Factors Associated with Strategic Corporate Decisions in Family Firms: Evidence from Sweden*

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ABSTRACT

By using detailed ownership data from Sweden, we investigate the factors associated with corporate investment decisions in family firms compared to nonfamily firms. We find that the family owner's portfolio diversification level is to some extent, and the use of dual-class share mechanism by the family owner is strongly, associated with reduced corporate investment. We further demonstrate where entrenched family owners, holding dual-class shares, canalize their firm free cash flows to: they prefer to distribute it as dividends with catering motivations. They opt to pay higher dividends over increasing corporate investment, which indicates some evidence of private benefits of control.

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I. INTRODUCTION

Family firms are an economic phenomenon throughout the world. La Porta et al. (1999) and Faccio and Lang (2002) report that they are more common than widely held firms in Western Europe. They are also observed more in continental Europe than in the US, UK, and Japan (Sraer and Thesmar 2007).

Although the family firm literature provides quite some international evidence on the valuation and performance of family firms, as well as the influence of family owners on some different corporate decisions[1,2] we still lack evidence on what factors are related to strategic corporate decisions in family firms. Moreover, the blockholder literature provides evidence of the impact of owners' portfolio composition and dual-class share ownership on corporate decisions and firm value (e.g., Cronqvist and Nilsson 2003 and Lyandres et al. 2015). However, the implications of *family* owners' portfolio diversification level as well as dual-class shares use on strategic corporate decisions are not evident in the literature.

Accordingly, this paper investigates the ownership, as well as firm-related factors, associated with corporate investment decisions in family firms and non-family firms. We argue that the *portfolio diversification* level of family owners, as well as *dual-class share* mechanism used by family owners, would be related to the level of corporate investment for the following two reasons. First, more diversified owners tend to increase corporate risk as they are able to diversify their portfolios by themselves. Faccio et al. (2011) show that large diversified owners prefer less corporate risk, measured by corporate earnings volatility.[3] Moreover, Anderson et al. (2012) find that *family* owners tend to invest less in research and development—less corporate investment is perceived as lower corporate risk[4]—supporting the well-accepted view about family owners, that they are risk averse. Risk aversion of family owners are well portrayed in the literature. Family owners have strong motives for the continuity of family business

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1 International evidence on family firms is mainly from the US, Anderson and Reeb (2003a), Anderson et al. (2012), Anderson and Reeb (2003b), Anderson et al. (2009), Anderson et al. (2003), Pérez-Gonzalez (2006), Villalonga and Amit (2006), Palia et al. (2008), Li and Ryan Jr. (2015); from Sweden, Cronqvist and Nilsson (2003) and Heaney and Holmén (2008); from France, Sraer and Thesmar (2007) and Bach (2010); from Denmark, Bennedsen et al. (2007); from Switzerland, Isakov and Weisskopf (2014); from Germany, Andres (2008); from Japan, Nguyen (2011); from Italy, Amore et al. (2011); and from Colombia, Gonzalez et al. (2013). Finally, Maury (2006) offers cross-country evidence.

2 In the literature, apart from family *performance* papers, family firms are mainly analyzed in relation to the following dimensions: corporate financial policies with a focus on capital structure (Anderson and Reeb 2003b; Amore et al. 2011 and Gonzalez et al. 2013), corporate diversification (Anderson and Reeb 2003b), corporate opacity (Anderson et al. 2009), management compensation (Palia et al. 2008), and corporate investment (Anderson et al. 2012).

3 The underlying idea here is that "the expected utility of any risk-averse investor decreases with increased variance of her wealth. If a controlling shareholder is risk-averse and poorly diversified, an increase in firm-specific risk will decrease her expected utility" (Faccio et al., 2011, pp. 3602). Similarly, undiversified large shareholders are expected to support conservative corporate investments *assuming* that the utility of these shareholders is lower than that of diversified shareholders (Paligorova 2010).

4 In the literature, both capital expenditures and research and development expenditures (henceforth "R&D") are considered to be long-term, and thus risky, investments; however, R&D expenses are particularly associated with higher idiosyncratic risk compared to capex (e.g., Anderson et al. 2012).

or control, and they also care about their family reputation (Anderson and Reeb 2003b; Gómez-Mejía et al. 2007; Anderson et al. 2012 and Hiebl 2013). With this mentality of family wealth and reputation preservation, increasing firm risk for family owners would mean (risk of), broadly speaking, losing control (Bach 2010). Therefore, such risk-averse family owners are expected to avoid corporate investments. Accordingly, we argue that, as family owners are more risk averse than nonfamily owners, their corporate investment decision would be more sensitive to their portfolio diversification level.

Second, having a dual-class share mechanism is one of the ways for owners to entrench (Cronqvist and Nilsson 2003 and Gompers et al. 2010). We note that dual-class shares are more common, particularly among family firms, as the family might be reluctant to leave the control to someone who is outside of the family (see the literature regarding the discussion on the continuity of the family [business]: Bach 2010; Anderson et al. 2012; and Gonzalez et al. 2013). Therefore, we argue that family owners who enjoy a dual-class share mechanism would be more likely to entrench *via* their high voting power[5] and, thus, reduce corporate investment.

Our main findings are as follows. First, we find that the family owner's portfolio diversification level is to some extent, and the use of dual-class share mechanism by the family owner is strongly, associated with reduced capital expenditures. Second, we further investigate the factors that are related to dividend policy as well as capital structure decisions to find out if cash flows are canalized to some other channels rather than corporate investment. We find that family owners with dual-class shares prefer (canalizing firm cash flows to) higher dividend payment. Third, we further test the catering view and demonstrate that family firms with these entrenched owners enjoying dual-class shares pay dividends to cater to investor demand. Finally, we investigate the valuation of both family and nonfamily firms to find out if family firms' strategy of distributing their cash flows as dividend, rather than putting them in corporate investment, is valued positively by the market. We find that dual-class share structure and free cash flows in family firms are both viewed positively by shareholders. This finding suggests that family firms' *ability* to turn their cash flows into dividend, rather than the dividend payout itself (as the dividend variable is insignificant), is valued positively by the market.

We conduct several robustness tests. We use an alternative family firm definition. We also use three alternative estimation techniques. All these tests confirm our earlier findings and increase our confidence in our results.

We carry out our research with a Swedish sample for two main reasons, which are as follows. First, the dual-class share structure is the most common

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5 Villalonga and Amit (2006) point out the importance of excess vote by finding that firm value is increasing in cash flow rights but decreasing in voting rights of the family owner.

mechanism used to enhance control rights in Sweden (Giannetti and Simonov 2006); 56% of our sample firms have dual-class shares, which is comparable to other Continental European countries, such as Switzerland (51%) and Italy (41%) (Faccio and Lang 2002). Moreover, among our family firms, this ratio is even higher: 85% of the family firms in our sample have a dual-class structure.[6] This enables us to have an adequate setting to study family owners who have entrenchment potential *by* holding dual-class shares.

Second, Sweden offers *accurate* and *detailed* ownership data. The Swedish Securities Register Center, Värdepapperscentralen, keeps a register of all shareholders of the firms listed on the Stockholm Stock Exchange since the 1970s, and Swedish law allows "public" access to this shareholders' register (Cronqvist and Nilsson 2003). The ownership database provided by Modular Finance AB uses this register and covers the years from 1999 to today. In addition to being very accurate, the data are also very detailed. In the database, we can neatly pinpoint family ownership. An important advantage of the data is that Modular Finance AB aggregates closely related owners, like family members, into a single group (sphere), basically an ownership coalition, which enables us to construct our family firm variable in a sound manner (more details on the database are provided below in the Section II). Moreover, we have detailed information on the portfolio composition of owners. The database also takes the ultimate shareholdings into account (see Cronqvist and Nilsson (2003) for the example demonstrating how ultimate ownership is incorporated in the database).

This paper is mainly related to two lines of studies. First, we contribute to the family firm literature by investigating corporate investment decisions in family firms (e.g., Anderson et al. 2012). Second, by providing evidence on family owners' portfolios, we contribute to the new stream of blockholder studies that look into the heterogeneity in owners' portfolio composition (e.g., Bodnaruk et al. 2008; Faccio et al. 2011; Ekholm and Maury 2014; Fich et al. 2015; Lyandres et al. 2015 and Ravid and Sekerci 2017).

To the best of our knowledge, this is the first study to document the factors that are related to corporate investment decisions in family firms in comparison to nonfamily firms by taking into account (i) the portfolio composition of the owner and (ii) the entrenchment possibility of the owner *via* dual-class shares. In this way, this paper builds on the previous literature that investigated the impact of owners' portfolio composition and dual-class share ownership on firm policies and value.

The paper is as follows. Section II presents the data and variable measurements. Section III exhibits descriptive statistics. In Section IV, we discuss the methodology and empirical results. Section V presents robustness checks. Finally, in Section VI, we present concluding remarks.

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6 This statistics is more than what the studies using the US data report (see, for example, Villalonga and Amit (2006) who report that 50% of the family firms in their US sample make use of a dual-class mechanism).

II. DATA AND VARIABLE CONSTRUCTION

A. Data

The sample includes 220 firms listed on the NASDAQ-OMX stock exchange in Stockholm and domiciled in Sweden. Our unbalanced panel dataset covers the period from 1998 through 2014. As is common in the literature, due to strong regulation in their industry, financial firms and firms whose headquarters are abroad are removed from the sample (e.g., Anderson and Reeb 2003a; Sraer and Thesmar 2007; Bach 2010; Isakov and Weisskopf 2014).

All the data used are collected as fiscal year-end values. Five different data sources are used for the study: Datastream, Retriever, company annual reports, company websites, and Modular Finance AB ownership data. Accounting data, as well as firm characteristics, are collected from Datastream. Retriever, company annual reports, and company websites are used to find out who the founders are and when the company was founded. Data regarding *ownership* and *portfolio diversification* are collected manually from the ownership database provided by Modular Finance AB, a Swedish company specializing in ownership data for listed firms in Sweden. This database provides detailed *ownership* data. First, for each listed firm, we are able to obtain information on the identity of the largest shareholder, that is, family owner or not. Second, the detailed holdings of the largest shareholders are provided. Holdings are presented as percentages of both total capital and votes—when different. The database accordingly gives information on whether a firm uses a dual-class share structure. Third, the database takes the ultimate ownership into account. The Modular database also provides data regarding the portfolio composition of the largest owner; accordingly, we can calculate the *diversification* level of the owner's portfolio.

B. Family firm definition

As also highlighted in Cronqvist and Nilsson (2003), an important benefit of the Modular Finance AB data is that they aggregate closely related owners, like family members, into ownership coalitions. According to the database, this ownership group is constituted by family members and other owners closely associated with the family, such as cofounders, managers who took part in an MBO, and so on. Therefore, in defining family firms, we take these types of ownership coalitions into account. (In addition to Cronqvist and Nilsson (2003), see, for example, Villalonga and Amit (2006) who also incorporate coalitions in their family measure.)

Following the definitions from the literature (e.g., Anderson and Reeb 2003a; Cronqvist and Nilsson 2003 and Villalonga and Amit 2006), we define family firms as those whose largest owner is a founder family (or a founder family group). More specifically, our family firm variable is a dummy variable that is equal to 1 when the largest fraction of the total votes is held by the founder

(or descendants of the founder) and families and individuals closely affiliated with the founder, and 0 otherwise.

Based on this definition, 27% of our sample consists of family firms. Similarly, in Cronqvist and Nilsson's (2003) study, 34% of listed Swedish firms (of 1317 firm-year observations) are family firms (covering 1991–1997).[7] Our rate is higher than the 20% reported by Villalonga and Amit (2006) (i.e., when the family is the largest vote holder in their sample). We particularly focus on founder family firms because they are free from selection bias. In other words, a family's decision of investing in a firm may not be independent of firm characteristics. However, in the case of founder family firms, the founder starts up the company and commits to it through generations for sake of the continuity of the family business (Bach 2010; Anderson et al. 2012; Gonzalez et al. 2013). Therefore, investigating founder family firms offers us a setting for more sound empirical analyses.

C. Other variables

Below, we provide information on how we construct our variables. All variable definitions, including family firm, are compiled in Table 1.

It is common in the literature to capture the controlling power of the owner. For example, there are proxies for family owners who are blockholders at 5% (Villalonga and Amit 2006; Nguyen 2011; Anderson et al. 2012) and 20% (Cronqvist and Nilsson 2003; Sraer and Thesmar 2007; Isakov and Weisskopf 2014). To control for this, we also incorporate the controlling power of the family owners in our analyses by including the following ownership measures: (i) *Vote* is the percentage of the total votes held by the largest shareholder, and (ii) *Capital* is the percentage of the total cash flow rights held by the largest shareholder.

In our analyses we also investigate owner's ability to enhance control. To this end, we use the following variable: *Dual-class*, a dummy variable equal to 1 when the firm has a dual-class share structure and 0 otherwise. The dual-class feature would potentially serve the owner as an entrenchment tool, enabling the owner to hold high-voting shares yet not necessarily requiring the owner to hold much cash flow rights.

Following Faccio et al. (2011), portfolio diversification is measured in two ways. *No. of Firms in Portf.* is the total number of firms[8] in which the largest shareholder invests. The amount of the vote holdings in these firms does not

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7 There are also non-*founder* family firms in our sample; they form up around 29% of our sample, and this ratio in Cronqvist and Nilsson (2003) is 25%.
8 Note that Modular Finance AB only compiles Swedish firms when forming the portfolio of the largest shareholder. Therefore, while composing the portfolio, we are not able to include any non-Swedish firms in which the largest shareholder may invest. However, given the international evidence on home bias (see, for example, Massa and Simonov (2006) for Sweden and Grinblatt and Keloharju (2001) for Finland), we can assume that most of the stocks in the portfolios of the investors in our sample would be Swedish.

Table 1 Definition of variables

Capex/TA	Capital expenditures divided by total assets
R&D/TA	Research and development expenses divided by total assets
Cash flow	Net income divided by total assets
Firm size	Net sales divided by total assets
Ln(TQ)	The natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets
Dividend	Dividend yield, which is dividend per share as a percentage of the share price
Dividend payer	Dummy variable that equals 1 for dividend payers and 0 for nonpayers
Dividend initiate	Dummy variable defined for nonpayers at the end of year t. It takes the value of 0 for firms that remain nonpayers in year $t + 1$ and 1 for nonpayers at the end of year t who start to pay a dividend in year $t + 1$
Dividend premium	The difference in the natural logarithm of average market-to-book ratios of dividend payers and nonpayers for a given year
Leverage	Total long-term debt divided by total assets
Firm age	The number of years that the firm has been operating
Ownership and entrenchment	
Family firm	Dummy variable that equals 1 if the largest shareholder is a founder family (group)
Vote	% of votes held by the largest shareholder
Capital	% of cash flow rights held by the largest shareholder
Dual-class	Dummy variable that equals 1 when the firm has a dual-class share structure
Crisis	Dummy variable that equals 1 for years equal to and later than 2008
Diversification	
(1-Herfindahl)	1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio
No. of firms in portf.	Total number of firms that constitutes the largest shareholder's portfolio
Family owner's involvement	
CEO|executive	Dummy equals 1 when the *family* owner is the CEO or in the management team as an executive
Chairman|director	Dummy equals 1 when the *family* owner is the Chairman or in the board as a director

This table presents definitions of the variables used in this paper. The data is obtained from Datastream, Retriever, company annual reports, company website, and Modular Finance AB ownership data. The currency used is SEK.

matter; we include all levels of the largest owner's investment. However, this measure is limited because diversification is not totally captured when the largest shareholder invests in *many* firms but concentrates his or her wealth in *one* single firm. To overcome this limitation, we use another proxy (*1—Herfindahl Index*), calculated as 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. The Herfindahl index itself can

take values between 0 and 1, where 1 reflects the largest owner investing in just one firm (fully concentrated wealth), whereas 0 shows the opposite state. To ease interpreting the results, we subtract the index from 1, so that a higher value indicates a more diversified portfolio. For space considerations, in the Section IV, we only report results with the (*1—Herfindahl Index*) proxy.

We proxy for corporate investment with two measures: (i) *Capex/TA*, constructed as the capital expenditures (henceforth "capex") divided by the book value of total assets, and (ii) *R&D/TA*, measured as research and development expenditures divided by the book value of total assets.

Control variables are as follows. We control for basic firm characteristics following the literature. *Cash Flow* is net income divided by total assets. *Firm Size* is proxied with net sales divided by total assets. *Ln(TQ)* is the natural logarithm of *Tobin's Q*, which is measured as the sum of the market value of equity plus book value of total liabilities, all divided by the book value of assets. *Dividend* is dividend yield, which is calculated as dividend per share as a percentage of the share price. It aims to capture how much cash flow the investor is receiving for each Swedish kronor invested in equity position. *Leverage* is measured as total debt divided by total assets. *Firm age* is the number of years that the firm has been operating.

III. DESCRIPTIVE STATISTICS

Table 2 shows the descriptive statistics for our sample of firms. Panel A presents summary statistics with a focus on the comparison between family and non-family firms. Panel B tabulates the correlation matrix of the selected variables.

As reported in Panel A, family owners on average have higher voting power (0.485) and cash flow rights (0.302) compared to nonfamily firms (0.284 and 0.216, respectively). Moreover, 85% of family firms in our sample use a dual-class share structure, whereas the ratio is 45% in nonfamily firms. Both rates are much higher than the dual-class share ratio in the US: Gompers et al. (2010) show that it is only 6% in their US sample.

We have two diversification measures, *(1-Herfindahl)* and *No of Firms in Portf.* The sample mean values for *(1-Herfindahl)* and *No of Firms in Portf.* are 0.349 and 22, respectively. These statistics are comparable to those in Faccio et al. (2011), who focus on large shareholders' diversification (and its relation to corporate risk taking) in a sample of private and publicly traded European firms. Their mean value for (1-Herfindahl Index) is 0.351, whereas it is 1.420 for ln(No. of Firms). This comparison suggests that the largest shareholders in Sweden constitute a representative sample for Europe.

Moreover, in sample splits, our two diversification variables, *(1-Herfindahl)* and *No of Firms in Portf.* indicate that family owners' portfolios are, on average, less diversified compared to nonfamily owners portfolios. The mean value of *(1-Herfindahl)* for family owners is 0.172, whereas it is 0.412 for nonfamily firms. We also show that family owners, on average, hold five firms in their

Table 2 Univariate tests

Panel A: Descriptive statistics of selected variables

Variables	All firms					Family firms					Non-family firms					Diff. in means	
	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max	(6) N	(7) Mean	(8) SD	(9) Min	(10) Max	(11) N	(12) Mean	(13) SD	(14) Min	(15) Max	(16) (7–12)	(17) t-test
Vote	2812	0.338	0.212	0.002	0.934	760	0.485	0.212	0.031	0.934	2052	0.284	0.185	0.002	0.884	0.201	24.650***
Capital	2812	0.239	0.161	0.002	0.861	760	0.302	0.170	0.010	0.861	2052	0.216	0.151	0.002	0.774	0.085	12.951***
Dual class	2812	0.562	0.496	0.000	1.000	760	0.851	0.356	0.000	1.000	2052	0.455	0.498	0.000	1.000	0.396	20.104***
(1-Herfindahl)	2401	0.349	0.353	0.000	0.986	632	0.172	0.256	0.000	0.926	1769	0.412	0.362	0.000	0.986	−0.239	−15.323***
No. of firms in P.	2400	22.040	64.869	0.000	517.00	632	5.266	8.318	0.000	54.000	1768	28.036	74.510	1.000	517.00	−22.770	−7.664***
Capex/TA	3479	0.041	0.050	0.000	0.298	747	0.047	0.055	0.000	0.298	2000	0.035	0.043	0.000	0.298	0.012	6.154***
R&D/TA	3585	0.030	0.078	0.000	0.497	750	0.023	0.066	0.000	0.497	2028	0.033	0.083	0.000	0.497	−0.010	−3.072***
Cash flow	3477	0.068	0.200	−0.918	0.444	734	0.122	0.164	−0.918	0.444	1997	0.050	0.201	−0.918	0.444	0.072	8.721***
Firm size	3581	1.064	0.751	0.000	3.721	749	1.112	0.784	0.000	3.721	2026	1.054	0.719	0.000	3.721	0.058	1.845***
TQ	3241	1.837	1.480	0.538	9.112	719	1.926	1.637	0.538	9.112	1933	1.771	1.388	0.538	9.112	0.155	2.432***
Dividend	3354	2.225	2.974	0.000	34.880	720	2.450	2.302	0.000	34.880	1956	2.176	2.598	0.000	34.880	0.274	2.496***
Dividend payer	3354	0.638	0.480	0.000	1.000	720	0.766	0.423	0.000	1.000	1956	0.588	0.492	0.000	1.000	0.178	8.613***
Dividend initiate	3300	0.046	0.210	0.000	1.000	720	0.038	0.193	0.000	1.000	1956	0.050	0.218	0.000	1.000	−0.011	−1.214***
Dividend premium	2662	−0.412	0.158	−0.810	−0.223	701	−0.423	0.161	−0.810	−0.223	1855	−0.401	0.151	−0.810	−0.223	−0.021	−3.156***
Leverage	3543	0.210	0.191	0.000	1.161	743	0.200	0.203	0.000	1.161	2024	0.210	0.182	0.000	1.161	−0.010	−1.264
Firm age	2768	47.323	54.622	0.000	405.00	756	38.490	29.706	0.000	141.00	2012	53.066	61.644	0.000	405.00	−14.575	−6.234***

Table 2 *(continued)*

Panel B: Correlation matrix of selected variables

	Family firm	Vote	Capital	Dual class	(1-Herfin.)	Capex/ TA	R&D/TA	Cash flow	Firm size	TQ	Dividend	Leverage	Firm age
Family firm	1.000												
Vote	0.421***	1.000											
Capital	0.237***	0.806***	1.000										
Dual class	0.354***	0.421***	0.010	1.000									
(1-Herfindahl)	-0.298***	-0.278***	-0.221***	-0.208***	1.000								
Capex/TA	0.116***	0.029	0.048***	-0.008	-0.060***	1.000							
R&D/TA	-0.058***	-0.186***	-0.151***	-0.127***	0.009	-0.100***	1.000						
Cash flow	0.164***	0.193***	0.112***	0.146***	-0.070***	0.091***	-0.435***	1.000					
Firm size	0.035*	0.051***	0.033*	0.050***	-0.006	-0.101***	-0.167***	0.270***	1.000				
TQ	0.047***	-0.140***	-0.129***	-0.119***	-0.059***	-0.010	0.358***	-0.099***	0.019	1.000			
Dividend	0.048***	0.115***	0.048***	0.112***	0.040**	0.023	-0.231***	0.241***	0.127***	-0.212***	1.000		
Leverage	-0.024	0.068***	0.085***	-0.027	-0.001	0.269***	-0.195***	0.045***	-0.265***	-0.265***	0.108***	1.000	
Firm age	-0.117***	0.073***	-0.023	0.187***	0.059***	0.003	-0.127***	0.166***	0.040***	-0.189***	0.104***	0.143***	1.000

In this table, Panel A provides descriptive statistics of the main variables, whereas Panel B presents the correlation matrix of the selected variables used in this study. All variables are described in Table 1. N is the number of observations. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

portfolios, which is lower than the average number of firms in nonfamily owners' portfolios, 28.

Family owners' portfolios, on average, are less diversified, yet the maximum and minimum value of *(1-Herfindahl)* and *No of Firms in Portf.* indicate that there is quite some heterogeneity among family owners. This is something that this paper will further explore in the multivariate analyses to find out if this heterogeneity matters for corporate investment.

Overall, these summary statistics suggest that family owners are the more controlling type of owners with their portfolios, on average, not being very diversified. They also seem to be entrenched owners as they hold dual-class shares extensively and, hence, have the "suitable" setting to expropriate wealth from minority shareholders.

Panel A further shows that family firms have, on average, more capex, yet less R&D, compared to nonfamily firms, which is in line with Anderson et al. (2012). Family firms also have higher cash flows and higher growth opportunities than their counterparts. Moreover, family owners prefer higher dividends compared to nonfamily firms. All these differences are statistically significant.

Panel B presents the correlations between the selected variables. Some correlations are noteworthy. Family owners hold high voting rights (0.421) and do not seem to be well diversified (–0.298), as we also mention in the univariate tests above. In addition, the largest owners who hold dual-class shares in general seem to be less diversified (–0.208). Cash flow of the company is positively correlated with capex (0.091), whereas it is negatively correlated with R&D (–0.435). Cash flows are also positively correlated with dividends (0.241).

IV. EMPIRICAL FINDINGS

A. *Family entrenchment, portfolio diversification, and corporate investment*

We investigate the ownership-related factors associated with corporate investment using a comparison analysis of family and nonfamily firms. More specifically, we run the following model for both family and nonfamily firms:

$$Corporate\ investment_{it} = \beta_0 + \beta_1 \left(diversification_{it}\right) + \beta_2 \left(ownership\ and\ entrenchment_{it}\right) + \beta_3 X_{\text{control variables , it}} + u_{it}$$

$$(1)$$

Equation (1) uses a two-way error component model, including both firm- and year fixed effects. Firm fixed effects mitigate issues related to omitted, unobserved time-invariant firm characteristics that may be correlated with any

of the independent variables.[9] Some year-specific shocks might influence all the firms in a similar fashion; therefore, we also use year fixed effects. We also cluster errors at the firm level to control for serial correlation within firms. Finally, we use a set of control variables following the literature to control for time-varying observable variables in our regressions. Another important point regarding our model choice is that it also controls for unobserved CEO heterogeneity. The firm fixed effect (FE) model is used to account for any unobserved firm heterogeneity, including managerial quality or structure (Wooldridge 2010, p. 282; Roberts and Whited 2012, p. 76). Therefore, we can *control* for the joint influence of manager and firm FE by addressing potential omitted variable bias.[10]

With a sample split analysis, we are able to investigate all the factors that are associated with corporate investment, which is the goal of this paper. Sample split offers an advantage over an alternative, interaction model where some of the independent variables are highly correlated with the family firm variable (e.g., vote, dual class dummy, capital, Herfindahl index; see the correlation matrix for the magnitudes of the correlations), thus making the interpretation of the interaction model tricky. Moreover, the endogeneity concerns would be higher in a full sample interaction model as we would regress corporate investment directly on family ownership.[11]

Tables 3 and 4 present regression results from equation (1) for capex and R&D expenditures, respectively. We find some evidence that the portfolio diversification level of family owners is related to a lower level of capex (Columns 1, 3, and 5 in Table 3). The portfolio diversification seems to have a stronger explanatory power for R&D for nonfamily firms (Columns 2, 4, and 6 in Table 4).[12] We find no evidence for the relation between the voting or cash flow rights of the largest owner and the corporate investment level (Columns

9 Endogeneity is present if (corr(μ_i, X_i) $\neq$ 0), where μ is *unobserved* firm heterogeneity (hence, a component of the error term) and where X is the independent variables (Wooldridge 2010 and Roberts and Whited 2012).

10 However, in order to separate CEO fixed effect from firm fixed effect, as well as to *measure* CEO fixed effect, one should use two other suggested methods: MDV and AKM models (for details see Graham, Li and Qiu, 2011, pp. 150–151).

11 Having mentioned the aim of this paper, and the chosen model for it, we still perform a full sample analysis before moving to the sample split analyses to find if we can confirm our univariate tests. In the full sample, we regress corporate investment on the family firm binary variable by paying attention to potential multicollinearity issues between the family firm variable and the other independent variables. We also use our two-way fixed effects model for the full sample with the motivations discussed above. The unreported results available upon request present that family firms are not associated with higher or lower level of corporate investment after controlling for all observable and unobservable variables. However, the signs of the regression coefficients on the family firm variable meet the expectations from our univariate analyses, where we show that family firms on average have higher capex and lower R&D compared to nonfamily firms. This is also in line with Anderson et al. (2012)'s univariate and multivariate results, but the multivariate analyses in Anderson et al. (2012) do not control for unobserved firm heterogeneity.

12 We get similar results when we use our alternative diversification variable, *No. of Firms in Portf.* The results are available from the author upon request.

Table 3 Family entrenchment, portfolio diversification, and corporate investment (capex)

	Capex/TA					
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	−0.066*	0.002	−0.064*	0.002	−0.051*	0.002
	(0.037)	(0.005)	(0.038)	(0.005)	(0.028)	(0.006)
Vote	0.011	0.001				
	(0.032)	(0.020)				
Capital			−0.004	0.005		
			(0.035)	(0.021)		
Dual class					−0.102***	0.020*
					(0.010)	(0.012)
Cash flow	−0.009	−0.020	−0.008	−0.020	−0.007	−0.020
	(0.015)	(0.013)	(0.015)	(0.013)	(0.014)	(0.013)
Ln(TQ)	−0.006	0.014***	−0.006	0.014***	−0.004	0.014***
	(0.010)	(0.004)	(0.010)	(0.004)	(0.010)	(0.004)
Leverage	0.032	0.001	0.032	0.001	0.028	0.002
	(0.028)	(0.013)	(0.028)	(0.013)	(0.026)	(0.013)
Firm size	0.025***	0.012	0.025***	0.012	0.023**	0.012
	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.007)
Firm age	0.001	−0.001**	0.001	−0.001**	0.001	−0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	−0.017	0.093**	−0.002	0.092**	0.086**	0.082**
	(0.055)	(0.037)	(0.046)	(0.036)	(0.034)	(0.038)
Observations	576	1603	576	1603	576	1603
R^2	0.074	0.082	0.073	0.082	0.108	0.085
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *Capex/TA,* which is capital expenditures divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

1–4 in Tables 3 and 4). However, we show that the use of dual-class shares in family firms is associated with lower capex, whereas there is some evidence that capex is higher in nonfamily firms with dual-class shares (Columns 5 and 6 in Table 3, respectively).

When we look at the other factors related to corporate investment rather than ownership-related ones, we note five findings. First, regarding cash flows of the

Table 4 Family entrenchment, portfolio diversification, and corporate investment (R&D)

	R&D/TA					
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	−0.006 (0.009)	−0.028** (0.013)	−0.006 (0.011)	−0.028** (0.013)	−0.005 (0.011)	−0.028** (0.013)
Vote	0.006 (0.030)	0.025 (0.036)				
Capital			0.002 (0.023)	0.014 (0.041)		
Dual class					−0.001 (0.005)	−0.001 (0.020)
Cash Flow	−0.004 (0.021)	−0.068*** (0.024)	−0.004 (0.021)	−0.069*** (0.024)	−0.004 (0.021)	−0.069*** (0.024)
Ln(TQ)	0.003 (0.009)	0.011* (0.007)	0.003 (0.009)	0.011* (0.006)	0.004 (0.009)	0.011* (0.006)
Leverage	0.004 (0.018)	−0.044** (0.020)	0.004 (0.018)	−0.044** (0.019)	0.004 (0.018)	−0.044** (0.020)
Firm size	0.020* (0.011)	0.015 (0.010)	0.020* (0.011)	0.016 (0.010)	0.020* (0.011)	0.016* (0.010)
Firm age	0.000 (0.000)	0.001 (0.001)	0.000 (0.000)	0.001 (0.001)	0.000 (0.000)	0.001 (0.001)
Constant	−0.012 (0.031)	−0.028 (0.040)	−0.006 (0.026)	−0.023 (0.040)	−0.004 (0.022)	−0.020 (0.043)
Observations	577	1619	577	1619	577	1619
R^2	0.042	0.107	0.042	0.106	0.042	0.105
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *R&D/TA,* which is research and development expenses divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

firm, we only show a significant relation between firm cash flow and R&D for nonfamily firms. Nonfamily firms with free cash flow seem to prefer fewer R&D projects. Second, our growth opportunity proxy, which is *Ln(TQ),* is positive and significant for nonfamily firms in both Tables 3 and 4 (at 1% and 10%, respectively). This suggests that nonfamily firms with growth opportunities tend to

Table 5 Family entrenchment, portfolio diversification, and corporate investment (capex) postcrisis

| | Capex/TA | | | | | |
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	−0.064*	0.002	−0.063*	0.002	−0.050*	0.002
	(0.037)	(0.005)	(0.037)	(0.005)	(0.028)	(0.006)
Vote	0.007	0.000				
	(0.031)	(0.019)				
Capital			−0.008	0.003		
			(0.032)	(0.021)		
Dual class					−0.104***	0.017
					(0.009)	(0.012)
Cash flow	−0.010	−0.018	−0.009	−0.018	−0.008	−0.018
	(0.016)	(0.013)	(0.016)	(0.013)	(0.015)	(0.013)
Ln(TQ)	−0.002	0.015***	−0.002	0.015***	−0.000	0.016***
	(0.009)	(0.004)	(0.009)	(0.004)	(0.009)	(0.004)
Leverage	0.030	0.001	0.030	0.001	0.026	0.002
	(0.027)	(0.013)	(0.027)	(0.013)	(0.026)	(0.013)
Firm size	0.024***	0.011	0.024***	0.011	0.022**	0.010
	(0.009)	(0.008)	(0.009)	(0.008)	(0.008)	(0.007)
firm age	0.000	−0.001*	0.000	−0.001*	0.000	−0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Crisis	−0.006	−0.002	−0.006	−0.002	−0.006	−0.002
	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)
Constant	0.017	0.072**	0.026	0.072**	0.110**	0.064**
	(0.052)	(0.030)	(0.045)	(0.030)	(0.043)	(0.032)
Observations	576	1603	576	1603	576	1603
R^2	0.056	0.073	0.056	0.074	0.093	0.075
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *Capex/TA,* which is capital expenditures divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. *Crisis* is a dummy variable that equals 1 for years equal to and later than 2008. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are in parenthesis.

prefer higher capex and higher R&D. Third, leverage ratio is significantly and negatively related to R&D expenses in nonfamily firms. This might indicate that the source of funds for R&D in nonfamily firms is not *via* long-term debt use.

Fourth, the variable we use to proxy for firm size is positive and significant, mainly for family firms in both Tables 3 and 4 (at 1%, and 10%, respectively). For family firms, being large seems to be the main driver of corporate investment

Table 6 Family entrenchment, portfolio diversification, and corporate investment (R&D) post-crisis

	R&D/TA					
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	−0.010	−0.028**	−0.010	−0.028**	−0.009	−0.028**
	(0.008)	(0.013)	(0.009)	(0.013)	(0.009)	(0.013)
Vote	0.010	0.023				
	(0.029)	(0.037)				
Capital			0.010	0.013		
			(0.019)	(0.042)		
Dual class					0.006	−0.001
					(0.005)	(0.020)
Cash flow	−0.009	−0.068***	−0.009	−0.068***	−0.008	−0.069***
	(0.018)	(0.024)	(0.018)	(0.024)	(0.018)	(0.025)
Ln(TQ)	−0.000	0.008	−0.000	0.008	−0.000	0.008
	(0.009)	(0.006)	(0.009)	(0.006)	(0.009)	(0.006)
Leverage	0.009	−0.040**	0.009	−0.040**	0.009	−0.040**
	(0.014)	(0.019)	(0.014)	(0.019)	(0.014)	(0.019)
Firm size	0.021*	0.017*	0.021*	0.017*	0.022*	0.018*
	(0.012)	(0.009)	(0.012)	(0.009)	(0.012)	(0.009)
Firm age	−0.001	0.000	−0.001	0.000	−0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Crisis	0.008	0.001	0.008	0.000	0.009	0.000
	(0.008)	(0.003)	(0.008)	(0.003)	(0.008)	(0.003)
Constant	0.043	0.012	0.045	0.016	0.045	0.018
	(0.034)	(0.046)	(0.046)	(0.046)	(0.043)	(0.049)
Observations	577	1619	577	1619	577	1619
R^2	0.029	0.094	0.028	0.093	0.028	0.093
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *R&D/TA,* which is research and development expenses divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. *Crisis* is a dummy variable that equals 1 for years equal to and later than 2008. ***, **, * denote statistical significance at the 1, 5, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

as firm size is the only firm characteristic variable that is significant in the regressions. Finally, older nonfamily firms are found to devote less money to capex.

In Tables 5 and 6, we run the equation (1) again, this time with a specific focus. We relax the year fixed effect consideration in our model, and we just add a dummy variable representing the recent financial crisis. The dummy variable takes value of 1 for years equal to and later than 2008. The purpose of this analysis is to find out if the corporate investment level in family firms is affected differently by such an exogenous shock to the whole economy. We do not find a difference in corporate investments levels between family and nonfamily firms following the crisis.

Overall, dual-class share structure seems to strongly explain the corporate investment level in family firms. Family owners holding dual-class shares prefer less capital expenditure. Because we do not find any investment cash flow sensitivity in family firms (Fazzari et al. 1988), we look into other corporate decisions to explore if firm cash flows are canalized to some other channels. More specifically, in the next section, we investigate the factors that are related to dividend and capital structure decisions, through which firm cash flows would be distributed.

B. Family entrenchment, portfolio diversification, and dividend and leverage

To find out if firm cash flows are directed to some other channels rather than corporate investment, we look at the dividend and leverage decisions with equations (2) and (3) specified below. We investigate the corporate decision on dividends rather than stock repurchases with a particular focus on dividend yield as we are interested in capturing how much cash flow the investor is receiving for each Swedish kronor invested in equity position following Giannetti and Simonov (2006).

In these models, we again use firm and year fixed effects and cluster the errors at firm level.

$$Dividend_{it} = \lambda_0 + \lambda_1 \left(diversification_{it} \right) + \lambda_2 (ownership\,and\,entrenchment_{it}) \\ + \lambda_3 X_{control\,variables,\,it} + u_{it} \tag{2}$$

$$Leverage_{it} = \lambda_0 + \lambda_1 \left(diversification_{it} \right) + \lambda_2 (ownership\,and\,entrenchment_{it}) \\ + \lambda_3 X_{control\,variables,\,it-1} + u_{it} \tag{3}$$

The main results are as follows. First, dual-class share structure seems to matter for dividend and leverage decisions only in family firms. As reported in Column 5 in Table 7, there is a strong positive relation between the use of dual-class shares by family owners and dividend yield. In addition to the dividend investigation we conduct, Column 5 in Table 8 suggests some evidence that dual-class use is associated with lower leverage.

Table 7 Family entrenchment, portfolio diversification, and dividend

	Dividend					
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	−0.057	0.134	−0.028	0.165	−0.393	0.180
	(1.354)	(0.314)	(1.383)	(0.316)	(1.510)	(0.310)
Vote	−0.355	−1.565*				
	(2.457)	(0.861)				
Capital			−0.697	−0.522		
			(2.166)	(0.894)		
Dual class					2.193***	−0.495
					(0.540)	(0.472)
Cash flow	1.849**	−0.109	1.861**	−0.052	1.803**	−0.043
	(0.874)	(0.379)	(0.862)	(0.381)	(0.874)	(0.379)
Ln(TQ)	0.042	0.403**	0.051	0.431**	−0.000	0.425**
	(0.343)	(0.168)	(0.333)	(0.170)	(0.342)	(0.171)
Leverage	1.658	0.122	1.667	0.125	1.767	0.106
	(1.548)	(0.576)	(1.565)	(0.580)	(1.561)	(0.578)
Firm size	−0.501	−0.363	−0.499	−0.395	−0.452	−0.404
	(0.434)	(0.330)	(0.447)	(0.332)	(0.453)	(0.332)
Firm age	0.099***	−0.018	0.097***	−0.016	0.105***	−0.018
	(0.034)	(0.028)	(0.034)	(0.028)	(0.028)	(0.028)
Constant	−1.885	3.777**	−1.763	3.378**	−4.235**	3.558**
	(2.483)	(1.690)	(2.198)	(1.701)	(1.761)	(1.742)
Observations	577	1619	577	1619	577	1619
R^2	0.264	0.135	0.264	0.133	0.268	0.133
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *Dividend,* which is dividend yield measured as dividend per share as a percentage of the share price. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1, 5, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

Second, we find some evidence that family owners with diversified portfolios seem to prefer higher leverage (Columns 1, 3, and 5 in Table 8). This is in line with the literature (see Faccio et al. (2011), who show the evidence of higher corporate risk taking for *all* types of owners). Therefore, our analysis is complementary to their study.

Table 8 Family entrenchment, portfolio diversification, and leverage

	Leverage					
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm
(1-Herfindahl)	0.193*	−0.012	0.189*	−0.013	0.198*	−0.011
	(0.107)	(0.020)	(0.104)	(0.020)	(0.107)	(0.019)
Vote	−0.051	−0.018				
	(0.126)	(0.061)				
Capital			−0.008	−0.048		
			(0.133)	(0.080)		
Dual class					−0.078*	−0.079
					(0.041)	(0.062)
Cash flow	−0.049	−0.101***	−0.050	−0.102***	−0.049	−0.101***
	(0.043)	(0.036)	(0.043)	(0.037)	(0.043)	(0.036)
Ln(TQ)	0.054*	0.032*	0.053*	0.032*	0.054*	0.031**
	(0.029)	(0.017)	(0.029)	(0.018)	(0.029)	(0.016)
Firm size	−0.063**	−0.069***	−0.062**	−0.069***	−0.064**	−0.069***
	(0.027)	(0.026)	(0.027)	(0.026)	(0.027)	(0.026)
Firm age	−0.017***	−0.001	−0.016***	−0.001	−0.016***	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Constant	1.008***	0.352***	0.960***	0.354***	1.021***	0.386***
	(0.139)	(0.128)	(0.100)	(0.129)	(0.048)	(0.124)
Observations	577	1619	577	1619	577	1619
R^2	0.157	0.069	0.155	0.069	0.158	0.073
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *Leverage,* which is total long-term debt divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Vote* is % of votes held by the largest shareholder. *Capital* is % of cash flow rights held by the largest shareholder. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating for. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

Third, family firms seem to use cash flows to distribute dividend (Columns 1, 3, and 5 in Table 7). On the other hand, nonfamily firms seem not to transfer cash flows to shareholders *via* dividend payment. Instead, they would use cash flows to lower their leverage ratio (Columns 2, 4, and 6 in Table 8)—the ratio would decline as a result of either increasing equity (e.g., *via* increased retained earnings or equity issue) or paying their loan back.

Overall, Tables 7 and 8 suggest that family owners holding dual-class shares are in favor of higher dividends and that family firms are using their free cash flows for dividend payment.[13]

The finding related to the dividends and dual-class shares is the opposite of what Maury and Pajuste (2002) expected based on the private benefits of control hypothesis (i.e., dual-share mechanism would escalate agency costs and hence would be associated with lower dividends) (Bebchuk et al. 2000). Maury and Pajuste (2002) use Finnish ownership data and do not find any negative significant relation between dual-class share structure and dividend payout. The positive relation we show between dual-shares and dividend yield *alone* suggests that family owners holding dual shares in Sweden do not seem to enhance control as the free cash flows are at least distributed to shareholders rather than being used for the family owner's own private benefits. In other words, instead of becoming entrenched and starting to extract private benefits, they pay out cash flows as dividend to all shareholders. However, when we also take into account our earlier finding, that family owners with dual-class shares prefer less corporate investment (i.e., less capex), we note some evidence of private benefits of control.

Thus, perhaps the catering theory of dividends (Baker and Wurgler 2004) offers a more plausible explanation for the *positive* relation we find between the dual-class share mechanism and dividend yield. The intuition behind the catering theory is that managers would pay out dividends to cater to investor demand. Accordingly, our finding indicates that family owners holding dual-class shares would use their power to cater to outside shareholders, as well as themselves.

The alternative explanation for family owners with dual shares for choosing to distribute firm cash flows as dividend rather than putting them in investment might be the theory on investment opportunities. In other words, family owners would opt for higher dividend simply because they might have already exhausted their growth opportunities. In fact, our univariate results indicate the opposite. Our univariate tests show that growth opportunities, Tobin's Q, are significantly higher in family firms than nonfamily firms. Accordingly, our finding of family firms' (owners') preference of paying high dividends over higher corporate investment may not be explained by the exhausted growth opportunities argument.

Overall, the preference of family owners holding dual shares for lower corporate investment *and* higher dividend can be explained by theories on private benefits of control *and* on catering.

To further support our catering interpretation, we directly test the catering theory in a further investigation. The aim is to find out if family firms with

13 Unreported findings indicate that there is no difference in family and nonfamily firms' leverage decisions postcrisis. Moreover, even during the postcrisis period, family firms are found to pay more dividends compared to nonfamily firms. Overall, these findings might suggest that family firms have a sound ability to distribute dividends as the dividends are not even affected by the macroeconomic (exogenous) shock to their cash flows.

dual-class shares cater to investors by paying dividends when investors put a stock price premium on dividend-paying firms. Table 9 presents the findings. We construct the investor demand measure by following Baker and Wurgler (2004). *Dividend Premium* is the difference in the natural logarithm of average market-to-book ratios of dividend payers and nonpayers for a given year, which

Table 9 Family entrenchment and dividend: Test of catering theory

	Dividend		Dividend payer		Dividend initiate	
	(1) Family -dual	(2) Nonfamily -dual	(3) Family -dual	(4) Nonfamily -dual	(5) Family -dual	(6) Nonfamily -dual
Dividend premium	3.972***	0.585	0.644**	−0.351	0.141	0.160
	(1.339)	(1.491)	(0.261)	(0.268)	(0.105)	(0.119)
(1-Herfindahl)	−0.732	0.364	0.204	−0.032	0.017	0.038
	(1.822)	(0.870)	(0.202)	(0.122)	(0.138)	(0.046)
Cash flow	1.923*	0.344	0.330	0.211	0.103	0.187**
	(1.103)	(0.790)	(0.203)	(0.136)	(0.071)	(0.074)
Ln(TQ)	−0.671	−0.665*	0.208***	0.123*	0.008	0.016
	(0.426)	(0.342)	(0.062)	(0.073)	(0.014)	(0.032)
Leverage	3.412*	0.674	0.224	−0.057	−0.061	−0.273***
	(1.715)	(0.884)	(0.197)	(0.171)	(0.097)	(0.082)
Firm size	−0.263	0.443	−0.225**	−0.114	−0.020	−0.043
	(0.498)	(0.612)	(0.088)	(0.094)	(0.039)	(0.027)
Firm age	−0.008	0.053	−0.011	0.024*	−0.009**	−0.009**
	(0.074)	(0.053)	(0.009)	(0.012)	(0.004)	(0.004)
Constant	4.562	−1.668	1.646***	−1.086	0.519**	0.832**
	(4.147)	(4.597)	(0.536)	(1.016)	(0.227)	(0.383)
Observations	479	676	479	676	479	676
R^2	0.126	0.040	0.157	0.051	0.014	0.037
Year FE	No	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variables are *Dividend,* which is dividend yield measured as dividend per share as a percentage of the share price; *Dividend Payer,* which is a dummy variable that equals 1 for dividend payers and 0 for nonpayers; and *Dividend Initiate,* which is a dummy variable defined for nonpayers at the end of year *t*. It takes a value of 0 for firms that remain nonpayers in year *t + 1* and 1 for nonpayers at the end of year *t* who start to pay a dividend in year *t + 1*. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. Column 1, for example (*Family-dual*), represents family firms with dual-class shares, whereas Column 2 (*nonfamily-dual*) represents nonfamily firms with dual class shares. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

is the main dividend premium proxy in Baker and Wurgler (2004). It captures the time-varying demand for dividends, and its mean value is negative (–0.412) in our sample, which covers 1998–2014.[14] We measure our dividend variables in the spirit of Baker and Wurgler (2004) but following Becker et al. (2011). The motivation behind this is that we have a panel setting, whereas Baker and Wurgler (2004)'s analyses are run at an aggregate level (see the review paper Rooij et al. (2009) for other empirical studies testing the catering theory with a panel data setting). In addition to the *Dividend* variable, we have two other dividend variables as in Becker et al. (2011): *Dividend Payer* is a dummy variable that equals 1 for dividend payers and 0 for nonpayers, and *Dividend Initiate* is a dummy variable defined for nonpayers at the end of year t. It takes the value of 0 for firms that remain nonpayers in year $t + 1$ and 1 for nonpayers at the end of year t who start to pay a dividend in year $t + 1$. Moreover, to be able to have the dividend premium capture the temporal variation in market sentiment as in Baker and Wurgler (2004), we exclude year fixed effect in this regression.

In Table 9, the positive and significant *dividend premium* indicates that *family firms with dual-class shares* pay higher dividends as a response to investor demand compared to *nonfamily firms with dual shares* (Columns 1–2). We also show that paying a dividend or not can also be explained by the investor demand for dividends only in family firms with dual shares (Column 3). Column 5 indicates that family firms with dual shares do not initiate dividends according to investor demand. Yet, we note that the percentage of all firms in our sample that initiate dividends is rather low, 4.5% (even lower for family firms: 3.8%)—our ratios are more or less comparable to Becker et al. (2011), who report their ratio as 2%. Overall, Table 9 stands as sound support to our interpretation for Table 7, that family owners' with dual shares paying more dividends is in line with the catering theory.

On a different note, results so far suggest that the dual-class share structure more strongly explains the level of corporate investment as well as dividend than the owner's portfolio characteristic (i.e., portfolio diversification). Accordingly, in the next section, we analyze how shareholders value the corporate decisions of family firms, as well as the ownership and entrenchment of the family owner.

C. Valuation of family decisions and dual-class share use

We look at the firm valuation of both family firms and nonfamily firms to find out if family firms' strategy of distributing their cash flows as dividend is valued positively by the market. Hence, our dependent variable is firm value, measured

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14 Studies covering different years also show that, in some countries, the premium is on average negative. See, for example, Denis and Osobov (2008) who present the premium on average being negative for US and Canada during the period 1994–2002 or see Bulan et al. (2007) presenting negative premium on average for US firms during the period 1966–1998.

as the natural logarithm of Tobin's Q, and we employ the following model, which uses firm and year fixed effects, and errors are clustered at the firm level:

$$Firm\ value_{\text{it}} = \psi_0 + \psi_1(ownership\ and\ entrenchment_{\text{it}-1}) + \psi_2 X_{\text{firm value controls},\ \text{it}-1} + u_{\text{it}}$$

(4)

Table 10 reports that dual-class share structure and free cash flows in family firms are both viewed positively by shareholders. On the other hand, the dividend variable itself is not significant. Overall, these findings suggest that family firms' *ability* to turn their cash flows into dividend, rather that the dividend itself, is valued positively by the market.

Moreover, the voting power of the largest owner[15] in nonfamily firms is discounted on the market (Columns 4 and 8 in Table 10). This finding could be interpreted as follows: nonfamily owners who are not expected to favor a higher dividend policy are valued negatively by the market. Furthermore, regarding the corporate investment variables, we find some evidence that higher level of R&D in nonfamily firms is valued positively by shareholders.

Overall, the channel through which family firms create value for shareholders seems to be where they canalize firm cash flows to. They seem to distribute firm cash flows to shareholders *via* dividend payment, and it appears that this strategic decision is supported—or even exerted—by family owners who hold dual-class shares as we earlier reported that dual-class share use by family owners explains a higher level of dividends. The positive market valuation we find can be interpreted as further supportive evidence for the catering theory we drew earlier. The positive market reaction might also indicate high investor demand for a higher dividend policy.

D. Involvement of the largest owner in the management team and board of directors

We further analyze the implications of the family owners' involvement in the management team as well as board of directors. We estimate equation (1) by using the family involvement dummy variables for the sample split.

Accordingly, in Columns 1–4 in Table 11, "YES" refers to family firms where the largest owner is a family owner *and* this owner is in the management team—as either the CEO or an executive, and "NO" refers to cases where the largest owner is not in the management team. Similarly, in Columns 5–8 in Table 11, "YES" refers to family firms where the largest owner is a family owner *and* this family owner is in the board of directors—as either the Chairman or a director, and "NO" refers to cases where the largest owner is not part of the board of directors.

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15 We also study the cash flow rights of the owner, as we do in Tables 3 and 4. For space reasons, we only report results for vote and dual class.

Table 10 Valuation of family decisions and dual-class share use

	Ln(TQ)							
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm	(5) Family firm	(6) Nonfamily firm	(7) Family firm	(8) Nonfamily firm
Dual class	0.183***	−0.281			0.136***	−0.239		
	(0.057)	(0.186)			(0.037)	(0.180)		
Vote			−0.140	−0.298**			−0.148	−0.299**
			(0.315)	(0.144)			(0.315)	(0.142)
Cash flow	0.613***	0.165	0.612***	0.176	0.616***	0.194*	0.615***	0.211*
	(0.172)	(0.116)	(0.172)	(0.115)	(0.171)	(0.111)	(0.170)	(0.109)
Capex/TA	0.360	0.602	0.284	0.559				
	(0.399)	(0.383)	(0.392)	(0.380)				
R&D/TA					−0.282	0.517*	−0.287	0.572*
					(0.580)	(0.305)	(0.570)	(0.300)
Dividend	−0.008	0.000	−0.008	0.001	−0.008	0.001	−0.008	0.001
	(0.010)	(0.003)	(0.009)	(0.003)	(0.010)	(0.003)	(0.009)	(0.003)
Leverage	0.141	−0.060	0.142	−0.035	0.144	−0.039	0.145	−0.020
	(0.184)	(0.145)	(0.183)	(0.173)	(0.186)	(0.148)	(0.185)	(0.173)
Firm size	0.088	0.027	0.093	0.037	0.096	0.027	0.101	0.033
	(0.094)	(0.051)	(0.093)	(0.050)	(0.092)	(0.051)	(0.090)	(0.050)
Firm age	−0.010	−0.020***	−0.009	−0.018**	−0.010	−0.023***	−0.010	−0.021***
	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)
Constant	0.578	1.707***	0.795	1.554***	0.650	1.866***	0.821	1.733***
	(0.520)	(0.458)	(0.538)	(0.440)	(0.509)	(0.448)	(0.530)	(0.428)
Observations	626	1703	626	1703	627	1720	627	1720
R^2	0.241	0.217	0.241	0.214	0.240	0.218	0.241	0.217
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variable is *Ln(TQ),* which is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Vote* is % of votes held by the largest shareholder. *Cash Flow* is net income divided by total assets. *Capex/TA* is capital expenditures divided by total assets. *R&D/TA* is research and development expenses divided by total assets. *Dividend* is dividend yield measured as dividend per share as a percentage of the share price. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

In a way, this analysis is also conducted in order to be consistent with the other family firm definitions from the literature (see Villalonga and Amit 2006; Anderson and Reeb 2003a). A firm is considered to be a family firm if the founder or any of the founders' heirs is an executive, or a director.

The model we use for this analysis also uses firm and year fixed effects, and errors are clustered at the firm level.

The main findings are as follows. The coefficients obtained on the variables, *(1-Herfindahl)* and *Dual-class,* in Table 11 are similar to those presented in Tables 3 and 4.[16] The main finding is that dual-class share use by the family owner is associated negatively with the level of capex when the family owner is involved in *both* the management team and the board (Columns 1 and 5). Yet, the family owners' portfolio diversification level matters for corporate investment mostly when the family owner is an executive (Column 1). This last finding may be interpreted in the following way: whether the family owner is diversified might mean more if the family owner is in the management team executing corporate decisions. This involvement in the execution might make it easier for the family owner to influence the decisions on capital expenditure, which would have a more "instant" effect on the portfolio composition of the family owner in near future—compared to decisions on R&D, which are more long-run projects whose effects would be visible in a further future.

V. ROBUSTNESS CHECKS

We further check the robustness of our findings by (i) employing an alternative definition for family firms and (ii) using alternative estimation techniques. Table 12 reports the results from the first investigation. The alternative family firm measure we use determines a minimum voting power for the family owner, which is 5%, which is also the reporting level for blockholding. More specifically, our new family firm dummy variable equals 1 if the largest shareholder is a founder family (group) *and* holds at least 5% of the votes; non-family firm refers to cases where this dummy variable equals 0. Table 12 presents results from this analyses that are in line with Tables 3 and 4.

We further use three alternative estimation techniques. First, we run a firm random effect model, which assumes that the error term is *not* correlated with independent variables (i.e., assuming no endogeneity). This is a strict assumption to fulfill. On the other hand, with our main specification, which is a firm fixed effect model, we cannot exploit the cross-sectional variation as the data that identify a coefficient in a firm fixed effect model have a within-firm variation. Therefore, we also use a random effect model to find out how much of the cross-sectional variation can explain corporate investment. The first four columns of Table 13 report the results of the random effect model estimation. We obtain similar results for our *(1-Herfindahl)* and *Dual-class* variables.

Second, we do not cluster standard errors and only use heteroskedasticity-robust standard errors (Column 5–8 in Table 13), as some studies in the literature do (e.g., Anderson et al. 2003). We note that the coefficients' significance level increases. The intention behind reporting these Columns 5–8 is to demonstrate the importance of clustering the standard errors at firm level to control for potential serial correlation within firm.

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16 Among our ownership and entrenchment variables, from now on, we only report the significant dual-class results for space reasons.

Table 11 Corporate investment when family owner is involved in Management & Board

	Family owner is involved in management?				Family owner is involved in board?			
	Capex/TA		R&D/TA		Capex/TA		R&D/TA	
	(1) YES	(2) NO	(3) YES	(4) NO	(5) YES	(6) NO	(7) YES	(8) NO
(1-Herfindahl)	−0.137**	0.005	−0.014	−0.023*	−0.033	0.003	−0.017*	−0.026**
	(0.065)	(0.007)	(0.015)	(0.012)	(0.028)	(0.006)	(0.010)	(0.012)
Dual class	−0.051**	0.019**	0.006	−0.018	−0.108***	0.022	0.003	−0.020
	(0.019)	(0.009)	(0.007)	(0.016)	(0.010)	(0.013)	(0.004)	(0.024)
Cash flow	−0.004	−0.015	−0.013	−0.056*	−0.008	−0.018	0.019	−0.074**
	(0.034)	(0.012)	(0.015)	(0.029)	(0.014)	(0.015)	(0.025)	(0.035)
Ln(TQ)	−0.032	0.015***	−0.003	0.004	−0.006	0.016***	−0.007	0.006
	(0.020)	(0.004)	(0.009)	(0.008)	(0.011)	(0.004)	(0.010)	(0.010)
Leverage	0.021	0.004	0.025	−0.027	−0.006	0.004	0.027	−0.037*
	(0.072)	(0.012)	(0.018)	(0.018)	(0.028)	(0.014)	(0.019)	(0.021)
Firm size	0.054*	0.014*	0.027*	0.014**	0.017*	0.016*	0.019	0.014
	(0.028)	(0.007)	(0.015)	(0.007)	(0.009)	(0.009)	(0.012)	(0.009)
Firm age	0.001	−0.001**	0.002	−0.000	−0.000	−0.001**	−0.000	0.000
	(0.001)	(0.001)	(0.002)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.049	0.065*	−0.091	0.043	0.138***	0.075*	−0.000	0.039
	(0.068)	(0.034)	(0.070)	(0.030)	(0.026)	(0.045)	(0.036)	(0.038)
Observations	209	1820	212	1832	533	1496	538	1506
R^2	0.259	0.083	0.184	0.066	0.111	0.088	0.054	0.093
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variables are *Capex/TA,* which is capital expenditures divided by total assets, and *R&D/TA,* which is research and development expenses divided by total assets. In Columns 1–4, "YES" refers to family firms where the largest owner is a family owner and this owner is in the management team—as either the CEO or an executive, and "NO" refers to cases where the largest owner is not in the management team. In Columns 5–8, "YES" refers to family firms where the largest owner is a family owner and this family owner is in the board of directors—as either the Chairman or a director, and "NO" refers to cases where the largest owner is not part of the board of directors. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating for. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

As the last alternative estimation method, we use 1 year-lagged independent variables to mitigate potential reverse causality concerns. As reported in Columns 9–12, we find similar results. Overall, alternative estimation techniques reinforce our main findings, that diversified family owners and family owners who hold dual-class shares are associated with a lower level of capex.

Table 12 Corporate investment with an alternative family definition

	Capex/TA		R&D/TA	
	(1) Family firm	(2) Nonfamily firm	(3) Family firm	(4) Nonfamily firm
(1-Herfindahl)	−0.047*	0.002	−0.004	−0.028**
	(0.028)	(0.006)	(0.011)	(0.013)
Dual class	−0.105***	0.020*	−0.002	−0.001
	(0.009)	(0.012)	(0.005)	(0.020)
Cash flow	−0.004	−0.020	−0.002	−0.069***
	(0.014)	(0.013)	(0.021)	(0.024)
Ln(TQ)	−0.002	0.014***	0.004	0.011*
	(0.010)	(0.004)	(0.009)	(0.006)
Leverage	0.021	0.002	0.003	−0.044**
	(0.026)	(0.013)	(0.018)	(0.020)
Firm size	0.020**	0.012	0.019*	0.016*
	(0.008)	(0.007)	(0.010)	(0.010)
Firm age	0.000	−0.001**	0.000	0.001
	(0.001)	(0.001)	(0.000)	(0.001)
Constant	0.096***	0.082**	−0.002	−0.020
	(0.033)	(0.038)	(0.022)	(0.043)
Observations	574	1603	575	1619
R^2	0.106	0.085	0.043	0.105
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Errors clustered	Yes	Yes	Yes	Yes

This table reports fixed effect regression results. The dependent variables are *Capex/TA,* which is capital expenditures divided by total assets, and *R&D/TA,* which is research and development expenses divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group) *and* holds at least 5% of the votes, and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm Size* is net sales divided by total assets. *Firm age* is the number of years that the firm has been operating. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

VI. CONCLUSION

By using detailed ownership data from Sweden, we are able to incorporate more information to reflect an owner's incentives to be involved in corporate governance. By exploiting this unique ownership dataset, we investigate if different factors drive corporate investment decisions in family firms compared to non-family firms. We document that family owners' portfolio diversification level, as well as their use of dual-class shares, can explain the level of corporate investment in family firms. More specifically, *diversified* family owners seem to retain their risk-averse attitude, which is well portrayed in the family firm literature,

Table 13 Alternative estimation techniques

	Random effect model				Heteroskedasticity-robust SEs				Lagged independent variables			
	Capex/TA		R&D/TA		Capex/TA		R&D/TA		Capex/TA		R&D/TA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	FF	Non-FF	FF	Non-FF	FF	Non-FF	FF	Non-FF	FF	Non-FF	FF	Non-FF
(1-Herfindahl)	-0.039*	0.003	-0.013	-0.025**	-0.051***	0.002	-0.005	-0.028***	0.001	-0.006	-0.000	-0.027**
	(0.021)	(0.005)	(0.009)	(0.012)	(0.015)	(0.004)	(0.016)	(0.005)	(0.031)	(0.006)	(0.013)	(0.012)
Dual class	-0.046**	0.001	-0.003	-0.008	-0.102***	0.020**	-0.001	-0.001	-0.070***	-0.004	0.004	0.016
	(0.019)	(0.005)	(0.019)	(0.008)	(0.023)	(0.010)	(0.025)	(0.012)	(0.011)	(0.008)	(0.007)	(0.020)
Cash flow	0.013	-0.012	-0.025	-0.083***	-0.007	-0.020***	-0.004	-0.069***	0.025*	0.010	0.009	-0.045**
	(0.011)	(0.012)	(0.029)	(0.024)	(0.013)	(0.006)	(0.013)	(0.008)	(0.013)	(0.008)	(0.021)	(0.018)
Ln(TQ)	-0.002	0.007**	0.017*	0.021***	-0.004	0.014***	0.004	0.011***	-0.004	0.002	-0.002	0.008
	(0.009)	(0.003)	(0.010)	(0.006)	(0.005)	(0.003)	(0.006)	(0.004)	(0.011)	(0.004)	(0.006)	(0.010)
Leverage	0.049**	0.023**	-0.022	-0.060***	0.028	0.002	0.004	-0.044***	-0.008	-0.038**	0.001	-0.041**
	(0.021)	(0.011)	(0.020)	(0.017)	(0.018)	(0.008)	(0.019)	(0.011)	(0.024)	(0.019)	(0.011)	(0.019)
Firm size	0.003	0.006	0.005	-0.000	0.023***	0.012***	0.020***	0.016***	0.007	0.002	0.013	0.000
	(0.006)	(0.005)	(0.007)	(0.006)	(0.007)	(0.003)	(0.007)	(0.005)	(0.006)	(0.004)	(0.012)	(0.006)
Firm age	0.000	0.000	-0.000	-0.000*	0.001	-0.001***	0.000	0.001*	0.001	-0.001*	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Observations	576	1603	577	1619	576	1603	577	1619	518	1469	520	1485
R^2	0.090	0.023	0.147	0.316	0.108	0.085	0.042	0.105	0.060	0.065	0.039	0.068
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm RE	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Errors clustered	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes

This table reports results from alternative estimation techniques. The dependent variables are *Capex/TA*, which is capital expenditures divided by total assets, and *R&D/TA*, which is research and development expenses divided by total assets. *Family Firm* is a dummy variable that equals 1 if the largest shareholder is a founder family (group), and *Nonfamily Firm* refers to cases where this dummy variable equals 0. *(1-Herfindahl)* is 1 minus the sum of the squared weights that each investment has in the largest shareholder's portfolio. *Dual class* is a dummy variable that equals 1 when the firm has a dual-class share structure. *Cash Flow* is net income divided by total assets. *Ln(TQ)* is the natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets. *Leverage* is total long-term debt divided by total assets. *Firm age* is the number of years that the firm has been operating for. Columns 1–4 reports random firm effect results. Columns 5–8 use heteroscedasticity-robust standard errors (SEs). In Columns 9–12, independent variables are 1 year lagged. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Clustered errors at firm level are given in parenthesis.

as we demonstrate that they are associated with less corporate investment. We further find that family owners enjoying high-voting shares thanks to a dual-class share mechanism seem to have a strong preference for less corporate investment, which supports the theory on private benefits of control. However, these entrenched family owners making use of dual-shares are found to instead opt for (canalizing firm cash flows to) higher dividend payment. We further show that they favor dividends to cater to investor demand, which supports the catering theory.

Moreover, we investigate how market values these strategic corporate decisions of family owners. We show that outside shareholders put a premium on family firms' preference for higher dividends, as well as on their preference for canalizing firm free cash flows to dividends. This evidence further supports the catering theory of dividends as positive market valuation might also be considered high investor demand for a higher dividend policy.

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