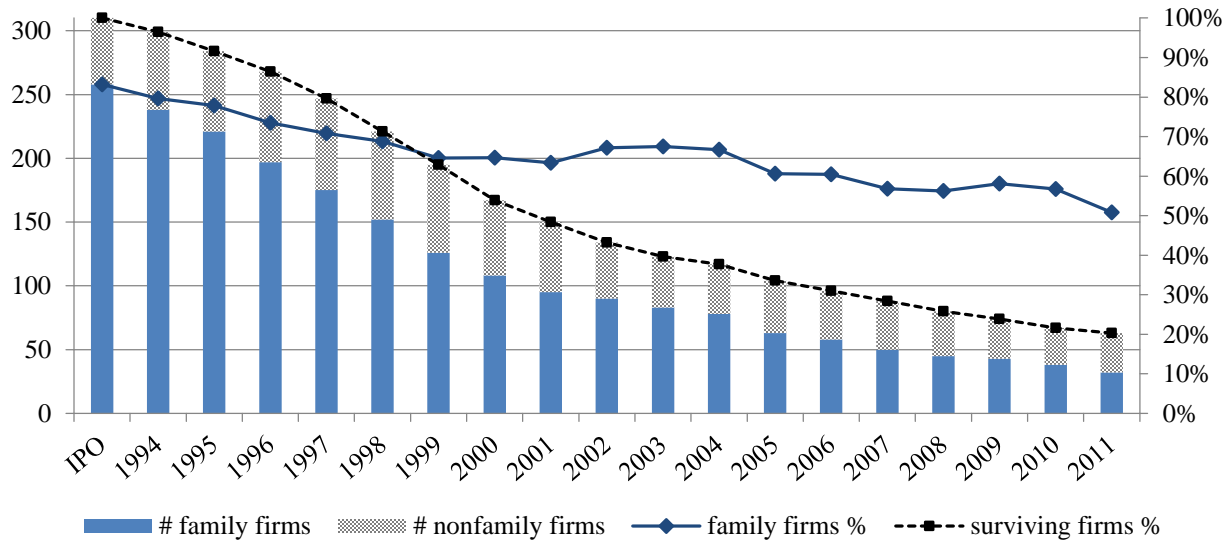
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Exhibit 1. Time-series changes of sample firms by IPO cohort year

This exhibit presents the time series changes of 310 firms that go public in 1993, 254 firms that go public in 1997, and 40 firms that go public in 2001. This is our initial sample of 604 IPOs and has no restriction on the survival time of the firm after the IPO. Firms remain in the sample from the IPO year to the end of 2011 or until the firm is delisted and no longer reported in CRSP. Exhibit 1.A describes the 1993 IPO cohort, Exhibit 1.B describes the 1997 IPO cohort, and Exhibit 1.C describes the 2001 IPO cohort. In each exhibit, the upper bars represent the number of nonfamily firms and the lower bars represent the number of family firms. The dotted line represents the percentage of surviving firms and the solid line represents the percentage of family firms. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. The sample firms are from Thomson SDC Platinum's Global New Issues database. We exclude spinoffs, carve-outs, foreign issuers, partnerships, trusts, unit offerings, mutual funds, savings and loans, financial and utility firms, rollups, firms that were public earlier in their history, and IPOs with an offer price less than five dollars or proceeds less than five millions. We require that the sample firms have Compustat data after the offering and are listed on CRSP within three months of the offering.

Exhibit 1.A. Sample composition and percentage of family firms (IPO year = 1993)



Continued on next page

Exhibit 1.B. Sample composition and percentage of family firms (IPO year = 1997)

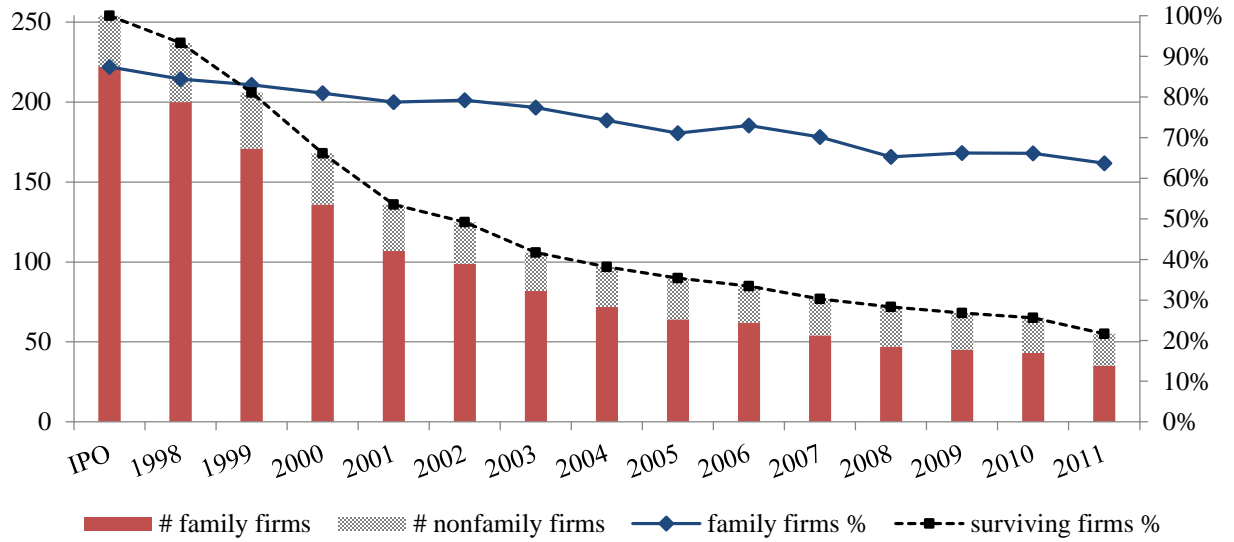


Exhibit 1.C. Sample composition and percentage of family firms (IPO year = 2001)

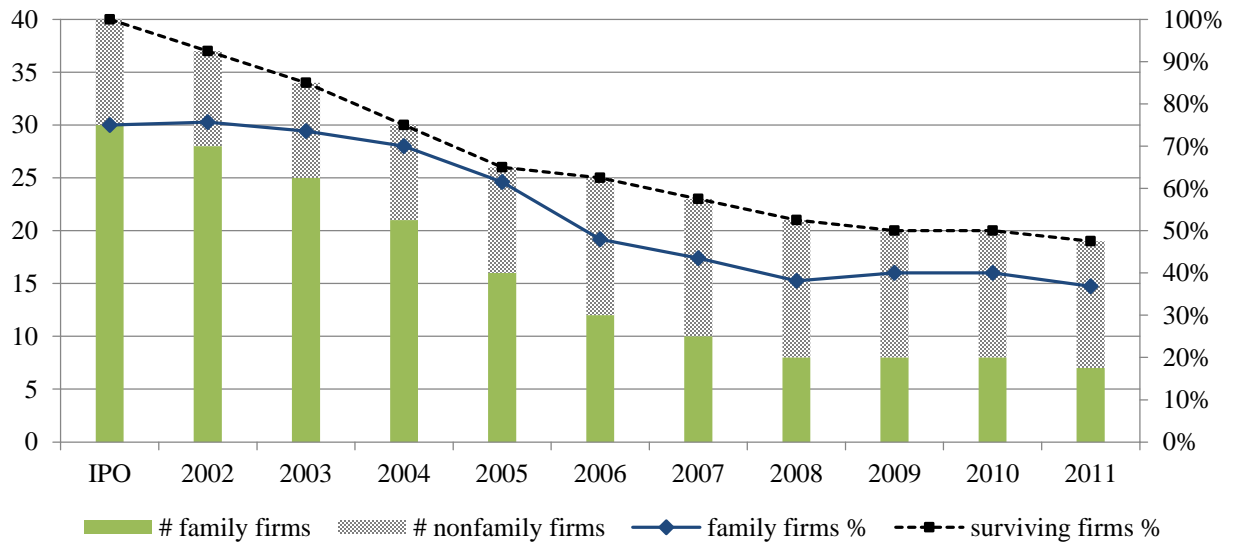


Table 1. Summary statistics for firm characteristics and stock ownership

This table presents summary statistics for firm characteristics and stock ownership. The sample consists of 5,618 firm-year observations from 1993 to 2011 and is comprised of 284 firms that go public in 1993, 206 firms that go public in 1997, and 34 firms that go public in 2001. The sample includes firms that are publicly traded for at least three years after the IPO. Firms remain in the sample from the IPO year to the end of 2011 or until the firm is delisted. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. Panel A provides statistics for firm characteristics and Panel B provides statistics for stock ownership. All continuous variables are winsorized at the 1% and 99% percentiles.

	Mean	Median	Min	Max	Std. Dev.	Obs.
Panel A. Firm Characteristics						
Family Firm (0/1)	0.73				0.45	5,618
Total Assets (millions)	423.50	109.46	2.71	5,827.30	884.71	5,581
Firm Age (years)	20.27	16.00	1.00	98.00	17.96	5,618
(R&D+CAPEX)/Beginning-of-Year PP&E	2.15	0.63	0.01	26.18	4.01	5,220
Debt/Assets (%)	21.49	11.75	0.00	113.86	25.20	5,581
Dual Class Stock (0/1)	0.05				0.21	5,618
Tobin's Q	2.27	1.64	0.58	11.22	1.86	5,045
ROA (%)	1.84	10.41	-152.92	40.73	30.80	5,565
Cash Flow	-1.00	0.29	-41.13	10.47	6.37	5,208
Sales Growth (%)	25.99	14.53	-60.54	317.42	53.09	4,828
Industry Adjusted Market-to-Book	1.49	1.08	-5.66	13.18	2.05	4,864
Annual Stock Return Volatility	0.72	0.64	0.25	2.08	0.34	5,044
Seasoned Equity Offering (0/1)	0.07				0.25	5,618
Buy-and-Hold Stock Return Prior to SEO (%)	8.31	-9.20	-101.77	460.20	84.57	4,464
Buy-and-Hold Stock Return After SEO (%)	6.35	-9.21	-102.39	419.65	80.84	5,355
Panel B. Ownership (% of Shares or Votes Outstanding)						
Total Family Cash Flow Rights	16.35	6.73	0.00	77.70	20.61	5,564
Total Family Voting Rights	17.46	6.85	0.00	88.07	22.61	5,564
Founder's Cash Flow Rights	12.87	4.87	0.00	72.98	17.77	5,564
Founder's Voting Rights	13.77	4.90	0.00	85.10	19.48	5,564
Nonfamily Block Cash Flow Rights	23.42	20.10	0.00	77.20	18.91	5,564
Nonfamily Block Voting Rights	23.22	19.71	0.00	79.80	19.26	5,564

Table 2. Comparison of founding family characteristics over time and correlation matrix

Panel A presents summary statistics for family firms over time and Panel B presents the correlation matrix in family firm-year observations. The family IPO sample consists of 4,088 family firm-year observations from 1993 to 2011 and is comprised of 236 family firms that go public in 1993, 181 family firms that go public in 1997, and 26 family firms that go public in 2001. The sample includes family firms that are publicly traded for at least three years after the IPO. Firms remain in the sample from the IPO year to the firm's last sample observation as a family firm. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. All ownership variables are winsorized at the 1% and 99% percentiles.

Panel A: Summary Statistics	At IPO (n=443)		IPO + 6 Years (n=218)		IPO + 12 Years (n=108)		IPO + 18 Years (n=32)		All Family Firms as of 2011 (n=74)	
	Mean	Med.	Mean	Med.	Mean	Med.	Mean	Med.	Mean	Med.
Total Family Cash Flow Rights (%)	29.17	21.29	21.89	13.40	15.97	9.74	11.61	6.07	13.16	7.00
Total Family Voting Rights (%)	30.53	22.30	23.52	14.40	17.70	10.22	12.90	6.07	15.39	7.00
Family Excess Voting Rights (%)	1.35	0.00	1.60	0.00	1.77	0.00	1.29	0.00	2.23	0.00
Family Excess Voting Rights (0/1)	0.05		0.05		0.06		0.03		0.05	
Founder's Cash Flow Rights (%)	23.96	16.70	16.71	9.90	10.69	5.60	7.69	2.47	9.91	4.61
Founder's Voting Rights (%)	25.14	16.70	17.99	10.02	12.07	5.86	8.98	2.47	11.64	4.61
# Family Executives and Directors	1.33	1.00	1.41	1.00	1.32	1.00	1.44	1.00	1.26	1.00
# Family Executives	1.01	1.00	0.95	1.00	0.81	1.00	0.84	1.00	0.74	1.00
# Family Directors	1.25	1.00	1.34	1.00	1.23	1.00	1.31	1.00	1.16	1.00
Family CEO (0/1)	0.62		0.63		0.50		0.53		0.47	
Founder CEO (0/1)	0.56		0.53		0.42		0.38		0.41	
Descendant CEO (0/1)	0.60		0.67		0.61		0.56		0.54	
Family Descendant (0/1)	0.15		0.20		0.20		0.44		0.27	

(Continued)

Table 2 – Continued

Panel B: Correlation in Family Firm-Year Observations	Tobin's Q	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ROA (%)	-0.25											
(2) Seasoned Equity Offering (0/1)	0.10	0.01										
(3) Debt/Assets (%)	-0.22	-0.01	-0.02									
(4) (R&D+CAPEX)/PP&E	0.37	-0.39	0.13	-0.18								
(5) Total Family Cash Flow Rights	-0.04	0.21	-0.09	0.15	-0.20							
(6) Total Family Voting Rights	-0.06	0.20	-0.07	0.19	-0.20	0.95						
(7) Family Excess Voting Rights (%)	-0.09	0.05	0.03	0.17	-0.09	0.14	0.45					
(8) # Family Executives and Directors	-0.06	0.11	0.00	0.18	-0.13	0.40	0.39	0.09				
(9) Family CEO (0/1)	-0.04	0.09	0.05	0.03	-0.10	0.26	0.25	0.04	0.28			
(10) Founder CEO (0/1)	0.02	0.04	0.05	-0.04	-0.05	0.12	0.12	0.03	0.09	0.87		
(11) Descendant CEO (0/1)	-0.12	0.09	-0.01	0.13	-0.11	0.25	0.23	0.02	0.35	0.23	-0.28	
(12) Outside CEO (0/1)	0.04	-0.09	-0.05	-0.03	0.10	-0.26	-0.25	-0.04	-0.28	-1.00	-0.87	-0.23

Table 3. Analysis of firm performance and family ownership in firm fixed effects regressions

This table presents results from firm fixed effects regressions of firm performance measures on founding family cash flow rights. The sample consists of 3,398 post-IPO family firm-year observations from 1993 to 2011 where information is available for all the variables, and is comprised of 236 family firms that go public in 1993, 181 family firms that go public in 1997, and 26 family firms that go public in 2001. Firms remain in the sample from the IPO year to the firm's last sample observation as a family firm. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. *Tobin's Q* is the ratio of market value of assets to book value of assets. Market value is the sum of book value of assets and market value of common stock minus the sum of book value of common stock and deferred taxes. *ROA* is the ratio of EBITDA to total assets. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include firm and year fixed effects. *t*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Tobin's Q	Ind.-Med. Adj. Q	ROA	Ind.-Med. Adj. ROA
	(1)	(2)	(3)	(4)
Total Family Cash Flow Rights (%)	-0.02*** (-3.78)	-0.02*** (-3.83)	0.11** (2.26)	0.11** (2.31)
Nonfamily Block Voting Rights (%)	-0.01*** (-4.76)	-0.01*** (-4.64)	-0.02 (-0.52)	-0.01 (-0.38)
Debt/Assets (%)	-0.01* (-1.79)	-0.01 (-1.62)	-0.22*** (-4.25)	-0.22*** (-4.22)
Annual Stock Return Volatility	-0.32** (-2.25)	-0.33** (-2.37)	-9.72*** (-5.83)	-8.96*** (-5.42)
(R&D+CAPEX)/PP&E	0.07*** (2.99)	0.07*** (3.10)	-1.10*** (-2.63)	-1.09*** (-2.61)
log(1+Assets)	-0.37*** (-4.48)	-0.39*** (-4.81)	6.14*** (4.68)	6.44*** (4.90)
Sales Growth (%)	0.01*** (6.78)	0.01*** (6.67)	0.03*** (3.05)	0.03*** (2.92)
log(1+Firm Age)	-0.78** (-2.46)	-0.75** (-2.38)	11.32*** (2.67)	11.66*** (2.78)
Constant	7.07*** (8.44)	5.48*** (6.65)	-32.42*** (-2.88)	-45.85*** (-4.11)
Observations	3,394	3,394	3,398	3,398
Number of Firms	422	422	421	421
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Within R-Squared	0.18	0.15	0.18	0.17

Table 4. Analysis of firm performance and family ownership in firm fixed effects regressions based on alternative family firm definitions

This table presents results from robustness tests based on the alternative definitions of family firms proposed by Villalonga and Amit (2006). Family firms remain in the sample from the IPO year to the firm's last sample observation as a family firm. The table reports only the coefficients on family ownership, but the regressions include all the control variables included in Table 3. Definition 1 is our baseline definition, where a firm is defined as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. *Tobin's Q* is the ratio of market value of assets to book value of assets. Market value is the sum of book value of assets and market value of common stock minus the sum of book value of common stock and deferred taxes. *ROA* is the ratio of EBITDA to total assets. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include firm and year fixed effects. *t*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

RHS variables: Total family cash flow rights (%), control variables, firm fixed effects, and year fixed effects	# Family Firm-Year (# Firms)	Tobin's Q (1)	Ind.-Med. Adj. Q (2)	ROA (3)	Ind.-Med. Adj. ROA (4)
1. (Base Def.) One or more family members are directors, executives, managers disclosed in the firm's SEC filings, or blockholders	3,398 (422)	-0.02*** (-3.78)	-0.02*** (-3.83)	0.11** (2.26)	0.11** (2.31)
2. There is at least one family director and one family executive	2,337 (343)	-0.02*** (-3.51)	-0.02*** (-3.51)	0.12** (2.06)	0.12** (2.11)
3. The family is the largest voteholder	1,693 (300)	-0.02** (-2.38)	-0.02** (-2.51)	0.22** (2.54)	0.21** (2.49)
4. The family is the largest shareholder	1,660 (296)	-0.02** (-2.36)	-0.02** (-2.50)	0.22** (2.58)	0.22** (2.53)
5. One or more family descendants are directors, executives, managers disclosed in the firm's SEC filings, or blockholders	660 (88)	-0.02** (-2.38)	-0.02** (-2.37)	0.28** (2.55)	0.29*** (2.64)
6. The family is the largest voteholder and has at least one family director and one family executive	1,324 (257)	-0.02** (-2.54)	-0.02*** (-2.64)	0.16* (1.81)	0.15* (1.76)
7. The family is the largest shareholder and holds at least 20% of the votes	1,273 (207)	-0.02** (-2.51)	-0.02*** (-2.65)	0.20** (2.07)	0.20** (2.05)
8. One or more family members are directors or blockholders, but there are no family executives	939 (189)	-0.01 (-0.50)	-0.01 (-0.55)	0.12 (0.84)	0.13 (0.88)
9. The family is the largest voteholder, has at least 20% of the votes, one family director and one family executive, and is in second or later generation	362 (61)	-0.02** (-2.10)	-0.02** (-2.18)	0.07 (0.61)	0.07 (0.67)

Table 5. Firm performance and measures of family ownership, control, and management in the entire sample

This table presents results from multivariate OLS regressions of Tobin's Q and ROA on measures of founding family ownership, control, and management. The sample consists of 4,738 post-IPO firm-year observations from 1993 to 2011 where information is available for all the variables. Firms remain in the sample from the IPO year to the end of 2011 or until the firm is delisted. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. *Tobin's Q* is the ratio of market value of assets to book value of assets. Market value is the sum of book value of assets and market value of common stock minus the sum of book value of common stock and deferred taxes. *Industry-median adjusted Q* is the difference between the firm's Tobin's Q and its industry median Tobin's Q in a given year. *ROA* is the ratio of EBITDA to total assets. *Industry-median adjusted ROA* is the difference between the firm's ROA and its industry median ROA in a given year. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include Fama-French 17 Industry, year, and IPO cohort fixed effects. *t*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Tobin's Q		Ind.-Med. Adj. Q		ROA		Ind.-Med. Adj. ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total Family Cash Flow Rights (%)	-0.00 (-0.20)		-0.00 (-0.14)		0.13*** (4.32)		0.13*** (4.27)	
Family Excess Voting Rights (%)	-0.02*** (-3.37)		-0.02*** (-3.39)		-0.13** (-2.27)		-0.12** (-2.13)	
Founder CEO (0/1)		-0.12 (-1.20)		-0.12 (-1.15)		-0.44 (-0.33)		-0.41 (-0.30)
Descendant CEO (0/1)		-0.43*** (-3.49)		-0.43*** (-3.56)		2.90 (1.25)		2.81 (1.22)
Outside CEO (0/1)		-0.03 (-0.29)		-0.03 (-0.27)		-0.81 (-0.61)		-0.86 (-0.65)
Nonfamily Block Voting Rights (%)	-0.01*** (-3.37)	-0.01*** (-3.25)	-0.01*** (-3.21)	-0.01*** (-3.14)	-0.06** (-2.18)	-0.11*** (-4.10)	-0.06** (-2.20)	-0.11*** (-4.11)
Debt/Assets (%)	-0.01*** (-4.76)	-0.01*** (-4.94)	-0.01*** (-4.67)	-0.01*** (-4.84)	-0.13*** (-4.20)	-0.12*** (-3.90)	-0.13*** (-4.22)	-0.12*** (-3.93)
Annual Stock Return Volatility	-0.19 (-1.52)	-0.20 (-1.62)	-0.20 (-1.58)	-0.21* (-1.68)	-18.98*** (-10.29)	-19.55*** (-10.41)	-18.54*** (-10.16)	-19.10*** (-10.27)
(R&D+CAPEX)/PP&E	0.13*** (5.71)	0.13*** (5.61)	0.13*** (5.77)	0.13*** (5.67)	-2.45*** (-7.06)	-2.57*** (-7.25)	-2.45*** (-7.03)	-2.57*** (-7.22)
log(1+Assets)	0.01 (0.14)	-0.01 (-0.14)	0.00 (0.05)	-0.01 (-0.24)	3.89*** (6.13)	3.73*** (5.93)	3.97*** (6.25)	3.81*** (6.05)
Sales Growth (%)	0.01*** (8.79)	0.01*** (8.78)	0.01*** (8.74)	0.01*** (8.73)	0.02** (2.25)	0.02** (2.03)	0.02** (2.11)	0.02* (1.88)

(Continued)

Table 6. Analysis of SEOs and family ownership in firm fixed effects regressions

This table presents results from firm fixed effects logistic regressions of seasoned equity offerings on founding family cash flow rights based on different definitions of family firms. The reported coefficients are odds ratios of SEOs. Definition 1 is our baseline definition, where a firm is defined as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. Alternative definitions of family firms are provided in Table 4. *Seasoned Equity Offering* equals one if the firm has at least one offering in a year and zero otherwise. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include firm fixed effects and year dummies. *z*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Seasoned Equity Offering (0/1)								
	Base Def.	Def. 2	Def. 3	Def. 4	Def. 5	Def. 6	Def. 7	Def. 8	Def. 9
Total Family Cash Flow Rights (%)	0.94*** (-4.04)	0.92*** (-4.62)	0.91*** (-2.94)	0.92*** (-2.61)	0.92*** (-3.15)	0.87*** (-3.61)	0.90*** (-2.92)	1.10 (1.04)	0.82*** (-2.88)
Industry Adjusted Market-to-Book _{t-1}	1.07 (0.99)	0.99 (-0.09)	1.05 (0.35)	1.05 (0.41)	0.59* (-1.93)	1.04 (0.25)	0.99 (-0.07)	1.20 (1.19)	0.34 (-1.45)
Buy-and-Hold Stock Return _{t-1} (%)	1.00** (2.36)	1.00* (1.78)	1.00 (-0.20)	1.00 (-0.30)	1.00 (1.12)	1.00 (-0.56)	1.00 (-0.35)	1.00 (1.03)	1.00 (0.30)
Buy-and-Hold Stock Return _{t+1} (%)	1.00** (-2.33)	1.00** (-2.14)	1.00* (-1.65)	1.00 (-1.58)	0.99** (-2.39)	1.00 (-0.92)	1.00 (-1.42)	0.99 (-1.45)	0.99** (-1.97)
log(1+Firm Age)	1.29 (0.28)	0.47 (-0.75)	1.35 (0.27)	1.85 (0.48)	10.26 (1.35)	0.44 (-0.66)	0.83 (-0.10)	3.90 (0.40)	2.23 (0.33)
log(1+Assets)	2.33*** (3.77)	2.12*** (2.63)	1.03 (0.09)	1.46 (0.87)	0.33** (-2.55)	1.50 (0.87)	0.74 (-0.50)	4.36*** (3.11)	0.09 (-1.53)
ROA (%)	1.01** (2.18)	1.02** (2.35)	1.05*** (2.70)	1.05*** (2.78)	1.06* (1.83)	1.04** (2.37)	1.05*** (2.79)	1.01 (0.28)	1.06 (1.10)
(R&D+CAPEX)/PP&E	1.38*** (7.22)	1.47*** (3.60)	0.80 (-0.63)	0.91 (-0.25)	1.27 (0.23)	0.67 (-0.85)	0.95 (-0.10)	1.34*** (2.66)	1.79 (0.41)
Nonfamily Block Voting Rights (%)	0.96*** (-5.07)	0.96*** (-4.19)	0.97* (-1.88)	0.97 (-1.58)	0.96 (-1.59)	0.95*** (-2.68)	0.95** (-2.06)	0.96 (-1.31)	0.90*** (-2.78)
Sales Growth (%)	1.00 (1.63)	1.00 (1.13)	1.01* (1.92)	1.01** (1.98)	1.00 (0.52)	1.01 (1.32)	1.01 (1.15)	1.00 (0.62)	1.01 (0.67)
Observations	1,416	1,006	563	542	260	472	396	264	150
Number of Firms	147	114	79	78	26	65	54	39	19
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.26	0.26	0.27	0.29	0.30	0.32	0.33	0.44	0.47

Table 7. Time from IPO to first SEO and measures of family ownership and control

This table presents results from Cox proportional hazards analysis of the time from IPO to first SEO and measures of family ownership and control. The reported coefficients are hazard ratios of the first SEO after IPO. The sample is all IPOs in columns (1) and (2) and family IPOs only in columns (3) and (4). Firms remain in the sample from the IPO year to the end of 2011 or until the firm is delisted. We define a firm as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. All continuous variables are winsorized at the 1% and 99% percentiles. The estimations include Fama-French 17 Industry, year, and IPO cohort fixed effects. z -test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Duration: Time from IPO to First SEO			
	All IPOs		Family IPOs	
	(1)	(2)	(3)	(4)
Total Family Cash Flow Rights (%)	0.98*** (-4.33)		0.98*** (-4.56)	
Family Excess Voting Rights (%)	1.00 (0.07)		1.00 (0.32)	
Total Family Voting Rights (%)		0.99*** (-4.08)		0.98*** (-4.10)
Industry Adjusted Market-to-Book _{t-1}	1.00 (-0.03)	1.00 (-0.10)	1.02 (0.39)	1.01 (0.28)
Buy-and-Hold Stock Return _{t-1} (%)	1.00*** (4.12)	1.00*** (4.05)	1.00*** (3.18)	1.00*** (3.11)
Buy-and-Hold Stock Return _{t+1} (%)	1.00* (-1.88)	1.00* (-1.83)	1.00 (-1.61)	1.00 (-1.55)
log(1+Firm Age)	1.00 (-0.02)	1.00 (0.04)	1.12 (0.87)	1.13 (0.90)
log(1+Assets)	1.65*** (8.05)	1.69*** (8.50)	1.62*** (6.69)	1.67*** (7.33)
ROA (%)	1.00 (-0.37)	1.00 (-0.55)	1.00 (0.04)	1.00 (-0.23)
(R&D+CAPEX)/PP&E	1.10*** (4.07)	1.10*** (4.13)	1.11*** (3.87)	1.11*** (4.02)
Nonfamily Block Voting Rights (%)	0.98*** (-4.79)	0.98*** (-4.67)	0.97*** (-4.42)	0.97*** (-4.25)
Sales Growth (%)	1.01*** (5.41)	1.01*** (5.56)	1.01*** (5.76)	1.01*** (5.96)
Observations	2,360	2,360	1,975	1,975
Number of Firms	470	470	393	393
Number of Events	182	182	152	152
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
IPO Cohort Fixed Effects	Yes	Yes	Yes	Yes

Table 8. Analysis of financial leverage and family ownership in firm fixed effects regressions

This table presents results from firm fixed effects regressions of financial leverage on founding family cash flow rights based on the different definitions of family firms. Definition 1 is our baseline definition, where a firm is defined as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. Alternative definitions of family firms are provided in Table 4. *Financial Leverage* is calculated as long-term debt plus debt in current liabilities divided by book assets. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include firm and year fixed effects. *t*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Financial Leverage: Debt/Assets %								
	Base Def.	Def. 2	Def. 3	Def. 4	Def. 5	Def. 6	Def. 7	Def. 8	Def. 9
Total Family Cash Flow Rights (%)	0.30*** (4.19)	0.35*** (4.06)	0.41*** (4.31)	0.41*** (4.19)	0.41*** (3.24)	0.47*** (4.41)	0.45*** (4.06)	0.24 (1.48)	0.60*** (5.07)
Nonfamily Block Voting Rights (%)	0.11*** (2.70)	0.08* (1.92)	0.08 (0.97)	0.09 (1.05)	0.09 (1.18)	0.08 (0.92)	0.07 (0.78)	0.04 (0.68)	-0.02 (-0.16)
(R&D+CAPEX)/PP&E	0.72 (0.97)	0.00 (0.00)	-0.84 (-1.03)	-0.95 (-1.10)	-3.65*** (-2.86)	-0.17 (-0.23)	-1.08 (-0.62)	0.42 (0.55)	-1.84 (-0.85)
Tobin's Q	-0.62 (-1.64)	-0.60* (-1.65)	-0.15 (-0.22)	-0.15 (-0.21)	0.84 (0.48)	-0.44 (-0.80)	-0.03 (-0.03)	-0.03 (-0.03)	-0.25 (-0.23)
Sales Growth (%)	-0.01 (-0.81)	-0.00 (-0.23)	0.00 (0.20)	0.01 (0.46)	0.06*** (2.69)	-0.01 (-0.61)	-0.00 (-0.06)	0.00 (0.35)	0.01 (0.33)
ROA (%)	-0.21*** (-4.42)	-0.19*** (-4.44)	-0.30*** (-2.96)	-0.30*** (-3.03)	-0.48*** (-5.35)	-0.21** (-2.43)	-0.37*** (-2.86)	-0.30*** (-2.79)	-0.34*** (-2.84)
Annual Stock Return Volatility	8.23*** (4.80)	8.78*** (5.36)	6.07*** (2.62)	5.95** (2.53)	6.76** (2.25)	6.94*** (3.30)	5.60** (2.21)	6.63 (1.37)	7.40*** (3.01)
log(1+Assets)	4.02*** (4.02)	5.87*** (4.88)	5.11*** (3.15)	5.41*** (3.29)	7.52*** (3.22)	7.41*** (4.93)	6.21*** (2.92)	1.64 (0.74)	14.99*** (4.32)
log(1+Firm Age)	6.25 (1.34)	1.38 (0.27)	4.34 (0.62)	5.09 (0.73)	2.73 (0.28)	-2.64 (-0.37)	5.49 (0.73)	20.98* (1.78)	-1.27 (-0.22)
Constant	-31.17*** (-2.81)	-29.33** (-2.36)	-34.59** (-2.16)	-37.61** (-2.31)	-34.68 (-1.51)	-31.40* (-1.89)	-43.40** (-2.52)	-50.96** (-2.08)	-66.68*** (-2.77)
Observations	3,386	2,330	1,687	1,654	654	1,318	1,268	932	357
Number of Firms	421	342	299	295	87	256	206	189	60
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R-Squared	0.15	0.17	0.20	0.20	0.30	0.21	0.21	0.16	0.50

Table 9. Analysis of investment on cash flow and family ownership in firm fixed effects regressions

This table presents results from firm fixed effects regressions of investment on cash flow and founding family cash flow rights based on the different definitions of family firms. Definition 1 is our baseline definition, where a firm is defined as family firm if the founder or any of the founder's relatives is a director, executive, manager disclosed in the firm's SEC filings, or the aggregate family ownership of outstanding equity is at least 5%. Alternative definitions of family firms are provided in Table 4. *Investment* is calculated as the sum of R&D expenses and capital expenditures (CAPEX) divided by property, plants, and equipment (PP&E) at the beginning of the year. *Cash Flow* is calculated as income before extraordinary items plus depreciation divided by PP&E at the beginning of the year. All continuous variables are winsorized at the 1% and 99% percentiles. All regressions include firm and year fixed effects. *t*-test statistics from robust standard errors (clustered by firm) are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, or 10% level, respectively.

	Investment: (R&D+CAPEX)/PP&E								
	Base Def.	Def. 2	Def. 3	Def. 4	Def. 5	Def. 6	Def. 7	Def. 8	Def. 9
Cash Flow*Total Family Cash Flow Rights (%)	0.00*** (3.48)	0.00** (2.04)	0.00*** (3.02)	0.00*** (2.98)	0.00 (0.25)	0.00** (2.27)	0.00 (1.38)	0.01*** (4.57)	-0.00 (-0.73)
Total Family Cash Flow Rights (%)	-0.01 (-1.19)	-0.02 (-1.62)	-0.01** (-2.58)	-0.01*** (-2.72)	-0.00 (-0.30)	-0.01*** (-2.83)	-0.01** (-2.37)	-0.00 (-0.17)	-0.00 (-0.53)
Cash Flow	-0.20*** (-4.46)	-0.14** (-2.30)	-0.11*** (-3.52)	-0.11*** (-3.40)	0.01 (0.56)	-0.10** (-2.40)	-0.04 (-1.35)	-0.20*** (-4.29)	0.04 (0.66)
Tobin's Q _{t-1}	0.05* (1.70)	0.09** (2.10)	0.01 (0.81)	0.01 (0.78)	0.03 (1.50)	0.01 (0.62)	0.02 (1.28)	0.00 (0.06)	-0.03 (-0.41)
Nonfamily Block Voting Rights (%)	-0.00 (-0.20)	-0.00 (-0.28)	-0.01* (-1.96)	-0.01** (-1.99)	-0.00 (-1.12)	-0.00 (-0.81)	-0.00 (-1.13)	-0.00 (-0.49)	-0.00 (-0.25)
log(1+Assets)	-0.37*** (-2.93)	-0.48** (-2.39)	-0.27*** (-3.04)	-0.25*** (-3.30)	-0.07 (-0.60)	-0.31*** (-3.09)	-0.21** (-2.09)	-0.15 (-0.77)	0.04 (0.43)
log(1+Firm Age)	0.94** (2.06)	0.66 (1.56)	-0.02 (-0.14)	-0.04 (-0.28)	-0.09 (-1.11)	-0.02 (-0.12)	-0.04 (-0.25)	2.32** (1.99)	0.06 (0.63)
Industry Adjusted Debt/Assets (%)	0.01 (1.02)	0.00 (1.09)	-0.00 (-0.60)	-0.00 (-0.58)	-0.00 (-1.64)	-0.00 (-0.09)	-0.00 (-0.67)	0.00 (0.44)	-0.00 (-0.47)
Constant	0.99 (0.90)	2.47** (2.52)	2.43*** (4.27)	2.31*** (4.69)	0.96 (1.34)	2.67*** (4.21)	2.07*** (3.48)	-3.42 (-1.17)	0.42 (0.53)
Observations	3,130	2,122	1,501	1,471	609	1,160	1,113	886	319
Number of Firms	425	342	291	288	86	248	197	190	58
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R-Squared	0.21	0.11	0.18	0.18	0.04	0.16	0.11	0.30	0.03