

FOUNDING-FAMILY OWNERSHIP AND FIRM PERFORMANCE IN THE FINNISH SETTING

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Lenni Tams
Aalto University School of Business
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Author Lenni Tams

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Abstract

I am investigating the interplay between firm performance and family ownership. My results suggest that family-firms are having a lower accounting performance and market valuation compared to nonfamily firms, when analysing data on Nasdaq Helsinki from years 2012-2019. There seems to also be nonlinearities within this relation since my further analysis suggests that in Finnish companies, increase in the fractional ownership of founding family increases the accounting performance of a firm. However, as family's equity holdings are low enough, there seems to be gains in the market valuation of the company, but as the ownership increases, this effect begins to taper off. Overall, my results are inconsistent with prior literature and the hypothesis that family ownership is an effective ownership structure.

Keywords Ownership structure; Firm Value; Financial Performance; Family-firm

Contents

1. Introduction.....	4
2. Founding-family ownership and the firm performance	5
2.1. Potential benefits of founding-family ownership	6
2.2. Potential costs of founding-family ownership.....	7
3. Research question and hypotheses.....	8
4. Data and Methodology	9
4.1. The Sample	9
4.2. Ownership data	9
4.3. Measuring Firm Performance	10
4.4. Control Variables	11
4.5. Descriptive Statistics	11
4.6. Methodology	12
5. Results.....	14
5.1. Family ownership and firm performance.....	14
5.2. Nonlinearities on Founding-Family Ownership.....	16
6. Further Discussion and Addressing Robustness	19
7. Conclusion	20
APPENDIX	21
References	25

1. Introduction

Ownership structure, agency costs and firm value have been a major field of interest in the finance literature. Major blockholders might be able to use company to gain private benefits on the cost of minor shareholders. Managers, who have a personal ownership in the firm they are running are very well incentivised to maximize the value of the firm. Whether the major and minor shareholders have their interest aligned as together as with the management – creates the traditional agency problem between shareholders and managers, which has been heavily studied (see, e.g., Jensen and Meckling 1976). As managerial ownership increases, the interests between manager and shareholders are more in line. However, when the managerial ownership becomes too extensive, interests are not anymore fully aligned with other shareholders. All these factors ultimately affect the value of a firm. Agency costs are an important aspect when considering family firms and their performance, since founding-families are typically large equity holders in the company who usually are heavily involved in monitoring and managing the firm (as a CEO or as a member of the board for example). Although many valid hypotheses on how family ownership enhances firm value can be justified, concentrated family-ownership has also some value destroying flaws. Founders might have interests which are unaligned with other shareholders since large portion of their wealth is usually tied in the company. This does in fact minimize the free rider problem but creates a different type of agency conflict in family-firms.

Unlike the traditional research on ownership structure and firm performance, the relation between family ownership and firm performance has not been as popular field in the academic research. Existing literature has not provided a unanimous hypothesis on the interplay between family-ownership and firm performance. Some research suggests that family firms are having superior performance (see, e.g., Barontini and Caprio 2006), while others obtain results that family firms are having weaker performance (see, e.g., Holderness and Sheehan 1988). However, most of the studies on this line of research are using data from the United States and there clearly is a lack of evidence on how family-owned businesses perform outside of the US. Corporate ownership is generally more diverse in the United States compared to the rest of the world or to Finland, for example, La Porta (1999).¹ This highlights the importance of studying the topic outside of the US to be able to find factors which might be harder to investigate in the US where firms' ownership is more diffuse. It is also important to study the effect of founding-family ownership on both market valuation and operating efficiency.

I contribute to the existing literature indeed by providing more evidence on performance of family-owned businesses in the Nordic Europe. In this novel study I am using metrics on both market valuation

¹ La Porta et al. (1999) also find that for countries outside of the United States, the common owner of a corporation is either a state or more often a family

and return on assets. By using data on publicly traded firms in Nasdaq Helsinki from 2012 to 2019, I investigate the interplay between founding family ownership and firm performance.

Based on my research on publicly traded firms in Finland between 2012 and 2019, I conclude that the founding-family presence in the firm as shareholders decreases the performance on both accounting and market metrics. However, these results are not statistically significant for either of the performance metrics. On the other hand, my investigation suggests that the relation on family ownership and firm performance implies nonlinearity. As fractional ownership of a family increases its effect on the operational performance switches to positive. These results are statistically significant on at least 95% level. Fractional ownership of family has an opposing effect on market valuation of a firm; however, these results show no statistical significance.

2. Founding-family ownership and the firm performance

The interplay between ownership structure and firm performance has been widely studied among management and finance research. However, prior literature has been investigating ownership structure and firm performance more from the general perspective rather than specifying on family firms. Research has not provided clear evidence on the links between shareholder structure and firm performance, thus main theory amongst the existing literature has been on the principal-agent problem resulting from separation of management and ownership (Jensen and Meckling, 1976). These agency costs can be mitigated by different instruments from shareholders to monitor and incentivise the management. Also, larger shareholders are generally able to monitor the management better. However, dominant owners are creating another type of threat by the possibility of profiting at the expense of minority shareholders. For example, Aluncha and Kaminski (2017) observe a negative association with ownership concentration and ROA on Polish stock market. This broad set of existing literature on ownership concentration is very relevant when investigating the performance of family firms, due to the characteristics of family owners who are typically major shareholders, heavily involved in the operations and management of their company.

Prior literature is not unanimous on how family-owned firms perform with respect to other firms. The hypothesis of family presence in the firm leading into poor performance could be justified, since Holderness and Sheehan (1988) for example, report that concentrated ownership alone does not affect firm value using Tobin's q . However, if the firm is held by a family shareholder instead of a corporation, the firm is associated with a negative performance. Also, Morck et al. (1988) provide similar results by investigating Canadian firms, controlled by the heir of the founder. The results address that family-firms

have a lower financial performance compared to other firms. The potential costs leading to this type of results are discussed broader in the next section.

Although, there has been evidence on family-firms performing worse than other firms, the opposing theory has also a significant academic evidence. Anderson and Reeb (2003) and Fahlenbrach (2009) were using US data to study the effects of family-ownership and founder-CEO status on firm performance. Both studies obtain results which support the view that family-firms are performing better on market valuation and operating performance. Evidence on family-firms overperforming has also been seen in studies performed using Asian and Finnish data.² Barontini and Caprio (2006) did a wide study on ownership structure on data from continental Europe using 11 different countries. Their findings are interesting since, the results on valuation and operating performance are similar as the Anderson and Reeb (2003) findings, when the firm was controlled by the founder. However, family-controlled firms are no longer statistically significantly performing better when the firm is controlled by the descendants of the founder. This theory has been supported also by Villalonga and Amit (2006), who note that for a family-firm to have a statistically distinguishable higher valuation, the founder must have an active involvement in the company. This hypothesis is bringing some insight on what could explain the partly inconsistent results on the existing literature, since there might be a lot of possible heterogeneity within the family firms (in the involvement of the family in the operations of the firm for example). Also, the fractional amount of shares family is holding could be possible leading into different end results. Inconsistency in the results in the academic literature can also be explained through high probability for endogeneity issues related to these kinds of studies: is the superior performance driven by family presence or is the family remaining its position due to the better performance. Next, I will discuss on the potential costs and benefits of the family ownership, which could explain these results and differences.

2.1. Potential benefits of founding-family ownership

A heavy founding-family presence in a firm has several potential ways of adding value to the firm. In firms with diffuse ownership, it is more complicated for shareholders to select reliable agents and to monitor them (Fama and Jensen, 1983). Since families typically are a major shareholder and have an extensive portion of their wealth tied in the firm, they are incentivised to monitor managers more strictly compared to owners of diversely owned firms. This decreases the agency conflict between managers and the shareholders. For instance, Ang et al. (2000) demonstrate how agency costs are higher when outsider manages the firm and how the agency costs increase when the number of nonmanager shareholders increase. This can be seen beneficial for family firms since they typically have a family

² For Asian data, see: Claessens et al. (2002) and for Finnish data, see: Ikäheimo and Lumijärvi (2018) (the study is in Finnish)

member in the CEO position. Gorriz and Fumas (1996) also show that family firms have on average, a higher productive efficiency compared to non-family firms, which could be resulting, from the major equity holdings of the family insiders.

Family owners typically have a longer investment horizon compared to other investor groups. This creates also a potential value adding factor to family businesses, since family owners have an incentive to invest in longer term projects rather than short term investments. Long investment horizon is diminishing myopic behaviour where the managers could invest in risky short-term projects with potentially very high profits. This long-term nature of founding-family owners is also reducing agency conflicts between bond and stockholders, which enables lower cost for debt financing. This hypothesis has an empirical backing as Anderson et al. (2003), find that family-owned firms are having 32 basis point lower cost of debt financing compared to other firms due to the long-term investment horizon.

Family owners could be also seen more broader: as stakeholders, rather than only shareholders. Family founders' reputation is more tied with the performance of their firm compared to non-family owners (which can be seen both as a benefit and a cost). This effect has been also noted empirically, Adams et al. (2009), find that the founder CEOs are more likely to leave their company in a good shape, which suggests that firm founders do not want to pass their firm forward with bad performance.

2.2. Potential costs of founding-family ownership

Even though ownership concentration is decreasing agency costs between managers and shareholders as previously stated, this is the case only to some extent. Jensen and Meckling (1976) note that when managerial ownership increases too much, managements incentives are no longer aligned with other shareholders. This is a potential cost for family-owned firms especially since they typically have major equity holdings on their company and are either the CEO or are monitoring the CEO very closely.³ This type of concentration of management and ownership indeed creates another type of agency problem between family insiders and minor shareholders, since it is harder for these shareholders to monitor the firm and its management.

Hiring only family members as the CEO or in the management emerges another type of potential disadvantage compared to other firms by restricting the labour pool for the firm. This type of behaviour leaves out possible human capital from the firm, which in the longer run leads to a weaker financial and operational performance. Ikäheimo and Lumijärvi (2018) suggest that founder could bring valuable

³ For example, Vidgren family holds roughly 60 per cent of Ponsse Oyj's outstanding stocks and the family is also heavily presents in the board of directors.

insight to the firm in the beginning of its business cycle, but as the firm ages the founder serving as a CEO is not anymore as beneficial.

Since family owners usually have an extensive amount of their wealth tied in the company, families could be investing in projects to maximize their own welfare on the cost of other shareholders. This is a problem for smaller shareholders when considering the substantial cash flow rights and voting rights that founders typically hold. Shleifer and Vishny (1997) for example, report that it is possible for controlling shareholders to try to achieve private benefits on the cost of firm. This combined with the typical characteristic of a family-owner that their wealth is relatively undiversified, suggest that founders might want to seek for private benefits at the cost the firm.

Family investors may also not have their interests aligned with smaller shareholders when it comes to prospects and R&D investments for instance. Families might want to eschew investments to R&D which they are considering as too risky (due to the undiversified personal wealth) but would be optimal for a common shareholder. R&D investment intensity could on the other hand be justified to be higher in family firms with the argument that family firms are seeing their firm as an objective to increase their total welfare, not only monetarily but also through developing technology to achieve social goals. Academic literature provides somewhat inconsistent results on R&D on family firms, since Fahlenbrach (2009) report that founder CEO firms are investing more in R&D but for example Morck et al. (1988) show that heir-controlled firms have lower R&D spending compared to other firms. Block (2012) brought another aspect to this analysis by suggesting that family ownership was decreasing the level of R&D but when the firm was controlled by a lone founder, R&D intensity was increased. This is providing more evidence to the theory that there might be unobservable attributes within family firms, which could partly explain the mixed results in prior studies.

3. Research question and hypotheses

In this study I investigate the relation between founding-family ownership and the firm performance in the Finnish setting. Academic literature has provided somewhat mixed results on the effect on how the presence of the founding-family affects firm performance. This type of study is interesting in the Finnish setting since in Finland the opinion towards family firms is generally more tolerant than in the United States for example. In Finland equity holdings are more concentrated compared to the US (La Porta, 1999), which might bring out some unobserved attributes compared to the US data. Despite the inconsistency of the prior research, academic literature has shown that family-owned businesses are in most cases performing better compared to non-family firms, which I expect to see in Finland also.

My research question based on these presumptions is: whether founding-family presence in a firm has a positive effect on firms' performance. I am measuring firm performance using accounting and

market metrics. For measuring accounting performance, I am using return on assets (ROA), which I have computed using earnings before interests, tax, depreciation, and amortization (EBITDA) and net income. To complement the analysis, I am evaluating firm performance also by using market valuation with Tobin's q .

For my study, I am using two different models to analyse the interplay between firm performance and family presence in the firm. First, I am using a dummy variable model (regression 1), where each firm is categorized as either a family-firm or a non-family firm based on founding family's fractional ownership. Second, I am further investigating the nonlinearities within the performance and family presence by using a continuous variable model with fractional ownership and squared value of the fractional ownership (regression 2).

4. Data and Methodology

4.1. The Sample

My sample consists of firms on Nasdaq Helsinki as of December 31, 2011, and I gathered data on these firms from 2012 to 2019.⁴ For my investigation I excluded banks and all regulated financial firms (TRBC codes 5510 and 5530) due to the problems with calculating Tobin's q for these firms and the possible effect of Government regulation on performance of these firms. I also excluded firms which are not from Finland (firms which do not have "FI" ISIN code). From Thomson Reuters Eikon, I obtained the ownership information and performance measures as well as all the control variables between years 2012 and 2019. Founders of each firm have been manually obtained using various different sources, like annual reports, company home pages and Google search engine. The final sample includes 818 complete firm-year observations from 113 firms during the 2012-2019 time period.⁵

4.2. Ownership data

Academic literature does not provide a clear solution on how to define a family business. European Union defines family business as a company which of the founder or his/her descendants own at least 25 per cent of the decision-making rights. However, academic literature usually provides a looser definition. For example, Anderson and Reeb (2003) used fractional ownership structure, and classified

⁴ I have used firms which were part of Nasdaq Helsinki main list, excluding First North market firms.

⁵ My primary sample consists of 113 firms, traded in OMX Helsinki in December 2011. At the end of the period in December 2019, number of firms has decreased to 89 which leads to 818 firm-year observations. Some firms have gone bankrupt (Ahtium Oyj, GeoSentric Oyj, Takoma Oyj and Tiimari Oyj) and some have gone through M&A process or gone private. Tekla Oyj, Aldata Solution Oyj, Interavanti Oyj and Nordic Aluminium have been also excluded from the sample since they were not part of Nasdaq Helsinki for the whole fiscal year of 2012 due to delisting and have therefore missing data.

firm as a family firm if founding family has any ownership stake in the firm or if they were part of the board. For my analysis, I am also using fractional equity ownership method to identify family firms. However, I classified firm as a family firm if the founding family has in their possession at least 10% of the stocks outstanding.⁶ Ownership structure has been obtained primarily from Thomson Reuters Eikon but for some firms I had to investigate annual reports. I have manually collected data from various sources like Orbis, Pörssitieto and Google search engine on founders and their descendants on each firm in the sample. Family has been determined very broadly in this study: family consists of founder and their descendants and their children. Ownership structure of each firm has been investigated down to shareholders which have at least 1 per cent equity stake of the company. For companies with multiple different stock series, I have used annual reports to manually collect data and define the shareholders for all stock series. I have investigated ownership information of all firms for the last trading day of December 2012 and 2019. This way of determining the founding-family variable based only on the first and last year of the sample can be justified, since founding families typically hold their positions in the firm for a long time. After collecting the final data on the ownership percentages of each founding-family, I have determined the classification to family firms and non-family firms with the 10% ownership constraint (this classification is needed for the dummy variable analysis later). However, if the ownership status of a firm has changed between those years (founding family holding more than 10% of the shares in December 2012 but less than 10% on December 2019), I have obtained the ownership structure for each year of the sample to determine the exact time when the family is not anymore the major shareholder of the company, leading to some firms changing from a family firm to a non-family firm in the middle of the sample. The change for a firm has been determined on an annual level based on the full fiscal year data (for ownership status, this means the equity holdings based on the last trading day of December).

4.3. Measuring Firm Performance

I am evaluating firm performance with operating performance and market valuation by using return on assets (ROA) and Tobin's q. I have computed ROA in two different ways; by using earnings before interest, tax, depreciation, and amortization (EBITDA) and by using net income. These are scaled by the book value of total assets to define the ROA. For Tobin's q I have used the same method as Adams et al. (2009) where Tobin's q is measured as the ratio of the firm's market value to its book value. Firm's market value is calculated by subtracting the book value of equity from the book value of total assets

⁶ One exception has been done to this classification with Raute Oyj. Insufficient data was available for Raute Oyj from Thomson Reuters Eikon so I had to investigate annual reports for the ownership structure. Mustakallio family owns at least 8.6 per cent of Raute Oyj's outstanding stocks (annual report did not have every owner down to 1 per cent) and they clearly have the control of the Raute Oyj through to superior voting rights compared to other investors. Therefore, Raute Oyj has been classified as a family firm.

and then adding the market value of equity. I have obtained data for all the needed variables mainly from Eikon and used Orbis for collecting some of the missing data.

4.4. Control Variables

For control variables, I have used number of different variables to control for size, risk level and industry of the companies and the year of the observations. The control variable for the firm size is the natural logarithm of the book value of total assets. Controlling for size is essential since the trade-off between growth and risk exposure might be leading family firms to be smaller in size (Gorritz and Fumas 1996). To control for financial structure and risk level of the firms I use debt to equity ratio, which is determined as the long-term debt divided by the book value of equity. Industry is controlled in the analysis by using Thomson Reuters Business Classification (TRBC) and classifying firms to business sectors. The final sample includes 35 different business sectors by this classification. I am creating a dummy variable for each TRBC code in the sample to eliminate the industry effect on my analysis. To control for time effect on my analysis, I am creating a dummy variable for each of the year in my sample.

4.5. Descriptive Statistics

Table I, contains summary statistics (Section 1) and difference of means test results (Section 2). Section 1 on the Table 1, provides means, medians, standard deviation, and maximum and minimum values for all the key variables for the analysis in the sample. Section 2. separates the means to family and nonfamily firms and shows the t-statistics for the difference of means tests between these two groups. For the difference of means test, I have calculated the means by first averaging for each firm's time series of each variable and then averaged across firms.⁷

Examining these results shows that family firms are on average smaller compared to nonfamily firms, and the difference is significant at the conventional levels. Family firms are also using more debt finance compared to nonfamily firms. When it comes to performance measures in the univariate analysis, nonfamily firms seem to be performing slightly better compared to family firms, when measured with accounting measures (ROA). With market measures (Tobin's q) there seems to be almost no difference, although family firms have a slightly higher valuation. However, these results are not statistically significant.

⁷ Six of the firms in the sample have changed from a family firm to a nonfamily firm within the sample period. To do the time-series average on these firms, I have done a different mean for the time that the firm was a family firm and a nonfamily firm. Then these means are used in the difference of means test. Using this approach gives very similar results compared to performing the difference of means test with firm-year observations.

Table I

Summary Statistics and Difference in Means Test

This table presents summary statistics and difference in means test results. The univariate data has been obtained by first averaging across time-series for each firm and then calculating the mean for the sample. Family firms are classified as firms where the founding family has at least 10 per cent of fractional ownership and nonfamily firms include all other firms. Return on Assets (ROA) is computed by two ways, using net income, and earning before interests, tax, depreciation, and amortization (EBITDA), which are then scaled by the book value of total assets. Tobin's Q is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Ln(Total assets) is the natural logarithm of the book value of total assets of a firm. Debt to Equity is calculated by dividing long term debt by the book value of equity. Debt to Equity and all the values of ROA are presented in percentages. Section 1. provides mean, median, standard deviation, maximum, and minimum values for all the firms in the sample. Section 2. shows the mean values for both family firms and non-family firms separately, and the t-statistics for the difference in means tests between those groups. The whole sample consists of 113 firms present in the Nasdaq Helsinki in December 2011 and the calculations are based on annual data from years 2012-2019.

Summary Statistics and Difference in Means Tests

Section 1: Summary Statistics for the Whole Sample					
	Mean	Median	Standard Deviation	Max.	Min.
Return on Assets (%) (Using EBITDA)	11.96	9.10	27.38	276.38	-62.09
Return on Assets (%) (Using Net Income)	0.28	2.80	19.75	47.3	-169.17
Tobin's Q	1.69	1.27	1.41	11.4	0.68
Ln(Total Assets)	19.37	19.03	2.14	26.27	13.76
Debt to Equity (%)	62.99	59.12	45.61	276.94	0.63
Section 2: Difference in Means Test					
	Family Firms	Non-family Firms	t-statistic		
Return on Assets (Using EBITDA) (%)	8.74	13.00	0.69		
Return on Assets (Using Net Income) (%)	0.92	2.44	0.81		
Tobin's Q	1.62	1.58	-0.36		
Ln(Total Assets)	18.50	19.77	7.42	***	
Debt to Equity (%)	77.44	69.10	0.81		
Fractional Ownership of Family (%)	36.37	0.34	-56.47	***	

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

4.6. Methodology

I study the relation between founding-family ownership and the performance of a firm by using a two-way fixed effects model, where the fixed effects are time (dummy variable for each year) and

industry (dummy variable for each TRBC code). The final regression (regression 1) will include *Firm Performance* as the dependent variable and *Family Firm* variable as the explanatory variable:

(1)

$$\begin{aligned} \text{Firm Performance} = & \\ & \alpha + \beta_1 \text{Family Firm}_{it} + \beta_2 \text{Debt to Equity}_{it} + \beta_3 \ln(\text{Total Assets}_{it}) \\ & + \beta_{4-38} \text{TRBC Code} + \beta_{38-44} \text{Year Dummy Variable} + \varepsilon \end{aligned}$$

where *Firm Performance* is the ROA computed by net income and EBITDA, and the Tobin's q, *Family Firm* is a binary variable which equals one, when founding-family has at least 10% ownership in the firm and 0 otherwise. Rest of the variables are the control variables: *Debt to Equity* is the ratio between firms long term debt and equity and $\ln(\text{Total Assets})$ is the natural logarithm of the firms total assets. *TRBC Code* is a dummy variable for each TRBC Code in the sample (35 different codes), which is either 1 or 0. *Year Dummy Variables* is also a dummy variable for each year in the sample, the variable is either 1 or 0.

To investigate the possible nonlinearities between company performance and founding-family ownership, I am also using another modification on regression 1 to study the firm performance. In regression 2, I have the same variables on *Firm Performance* (ROA and Tobin's q) and all the same control variables for size, industry, and year. However, I am using the model from McConnel and Servaes (1990), by including two continuous variables: *Family Ownership* and the square of family ownership. This regression will therefore receive the form:

(2)

$$\begin{aligned} \text{Firm Performance} = & \\ & \alpha + \beta_1 \text{Family Ownership}_{it} + \beta_2 \text{Family Ownership}_{it}^2 + \beta_3 \text{Debt to Equity}_{it} \\ & + \beta_4 \ln(\text{Total Assets}_{it}) + \beta_{5-39} \text{TRBC Code} + \beta_{39-45} \text{Year Dummy Variable} \\ & + \varepsilon \end{aligned}$$

I am using Huber White Sandwich Estimator to control for autocorrelation and heteroskedasticity on both regressions. All the t-values presented below are corrected for autocorrelation and heteroskedasticity using that estimator. In total, 818 firm year observations are included in the analysis.

5. Results

5.1. Family ownership and firm performance

Table II shows the results of the regression 1 of firms' performance, using return on assets (ROA). In column 1 ROA is computed using earnings before interest, tax, depreciation, and amortization (EBITDA) and in column 2 net income is the numerator in the ROA. When it comes to operational performance, my results suggest that founding-family-owned businesses are performing worse than non-family firms, since the coefficient on the *Family Firm* dummy variable is negative for both regressions (-0.023 and -0.007). However, these results are not being backed by statistical significance, t-statistics being -1.502 and -0.470. On the contrary to the extensive prior literature, my results are backing the hypotheses that family-owner presence is linked to poorer operating performance. This might be resulting from negative effects of family presence (for example, expropriating wealth from the firm, limiting the labour pool) overpowering the benefits of family presence (superior knowledge on the firm and the technologies).

Table III shows the estimation results on the interplay between founding family presence in the firm and market valuation (Tobin's q). These results are also suggesting that family-owned businesses are performing worse than non-family-owned firms, since the coefficient of the *Family Firm* dummy variable is again negative (-0.013). This coefficient, however, also lacks statistical significance due to the t-statistic being -0.143. Although these results are not statistically distinguishable, they are providing similar results as the operating performance by suggesting that family firms are performing worse compared to non-family held companies. This again, might be resulting from the negative aspects (concentrated shareholders extracting private benefits at the costs of minority shareholders) having stronger impact compared to the positive effects of family presence (longer investment horizon of families diminishing myopic decisions, for example).

Table II**Regression Results of Family-Ownership and Firm Performance Using Accounting Measures**

This table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Performance is measured using return on assets, which is computed by dividing EBITDA (column 1) or net income (column 2) by the book value of total assets. Family firm is a binary variable which equals 1 if founding family has at least 10 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. Ln of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R² are reported on the bottom of the table.

Return on Assets (ROA)		
	Using EBITDA (1)	Using Net Income (2)
(intercept)	0.218 (0.892)	-0.037 (-0.276)
Family Firm	-0.023 (-1.502)	-0.007 (-0.470)
Debt to Equity	0.000 (-1.665) **	0.000 (-3.795) ***
Ln of Total Assets	-0.002 (-0.215)	0.005 (0.805)
Year control	Yes	Yes
Industry control	Yes	Yes
Adjusted R ²	0.022	0.062
N	818	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

My results are suggesting in somewhat myopic behaviour within the family-owners since they are holding their investments even though the firms are having weak market performance. In prior studies, endogeneity has been an issue within regression results (whether family presence is leading to better performance, or the superior performance has led family to maintain their position). My results are showing the opposing effect that families are holding their position even though the performance is weaker. This is partly supported by existing literature firstly, by suggesting that families are very long-term investors (even though the firm might be currently performing poorly). Secondly, Adams et al. (2009), found that the founder CEOs are more likely to leave their companies in a good shape and when the firm is performing great, it would surprisingly make the founders leave the company. This might be

partly explaining why my results suggest that founders as the ultimate insiders are still holding on their investments.

Table III
Regression Results of Family-Ownership and Firm Performance Using Market Measures

This Table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Performance is measured using Tobin's q, which is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family firm is a binary variable which equals 1 if founding family has at least 10 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. Ln of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R2 are reported on the bottom of the table.

Tobin's q	
(intercept)	0.923 (2.049) **
Family Firm	-0.013 (-0.143)
Debt to Equity	-0.000 (-1.752) *
Ln of Total Assets	0.028 (1.607)
Year control	Yes
Industry control	Yes
Adjusted R ²	0.022
N	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

5.2. Nonlinearities on Founding-Family Ownership

Although these results could be driven by the costs and benefits of the family presence, I am further investigating the performance effects of a family presence by addressing the possible nonlinearities in the relation. The traditional agency conflict can be reduced by blockholders especially in the case of family blockholding since they are very well incentivised to monitor the management. However, as the fractional equity ownership is increasing too much, another agency conflicts rises between the

blockholder and minority shareholders (Jensen and Meckling 1976). On the other hand, founders' heavy involvement in the business could lead to a superior performance (Villalonga and Amit 2006). Therefore, I am using the approach of McConnel and Servaes (1990) in the regression 2, to investigate this effect.

Results for the regression 2 are shown in the table IV. The estimation results show that there is evidence on nonlinearities within the relation between family ownership and firm performance. The results with the accounting measures are shown in columns 1 and 2. Family presence is, on lower ownership levels, having a negative effect on accounting performance (as predicted in the core analysis), but after a certain point the negative effect of the family presence begins to fade off. The inflection point of fractional ownership for the performance effect to change is 30.6 (27.9) percent when ROA is computed by EBITDA (Net Income).⁸ These results are, statistically significant on the 99% (90%) level when ROA is computed by EBITDA (Net Income). A completely opposing effect was seen in the research by Anderson and Reeb (2003), when they were estimating the nonlinearities. However, the inflection point in their regression was also approximately 30%. When looking at these results, the nonfamily firms have a better accounting performance compared to family firms until the family reaches about 60% ownership stake in the company.

Interestingly, when firm performance is analysed with market valuation (column (3) in Table III), the nonlinearities are opposing as with accounting measures. These results suggest that there are gains associated with family presence when the fractional ownership is low enough, but after a certain point the gains are tapering off. However, these results are not statistically distinguishable, but are in fact in line with the results of Anderson and Reeb (2003). The inflection point for the performance effect to change is 56.3 percent.

The results, even though being inconsistent, could be explained by the theory introduced in the existing literature. Although, ownership concentration by the majority shareholder has suggested to be having a negative effect on ROA (Aluchna and Kaminski 2017), it might be possible that concentration to family members emerge some other benefits. It is possible that the gains in accounting performance associated with family ownership are coming from founder involvement. Heavy involvement of a founder could be explaining my results on operating performance: When the founding family has high enough fractional ownership in the company, they are able to use their insight on the technologies and industry to provide superior performance. Also, monitoring the management is more efficient when the fractional ownership is high enough, which might prevent the management from myopic behaviour.

⁸ The inflection point is calculated by deriving the regression w.r.t. *Family Ownership* variable and solving the equation $d(\text{Firm Performance})/d(\text{Family Ownership}) = 0$

However, as the fractional ownership increases, the agency conflict between minority shareholders and the family blockholder tapers off the premium in the firm value (Tobin's q).

Table IV
Regression Results for the Nonlinearity Analysis

This Table reports the regression results for the interplay between family ownership and firm performance, using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Firm Performance is measured with return on assets (ROA) and Tobin's q. ROA is computed by scaling either Earning Before Interest, Tax, Depreciation, and Amortization (EBITDA), Column (1) or the Return on Assets, Column (2), by the book value of total assets. Tobin's q is calculated by dividing the market value of a firm by the book value of total assets. Market value of a firm is obtained by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family Ownership is the fractional ownership stake that the founder family is holding of the company, and Family Ownership² is squared value of that variable. Debt to Equity ratio is computed by dividing firms' long-term debt by the book value of equity. Ln of total assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R² are reported on the bottom of the table.

Nonlinearities on Firm Performance and Family Presence			
	Return on Assets (Using EBITDA)	Return on Assets (Using Net Income)	Tobin's Q
	(1)	(2)	(3)
(intercept)	0.220 (0.899)	-0.035 (-0.271)	0.8652 (-1.939) *
Family Ownership	-0.003 (-3.187) ***	-0.002 (-1.708) *	0.003 (-0.400)
Family Ownership ²	0.000 -3.358 ***	0.000 -2.011 **	-0.000 (-0.209)
Debt to Equity	-0.000 (-1.632)	-0.000 (-3.720) ***	-0.000 (-1.765) *
Ln of Total Assets	-0.003 (-0.219)	0.005 -0.811	0.030 -1.772 *
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Adjusted R ²	0.021	0.063	0.551
N	818	818	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

6. Further Discussion and Addressing Robustness

First, I am investigating the suggested nonlinearity with the family ownership and firm performance. I perform the regression (1) but use three different classifications for the *Family Firm* dummy variable. The different fractional ownership constraints to classify family firms are provided from the previous nonlinearity analysis, which showed three different points of ownership percentage, where the performance effect changed. These points are 27.92;30.61 and 56.33. The results for these three different regressions are shown in Tables AI-AIII (see, Appendix). With the first and second test (Tables AI and AII), the performance effect for a family presence is negative for the accounting measures (see, column 1 and 2) and positive for the Tobin's q (see, column 3). With the third test (Table AIII), family firms are performing better measured with ROA and worse measured with Tobin's q. Even though, not being statistically significant, these results are complementing the suggestion that there are nonlinearities within the relation between family ownership and firm performance. As suggested before, when the fractional ownership of the family increases to about 60 per cent, family firms are having a better accounting performance. With the tests 1 and 2, family firms are having a stronger market valuation, but when the family ownership becomes too extensive, the family presence has a negative effect on firm valuation (Table AIII).

Second, I am controlling for the potential survivorship bias⁹ by excluding firms which do not have data for the whole sample period (20 firms excluded compared to the original sample leading to 708 firm-year observations). I am performing the regression (1). on this subsample, and the results are shown in the Table AIV (see, Appendix). These results are mainly consistent with the core findings since family ownership seems to be having a negative effect on accounting performance, even though not statistically distinguishable. However, market valuation on family firms seems to be higher (0.035 coefficient on Tobin's q) compared to nonfamily firms. These results are not however, backed by statistical significance. This might be resulting from the possible nonlinear nature of the relation, since in the subsample some firms with a very heavy family ownership have been excluded.¹⁰ Overall, we can say that the core results on accounting performance and nonlinearity are robust to survivorship bias.

Finally, it is important to note that the sample size in the Finnish stock market is relatively novel. The results could be driven at least partly by the sample selection bias, since for example Ikäheimo and Lumijärvi (2018) found that family-firms were performing better compared to non-family firms, using also Finnish data. There are also some unobserved factors which might be driving the results, for

⁹ Although, the effect of the family ownership is opposing to the effect found by Anderson and Reeb (2003), for example, there is still a possible survivorship bias regarding to my study. As Adams, et al. (2008) noted, that good firm performance has a negative effect on the probability that firm is ran by its founder.

¹⁰ Lemminkäinen Oyj, for example has been left out due to missing data. Pentti-family has an ownership of approximately 57 per cent of Lemminkäinen Oyj.

example, is the CEO status held by the founder, firm age, and the difference between voting rights and fractional ownership. Further investigation on the Nordic markets is definitely needed to receive a more certain conclusion.

7. Conclusion

In this paper I use yearly data on publicly traded firms in the Nasdaq Helsinki from years 2012-2019. From my analysis I conclude that family firms are performing worse compared to nonfamily firms on accounting measures (return on assets) and market valuation (Tobin's q). These findings are unaligned with earlier studies (see, e.g., Anderson and Reeb, 2003, Fahlenbrach, 2009, and Barontini and Caprio, 2006) which suggest family firms to be having a superior performance. However, my results add to the findings of Holderness and Sheehan (1988) by showing that family-ownership concentration has a negative affect to market valuation.

My further research also implies that these results might be partly driven by nonlinearities with the relation of firm performance and family-ownership. My results suggest that as the fractional ownership increases the negative effect of the family presence on return on assets, wears off. Also, when the ownership is concentrated enough, family firms become to overperform on accounting measures. Market measures are showing completely opposing effect, since as the ownership of the family is low enough, family-firms seem to be performing slightly better. However, as the ownership increases this effect seems to be tapering off and with enough ownership concentration, family-firms are having a lower market valuation.

The nonlinear nature of the relation could be resulting from the heavier involvement of the founder, who might be having a more insight on the technology or the industry. It is also notable that it is easier for a family blockholder to monitor the management which might be reducing myopic behaviour leading to more profitable investments.

Overall, more investigation on the family-firms in the Nordic stock market is definitely needed, due to the small sample size in Finland. For further research, more detailed information is needed on some unobserved attributes in my analysis, like the CEO-status, firm age and the difference in fractional ownership and voting rights. It would also be beneficial to expand the analysis to the whole Nordic stock market to obtain a broader investigation and results backed by stronger statistical significance.

APPENDIX

Tables AI-AIII, show the regression results (regression 1), with different constraint to classify family firms. Table AIV, includes the regression results (regression 1), with the subsample of firms which have data available for the whole sample 2012-2019.

Table AI

This table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Firm performance is calculated using return on assets (ROA) and Tobin's Q. ROA is computed by two ways: (1) scaling earnings before interest, tax, depreciation, and amortization (EBITDA) or (2) scaling net income by the book value of total assets. Tobin's Q is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family firm is a binary variable which equals 1 if founding family has at least 27.92 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. LN of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R2 are reported on the bottom of the table.

Family Ownership on Firm Performance With 27.92 Constraint			
	Return on Assets (Using EBITDA)	Return on Assets (Using Net Income)	Tobin's Q
	(1)	(2)	(3)
(intercept)	0.218 (0.897)	-0.034 (-0.258)	0.896 (2.043) **
Family Firm	-0.030 (-1.636)	-0.014 (-0.866)	0.025 (0.235)
Debt to Equity	-0.000 (-1.640) *	-0.000 (-3.806) ***	-0.000 (-1.775) *
Ln of Total Assets	-0.002 (-0.218)	0.005 (0.796)	0.029 (1.735) *
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Adjusted R ²	0.022	0.063	0.551
N	818	818	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

Table AII

This table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Firm performance is calculated using return on assets (ROA) and Tobin's Q. ROA is computed by two ways: (1) scaling earnings before interest, tax, depreciation, and amortization (EBITDA) or (2) scaling net income by the book value of total assets. Tobin's Q is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family firm is a binary variable which equals 1 if founding family has at least 30.61 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. LN of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R2 are reported on the bottom of the table.

Family Ownership on Firm Performance With 30.61 Constraint			
	Return on Assets (Using EBITDA)	Return on Assets (Using Net Income)	Tobin's Q
	(1)	(2)	(3)
(intercept)	0.215 (0.898)	-0.035 (-0.270)	0.848 (1.925) *
Family Firm	-0.035 (-2.005) **	-0.017 (-1.192)	0.132 (1.066)
Debt to Equity	-0.000 (-1.738) *	-0.000 (-3.864) ***	-0.001 (-1.724) *
Ln of Total Assets	-0.002 (-0.210)	0.005 (0.818)	0.031 (1.846) *
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Adjusted R ²	0.022	0.063	0.552
N	818	818	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

Table AIII

This table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Firm performance is calculated using return on assets (ROA) and Tobin's Q. ROA is computed by two ways: (1) scaling earnings before interest, tax, depreciation, and amortization (EBITDA) or (2) scaling net income by the book value of total assets. Tobin's Q is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family firm is a binary variable which equals 1 if founding family has at least 56.33 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. LN of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R2 are reported on the bottom of the table.

Family Ownership on Firm Performance With 56.33 Constraint

	Return on Assets (Using EBITDA) (1)	Return on Assets (Using Net Income) (2)	Tobin's Q (3)
(intercept)	0.192 (0.806)	-0.048 (-0.374)	0.936 (2.086) **
Family Firm	0.025 (1.182)	0.022 (1.640) *	-0.100 (-0.811)
Debt to Equity	-0.000 (-1.708) *	-0.000 (-3.893) ***	-0.001 (-1.772) *
Ln of Total Assets	-0.001 (-0.123)	0.005 (0.922)	0.027 (1.579)
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Adjusted R ²	0.022	0.063	0.552
N	818	818	818

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

Table AIV

This table reports the regression results for the relationship between founding-family ownership and firm performance using yearly data on publicly traded firms on Nasdaq Helsinki (as of December 2011) from years 2012-2019. Firms, which do not have data available for the whole sample period are excluded. Firm performance is calculated using return on assets (ROA) and Tobin's Q. ROA is computed by two ways: (1) scaling earnings before interest, tax, depreciation, and amortization (EBITDA) or (2) scaling net income by the book value of total assets. Tobin's Q is computed by dividing the market value of a firm by the book value of total assets. Market value of a firm is calculated by subtracting the book value of equity from the book value of total assets and then adding back the market value of equity. Family firm is a binary variable which equals 1 if founding family has at least 56.33 per cent fractional ownership in the firm and 0 if not. Debt to Equity ratio is computed by dividing company's long-term debt by the book value of equity. Ln of Total Assets is the natural logarithm of the book value of total assets of a firm. Year control is a dummy variable for each year in the sample (2012-2019), equal to either 1 or 0. Industry control is also a dummy variable for each industry in the sample (35 different industries) using Thomson Reuters Business Classification (TRBC) system. Huber White Sandwich Estimator is used to correct for autocorrelation and heteroskedasticity when calculating t-values which are reported in parentheses. Number of observations and adjusted R2 are reported on the bottom of the table.

Family Ownership on Firm Performance, Addressing Survivalship Bias			
	Return on Assets (Using EBITDA)	Return on Assets (Using Net Income)	Tobin's Q
	(1)	(2)	(3)
(intercept)	0.258 (0.999)	0.021 (0.149)	0.821 (1.017)
Family Firm	-0.031 (-1.384)	-0.010 (-0.556)	0.035 (0.211)
Debt to Equity	-0.000 (-1.413)	-0.000 (-4.461)	-0.000 (-1.317)
Ln of Total Assets	-0.004 (-0.331)	0.002 (0.398)	0.031 (0.960)
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Adjusted R ²	0.155	0.058	0.347
N	708	708	708

*, **, *** indicates significance at the 90%, 95%, 99% level, respectively

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