

The Family Behind the Family Firm Premium: Agency Conflicts and Personal Financial Constraints

Finance Working Paper N° 859/2022

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We are grateful for feedback from Rafel Crespi, Alex Edmans, participants at the Comparative Corporate Governance Workshop at Cardiff Business School, the BI Lunch seminar in Corporate Finance, the 19th Workshop on Corporate Governance and Investment at Universitat de les Illes Balears, the 9th annual conference of the Baltic Economic Association, and the World Finance Conference in Turin.

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Abstract

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Keywords: family firms, majority control, corporate governance, agency costs, return on assets, financial constraints, wealth, diversification, liquidity

JEL Classifications: G32, G34

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We relate the personal characteristics of the controlling family to the difference between the return on assets of all Norwegian family firms and nonfamily firms over twenty years. This family firm premium increases when the family owns a higher equity stake, has fewer owning members, and participates more actively in governance. The premium also increases when the family has less personal wealth, less diversified wealth, and less liquid shares. This evidence suggests that family firms have governance advantages and financial disadvantages, that both properties increase the family firm premium, and that both depend on personal characteristics of the controlling family.

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1. Introduction

Family firms have special owners. The controlling family is a tightly related group of individuals, the investment in the firm may represent most of the family's wealth, and the family may take positions in the firm as directors, managers, and other employees. This situation suggests that characteristics of the family may be unusually important for family firm outcomes. Nevertheless, Bennedsen, Perez-Gonzalez, and Wolfenzon (2010) state: "Direct tests of the effect of family characteristics on performance are rare in the literature, yet they provide the distinguishing mark and the future of this area of research". Because the family firm is the world's most widespread organizational form for economic activity (La Porta, Lopez-De-Silanes, and Shleifer, 1999; Claessens, Djankov, and Lang, 2000; Astrachan and Shanker, 2003; Franks, Mayer, and Rossi, 2009; Masulis, Pham, and Zein, 2011; Mehrotra et al., 2013), this lack of insight into the fundamentals of family firms seems unfortunate.

We reduce this lack of insight by showing that the significant and persistent difference in profitability between family and nonfamily firms relates closely to basic characteristics of the family firm's controlling family. Specifically, we find that the profitability premium of family firms increases with lower agency conflicts rooted in the family firm's controlling family, but also with stronger financial constraints caused by limited family wealth, undiversified family wealth, and low liquidity of the family firm's equity. Our results suggest that the higher profitability of family firms documented in the literature reflects both advantages and disadvantages of family ownership that vary from firm to firm. Therefore, one cannot validly infer the merits of family ownership from the profitability premium unless one accounts for basic and often hard-to-observe characteristics of the controlling family.

Analyzing all limited-liability firms in the Norwegian economy in 2000–2019, we first show that family firms, which we define as firms where individuals related by blood or marriage own more than half the equity, constitute 72% of all firms and have an average book return on assets (ROA) that is 1.4 percentage points higher per year than in nonfamily firms. The median is 1.1. This family firm premium is stable across the business cycle, and it persists when we account for firm characteristics commonly used in the literature, such as risk, size, leverage, growth, age, and industry. To the best of our knowledge, we are the first to document the magnitude of the premium in the population of all firms over an extended time period.

We build on this initial setup to show that the family firm premium varies with characteristics of the controlling family. This relationship has barely been analyzed in the

literature, presumably because family characteristics are much harder to observe than firm characteristics, and because existing research has almost exclusively studied just large and listed firms, which are much less often actively governed by a family and have much more liquid equity than the typical firm in the economy.

Our main result suggests that family control produces governance advantages and financial disadvantages, and that both increase the family firm premium. Governance advantages can increase both firm value in absolute terms and firm value per unit invested, while financial disadvantages only increase the latter. Thus, the premium does not just increase with better governance, but also with more underinvestment due to a higher required return on investment.

The governance advantages occur when the firm has *lower agency conflicts*. The vertical agency problem between shareholders and managers is likely to be low in most family firms (Roe, 1994; Villalonga et al., 2015). The controlling owners are unusually tightly knit both economically and socially, and a family member is often the firm's chair as well as its CEO (Bøhren et al., 2019). Therefore, the separation between ownership and control and the resulting need to monitor the CEO is generally modest (Edmans and Holderness, 2017). Nevertheless, there is considerable variation in governance across family firms. For instance, some family firms in our sample have a nonfamily CEO, and some have mostly nonfamily directors. This variation allows us to explore how the profitability premium relates to the seriousness of the vertical agency problem across different family firms.

Consistent with the logic of the vertical agency problem, we find a higher premium when the family firm has a family CEO, when the family CEO holds a larger equity stake, and when the proportion of family directors is higher.

The horizontal agency problem between large and small shareholders may be more important in family firms than elsewhere if the family uses its majority stake to exploit minority shareholders. Because the minority shareholders have more to lose the larger their equity stake, the horizontal agency problem is more serious the smaller the controlling family's stake (Gomes, 2000; Faccio, Lang, and Young, 2001; Berzins, Bøhren, and Stacescu, 2018).

In line with this idea, we find that the family firm premium is higher when the controlling family owns a larger equity stake and when minority shareholders are on the board. On the other hand, we also find that the controlling stake is 94% on average and 100% in 69% of the cases. Therefore, the family's incentive to expropriate its co-investors is normally very low.

There may be both agency problems and coordination problems inside the family. The agency problem concerns potential conflicts of interest between active and passive family owners (Villalonga et al., 2015). We find, however, that the family firm premium is unrelated to having both passive and active family owners in the firm, suggesting that agency problems within the family seldom threaten profitability.¹ The coordination problem stems from disagreements between the family owners that impede decision making (Jacob and Michaely, 2017). We find that the profitability premium is higher when the family has only one owning member, when this owner is also the CEO, and when more employees are from the family. Thus, easier coordination within the family increases the merits of family control.

A related, indirect source of governance advantages is family skills, which benefit the firm when family members are actively involved (Bertrand and Schoar, 2006). At least in the founder's generation, the family may know the industry and the firm better than other owners do. Consistent with this view, large public firms in the United States with an active founder outperform firms controlled or managed by heirs (Villalonga and Amit, 2006; Anderson and Reeb, 2003). This result suggests that founders have skills that later generations do not inherit.

We find a similar result in our sample of private firms because younger family firms have the larger premium. However, we also find a premium in older family firms, particularly when the CEO is from the family and is young. Thus, family governance is positively associated with superior profitability also after the founder stage, possibly due to persistent family skills.

In sum, our agency results suggest that lower conflicts of interest in family firms are associated with a higher family firm premium. This finding supports the notion that lower agency problems is a competitive advantage of family firms. The family premium is also positively associated with easier coordination and persists in later generations.

Stronger financial constraints in the controlling family is what we consider the second main component of the family firm premium. The fact that most of the equity is held by the controlling family and that most family firms are unlisted means that the firm's funding pool may depend strongly on the family's resources. The family may not just have insufficient means to finance all profitable investments in the firm, but may also be reluctant to give up control by raising funds from outsiders. This setting increases the required rate of return, making the family firm reject projects that firms with less constrained owners would accept.

¹ Recent research relates multiple family relationships among insiders to superior performance (Parise, 2022) and to resilience after negative shocks (Salvato et al., 2020).

Accordingly, this financial disadvantage may make the observed return on assets higher in family firms than elsewhere, thereby increasing the family firm premium.

Our evidence supports this idea. We find that the family premium is larger the less wealthy the controlling family, if the family has few liquid assets, owns few assets outside the firm, has high personal leverage, and if the family is small. This evidence suggests that limited personal wealth reduces the family's funding capacity and increases the required return.

This tight financial link between the firm and the family can also be understood from the fact that most of the family's wealth is usually concentrated. The lack of diversification and the low attention paid to the firm by potential outside investors may make the family require a higher return when evaluating the firm's projects (Merton, 1987). Our evidence supports this hypothesis, as the premium is larger the fewer firms the family controls, the fewer industries the family firm is involved in, and the more the firm's assets dominates the family's wealth.²

Finally, illiquid shares may be a financial disadvantage of family control, as shareholders may require higher returns to compensate for the greater cost of trading the shares (Moskowitz and Vissing-Jørgensen, 2002). We find evidence consistent with this prediction, as the premium is larger the lower the number of minority owners, the lower the number of individual owners, and when the family firm is private rather than public.³

Our paper makes *four contributions* to the literature. First, we are the first to show that the profitability premium of family firms consists of two components that reflect how family control is not just associated with governance advantages, but also with financial disadvantages.⁴ We show that both components are positively associated with the family firm premium, despite the fact that only the governance advantages may create economic value. Because this means a higher premium may reflect stronger underinvestment and hence lost value, our evidence suggests that the use of return on assets to compare the performance of family firms and nonfamily firms can be uninformative of the underlying economic channels.

² Owner diversification is also found to be important for firm behavior by Faccio, Murchica, and Mura (2011).

³ The profitability premium may also be due to measurement error. Assets like reputation and good relationships to employees and customers may not be captured by the book values on the balance sheet (Sraer and Thesmar, 2007). Therefore, the ROA may overestimate true profitability if the gap between the true capital invested and its book value is higher in family firms than elsewhere. Moreover, we find that family firms have the lower capital intensity, which may inflate their ROA as well. Therefore, we control for capital intensity in all regressions.

⁴ There may be correlation between these two features because single-owner family firms may have both particularly low agency conflicts and particularly strong financial constraints. We show, however, that our results hold when we account for both features and also when we keep one of them fixed while varying the other.

Second, we consider a wide range of basic and unexplored family characteristics to shed new light on the underlying sources of the family firm premium. The existing literature analyzes just a few family characteristics, usually addresses just one characteristic at a time, and the characteristic used often reflects only the family's chosen governance activity, such as whether the CEO is from the family, whether the founder is officer or director, and whether the owners are founders or heirs.⁵

In contrast, we consider a wide array of family characteristics, including primitives like family size and the family CEO's age, which may influence the family's governance behavior. The family's wealth may also be considered a primitive, particularly when the family owns considerably more than the firm analyzed. Therefore, we relate profitability to family characteristics that reflect not just the governance roles the family takes, but also the family's incentives and ability to take them. Moreover, our data enables us to address concerns raised in the literature, but not explored empirically, such as potential conflicts between some family owners and the family at large (Villalonga et al., 2015). Because our list of family primitives is limited, however, we do not claim that the estimated relationships are causal.

Our third contribution is to study an unusually comprehensive and representative set of firms. This feature is important, considering the fact that the family firm premium estimated in the literature varies widely. Even the sign is ambiguous, being sometimes positive (Anderson and Reeb, 2003), sometimes negative (Bennedsen et al., 2007), and sometimes insignificant (Miller et al., 2007). This ambiguity exists in both private and public family firms and across different countries (O'Boyle, Pollack, and Rutherford, 2012; Amit and Villalonga, 2014). One possible reason is that the samples are not representative of the population. This problem occurs because most family firms are nonlisted, because high-quality data on such firms are seldom available, and because data on family characteristics are even harder to obtain. According to Amit and Villalonga (2014): "...it is typically very difficult, when not impossible, to determine who the ultimate owners of a firm are – let alone whether those owners are family related".

We handle this challenge by using proprietary data on all ultimate owners and every family relationship between them to construct a sample of all active nonfinancial firms with limited liability in Norway over twenty years. The sample has about 86,000 firms on average per year, family firms account for 73% of the firms, 43% of employment, 24% of sales, and 15% of assets. Thus, the family firm is the dominating organizational form and generates a large part

⁵ Examples are generations in Anderson and Reeb, (2003) and Villalonga and Amit (2006), CEO successions in Bennedsen et al. (2007), and the number of family owners in Buchanan et al. (2022) and Parise (2022).

of overall economic activity. The only existing family firm study we know that uses population data strengthens this impression. Analyzing Swedish limited-liability firms in 2010, Anderson et al. (2017) find that family firms constitute 62% of all firms and 35% of all employment.⁶

Finally, our fourth contribution is to define the family firm in a way that captures the uniqueness of family control from both a sociological and a governance perspective. We define the family firm as being majority-owned by individuals related by blood or marriage, regardless of whether they have chosen to be active as directors or officers. This definition has the advantage of reflecting both the unusually tight social ties between the owners and their option to self-handedly choose their preferred participation in governance, such as recruiting a family member as the CEO.

There are about 90 definitions of a family firm in the literature (European Commission, 2009). The definition used in empirical tests is usually driven by data limitations. For instance, working with listed firms may require a minimum control threshold of just 20% rather than 50% to ensure sufficient sample size (Maury, 2006). In contrast, our data allows us to identify all limited-liability firms in the economy where the family has unquestionable majority control, and we relate our findings to the existing literature by exploring the family firm premium under alternative control thresholds. We also contribute to the emerging literature on the taxonomy of family firms (Buchanan et al., 2022; Parise, 2022) by considering family characteristics like participation in the firm's board and management, the family CEO's age, and whether the family is the only owner. Such characteristics can be used in the taxonomy literature to define subtypes of family firms and to compare profitability across subtypes.

We provide summary statistics in Section 2 and estimate the relationship between firm profitability, family control, and firm characteristics in Section 3. We use family characteristics to show how the family firm premium relates to governance advantages in Section 4, to financial disadvantages in Section 5, and to both in Section 6. We conclude in Section 7.

⁶ Studies of public firms in the United States surveyed by Amit and Villalonga (2014) find that the proportion of family firms ranges from 17% to 71%, depending on the family firm definition and the sample period used. Internationally, the estimated proportion among public firms ranges from 44% in 13 Western European countries (Faccio and Lang, 2002) through 53% in the world's 27 richest economies (La Porta, Lopez-De-Silanes, and Shleifer, 1999) to 67% in nine East Asian countries (Claessens, Djankov, and Lang, 2000). An indirect estimate based on the number of tax returns from all public and private firms in the United States suggests that 60% of the partnerships and corporations are family businesses in year 2000 (Astrachan and Shanker, 2003).

2. Summary Statistics

In this section, we select the sample, define the family firm, and show descriptive statistics on firm characteristics for all firms, family characteristics for the family firm's controlling family, and the profitability premium of family firms by year, firm size, and industry.⁷

Starting with all limited liability firms in Norway from 2000 to 2019, we select the sample by excluding financials and firms with no activity and firms with less than three years of data. We construct business groups and use consolidated data for one entity in the group.

We define a family firm as one where more than half the equity belongs to individuals related by blood or marriage up to the fourth degree of kinship.⁸ We use this definition to capture governance and sociology dimensions that jointly make family firms unique. Regarding the governance dimension, controlling the firm's decision-making is the fundamental mechanism (Tirole, 2001). Because the owners elect the board, owners with a majority stake can control every formal governance position without other shareholders' consent.⁹ These owners can single-handedly choose their governance intensity, such as whether to be on the board, be the chair, or be the CEO. Regarding the sociology dimension, we consider only firms where the controlling owners constitute a particularly tight entity. We ensure this coherence by requiring that the controlling owners are related by family ties.

Table 1 shows in Panel A that, compared to nonfamily firms, family firms have higher mean and median returns on assets, equity, and capital invested. For instance, median return on assets (ROA) per year is 7.4% in family firms and 6.3% in nonfamily firms, producing a premium of 1.1 percentage points.¹⁰

Table 1

In the following, we analyze the profitability premium using ROA, which is the most common performance measure in this literature (Anderson and Reeb, 2003; Amit and Villalonga, 2014; Parise, 2022). Unlike return on equity, ROA has the benefit of reflecting the returns to all capital providers, and it is not directly influenced by financial leverage. Unlike

⁷ The Data Appendix explains in greater detail how what our data sources are, how we select the sample, construct the variables, and assign firms with inter-firm ownership to business groups.

⁸ <https://sdsos.gov/elections-voting/assets/Kinship%20Chart.pdf>. See our Data Appendix for details.

⁹ Our ownership data are based on cash flow rights. However, only 3.8% of the sample firms have multiple share classes, which is mostly used in large groups to allocate control within the family rather than protect the family from nonfamily owners. Moreover, we treat the whole family as one owner, which means the separation between ownership and control among the majority owners is irrelevant in our setting.

¹⁰ Our median premium of 1.1 for 2000-2019 is lower than the premium of 2 (no decimals reported) estimated by Andersson et al. (2017) in the population of Swedish firms in 2010.

return on invested capital, ROA reflects all capital used and not just noncash assets financed with equity and interest-bearing debt.

The premium may vary across the business cycle. We explore this possibility by comparing the profitability of family firms and nonfamily firms in each sample year. Our time period 2000–2019 is sufficiently long to cover several business cycles, capturing the end of the dot-com bubble and the low oil prices in the early 2000s, the financial crisis around 2008, and the low oil price around 2014. Figure 1 shows in Panel A that the mean family firm premium is quite stable and always positive across the business cycle. Panel B uses medians to show a similar pattern.

Figure 1

Panel A of Table 1 also documents that family firms are smaller, grow less, and are less capital intensive than nonfamily firms are. For instance, the median family firm is about 60% the size of the median nonfamily firm as measured by sales, employs 3 vs. 6 people, and sells for NOK 3.4 mill. vs. 8.5 mill. Therefore, accounting for size is potentially important when examining the family firm premium. In contrast, family control barely matters for the typical firm's age, risk, and leverage. For instance, median risk as measured by sales volatility per unit of average sales is 0.15 in both firm types.

Panel B of Table 1 shows distributional properties of several characteristics of the controlling family. The average controlling family owns 94% of the equity and has 27 members, but just 1.5 of them own shares in the firm. The average family has wealth of NOK 35 mill. (about 3.5 mill. Euros), and one fifth of this wealth is liquid assets such as bank deposits and listed securities.¹¹ The family has on average invested NOK 16 mill. outside the firm, but the distribution is highly skewed. Personal leverage (the ratio between the tax value of the family's liabilities and assets) has a mean of 2.15 and a median of 0.84.¹²

The family controls on average 1.4 firms that mostly operate in just one industry. On average, 81% of the board members are from the family, and 93% of the family firms have a family CEO, who is the majority owner in 72% of the cases. The average family CEO is less than 30 years old ("young") in 3% of the cases and more than 50 ("old") in 51%, being 51

¹¹ Because the data on the family's private wealth only covers the 2000–2016 period, regressions with wealth-based variables have fewer observations than the other regressions.

¹² The ratio is often above one because the assets are in book value while the debt is close to market value.

years old on average. The average family firm recruits 41% of its employees from the controlling family, while half the family firms do so for at least one third of their employees.

The table also shows that many family characteristics vary considerably across firms. For instance, the average controlling family has 27 members and wealth of NOK 35 mill., while 5% of the families have more than 75 members and wealth above NOK 95 mill.

Panel C shows the family premium across years (also visualized in Figure 1), across deciles of firm size as measured by sales, and across industries. The premium tends to be greater the smaller the firm, and there is large variation across industries. For instance, the mean premium in the 10% largest firms is 1.7 and 6.5 in the 10% smallest firms. The mean premium ranges from -1.8 percentage points in construction and -0.9 in agriculture (the only industries with a negative family firm premium) to 2.0 in services and 7.3 in public services, such as private kindergartens and dentists. Generally, the premium seems larger the smaller the firm and the less capital-intensive the industry. Thus, it is important to account for both size and industry to understand the family firm premium. We use sales as the firm's size measure to avoid measures that also capture technology and capital intensity, such as assets.

Summarizing, the mean and median family firm premium is consistently positive over time. Family firms tend to be smaller, grow less, and use less capital than do nonfamily firms. The average controlling family has about ten times more members than owners and fills most board seats. The most common family involvement in management is to have the majority-owning family member as the CEO. About 5% of the family CEOs are older than the official retirement age of 67 years. There is large variation across family firms regarding characteristics that may influence the advantages and disadvantages of family control.

3. The Baseline Relationship

We have shown that many firm characteristics differ between family firms and nonfamily firms, and that there are large variations in family characteristics across family firms. This setting allows us to examine the relationship between family characteristics and profitability while controlling for firm characteristics. Therefore, the general structure of the profitability regressions in this paper is:

$$ROA_{it} = f(\text{Family characteristics}_{it}, \text{Firm characteristics}_{it}, \text{Fixed effects})$$

ROA_{it} is firm i 's return on assets (operating earnings after taxes divided by total assets) in year t . *Family characteristics* are the properties of the family that reflect potential agency conflicts

or personal financial constraints, while *Firm characteristics* are properties of the firm that may matter for profitability, regardless of family firm status. We use year *Fixed effects* to account for the business cycle and industry fixed effects to account for time-invariant properties of the firm's industry. Because most family characteristics are very persistent, we do not include firm fixed effects to avoid inconsistent estimates.¹³

In this section we first check whether the family firm premium persists when we account for the heterogeneity of firm characteristics by estimating the model:

$$(1) \quad \begin{aligned} ROA_{it} = & \beta_0 + \beta_1 * Family\ firm_{it} \\ & + \beta_2 * Age_{it} + \beta_3 * Size_{it} + \beta_4 * Risk_{it} + \beta_5 * Growth\ opportunities_{it} \\ & + \beta_6 * Asset\ liquidity_{it} + \beta_7 * Leverage_{it} + \beta_8 * Capital\ intensity_{it} \\ & + f_t + f_{it} + \varepsilon_{it} \end{aligned}$$

Family firm is 1 if the family controls more than 50% of the firm's equity and 0 otherwise. Thus, β_1 reflects the profitability premium of family firms when we account for differences in firm characteristics between family firms and non-family firms.

The firm's age and size can influence its financial constraints (Hadlock and Pierce, 2010). We measure *Age* as the log of the firm's age in years, while *Size* is the log of the inflation-adjusted sales in million 2019 NOK. *Risk* is the volatility of sales, measured as the coefficient of variation over the previous three years. *Growth opportunities* is the ratio of sales to assets, the logic being that firms with larger sales per unit of assets have less slack and are more likely to expand their future asset base. *Asset liquidity* is the ratio between the firm's cash holdings and total assets, and *Leverage* is debt less cash to total assets less cash. Finally, *Capital intensity*, which we operationalize as the log of assets per employee, accounts for possible measurement error in ROA due to unusually large intangible assets and small physical assets. Both features boost the ratio between earnings and the book value of assets, and family firms tend to have fewer tangible assets than other firms have.

The next step is to augment (1) by the controlling family's possible participation as a CEO, which is a common way in the literature to address family involvement. In fact, family firms are often defined by family management rather than family ownership (Fahlenbrach, 2009):

¹³ Firm fixed effects may reduce endogeneity bias by shifting the focus to within-firm changes (Sraer and Thesmar, 2007). Results available upon request show, however, that our models are robust to including firm fixed effects.

$$\begin{aligned}
 ROA_{it} = & \beta_0 + \beta_1 * Family\ firm_{it} + \beta_2 * Family\ firm_{it} * Family\ CEO_{it} \\
 (2) \quad & + \beta_3 * Age_{it} + \beta_4 * Size_{it} + \beta_5 * Risk_{it} + \beta_6 * Growth\ opportunities_{it} \\
 & + \beta_7 * Asset\ liquidity_{it} + \beta_8 * Leverage_{it} + \beta_9 * Capital\ intensity_{it} \\
 & + f_t + f_{it} + \varepsilon_{it}
 \end{aligned}$$

Family CEO_{it} is 1 if the CEO comes from the family and 0 otherwise. This is the only family characteristic we consider in this section, while Sections 4–6 consider the full set of family characteristics, using the firm characteristics as control variables.

We estimate models (1) and (2) in Section 3.1, while we in Section 3.2 use alternative ownership thresholds to define a family firm in these two models.

3.1 Firm Characteristics and Family CEO

The estimates of model (1) in Table 2 show that when we account for firm characteristics as well as year and industry fixed effects, the family firm premium is much higher than its unconditional value in Table 1 (4.7 vs. 1.4 percentage points). Thus, differences in firm characteristics between family firms and nonfamily firms cannot explain the superior profitability of family firms.

Table 2

The estimates of model (2) show that the expected family firm premium is 4.2 percentage points with a family CEO and 1.8 without. Thus, controlling for firm characteristics, industry effects, and the business cycle, about 60% of the premium is associated with a family CEO.

In both models, the coefficient estimates show that returns on assets are higher the younger and larger the firm, the smaller the risk, the lower the future growth, the higher the asset liquidity, the lower the leverage, and the higher the capital intensity. The latter relationship suggests that the family firm premium cannot be explained by an overestimated ROA due to large intangibles or high labor intensity in family firms. Finally, about 13% of the variation in profitability is associated with variation in the characteristics included in Table 2.

3.2 The Control Threshold

The family firms in our sample have concentrated ownership because we require the family's ultimate equity stake to exceed 50%. Therefore, it is not clear whether the observed premium is due to family ownership per se or just controlling ownership regardless of owner type.

Part 1 of Table 3 addresses this question by considering only firms with a controlling owner, whether family or nonfamily. The estimates show that family-controlled firms

outperform firms controlled by other owner types by 11.8 or 11.0 percentage points, depending on whether the family firm has the CEO or not. About one fifth of the family firm premium in this sample is associated with having a family CEO. Accordingly, the premium is not associated with the benefits of majority ownership, but with the notion that the family is indeed a particularly valuable blockholder type (Isakov and Weiskopf, 2014).

Table 3

In Part 2 of Table 3 we drop the requirement of majority control and define family firms as those where the largest family stake exceeds just 20%. This low threshold is common in the literature (Amit and Villalonga, 2014; Bennedsen et al., 2020). The estimates show that when the 20% threshold is passed, expected profitability increases by 3.4 percentage points if the family does not have the CEO and by 7.9 otherwise. Accordingly, some of the beneficial effect of family ownership occurs even below the majority threshold.

Part 3 takes the results from Part 2 further by looking more closely at different concentration levels of family ownership. The benchmark is firms where no family owns more than 20%. We add dummies for every 10-percentage point increase in the largest family stake and for single-owner family firms. The family firm premium gets large at around 40% concentration and is highest when the family owns around 2/3 or all the equity. Overall, the family firm premium tends to increase with the size of the controlling family's stake, and to be particularly and consistently large under majority control.

Summarizing this section, the family firm premium remains positive when we account for firm characteristics. About 60% of the premium is associated with firms where the CEO comes from the family. The positive relationship between the premium and family ownership starts already at a 20% equity stake, but the premium is larger when the family has majority control.¹⁴ Single-owner family firms earn the highest premium of all family firms.

These baseline findings suggest that families provide more valuable governance roles than do other owners. As we discussed in Section 1, however, the story about the merits of family ownership is more complicated than this because family owners may be more financially disadvantaged than are other owners, which may bring underinvestment and a higher ROA to the family firm. The next two sections clarify how governance advantages (Section 4) and financial disadvantages (Section 5) of family control feed into the family firm premium.

¹⁴ This result is consistent with studies using thresholds below 50% for family control, such as Maury (2006).

4. Governance Advantages of Family Ownership

We argued in Section 1 that characteristics of the controlling family may matter for the family firm premium, and we showed in Section 3 that the family's governance effort as a CEO accounts for a large part of the premium. In this section we relate the premium directly to a wider and sometimes more basic set of family characteristics than the family's chosen governance effort. These characteristics may matter for the family's incentives and ability to govern the firm, be it as officers, directors, informal monitors and advisors, and as mediators at the shareholder meeting. We address family characteristics that may reduce agency conflicts in Section 4.1 and the role of family skills in Section 4.2.

4.1 Low Agency Conflicts

We start with single-owner family firms as a benchmark. Such firms have particularly low agency conflicts because the owner can easily monitor management (low vertical agency conflict), and because there are no minority owners (non-existent horizontal agency conflict).

Single-owner firms constitute 62% of our sample, and 91% of those firms are family firms. Model 1 in Table 4 uses a dummy variable for family firms where the family controls all the equity. The estimates show that single-owner family firms are more profitable than other firms.

Table 4

Model 2 adds a dummy variable for all single-owner family firms, whether family or nonfamily. Consistent with the idea that families are special owners, we find higher profitability for single-owner firms controlled by families, but not for single-owner firms in general. Thus, the positive single-owner effect in Model 1 is not due to single-owner firms as a whole, but to the subsample of such firms where the family owns all the equity.¹⁵

The vertical agency problem between shareholders and managers is likely to be lower in family firms due to their concentrated ownership. This agency problem may be particularly low if the CEO belongs to the controlling family, which reduces the distance between shareholders and management, and if this CEO owns a large share in the firm, which increases the incentive to improve profitability. Also, having family members on the board may improve the monitoring and reduce moral hazard.

¹⁵ In multiple-owner family firms the family could be seen as a controlling coalition of owners, as in Bennedsen and Wolfenzon (2000). As modelled by Gomes (2000), a larger share for the controlling coalition increases its incentives to internalize the effect of its actions on minority owners, which reduces the horizontal agency problem.

The expected relationship between the family firm premium and our empirical measures of the two agency conflicts are summarized in columns A and B of Table 5.

Table 5

The estimates of models 2–7 in Table 4 show that the premium increases when the family firm’s CEO is from the family, when the family CEO holds more equity, with the family’s equity holding and board participation, and when minority shareholders are on the board.¹⁶ These results are consistent with the notion that the family firm premium is larger the smaller the potential vertical and horizontal agency conflicts.

Coordination within the controlling family may influence the family’s ability to reduce agency conflicts, (Bertrand et al., 2008; Villalonga et al., 2015). Column C of Table 5 shows the predicted relationships between ROA and our proxies for coordination problems. We expect that coordination is easier when there are few family owners, when family members work in the firm or sit on the board, and when the family CEO is also the majority owner. The estimates in Table 6 are mostly consistent with these predictions. The family firm premium decreases with the number of family owners, while it increases when the family’s ownership share is concentrated on fewer hands, when the family CEO is the controlling owner, and when more employees are also family members. Having family owners who are not active as board members or CEOs (i.e., not insiders) is not associated with a lower premium, suggesting that the combination of active and passive owners in the family is seldom a threat to profitability.¹⁷ Overall, these results support the idea that easier coordination within the controlling family increases the profitability of family firms.

Table 6

4.2 High Family Skills

Table 2 shows that the family firm premium increases when there is a family CEO, while Table 6 shows that the premium increases when family members are employees. This result may reflect that family control does not just reduce agency costs because of strong incentives to do so, but may also come with unique skills at mitigating agency conflicts and at operating the

¹⁶ The result about family board participation is consistent with Andres (2008), where family board participation is a prerequisite for family firm outperformance. Because the family is on the board in 97% of family firms in our sample (in 95% of the firms the family has at least 20% of the board seats), our results show that the family firm premium is negative for a very small group of family firms where the family is not involved. This importance of active family governance is also emphasized by Maury (2006).

¹⁷ Miller et al. (2007) also find that single-owner family firms outperform multiple-owner. In contrast, Salvato (2020) and Parise (2022) find that multiple family relationships among owners and insiders are beneficial. However, their analysis does not consider coordination or control, but rather the firm’s resources.

firm. Moreover, the literature suggests that the founder's skills may be particularly important. Large public firms in the United States with an active founder outperform other firms, while heirs seem unable to maintain this quality (Villalonga and Amit, 2006). Thus, families that start firms may have business skills and industry knowledge that later generations miss.

We analyze the role of family skills by examining first-generation (young) firms and later-generations (old) firms. We define a young firm as being less than 10 years old, while old firms are more than 20. To distinguish between firm generations and family generations, we classify family CEOs as young if they are less than 30 years old and as old if they are more than 50. We assume that a young family-owned firm is a founder firm, while an old firm with a young family CEO is a nonfounder firm. Column D of Table 5 shows our empirical proxies and predictions, which are that young family firms with family CEOs have a higher family premium than other family firms, while old family firms with young CEOs have a lower premium.

The estimates in Panel A of Table 7 show that the expected family firm premium is 2.8 percentage points larger in young family firms with a family CEO than in young family firms without a family CEO.¹⁸ Panel B considers old firms, where the premium is considerably smaller than for the young firms in Panel A (1.9 vs. 5.5), but still positive and significant. Moreover, the premium in Panel B is larger with a young family CEO. Thus, old family CEOs in old family firms are associated with the smallest premium. This means the family firm premium and the family CEO premium both survive when moving from young to old firms.

Table 7

These results do not support Villalonga and Amit (2006), who find that the family firm premium switches from positive to negative if founder-led firms are excluded from the sample. In contrast, we find that mature family firms are still more profitable than mature nonfamily firms, especially when they have young family CEOs. Therefore, the family's governance seems to benefit the firm also after the founder stage, suggesting that controlling families have unique skills that survive beyond the first generation.

The finding that the family firm premium disappears with the founder is common in developed capital markets, while studies from developing capital markets tend to find that the premium survives to later generations (Villalonga and Amit, 2020). We think the key in our setting may be that while the results from the United States are from large, listed firms, our

¹⁸ The premium is also larger with a young family CEO, while smaller when the family CEO is old in the young firms further dissecting the founder premium.

results are dominated by small, private firms. Compared to the former, the firms we study have access to a much smaller pool of governance and management skills outside the family, particularly in rural areas (Bøhren et al., 2019). The advantage of family control in such settings may be higher than the disadvantage (Bennedsen et al., 2015). Our results are also in line with the finding from European countries that dynastic control is not necessarily detrimental to high profitability (Sraer and Thesmar, 2007; Bach, 2016).

Our results may reflect that firms that remain family controlled for several generations are those where the controlling family has the skills to take serious part in governance. For instance, Table 1 documents that the CEO comes from the family in 93% of the family firms and is the majority shareholder in 72% of them. This possible self-selection may be a reason why the family firm premium we find is not just a founder phenomenon. Moreover, 62% of our sample firms have no minority shareholders. This fact means that most controlling families cannot extract private benefits at other shareholders' expense. Rather, the family has incentives to maximize the returns on the firm as a whole rather than just the family's part.

Summarizing, the findings in this section are consistent with the hypothesis that the family firm premium is larger the smaller the agency problems. Unlike for large, listed family firms in the United States, the smaller, the controlling owner of nonlisted family firms we analyze seem to have governance and operational skills that survive beyond the firm's founder stage, making the family firm premium persist over multiple generations.

5. Financial Disadvantages of Family Firms

Family firms may find it harder than nonfamily firms to fund value-creating projects (Masulis et al., 2011; Lins, Volpin, and Wagner, 2013). This financial disadvantage may increase the required ROA, the observed ROA of accepted projects, and hence the family firm premium. We consider how the premium relates to financial disadvantages due to the controlling family's limited wealth (Section 5.1), the family portfolio's risk (Section 5.2), and the illiquidity of the family firm's shares (Section 5.3).

5.1 Limited Family Wealth

The controlling owners of family firms may have less to invest than nonfamily owners of similar firms. This importance of the family's limited personal wealth for the family firm is strengthened by the fact that almost all family firms are private and that the pool of minority investors may be very small.

To analyze this mechanism, we relate the ROA to alternative measures of wealth limitations for the controlling family. As summarized by column E of Table 5, these measures are the family's wealth in absolute terms, the rank of the family's wealth among all controlling families in the economy, the family's assets relative to the mean assets per firm in the industry, the family's liquid assets relative to the firm's equity, the family's personal leverage, the assets of all firms under the family's control, and the overall size of the family, including non-owning members not involved in the firm.

The smaller the leverage and the larger the other measures, the less constrained the family's wealth. Wealthier families may find it easier to raise additional capital. Because the typical firm size varies across industries, we also consider family wealth relative to firm size. For instance, mining and oil or heavy industry require more capital than do service firms. If the family controls multiple firms, it may be easier to finance any firm in the portfolio. We consider the family's liquidity and personal leverage, which may restrict the family's ability to invest in the firm or to pledge collateral for its loans (Schmalz, Sraer, and Thesmar, 2017). Finally, having a large family may mean that more potential investors know the firm.

Table 8 shows that the profitability premium is higher the less wealthy the family, both in absolute terms, relative to the wealth of other controlling families, and relative to the typical firm size in the industry. The premium is also larger the higher the family's leverage, the lower the family's liquid assets outside the firm, and the smaller the assets of firms the family controls. This evidence supports the notion that more limited personal wealth for the controlling owner increases the family firm's ROA. The only inconsistent result is that a larger controlling family is associated with a higher premium, possibly reflecting that bringing more human resources to the table improves profitability. For instance, a larger family may provide a larger pool of candidates with a talented family CEO (Mullins and Schoar 2016).

Table 8

5.2 Undiversified Family Wealth

The family firm usually represents the family's main financial investment, and the firm may also be an important source of the family's labor income. Such concentrated wealth and income may influence the family's decisions as a controlling owner (Faccio et al., 2011), and it may make the family require higher expected returns than other owners would. As specified in column F of Table 5, we measure diversification of the family's wealth by the existence of nonfamily owners in the firm, the number of firms the family controls, the number of industries

in the controlled firms and in the firm's group, the family's equity in the firm relative to family wealth, and by the firm's assets relative to the corporate assets under family control.¹⁹

All these variables reflect how much of the family's financial resources are concentrated in the family firm. Having minority shareholders means the family can sell some of its equity and diversify. If the firm represents a smaller part of the family's portfolio, its idiosyncratic risk will be less important. Owning a portfolio of multiple firms, especially if they are active in multiple industries, makes the family more diversified.

Table 9 shows that the observed family firm premium is larger when the family is the only owner, the fewer firms and industries the family controls, the larger the proportion of the family's wealth invested in the firm, and the larger the proportion the firm represents in the family's wealth. These findings are consistent with the hypothesis that the less diversified the family's capital, the higher the controlled firm's ROA.

Table 9

5.3 Illiquid Shares

Shareholders may require higher expected returns the greater the cost of trading the share (Moskowitz and Vissing-Jørgensen, 2002). We test the existence of such an illiquidity premium by relating the ROA to three liquidity proxies shown in column G of Table 5, which are the number of minority owners, the number of separate owners (counting each owning family member as an owner), and that the firm is listed. The shares are less liquid if there are fewer investors willing to buy them and if there is no formal market for trading them. Thus, we expect an inverse relationship between ROA and these three liquidity proxies.

The estimates in Table 10 support these predictions. The family premium is larger the less liquid the family firm's shares, regardless of how we measure liquidity.

Table 10

Summarizing Section 5, we have related the family firm premium to select properties of the controlling family's wealth, finding that the premium increases with the financial

¹⁹ The family's wealth is the value of the family's assets as specified in the tax returns. The wealth figure includes cash, bank accounts, listed and nonlisted securities, real estate, and other tangible assets. To capture the wealth of the entire family, we include all its members, regardless of whether the member is involved in the firm as a shareholder, board member, or CEO. The number of family members (family size) is the number of individuals in the controlling family, regardless of whether the individual is involved in the firm or not.

disadvantages of family ownership. This is true regardless of whether we measure the family's financial disadvantages by limited wealth, undiversified wealth, or illiquid wealth.

6. Governance Advantages and Financial Disadvantages

We have used a wide range of empirical proxies to estimate how family control over the firm produces governance advantages in Section 4 and financial disadvantages in Section 5, presenting the results in altogether seven tables. It may be useful to bring these separate relationships together into just one model and make sure each relationship captures unique family characteristics behind the premium rather than overlapping ones. The latter concern may be particularly relevant in single-owner firms, which may have both low agency problems and owners with strong financial constraints, which both increase the family firm premium.

Table 11 addresses these concerns, where the six empirical proxies and the expected relationships are in the rightmost column of Table 5. We choose one proxy for each main family characteristic, trying to use empirical proxies that best capture the theoretical variables and that do not have extreme distributions. For instance, the small number of listed firms in the sample strongly skews the distribution of the listed-firm dummy. Therefore, we use the number of minority owners rather than listing status as the liquidity proxy. We expect that the vertical agency problem is smaller with a family CEO, that the horizontal agency problem is smaller the larger the family's ownership share, and that the coordination problem is smaller with less family owners. We expect lower financial constraints the larger the family's wealth, the larger the proportion of the wealth invested in the firm, and the larger the number of minority owners.

Model 1 has both main components of the family firm premium and also allows for the possibility that the two are correlated. The estimated signs of the coefficients correspond to those of the component models in Section 4 and 5. Moreover, the family firm dummy is significant only at the 5% level and the premium is just 0.8 percentage points, as opposed to a typical significance level of 1% and a coefficient of 2 – 5 percentage points in the preceding tables. These results show that both governance advantages and financial disadvantages are important for the superior asset returns of family-controlled firms, and that the two jointly account for the bulk of the family firm premium.

Table 11

An alternative way to verify that governance advantages and financial disadvantages are distinct components of the family premium is to keep one component constant while varying

the other. We select a sample that keeps constant the governance component in Model 2 and the financial component in Model 3, estimating the effect of changing the other component.

The sample for Model 2 is firms where the controlling family owns all the equity. This means the vertical and horizontal agency problems as well as the coordination problem are at their lowest. The estimates show that lower and less diversified wealth is associated with higher profitability.²⁰ This result is consistent with the relationship observed in Section 4.

Model 3 uses a sample of firms where the controlling family is in the top quartile of the wealth distribution, which means family wealth exceeds 10 million NOK (about 1 million Euros). This wealth level may ensure the family's financial constraints are low, while the governance advantages may vary with family characteristics unrelated to wealth. Like in Section 5, the estimates are consistent with a positive relationship between ROA and having low agency costs due to a family CEO, a large family stake, and a small family.

Overall, the integrated models estimated in this section confirm the findings from the piecewise models in the preceding sections. Moreover, the integrated models show that most of the family firm premium can be associated with better governance of the firm and stronger financial constraints for the controlling family.

7. Conclusion

This paper is the first to show the relationship between the profitability premium of family firms and a wide set of basic characteristics of the controlling family in the universe of all firms in the economy. Starting out by showing that the mean return on assets per year over twenty years is 1.4 percentage points larger in family-controlled firms, our main contribution is to decompose this family firm premium into two separate components that reflect the governance advantages and the financial disadvantages of family control, respectively, and to show how both components increase the family premium.

Using book return on assets to measure profitability, we show that the family firm premium increases with family characteristics that may produce lower conflicts of interest, easier coordination, and better family skills. These governance advantages may be sources of value creation that other owner types cannot easily provide. We also find, however, that the profitability premium of family firms increases because family firms may underinvest. This

²⁰ We do not include share illiquidity measures because they are always at their maximum in this sample of single-owner firms. Models 2 and 3 have no family firm dummy because the samples only include family firms.

financial disadvantage of family control happens because the controlling family's wealth is limited, undiversified, and illiquid.

Because a high family firm premium can reflect both the advantage of low agency costs and the disadvantage of underinvestment, one cannot validly compare the merits of alternative organizational forms by comparing their returns on assets, which is the most common approach in this literature. For the same reason, the political challenge is to provide regulatory environments where the family firm premium is not driven by the disadvantages of family control, but rather by the advantages.

References

- Amit, R., and B. Villalonga, 2014, Financial performance of family firms. In L. Melin, M. Nordqvist and P. Sharma (Eds.), *The SAGE Handbook of Family Business*. London: Sage.
- Anderson, R., and D.M. Reeb, 2003. Founding-family ownership and firm performance: Evidence from the S&P 500, *Journal of Finance* 58, 1301–1328.
- Andersson, F.W., D. Johansson, J. Karlsson, M. Lodefalk, and A. Poldahl, 2017, The characteristics and performance of family firms: Exploiting information on ownership, kinship, and governance using total population data, *Small Business Economics* 49, 1–18.
- Andres, C., 2008, Large shareholders and firm performance - An empirical examination of founding-family ownership, *Journal of Corporate Finance* 14, 431–445.
- Astrachan, J.H., and M.C. Shanker, 2003, Family businesses' contribution to the US economy: A closer look, *Family Business Review* 16, 211–219.
- Bach, L., 2014, Are small businesses worthy of financial aid? Evidence from a French targeted credit program, *Review of Finance* 18, 877–919.
- Bach, L., 2016, The causal (non-)effect of dynastic control on firm performance, Working paper, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2660464.
- Bennedsen, M., F. Pérez-González, K. Nielsen, and D. Wolfenzon, 2007, Inside the family firm: The role of families in succession decisions and performance, *Quarterly Journal of Economics* 122, 647–691.
- Bennedsen, M., F. Pérez-González, and D. Wolfenzon, 2010, The governance of family firms, In Baker, H. K., and R. Anderson (Eds.), *Corporate Governance: A Synthesis of Theory, Research, and Practice*, Hoboken, NJ: Wiley.
- Bennedsen, M., J. P.H. Fan, M. Jian, and Y.H. Yeh, 2015, The family business map: Framework, selective survey, and evidence from Chinese family firm succession, *Journal of Corporate Finance* 33, 212–226.
- Bennedsen, M., F. Pérez-González, K. Nielsen, and D. Wolfenzon, 2020, Do CEOs matter? Evidence from hospitalization events, *Journal of Finance* 75, 1877–1911.
- Bertrand, M., S. Johnson, K. Samphantharak, and A. Schoar, 2008, Mixing family with business: A study of Thai business groups and the families behind them, *Journal of Financial Economics* 88, 466–498.
- Berzins, J., Ø. Bøhren, and B. Stacescu, 2018, Shareholder conflicts and dividends, *Review of Finance* 22, 1807–1840.
- Buchanan, B., E. Liljeblom, M. Martikainen, and J. Nikkinnen, 2022, Multiple owners and productivity: Evidence from family firms, *European Journal of Finance*, forthcoming.
- Bøhren, Ø., B. Stacescu, L. Almlı, and K.L. Søndergaard, 2019, When does the family govern the family firm? *Journal of Financial and Quantitative Analysis* 54, 2085–2117.
- Claessens, S., S. Djankov, and H.P. Lang, 2000, The separation of ownership and control in East Asian corporations. *Journal of Financial Economics* 58, 81–112.
- Downing, J., and J.C. Langli, 2019, Audit exemptions and compliance with tax and accounting regulations, *Accounting and Business Research*, 49, 28–67.

- Edmans, A. and C.G. Holderness, 2017, Blockholders: A survey of theory and evidence. In B.E. Hermalin and M.S. Weisbach (Eds.), *The Handbook of the Economics of Corporate Governance*, Volume 1, Chapter 8, pp. 541–636. Amsterdam: North-Holland.
- European Commission, 2009, Final report of the expert group. Overview of family-business-relevant issues: Research, networks, policy measures and existing studies. <http://ec.europa.eu/enterprise/policies/sme/>.
- Faccio, M., and H.P. Lang, and L. Young, 2001, Dividends and expropriation, *American Economic Review* 91, 54–78.
- Faccio, M., and H.P. Lang, 2002, The ultimate ownership of Western European corporations. *Journal of Financial Economics* 65, 365–395.
- Faccio, M., M.T. Marchica, and R. Mura, 2011, Large shareholder diversification and corporate risk-taking, *Review of Financial Studies* 24, 3601–3641.
- Fahlenbrach, R., 2009, Founder-CEOs, investment decisions, and stock market performance, *Journal of Financial and Quantitative Analysis* 44, 439–466.
- Franks, J., C. Mayer, and S. Rossi, 2009, Ownership: Evolution and regulation, *Review of Financial Studies* 22, 4009–4056.
- Gomes, A., 2000, Going public without governance: Managerial reputation effects, *Journal of Finance* 55, 615–646.
- Hadlock, C.J., and J.R. Pierce, 2010, New evidence on measuring financial constraints: Moving beyond the KZ index, *Review of Financial Studies* 23, 1909–1940.
- Isakov, D., and J.P. Weisskopf, 2014, Are founding families special blockholders? An investigation of controlling shareholder influence on firm performance, *Journal of Banking and Finance* 41, 1–16.
- Jacob, M., and R. Michaely, 2017, Taxation and dividend policy: The muting effect of agency issues and shareholder conflicts, *Review of Financial Studies* 30, 3176–3222.
- La Porta, R., F. Lopez-De-Silanes, and A. Shleifer, 1999, Corporate ownership around the world, *Journal of Finance* 54, 471–517.
- Lins, K.V., P. Volpin, and H.F. Wagner, 2013, Does family control matter? International evidence from the 2008–2009 financial crisis, *Review of Financial Studies* 26, 2583–2619.
- Masulis, R.W., P.K. Pham, and J. Zein, 2011, Family business groups around the world: Financing advantages, control motivations, and organizational choices, *Review of Financial Studies* 24, 3556–3600.
- Maury, B., 2006, Family ownership and firm performance: Empirical evidence from Western European corporations, *Journal of Corporate Finance* 12, 321–341.
- Mehrotra, V., R. Morck, J. Shim, and Y. Wiwattanakantang, 2013, Adoptive expectations: Rising sons in Japanese family firms. *Journal of Financial Economics* 108, 840–885.
- Merton, R.C., 1987, A simple model of capital market equilibrium with incomplete information, *Journal of Finance* 42, 483–510.
- Miller, D., I. Le Breton-Miller, R.H. Lester, and A.A. Cannella, 2007, Are family firms really superior performers? *Journal of Corporate Finance* 13, 829–858.
- Moskowitz, T.J., and A. Vissing-Jørgensen, 2002, The returns to entrepreneurial investment: A private equity premium puzzle? *American Economic Review* 92, 745–778.

- Mullins, W., and A. Schoar, 2016, How do CEOs see their roles? Management philosophies and styles in family and non-family firms, *Journal of Financial Economics* 119, 24–43.
- O’Boyle, E.H. Jr., J.M. Pollack, and M.W. Rutherford, 2012, Exploring the relation between family involvement and firms' financial performance: A meta-analysis of main and moderator effects. *Journal of Business Venturing* 27, 1–18.
- Parise, G., 2022, Revisiting family firms, Working paper, EDHEC Business School, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4064876.
- Roe, M.J., 1994, Strong Managers, Weak Owners: The Political Roots of American Corporate Finance, Princeton, NJ: Princeton University Press.
- Salvato, C., M. Sargiacomo, M.D. Amore, and A. Minichilli, 2020, Natural disasters as a source of entrepreneurial opportunity: Family business resilience after an earthquake, *Strategic Entrepreneurship Journal*, 14, 594–615.
- Schmalz, M.C., D.A. Sraer, and D. Thesmar, 2017, Housing collateral and entrepreneurship. *Journal of Finance* 72, 99–132.
- Sraer, D.A, and D. Thesmar, 2007, Performance and behavior of family firms: Evidence from the French stock market. *Journal of the European Economic Association* 5, 709–751.
- Tirole, J., 2001, Corporate governance. *Econometrica* 69, 1–35.
- Villalonga, B., and R. Amit, 2006, How do family ownership, control, and management affect firm value? *Journal of Financial Economics* 80, 385–417.
- Villalonga, B., R. Amit, M.A. Trujillo, and A. Guzman, 2015, Governance of family firms. *Annual Review of Financial Economics* 7, 635–654.
- Villalonga, B., and R. Amit, 2020, Family ownership. *Oxford Review of Economic Policy* 36, 241–257.

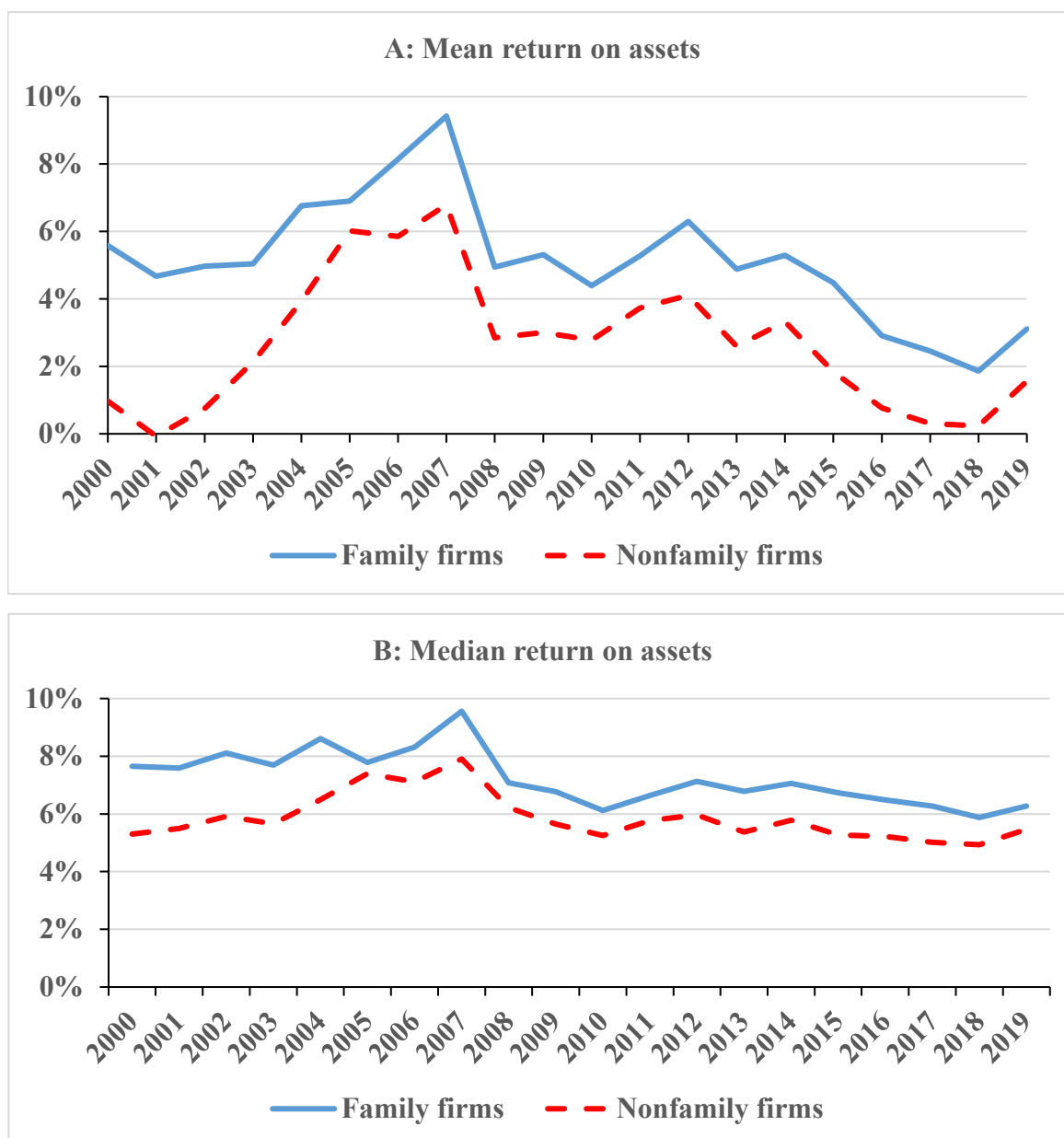


Figure 1: The family firm premium over the business cycle

This table shows the mean (Panel A) and median (Panel B) return on assets over the sample period for family firms and nonfamily firms. A family firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Nonfamily firms are all other firms. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. Return on assets (ROA) is operating earnings after taxes divided by assets. The sample includes the population of Norwegian limited-liability firms with at least three years of data, except financial firms and firms with no sales, employees, or assets.

Table 1: Descriptive statistics

This table shows summary statistics for variables used in the empirical tests. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. A family firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. All other firms are nonfamily firms. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "ROA" is operating earnings after taxes divided by assets, "ROIC" is operating earnings after taxes divided by assets net of cash and current debt, and "ROE" is net earnings after taxes divided by the book value of equity. "Sales" and "Assets" are in million 2019 NOK. "Employees" is the number of employed labor. "Age" is the number of years since the firm was founded, "Risk" is the coefficient of variation of the firm's sales over the previous three years, "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the ratio of assets (in million 2019 NOK) to employees. ROA, ROE, ROIC, Growth opportunities, and Leverage are winsorized at 2.5% and 97.5%, while Age and Capital intensity are wized at 97.5%.

Panel A. Firm characteristics in all firms, family firms, and nonfamily firms

Variables	All firms		Family firms		Nonfamily firms		Family firms-Nonfamily firms			
	Mean	Median	Mean	Median	Mean	Median	Mean	<i>t</i> test	Median	Wilcoxon test
ROA	0.050	0.070	0.054	0.074	0.040	0.063	0.014	<.0001	0.011	<.0001
ROE	0.307	0.195	0.312	0.200	0.294	0.179	0.017	<.0001	0.021	<.0001
ROIC	0.283	0.134	0.286	0.137	0.275	0.125	0.011	<.0001	0.012	<.0001
Sales	63.649	4.311	20.979	3.414	175.898	8.501	-154.918	<.0001	-5.087	<.0001
Assets	112.176	2.828	23.729	2.322	345.303	5.199	-321.574	<.0001	-2.877	<.0001
Employees	18.778	4.000	9.576	3.000	43.034	6.000	-33.458	<.0001	-3.000	<.0001
Age	15.519	12.000	15.308	12.000	16.074	12.000	-0.766	<.0001	0.000	0.042
Risk	0.293	0.157	0.298	0.159	0.280	0.153	0.018	<.0001	0.007	<.0001
Growth opportunities	2.313	1.928	2.306	1.881	2.333	2.041	-0.027	<.0001	-0.160	<.0001
Asset liquidity	0.292	0.216	0.298	0.221	0.276	0.203	0.022	<.0001	0.018	<.0001
Leverage	0.382	0.609	0.346	0.600	0.478	0.630	-0.132	<.0001	-0.030	<.0001
Capital intensity	4.754	0.661	3.016	0.623	9.336	0.778	-6.320	<.0001	-0.155	<.0001
Number of observations	1,447,882	.	1,049,663	.	398,173	.	1,447,882	.	.	.

Continued on next page

Table 1–Continued

Panel B. Family characteristics in family firms

This panel shows summary statistics for variables describing the controlling family. The population is all Norwegian family firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. A family firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. "Family size" is the number of owning and nonowning family members, "Ownership share in the firm" is the family's proportion of the firm's equity, measuring ownership as the sum of the owner's direct and indirect equity holdings in the firm, with the family counted as one owner. "Number of family owners" is the number of family members that own shares in the firm either directly or indirectly, "Wealth" is the family's gross assets, "Rank by wealth" is the family's percentile in the wealth distribution, "Liquid assets" is cash, bank accounts, and marketable securities, "Personal leverage" is the family's debt divided by the family's gross assets. "Assets outside the firm" is the family's total assets minus its holding in the firm, "Number of investments with control" is the number of firms in which the family owns a majority stake, "Number of industries in family-controlled firms" is number of industries in all operating firms the family controls, "Number of industries in the group" is the number of industries in the family firm's group, "Number of family owners who are not insiders" is the number of shareholders who are members of the controlling family but do not serve as CEOs or directors, "Family share on board" is the proportion of directors who are family members, "Family CEO" is 1 if the CEO comes from the family and 0 otherwise, "Age of family CEO" is the number of years since the family CEO was born, "Family CEO is majority owner" is 1 if the family CEO owns at least 50% of the firm's equity and 0 otherwise, "Young family CEO" is 1 if the family CEO is less than 30 years old and 0 otherwise, while "Old family CEO" is 1 if the family CEO is more than 50 years old and 0 otherwise. "Proportion of employees belonging to family" is the proportion of the firm's employees who are related to the controlling family. "StdDev" is standard deviation.

Characteristic	Mean	P5	P25	Median	P75	P95	StdDev	N
Family size	27.072	4.000	12.000	20.000	33.000	75.000	24.020	945,263
Ownership share in the firm	0.937	0.600	1.000	1.000	1.000	1.000	0.135	1,037,346
Number of family owners	1.488	1.000	1.000	1.000	2.000	3.000	0.868	945,125
Wealth (mill. NOK)	35.076	2.118	7.642	16.016	32.384	95.191	172.652	944,805
Rank by wealth	49.981	5.000	26.000	50.000	74.000	94.000	28.248	909,261
Liquid assets (mill. NOK)	7.190	0.275	1.687	3.945	8.140	21.187	26.974	944,639
Relative liquid assets	18.322	0.190	1.323	4.362	13.947	78.249	49.361	807,825
Personal leverage	2.151	0.119	0.488	0.844	1.278	2.247	439.288	944,690
Assets outside the firm (mill. NOK)	16.271	0.000	0.000	0.000	0.051	15.675	1,840.589	945,262
Number of investments with control	1.383	1.000	1.000	1.000	1.000	3.000	0.939	910,355
Number of industries in family-controlled firms	1.180	1.000	1.000	1.000	1.000	2.000	0.570	907,560
Number of industries in the group	1.067	1.000	1.000	1.000	1.000	1.000	0.356	1,005,285
Number of family owners who are not insiders	0.547	0.000	0.000	0.000	1.000	2.000	0.637	1,049,593
Family share on board	0.812	0.333	0.600	1.000	1.000	1.000	0.273	945,092
Family CEO	0.932	0.000	1.000	1.000	1.000	1.000	0.252	1,022,637
Age of family CEO (years)	50.695	33.000	43.000	51.000	58.000	68.000	10.841	875,634
Family CEO is majority owner	0.717	0.000	0.000	1.000	1.000	1.000	0.451	1,049,754
Young family CEO	0.027	0.000	0.000	0.000	0.000	0.000	0.162	875,634
Old family CEO	0.508	0.000	0.000	1.000	1.000	1.000	0.500	875,634
Proportion of employees belonging to family	0.408	0.000	0.000	0.333	0.750	1.000	0.390	624,170

Continued on next page

Table 1—Continued

Panel C. The family firm premium by year, firm size, and industry

This panel shows summary statistics for family and nonfamily firms. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. A family firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. All other firms are nonfamily firms. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. The family firm premium is the difference between the mean (median) of the ROA of family and nonfamily firms in a given year, size decile, or industry. where ROA is operating earnings after taxes divided by assets. The firm size deciles are based on sales expressed in 2019 NOK.

	Year																			
Family firm premium	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Mean	0.030	0.028	0.033	0.024	0.022	0.003	0.013	0.015	0.011	0.016	0.008	0.008	0.015	0.018	0.014	0.020	0.017	0.015	0.007	0.014
Median	0.019	0.016	0.018	0.018	0.019	0.003	0.009	0.012	0.006	0.010	0.007	0.007	0.009	0.012	0.011	0.011	0.012	0.010	0.007	0.009

	Firm size decile									
Family firm premium	1 (smallest)	2	3	4	5	6	7	8	9	10 (largest)
Mean	0.065	0.064	0.077	0.071	0.048	0.035	0.022	0.015	0.010	0.017
Median	0.014	0.017	0.038	0.038	0.027	0.020	0.012	0.008	0.005	0.014

	Agriculture	Forestry	Fishing	Mining and oil	Light industry	Heavy industry	Utilities	Construction	Retail and wholesale	Transport	Publishing, media, IT	Real estate	Services	Public services	Multisector
Family firm premium	-0.009	0.022	0.040	0.066	0.018	0.024	0.034	-0.018	0.003	0.010	0.042	0.002	0.020	0.073	0.023
Mean	-0.009	0.022	0.040	0.066	0.018	0.024	0.034	-0.018	0.003	0.010	0.042	0.002	0.020	0.073	0.023
Median	-0.002	0.027	0.000	0.036	0.010	0.008	0.032	-0.009	0.001	0.014	0.027	0.002	0.022	0.084	0.014

Table 2: The baseline relationship

This table shows the results of regressing firm profitability on a family firm dummy (model 1) and also a family CEO dummy (model 2) while also accounting for firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. A family consists of individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Family firm" is 1 if the family holds more than 50% of the equity and 0 otherwise, while "Family CEO" is 1 if the controlling family has the CEO position and 0 otherwise. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is the ratio of cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)	1		2	
	Coefficient	Standard error	Coefficient	Standard error
Family firm	0.047 ***	0.001	0.018 ***	0.002
Family firm*Family CEO			0.024 ***	0.001
Age	-0.014 ***	0.001	-0.015 ***	0.001
Size	0.033 ***	0.000	0.034 ***	0.000
Risk	-0.025 ***	0.006	-0.022 ***	0.006
Growth opportunities	-0.014 ***	0.000	-0.015 ***	0.000
Asset liquidity	0.092 ***	0.002	0.095 ***	0.002
Leverage	-0.035 ***	0.001	-0.034 ***	0.001
Capital intensity	0.018 ***	0.000	0.020 ***	0.000
Year fixed effects	Yes		Yes	
Industry fixed effects	Yes		Yes	
R ²	0.129		0.133	
Number of observations	1,427,604		1,321,513	
Number of firms	211,811		204,566	

Table 3: The family firm premium under alternative definitions of the family firm

This table shows the results of regressing firm profitability on a family firm dummy, a dummy for family CEO in family firm, and firm characteristics, using alternative definitions of the family firm. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. "Family firm" is 1 if individuals related by blood or marriage up to the fourth degree of kinship own at least the proportion of the firm's equity as specified by the family firm definition used in the models, and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails. "Family CEO" is 1 if the controlling family has the CEO position and 0 otherwise. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is the ratio of cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. The sample in Part 1 includes only majority-held firms, which are firms where a family or nonfamily entity owns more than 50% of the equity. Part 2 defines family firms as firms where a family owns more than 20% of the equity. Part 3 distinguishes between firms with different levels of family ownership, where the benchmark group has no family owner with more than 20%. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	Part 1: Only majority-controlled firms; family firm if largest family stake exceeds 50%				Part 2: All firms; family firm if largest family stake exceeds 20%				Part 3: All firms; alternative thresholds for largest family stake	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.110 ***	0.002	0.092 ***	0.002	0.083 ***	0.003	0.034 ***	0.003		
Family firm*Family CEO			0.026 ***	0.001			0.045 ***	0.001		
Family share 20-30%									0.036 ***	0.003
Family share 30-40%									0.066 ***	0.003
Family share 40-50%									0.088 ***	0.003
Family share 50-60%									0.079 ***	0.003
Family share 60-70%									0.091 ***	0.003
Family share 70-80%									0.074 ***	0.003
Family share 80-90%									0.076 ***	0.003
Family share 90-99%									0.067 ***	0.003
Family share above 99%									0.091 ***	0.003
Age	-0.016 ***	0.001	-0.016 ***	0.001	-0.012 ***	0.001	-0.014 ***	0.001	-0.012 ***	0.001
Size	0.035 ***	0.000	0.036 ***	0.000	0.030 ***	0.000	0.034 ***	0.000	0.031 ***	0.000
Risk	-0.022 ***	0.004	-0.021 ***	0.004	-0.026 ***	0.007	-0.022 ***	0.006	-0.026 ***	0.007
Growth opportunities	-0.015 ***	0.000	-0.015 ***	0.000	-0.013 ***	0.000	-0.015 ***	0.000	-0.013 ***	0.000
Asset liquidity	0.086 ***	0.002	0.086 ***	0.002	0.090 ***	0.002	0.094 ***	0.002	0.090 ***	0.002
Leverage	-0.033 ***	0.001	-0.032 ***	0.001	-0.035 ***	0.001	-0.034 ***	0.001	-0.035 ***	0.001
Capital intensity	0.022 ***	0.000	0.022 ***	0.000	0.019 ***	0.000	0.020 ***	0.000	0.018 ***	0.000
Year fixed effects	Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes	
R ²	0.138		0.139		0.126		0.134		0.127	
Number of observations	1,130,130		1,081,894		1,427,604		1,321,513		1,427,267	
Number of firms	179,924		174,836		211,811		204,566		211,711	

Table 4: The family firm premium and agency conflicts

This table shows the results of regressing profitability on a family firm dummy, measures of agency conflicts, and firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. The sample for model 7 excludes single-owner firms. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at 2.5% and 97.5%. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, counting the family as one owner. "Single-owner firm" equals one if one family or nonfamily entity owns all the shares in the firm and 0 otherwise. "Family CEO" equals 1 if the controlling family has the CEO position and 0 otherwise. "Holding of CEO" is the equity stake in the firm held by the CEO. "Holding of family CEO" is the equity stake in the firm held by the family CEO. "Family seats on board" is the percentage of directors who belong to the controlling family. "Holding of largest owner" is the highest percentage equity stake in the firm. "Minority on board" is 1 if minority shareholders sit on the board and 0 otherwise. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets	1		2		3		4		5		6		7	
Independent variable	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.037 ***	0.001	0.024 ***	0.001	0.018 *	0.002	0.001	0.001	-0.004 ***	0.001	0.031 ***	0.002	0.018 ***	0.001
Family firm*Single-owner firm	0.014 ***	0.001	0.085 ***	0.002										
Single-owner firm			-0.070 ***	0.002										
Family firm*Family CEO					0.024 ***	0.001								
Family firm*Holding of family CEO							0.020 ***	0.001						
Family firm*Family seats on board									0.033 ***	0.001				
Family firm*Holding of largest owner											0.017 ***	0.002		
Family firm*Minority on board													0.006 ***	0.001
Age	-0.013 ***	0.001	-0.013 ***	0.001	-0.015 ***	0.001	-0.016 ***	0.001	-0.015 ***	0.001	-0.014 ***	0.001	-0.009 ***	0.001
Size	0.033 ***	0.000	0.034 ***	0.000	0.034 *	0.000	0.040 ***	0.000	0.039 ***	0.000	0.033 ***	0.000	0.032 ***	0.001
Risk	-0.025 ***	0.006	-0.024 ***	0.006	-0.022 ***	0.006	-0.016 ***	0.005	-0.019 ***	0.005	-0.025 ***	0.006	-0.029 **	0.015
Growth opportunities	-0.014 ***	0.000	-0.014 ***	0.000	-0.015 ***	0.000	-0.017 ***	0.000	-0.016 ***	0.000	-0.014 ***	0.000	-0.011 ***	0.000
Asset liquidity	0.091 ***	0.002	0.092 ***	0.002	0.095 *	0.002	0.103 ***	0.002	0.105 ***	0.002	0.092 ***	0.002	0.110 ***	0.003
Leverage	-0.034 ***	0.001	-0.034 ***	0.001	-0.034 *	0.001	-0.030 ***	0.001	-0.031 ***	0.001	-0.035 ***	0.001	-0.043 ***	0.001
Capital intensity	0.018 ***	0.000	0.019 ***	0.000	0.020 *	0.000	0.022 ***	0.000	0.021 ***	0.000	0.018 ***	0.000	0.013 ***	0.001
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
R ²	0.130		0.132		0.133		0.142		0.141		0.129		0.131	
Number of observations	1,427,604		1,427,604		1,321,513		1,098,325		1,169,342		1,427,465		561,958	
Number of firms	211,811		211,811		204,566		177,847		182,020		211,795		103,437	

Table 5: Empirical proxies and predicted relationships

This table summarizes the hypothesized relationship between the family firm's return on assets and agency costs and the family's financial constraints. The variables are defined in the table referred to in the leftmost column.

Variable	The family firm's agency costs				The controlling family's financial constraints			Table 11: Integrated models
	A: Vertical agency problem	B: Horizontal agency problem	C: Coordination problem	D: Family skills problem	E: Limited family wealth	F: Undiversified family wealth	G: Illiquid shares	
<i>Table 4:</i>								
Family firm*Family CEO	+							+
Family firm*Holding of family CEO	+							
Family firm*Family seats on board	+							
Family firm*Holding of largest owner		+						+
Family firm*Minority on board		+						
Family firm*Single-owner firm		+						
<i>Table 6:</i>								
Family firm*Number of family owners				-				+
Family firm*Concentration of family ownership				+				
Family firm*Single family owner				+				
Family firm*Family CEO is majority owner				+				
Family firm*Proportion of employees belonging to family				+				
Family firm*Number of family owners who are not insiders				-				
<i>Table 7:</i>								
Family firm*Family CEO in family firm								
Family firm*Young family CEO in family firm								
<i>Table 8:</i>								
Family firm*Controlling family wealth						-		-
Family firm*Controlling family rank by wealth						-		
Family firm*Controlling family assets relative to industry						-		
Family firm*Controlling family liquidity relative to firm						-		
Family firm*Personal family leverage						+		
Family firm*Assets of firms controlled by the family						-		
Family firm*Controlling family size						-		
<i>Table 9:</i>								
Family firm*Multiple-owner firm							-	
Family firm*Number of firms the largest family controls							-	
Family firm*Number of industries in family-controlled firms							-	
Family firm*Number of industries in the firm's group							-	
Family firm*Equity investment to family wealth							+	+
Family firm*Proportion of family-controlled assets							+	
<i>Table 10:</i>								
Family firm*Number of minority owners								-
Family firm*Number of separate owners								-
Family firm*Listed								-

Table 6: The family firm premium and in-family coordination

This table shows the results of regressing profitability on a family firm dummy and measures of family coordination issues. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at 2.5% and 97.5%. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, counting the family as one owner. "Number of family owners" is the number of family members with shares in the firm. "Single family owner" is equal to 1 if there is only one owner in the controlling family and 0 otherwise. "Family CEO is majority owner" is equal to 1 if the CEO belongs to the family and holds more than 50% of the firm's equity, and 0 otherwise. "Concentration of family ownership" is the Herfindahl index of the family members' individual equity stakes. "Proportion of employees belonging to family" is the proportion of the firm's employees who are also family members. "Number of family owners who are not insiders" is the number of shareholders who belong to the controlling family, but do not serve as CEOs or directors. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3		4		5		6	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.035 ***	0.001	0.046 ***	0.001	0.013 ***	0.001	0.007 ***	0.001	0.018 ***	0.001	0.044 ***	0.001
Family firm*Number of family owners	-0.008 ***	0.000										
Family firm*Single family owner			0.030 ***	0.001								
Family firm*Family CEO is majority owner					0.013 ***	0.001						
Family firm*Concentration of family ownership							0.020 ***	0.001				
Family firm*Proportion of employees belonging to family									0.002 *	0.001		
Family firm*Number of family owners who are not insiders											0.006 ***	0.001
Age	-0.014 ***	0.001	-0.012 ***	0.001	-0.015 ***	0.001	-0.015 ***	0.001	-0.013 ***	0.001	-0.014 ***	0.001
Size	0.038 ***	0.000	0.034 ***	0.000	0.038 ***	0.000	0.038 ***	0.000	0.036 ***	0.001	0.033 ***	0.000
Risk	-0.019 ***	0.006	-0.025 ***	0.006	-0.019 ***	0.005	-0.019 ***	0.006	-0.014 ***	0.005	-0.025 ***	0.006
Growth opportunities	-0.016 ***	0.000	-0.014 ***	0.000	-0.016 ***	0.000	-0.016 ***	0.000	-0.013 ***	0.000	-0.014 ***	0.000
Asset liquidity	0.106 ***	0.002	0.091 ***	0.002	0.102 ***	0.002	0.106 ***	0.002	0.112 ***	0.002	0.091 ***	0.002
Leverage	-0.031 ***	0.001	-0.034 ***	0.001	-0.032 ***	0.001	-0.031 ***	0.001	-0.032 ***	0.001	-0.034 ***	0.001
Capital intensity	0.022 ***	0.000	0.018 ***	0.000	0.021 ***	0.000	0.021 ***	0.000	0.021 ***	0.001	0.018 ***	0.000
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R ²	0.141		0.132		0.140		0.141		0.141		0.130	
Number of observations	1,170,042		1,427,604		1,245,274		1,169,973		790,110		1,427,406	
Number of firms	182,017		211,811		194,434		182,009		144,156		211,727	

Table 7: Family skills in firm and family generations

This table shows the results of regressing the profitability of young firms (Panel A) and old firms (Panel B) on firm characteristics and on generations of family participation in governance. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. The firms in Panel A (young firms) are less than 10 years old, while the firms in Panel B (old firms) are more than 20 years old. "Return on assets (ROA)" is operating earnings after taxes divided by assets in real terms, winsorized at the 2.5% and 97.5% tails. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship, and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Family CEO" equals 1 if the controlling family in the firm also has the CEO position, and 0 otherwise. "Young family CEO" equals 1 if the family CEO is less than 30 years old, and 0 otherwise. "Old family CEO" equals 1 if the family CEO is more than 50 years old, and 0 otherwise. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Panel A. Young firms

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3		4	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.055 ***	0.001	0.029 ***	0.002	0.055 ***	0.001	0.058 ***	0.001
Family firm*Family CEO in family firm			0.028 ***	0.002				
Family firm*Young family CEO in family firm					0.010 ***	0.002		
Family firm*Old family CEO in family firm							-0.010 ***	0.001
Age	-0.003	0.002	-0.003	0.002	-0.003	0.002	-0.002	0.002
Size	0.051 ***	0.001	0.051 ***	0.001	0.051 ***	0.001	0.051 ***	0.001
Risk	-0.035 ***	0.008	-0.034 ***	0.008	-0.034 ***	0.008	-0.034 ***	0.008
Growth opportunities	-0.019 ***	0.000	-0.019 ***	0.000	-0.019 ***	0.000	-0.019 ***	0.000
Asset liquidity	0.091 ***	0.003	0.091 ***	0.003	0.093 ***	0.003	0.094 ***	0.003
Leverage	-0.046 ***	0.001	-0.046 ***	0.001	-0.045 ***	0.001	-0.045 ***	0.001
Capital intensity	0.024 ***	0.001	0.024 ***	0.001	0.025 ***	0.001	0.025 ***	0.001
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
R ²	0.187		0.188		0.165		0.187	
Number of observations	523,265		523,265		510,862		510,862	
Number of firms	113,927		113,927		103,800		113,927	

Continued on next page

Table 7–Continued

Panel B. Old firms

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3		4	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.019 ***	0.001	0.007 ***	0.002	0.020 ***	0.001	0.022 ***	0.001
Family firm*Family CEO in family firm			0.013 ***	0.002				
Family firm*Young CEO in family firm					0.014 ***	0.004		
Family firm*Old CEO in family firm							-0.003 ***	0.001
Age	-0.031 ***	0.002	-0.031 ***	0.002	-0.031 ***	0.002	-0.031 ***	0.002
Size	0.020 ***	0.000	0.020 ***	0.000	0.020 ***	0.000	0.020 ***	0.000
Risk	-0.008 *	0.004	-0.008 *	0.004	-0.008 *	0.004	-0.008 *	0.004
Growth opportunities	-0.009 ***	0.001	-0.009 ***	0.001	-0.009 ***	0.001	-0.009 ***	0.001
Asset liquidity	0.102 ***	0.004	0.102 ***	0.004	0.103 ***	0.004	0.103 ***	0.004
Leverage	-0.015 ***	0.001	-0.015 ***	0.001	-0.015 ***	0.001	-0.015 ***	0.001
Capital intensity	0.013 ***	0.001	0.013 ***	0.001	0.013 ***	0.001	0.013 ***	0.001
Year fixed effects	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
R ²	0.081		0.081		0.081		0.081	
Number of observations	342,792		342,792		333,305		333,305	
Number of firms	54,517		54,517		52,794		52,794	

Table 8: The family firm premium and the controlling family's limited wealth

This table shows the results of regressing profitability on a family firm dummy, the controlling family's wealth constraints, and firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at 2.5% and 97.5%. "Controlling family wealth" is the log of family's total gross assets in million 2019 NOK. "Controlling family rank by wealth" is the rank of the family among all controlling families in a given year in terms of gross assets. "Controlling family assets relative to industry" is the family's gross assets to the mean total assets of firms in the same industry and year. "Controlling family liquidity relative to firm" is the ratio between the family's bank deposits and the firm's equity. "Personal family leverage" is the family's debt divided by the family's gross assets. "Assets of firms controlled by the family" is the log of the total assets of all firms controlled by the family. "Controlling family size" is the log of the number of members in the extended family. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3		4		5		6		7	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.054 ***	0.001	0.034 ***	0.001	0.024 ***	0.001	0.021 ***	0.001	0.007 ***	0.001	0.063 ***	0.001	0.008 ***	0.002
Family firm*Controlling family wealth	-0.012 ***	0.000												
Family firm*Controlling family rank by wealth			-0.027 ***	0.001										
Family firm*Controlling family assets relative to industry					-0.012 ***	0.000								
Family firm*Controlling family liquidity relative to firm							-0.003 ***	0.000						
Family firm*Personal family leverage									0.020 ***	0.001				
Family firm*Assets of firms controlled by the family											-0.023 ***	0.001		
Family firm*Controlling family size													0.004 ***	0.000
Age	-0.012 ***	0.001	-0.013 ***	0.001	-0.012 ***	0.001	-0.019 ***	0.000	-0.012 ***	0.001	-0.011 ***	0.001	-0.015 ***	0.001
Size	0.037 ***	0.000	0.036 ***	0.000	0.036 ***	0.000	0.020 ***	0.000	0.036 ***	0.000	0.045 ***	0.001	0.038 ***	0.000
Risk	-0.016 ***	0.005	-0.016 ***	0.005	-0.016 ***	0.005	-0.003 **	0.001	-0.017 ***	0.006	-0.016 ***	0.005	-0.019 ***	0.006
Growth opportunities	-0.013 ***	0.000	-0.013 ***	0.000	-0.013 ***	0.000	-0.004 ***	0.000	-0.013 ***	0.000	-0.018 ***	0.000	-0.016 ***	0.000
Asset liquidity	0.110 ***	0.002	0.110 ***	0.002	0.112 ***	0.002	0.197 ***	0.002	0.113 ***	0.002	0.100 ***	0.002	0.107 ***	0.002
Leverage	-0.034 ***	0.001	-0.034 ***	0.001	-0.034 ***	0.001	0.015 ***	0.000	-0.034 ***	0.001	-0.031 ***	0.001	-0.031 ***	0.001
Capital intensity	0.022 ***	0.000	0.022 ***	0.000	0.023 ***	0.000	0.017 ***	0.000	0.022 ***	0.000	0.027 ***	0.000	0.022 ***	0.000
Year fixed effects	Yes		Yes		Yes		Yes		Yes				Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes				Yes	
R ²	0.143		0.143		0.142		0.100		0.142		0.145		0.141	
Number of observations	941,524		941,524		941,551		811,996		941,347		1,169,486		1,170,042	
Number of firms	154,541		154,810		154,806		137,452		154,155		182,091		182,016	

Table 9: The family firm premium and the controlling family's undiversified wealth

This table shows the results of regressing profitability on a family firm dummy, the degree of diversification in the controlling family's wealth, and firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Multiple-owner firm" is a firm with more owners than just a family. "Number of firms the largest family controls" is the number of firms where the firm's largest family by ownership holds a majority stake, "Number of industries in family-controlled firms" is number of industries in all operating firms the family controls. "Number of industries in the firm's group" is the number of industries in the operating firm's group. "Equity investment to family wealth" is the family's equity investment in the firm divided by the family's nonresidential wealth. "Proportion of family-controlled assets" is share of the firm's assets of all corporate assets controlled by the family. "Age" is the log of the number of years since the firm was founded, "Size" is the log of the firm's sales in million 2019 NOK, "Risk" is the coefficient of variation of the firm's sales over the previous three years, "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3		4		5		6		7	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.051 ***	0.001	0.041 ***	0.001	0.045 ***	0.001	0.066 ***	0.002	0.007 ***	0.001	0.028 ***	0.002	0.031 ***	0.002
Family firm*Multiple-owner firm	-0.014 ***	0.001												
Family firm*Number of firms the largest family controls			-0.013 ***	0.000										
Family firm*Number of industries in family-controlled firms					-0.018 ***	0.001								
Family firm*Number of industries in the firm's group							-0.014 ***	0.001						
Family firm*Equity investment to family wealth									0.030 ***	0.000				
Family firm*Proportion of family-controlled assets											0.024 ***	0.002		
Age	-0.013 ***	0.001	-0.014 ***	0.001	-0.012 ***	0.001	-0.013 ***	0.001	-0.013 ***	0.001	-0.012 ***	0.001	-0.012 ***	0.001
Size	0.033 ***	0.000	0.039 ***	0.000	0.038 ***	0.000	0.041 ***	0.000	0.035 ***	0.001	0.032 ***	0.000	0.033 ***	0.001
Risk	-0.025 ***	0.006	-0.018 ***	0.005	-0.015 ***	0.005	-0.017 ***	0.005	-0.024 ***	0.006	-0.017 ***	0.006	-0.028 ***	0.009
Growth opportunities	-0.014 ***	0.000	-0.016 ***	0.000	-0.013 ***	0.000	-0.017 ***	0.000	-0.014 ***	0.000	-0.011 ***	0.000	-0.014 ***	0.000
Asset liquidity	0.091 ***	0.002	0.104 ***	0.002	0.107 ***	0.002	0.102 ***	0.002	0.089 ***	0.002	0.125 ***	0.002	0.090 ***	0.002
Leverage	-0.034 ***	0.001	-0.031 ***	0.001	-0.033 ***	0.001	-0.030 ***	0.001	-0.034 ***	0.001	-0.028 ***	0.001	-0.035 ***	0.001
Capital intensity	0.018 ***	0.000	0.022 ***	0.000	0.021 ***	0.000	0.022 ***	0.000	0.018 ***	0.000	0.020 ***	0.000	0.018 ***	0.001
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
R ²	0.130		0.142		0.144		0.131		0.149		0.129		0.129	
Number of observations	1,427,604		1,169,534		1,116,204		1,361,425		900,923		1,164,028		1,159,134	
Number of firms	211,810		182,097		176,361		205,970		148,338		195,841		195,788	

Table 10: The family firm premium and the share's illiquidity

This table shows the results of regressing profitability on a family firm dummy, measures of share illiquidity, and firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Number of minority owners" is the number of shareholders except the largest, "Number of separate owners" is the number of ultimate owners in the firm, counting each family member as one owner, while "Listed" is 1 if the firm is public and 0 otherwise. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.048 ***	0.001	0.049 ***	0.001	0.047 ***	0.001
Family firm*Number of minority owners	-0.001 ***	0.000				
Family firm*Number of separate owners			-0.001 ***	0.000		
Family firm*Listed					-0.254 ***	0.010
Age	-0.014 ***	0.001	-0.014 ***	0.001	-0.013 ***	0.001
Size	0.033 ***	0.000	0.033 ***	0.000	0.034 ***	0.000
Risk	-0.025 ***	0.006	-0.025 ***	0.006	-0.024 ***	0.006
Growth opportunities	-0.014 ***	0.000	-0.014 ***	0.000	-0.014 ***	0.000
Asset liquidity	0.092 ***	0.002	0.092 ***	0.002	0.092 ***	0.002
Leverage	-0.034 ***	0.001	-0.034 ***	0.001	-0.035 ***	0.001
Capital intensity	0.018 ***	0.000	0.018 ***	0.000	0.018 ***	0.000
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
R ²	0.129		0.130		0.131	
Number of observations	1,426,427		1,426,427		1,427,604	
Number of firms	205,733		205,733		211,810	

Table 11: The family firm premium, agency advantages, and financial disadvantages

This table shows the results of regressing profitability on a family firm dummy, governance advantages of family control, financial disadvantages of family control, and firm characteristics. The population is all Norwegian firms with limited liability in 2000–2019. The sample excludes financial firms, firms with less than three years of data, and firms with no sales, employees, or assets. Model 2 includes only single-owner family firms, and Model 3 includes only family firms where the gross wealth of the family is in the top quartile. "Return on assets (ROA)" is operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails. "Family firm" is 1 if the firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship and 0 otherwise. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Family CEO" is 1 if the controlling family has the CEO position and 0 otherwise. "Holding of largest owner" is the highest percentage equity stake in the firm. "Number of family owners" is the number of family members with shares in the firm. "Controlling family wealth" is the log of family's gross assets in million 2019 NOK. "Equity investment to family wealth" is the family's ownership stake in the firm divided by the family's nonresidential assets. "Number of minority owners" is the number of shareholders except the largest. "Age" is the log of the number of years since the firm was founded. "Size" is the log of the firm's sales in million 2019 NOK. "Risk" is the coefficient of variation of the firm's sales over the previous three years. "Growth opportunities" is the ratio of sales to assets, "Asset liquidity" is cash to assets, "Leverage" is the ratio of liabilities less cash to total assets less cash, and "Capital intensity" is the log of the ratio of assets (in million 2019 NOK) to employees. "SE" is standard error. Statistical significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Dependent variable: Return on assets (ROA)

Independent variable	1		2		3	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Family firm	0.008 **	0.004				
Governance advantages						
<i>Vertical agency problem</i> : Family firm*Family CEO	0.020 ***	0.002			0.026 ***	0.002
<i>Horizontal agency problem</i> : Family firm*Holding of largest owner	0.013 ***	0.003			0.014 ***	0.003
<i>Coordination problem</i> : Family firm*Number of family owners	-0.003 ***	0.000			-0.005 ***	0.001
Financial disadvantages						
<i>Wealth constraints</i> : Family firm*Controlling family wealth	-0.009 ***	0.001	-0.009 ***	0.001		
<i>Undiversified wealth</i> : Family firm*Equity investment to family wealth	0.029 ***	0.000	0.031 ***	0.001		
<i>Illiquid shares</i> : Family firm*Number of minority owners	-0.002 ***	0.000				
Control variables						
Age	-0.011 ***	0.001	-0.012 ***	0.001	-0.013 ***	0.001
Size	0.034 ***	0.001	0.034 ***	0.001	0.026 ***	0.001
Risk	-0.016 ***	0.005	-0.013 ***	0.004	-0.009	0.006
Growth opportunities	-0.012 ***	0.000	-0.012 ***	0.000	-0.008 ***	0.001
Asset liquidity	0.125 ***	0.002	0.114 ***	0.003	0.139 ***	0.005
Leverage	-0.028 ***	0.001	-0.023 ***	0.001	-0.016 ***	0.001
Capital intensity	0.020 ***	0.000	0.022 ***	0.001	0.017 ***	0.001
Year fixed effects	Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes	
R ²	0.151		0.155		0.113	
Number of observations	900,456		548,849		220,031	
Number of firms	148,218		100,296		54,633	

Data Appendix

a. Data sources and sample construction

We start with the population of Norwegian limited-liability firms during 2000–2019 that are economically active and non-financial. The data base includes complete accounting, ownership, and board membership data from [Experian](#). The filing of accounting data is mandatory in Norway, and all limited-liability firms also had to submit annual audited accounts until 2011 or be subject to liquidation by the court within 17 months after fiscal-year end. The vast majority of firms continued to have an auditor or a licensed accountant after 2011, which made the quality of their reporting remain unchanged (Downing and Langli, 2019).

We use minimal activity filters for inclusion in the sample, requiring the firm to have positive assets, sales, and employment. We ensure the sample firms do not belong to the financial sector at the operating firm level. Firms that report less than three years of data are excluded.

We add family relationships and detailed income tax and wealth tax data from personal tax returns. The family relationships data and the tax data both come from the [Norwegian Tax Authority](#). Finally, we use demographic data from the Population Register, which belongs to the [Norwegian Tax Authority](#).

b. Constructing business groups and identifying the firm's largest family by ownership

Business groups

Using the ownership data for all limited-liability firms, we construct detailed group structures by following majority-ownership chains between firms, and by working out special cases such as cross ownerships. The algorithm allows us to identify the ultimate ownership of the group of either a family (a family owns at least 50% of the equity) or a nonfamily (usually dispersed ownership, but also controlling ownership by financials, the state, and foreigners). We validate the algorithm by using publicly available ownership data to hand check the family/nonfamily classification generated by the algorithm for the largest 5000 business groups.

We examine the structure of each business group to choose one key firm within the group for our corporate finance and governance measures. This key firm is the firm that reports consolidated accounts for the group, and that has a board and a CEO that is representative for the group.¹ We define the group's ownership concentration as the ultimate equity share of the largest family or single owner at the key firm level.

The firm's largest family by ownership

The family relationship data spans four vertical degrees of kinship. We include relationships upwards, as for parents, grandparents, great grandparents, and great-great grandparents, and downwards, as for children, grandchildren, great grandchildren, and great grandchildren. We also include four lateral degrees of kinship, i.e., siblings, cousins, second- and third-degree cousins. Marriages and civil partnerships are treated equally.

¹ The key firm is usually at the top of the group structure. The exception is cases where individual owners or coalitions of owners control their shares in the group's key firm through holding companies with no economic activity. In some cases, we allow the key firm for the governance measures to differ from the key firm for the corporate finance measures. This possibility allows us to separate governance activities from the operating activities, which we observe in a number of groups.

We develop an algorithm to identify a family affiliated with the firm. The algorithm uses both the list of ultimate owners and family relationships to identify the largest family by ownership in each firm.

The data for constructing a family has the following building blocks:

- Marriages
- Domestic partnerships
- Key relatives: children, parents, grandparents, great grandparents, and great-great grandparents

First, we construct a deep relationship map between any two persons who have even remote kinship. The building blocks are the marriages, domestic partnerships, direct key relatives, and mirrored key relatives. To that block we add distant relatives.

We then use this approach in a firm-centric family identification:

- For each owner we find a spouse or domestic partner.
- We add a year indicator to this family relationship structure by checking that the marriage/partnership is active in the year and that the persons are already born and mark whether anyone has died by using the death register from the Population Register.
- We add the deep set of relatives for the two spouses/partners.
- We combine the resulting deep-relationship set with the firm ownership data to for firm-centric family set with a delineation of family members involved in the firm and ones that are not.
- We rank the families based on their ownership stake and proceed with the largest family.

Note that we use the complete ownership data to estimate each owner's ultimate ownership stake in each firm (direct + indirect). We use the ultimate ownership stake in all our analyses.

c. Variable names and variable definitions

Variable name	Definition
<i>Family variables</i>	
Family CEO	1 if the controlling family has the CEO position, and 0 otherwise
Family firm	1 if individuals related by blood or marriage up to the fourth degree of kinship own more than 50% of the firm's equity, and 0 otherwise
Minority on board	1 if minority shareholders sit on the board, and 0 otherwise
Single-owner firm	1 if one family or nonfamily owns all the shares in the firm, and 0 otherwise
Family CEO is majority owner	1 if the CEO belongs to the family and holds more than 50% of the firm's equity, and 0 otherwise
Young family CEO	1 if the family CEO is less than 30 years old, and 0 otherwise
Old family CEO	1 if the family CEO is more than 50 years old, and 0 otherwise
Multiple-owner firm	1 if the firm with more owners than just a family, 0 otherwise

Single family owner	1 if there is only one owner in the controlling family, and 0 otherwise
Holding of CEO	The equity stake in the firm held by the CEO
Holding of family CEO	The equity stake in the firm held by the family CEO
Personal family leverage	The family's debt divided by the family's gross assets
Equity investment to family gross wealth	The family's equity investment in the firm divided by the family's nonresidential wealth
Controlling family assets relative to industry	The controlling family's gross assets to the mean total assets of firms in the same industry and year
Concentration of family holdings	The Herfindahl index of the family members' individual equity stakes
Concentration of all holdings	The Herfindahl index of the individual equity stakes of both family and nonfamily shareholders
Holding of largest owner	The highest percentage equity stake in the firm
Controlling family wealth	The log of controlling the family's total gross assets in million 2019 NOK
Controlling family assets outside the firm	The log of the controlling family's total gross wealth in million 2019 NOK excluding the family's equity stake in the firm
Largest family size	The log of the number of members in the extended family
Assets of firms controlled by the family	The log of the total assets of all firms in million 2019 NOK controlled by the family
Sales of firms controlled by the family	The log of the total sales of all firms in million 2019 NOK controlled by the family
Number of minority owners	The number of shareholders except the largest
Number of family owners	The number of members in the controlling family with shares in the firm
Number of firms the largest family controls	The number of firms where the firm's largest family by ownership holds a majority stake
Number of industries in family-controlled firms	The number of industries in all operating firms the family controls
Number of industries in the firm's group	The number of industries in the operating firm's group
Number of family owners who are not insiders	The number of shareholders who belong to the controlling family, but do not serve as CEOs or directors
Number of separate owners	The number of ultimate owners in the firm, counting each family member as one owner
Family seats on board	The percentage of directors who belong to the controlling family
Proportion of employees belonging to family	The proportion of the firm's employees who are also in the controlling family

Controlling family rank by wealth	The rank of the family among all controlling families in a given year in terms of gross assets
Controlling family relative liquidity	The ratio between the family's bank deposits and the firm's equity
Proportion of family-controlled assets	The ratio of the firm's assets to all corporate assets the family controls
Proportion of family-controlled revenues	The ratio of the firm's revenues to all corporate revenues the family controls
<i>Firm variables</i>	
Age	The log of the number of years since the firm was founded
Asset liquidity	The ratio of cash to assets
Capital intensity	The log of the ratio of assets (in million 2019 NOK) to employees
Growth opportunities	The ratio of sales to assets
Leverage	The ratio of liabilities less cash to total assets less cash
Listed	1 if the firm is public, and 0 otherwise
Risk	The coefficient of variation of the firm's sales over the previous three years
ROA	Operating earnings after taxes divided by assets, winsorized at the 2.5% and 97.5% tails
ROIC	Operating earnings after taxes divided by assets net of cash and current debt, winsorized at the 2.5% and 97.5% tails
ROE	Net earnings after taxes divided by the book value of equity, winsorized at the 2.5% and 97.5% tails
Size	The log of the firm's sales in million 2019 NOK

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