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Corporate Investment in Swedish Family Firms: Do Investment Horizon and Diversification Level of Family Owners Matter?

Abstract

In the literature, large family owners are widely assumed to have *undiversified* portfolios and *long-run horizons* in the firms in which they invest. Consequently, these families are expected to take less risk in corporate financial decisions. Using a novel Swedish ownership dataset, we question these two assumptions and investigate whether family owners' investment horizon and family-portfolio diversification level have any impact on corporate investment. Our data suggest that there is heterogeneity in both families' investment horizon and family-portfolio diversification level. We first show that family firms seem to avoid long-run, so-called risky, investments. This is consistent with the literature's conclusion that family firms are risk averse. Yet, exploiting the variations in our data, we find that *long-investment-horizon* family owners invest in long-run corporate projects and families with *diversified* portfolios prefer long-run investments. However, diversified family owners choose less risky capital expenditures relative to more risky R&D. Moreover, we find that a lower level of investment in family firms is valued negatively by outside shareholders. The results are robust to a number of additional tests, including alternative measurements of investment, family ownership, horizon, and diversification, as well as sample-splits and endogeneity.

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1. Introduction

A typical family firm differs from a "modern corporation" defined in Berle and Means (1932). Modern corporations are products of a dispersed ownership base and encouraged by law.[1] Unlike a modern corporation, family firms do not exhibit dispersed ownership. Yet, family firms are common organizational structures. La Porta, Lopez-de-Silanes, and Shleifer (1999) report that family firms are in fact more common than widely-held firms in the world. In particular, family firms are observed more in continental Europe than in the U.S., UK and Japan (Sraer and Thesmar, 2007). Empirical work on family firms is still a growing literature, and knowledge on the topic in general, such as how these firms behave and perform, is limited.[2,3]

Investigating corporate investment in family firms is particularly important since families – large, "undiversified," and accordingly "risk-averse" owners – might expropriate wealth from minority shareholders by reducing firm risk (Anderson and Reeb, 2003b). More specifically, poorly diversified risk-averse family owners are more likely to prefer lower firm risk than well-diversified shareholders who can diversify away firm risk.[4] According to Shleifer and Vishny (1986), large undiversified shareholders' risk-reduction strategy is the major cost to minority shareholders among other costs related to, for example, special dividends and excessive compensation packages. Therefore, a comprehensive analysis of corporate investment in family

[1] According to Berle and Means (1932), legal systems in the U.S. and UK fostered good protection of minority rights. As a result, separation of ownership and control in publicly held corporations is encouraged.

[2] Important studies on family firms include, from the U.S., Anderson and Reeb (2003a), Anderson, Duru, and Reeb (2012), Anderson and Reeb (2003b), Anderson, Duru, and Reeb (2009), Anderson, Mansi, and Reeb (2003), Pérez-Gonzalez (2006), Villalonga and Amit (2006), Palia, Ravid, and Wang (2008); from Sweden, Cronqvist, and Nilsson (2003), Bjuggren, Dzansi, and Palmberg (2007), Naldi, Nordqvist, Sjöberg, and Wiklund (2007), and Heaney and Holmen (2008); from France, Sraer and Thesmar (2007), and Bach (2010); from Denmark, Bennedsen, Nielsen, Pérez-Gonzalez, and Wolfenzon (2007); from Switzerland, Isakov and Weisskopf (2012); from Germany, Andres (2008); from Japan, Nguyen (2011); and from Italy, Amore, Minichilli, and Corbetta (2011). Finally, Maury (2006) is a cross-country example.

[3] 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 (Amore et al., 2011; Anderson and Reeb, 2003b; Gonzalez, Guzman, Pombo, and Trujillo, 2012), corporate diversification (Anderson and Reeb, 2003b), corporate opacity (Anderson et al., 2009; Bianco, Bontempi, Golinelli, and Parigi, 2012), management compensation (Palia et al., 2008) and investment (Bianco et al., 2012; Anderson et al., 2012). Anderson et al. (2012) report that corporate disclosures and earnings volatility of family firms are also among the investigated issues.

[4] 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" (pg. 3602, Faccio, Marchica, and Mura, 2011). Similarly, undiversified large shareholders are expected to support conservative investments *assuming* that the utility of these shareholders is lower than that of diversified shareholders (Paligorova, 2010).

firms is essential to assess the consequences, in terms of minority-wealth expropriation, of family ownership.

However, previous studies investigating the effects of family ownership on different channels through which risk taking is reflected miss two important dimensions, mainly due to data limitations: the family's *investment horizon* and the family portfolio's *diversification* level. Instead, those studies take the following for granted: 1) families have long-term investment horizons in the firms in which they invest and 2) families have undiversified risk due to concentrated ownership in the firm. Below, we discuss the centrality of two themes to this paper.

First, the family's investment horizon is essential in exploring corporate investment in family firms. According to the literature (Anderson et al., 2012; Naldi et al., 2007; Hiebl, 2013; Anderson and Reeb, 2003b), family owners having a long-term horizon preference are more likely to avoid risk[5] for the sake of the continuity of the family business. The importance of horizon preference is also highlighted in Bach (2010), who refers to firms with family successions as *dynastic* firms since these firms have strong motives for *continuity* of family business or control, which is expected to result in less corporate risk taking. To them, increasing firm risk means (a risk of) losing control.[6] Overall, the literature mainly assumes that families have *long-term* investment horizons and continuing commitments to their businesses, which accordingly make them avoid risk, for example, by choosing less risky projects. We explore if the investment horizon is indeed long-term or if there is any heterogeneity in the horizon choices across family firms. We then exploit this variety to test its implications on corporate investment.

Second, the diversification dimension is also important in investigating corporate investment in family firms. Studies have up to now assumed that family owners hold *undiversified* portfolios and therefore have a desire to reduce firm risk (Anderson et al., 2012; Anderson and Reeb, 2003b). However, firms with diversified large shareholders have incentives to favor more risky projects than those with undiversified large shareholders (Jensen and Meckling, 1976; Shleifer

[5] Anderson et al. (2012) also counter-argues that a family's long-term investment horizon might, on the other hand, provide strong incentives to commit considerable financial resources to long-run projects. This is their *extended-investment-horizon* hypothesis, in contrast to their *risk-aversion* hypothesis. However, their empirical finding supports the risk-aversion hypothesis since they find that family firms avoid long-run, risky projects.

[6] Very broadly speaking, since dynastic firms tend to invest in the firm through multiple generations, they should not go to bankruptcy.

and Vishny, 1997). Faccio et al. (2011), studying only *large* shareholders, for the first time interrogates the validity of the common assumption that large shareholders are undiversified and, hence, take less risk. Their data show that typical large shareholders hold poorly diversified portfolios while some are highly diversified by investing in many firms. Analyzing implications of this heterogeneity on corporate risk taking, Faccio et al. (2011) find that firms controlled by diversified large shareholders engage in riskier projects compared to those controlled by undiversified large shareholders. In this paper, we aim to explore whether there is heterogeneity in diversification level of *family* portfolios, and if so, whether it matters for corporate investment.

Before testing our hypotheses, we first explore the corporate investment policies of family firms in comparison to those of nonfamily firms – this is our base investigation. The paper has two main hypotheses: 1) We investigate if the investment horizon of family owners matters for a firm's investment policies, and 2) we analyze if family-portfolio diversification affects corporate investment. Additionally, we also investigate how the stock market values corporate investment decisions in family firms to explore if any potential minority-wealth expropriation by large family owners, reflected through corporate investment, comes at a cost.

We use an unbalanced panel dataset composed of 208 firms listed on the NASDAQ-OMX stock exchange in Stockholm and domiciled in Sweden. The dataset covers the period from 1999 through 2012. Our novel Swedish ownership data come from the database provided by SIS Ägarservice AB (SIS Ownership Service AB). Sweden offers uniquely detailed and accurate ownership data (more elaboration on this below). Exploiting this detailed ownership data, we find heterogeneity in families' investment horizons and in their portfolios' diversification level. These findings challenge the two assumptions used in the family-firm literature: 1) families have long-term investment horizons in the firms in which they invest and 2) families hold undiversified portfolios.

Our empirical results, overall, demonstrate that these heterogeneities affect corporate investment. We first show that family firms invest less in long-run projects than nonfamily firms. Then, our main findings related to *horizon* are as follows. First, families with longer investment horizons prefer long-run investments. Second, decomposing total investment into capital expenditures (capex) and R&D, we find that capex is higher in family firms, indicating that families devote

more funds to less risky capex than relatively more risky R&D expenses.[7] However, families with long-term investment horizons are found to invest less in capex (relative to R&D). Third, decomposition of family firms into two groups – founder and nonfounder family firms – shows that our evidence is mostly driven by nonfounder family firms, which are found to invest less in long-run corporate projects (and more in capex). However, both founder and nonfounder family firms whose horizon is longer seem to devote more capital to long-run projects (and devote less money to less risky capex relative to R&D).

Our main findings regarding *diversification* are as follows. First, we show a positive relation between diversification level of (any type of) the large shareholder and total investment. We further find that family firms with diversified owners invest more in long-run projects by exploiting the benefit of portfolio diversification. Second, however, diversified family owners invest more in less risky capex (rather than relatively more risky R&D). Third, looking at the two subcategories of family firms, the results from both founder and nonfounder firms confirm these findings.

To sum up, family firms seem to avoid long-run, so-called risky, investments. This is consistent with the literature concluding that family firms are risk averse. However, the main findings from the two themes indicate that, challenging the literature, *long-investment-horizon* family owners and family owners with *diversified* portfolios do invest in long-run corporate projects, but diversified family owners are cautious and choose less risky capex relative to more risky R&D. Moreover, in addition to these two themes, we find that a lower level of investment in family firms is valued negatively by outside shareholders, which is in line with Anderson et al. (2012).

Our findings are confirmed when the identity of the largest shareholders is taken into account. Another supplementary analysis shows that family firms that entrench their control via a higher level of votes and firms that have dual-class shares engage in a lower level of corporate investment. The results are robust to a number of additional tests we conduct: including, among others, alternative measurements of investment, family ownership, horizon, and diversification, as well as sample-splits and endogeneity.

[7] Anderson et al. (2012) suggest that R&D expenses are associated with higher idiosyncratic risk compared to capital expenditures.

The paper has two important contributions. To the best of our knowledge, this paper is the first to address two important questions: 1) Does a family's investment horizon matter for a firm's investment activities? 2) Does family-portfolio diversification level have any implications for corporate investment policies?

Sweden offers a unique environment for us to investigate family firms for several reasons. First, family firms are quite prevalent in Sweden; 42.7% of our sample (2,158 firm-year observations) consists of (founder or nonfounder) family firms. Similarly, in Cronqvist and Nilsson's (2003) study, 58.8% of listed Swedish firms (of 1,317 firm-year observations) are family firms (covering 1991–1997). Family firms also constitute 60% of 646 firm-year observations in the Bjuggren et al. (2007) study using Swedish data (covering 1999-2005).

Second, Sweden has uniquely detailed and accurate 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 (Cronqvist and Nilsson, 2003), and Swedish law allows public access to this public shareholders' register. The ownership database provided by SIS Ägarservice AB uses this register, and covers the years from 1999 to today. With this detailed ownership data on listed firms, we can neatly pinpoint family ownership: Thanks to the database (more details on the database are provided below in the Data part), we can detect if the largest shareholder (family or not) has a long-term investment horizon in the firm that she/he invests in. Moreover, we can measure the diversification level of this largest shareholder's portfolio.

Third, we observe variation in ownership structures across listed Swedish firms (Giannetti and Simonov, 2006). On the one hand, ownership is often concentrated in either a single or a few major shareholders (the Swedish Corporate Governance Code). On the other hand, investor protection is strong in Sweden (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998), which encourages dispersed ownership. Therefore, it is interesting to investigate this variation in ownership structures and to explore if it might have any implications on firms' investment policies.

Last, Burkart, Panunzi, and Schleifer (2003) conclude that separation of ownership and management is an indicator of good corporate governance. Accordingly, the presence of

concentrated ownership and family firms suggests financial underdevelopment. The fact that in Sweden, a country with a well-developed capital market, family firms are common is an additional reason to investigate family firms in Sweden.

The paper proceeds as follows. Section 2 presents the data and variable measurements. Section 3 exhibits descriptive and univariate analyses. In Section 4, we discuss the methodology and empirical results. Finally, in Section 5, we present concluding remarks.

2. Data and Variable Construction

2.1 Data

The sample includes 208 firms[8] listed on the NASDAQ-OMX stock exchange in Stockholm and domiciled in Sweden.[9] Our unbalanced panel dataset covers the period from 1999 through 2012. We have 2,158 firm-year observations in total. Due to strong regulation in their industry, 24 financial firms are removed from the sample as is common in the field (e.g., Anderson and Reeb, 2003a; Sraer and Thesmar, 2007; Bach, 2010; Isakov and Weisskopf, 2012).

All the data used are collected as fiscal year-end values. Four data sources are used for the study: Datastream, company annual reports, SIS Ägarservice AB ownership data, and Retriever.[10] Accounting data, as well as firm characteristics, are collected from Datastream and annual reports. To find out who the founder is, we use company reports and Retriever, a business library containing company background information, announcements and so on. Data regarding family *ownership*, *diversification* and *horizon* are collected manually from the ownership database provided by SIS Ägarservice AB, a Swedish company specializing in ownership data for listed firms in Sweden. This database provides detailed ownership data.[11] First, for each listed firm, we are able to obtain information on the identity of the largest shareholder. Accordingly, owners are categorized into the following five groups: 1) families, 2) corporations, 3) financial institutions (mutual funds, pension funds, insurance companies, and banks), 4) government (including also

[8] Accounting data of four firms were not available on Datastream, so they were removed from the sample.

[9] 14 foreign firms are removed from the sample.

[10] http://web.retriever-info.com/services/businessinfo.html. Retriever replaces business information from "Affärsdata."

[11] The 200 largest shareholders are provided for each listed firm.

foundations, cooperatives, and unions), and 5) individuals. Second, the detailed holdings of the largest shareholders are also 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, and, if so, how much wedge there is between vote and capital holdings.

The database also provides data regarding family *diversification* and *horizon.*[12] First, the level of diversification of the largest owner's portfolio can be detected. Second, the database lists the first date when the largest shareholder owns shares in the company, and when the shareholder sells his/her shares (or still holds shares at the end of our sample period, December 2012[13]). Electronic SIS Ägarservice AB data only go back to 1999. Therefore, for owners who have a stake in the firm in 1999, we assume that the starting date of their investment is 1999.

2.2 Variable Construction

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

2.2.1 Corporate Investment and Tobin's *Q*

We proxy for corporate investment with three measures applied by Anderson et al. (2012): 1) *Total Inv./Assets*, calculated as the sum of R&D and capital expenditures, all divided by total assets; 2) *Capex/Total Inv.*, constructed as the capital expenditures divided by the sum of R&D and capital expenditures; and 3) *R&D/Total Inv.*, measured as R&D expenditures divided by the sum of R&D and capital expenditures.

In addition, to be used in the firm valuation analysis, we construct the industry-adjusted total investment variable (*Ind. Adj. Total Invest.*): the natural logarithm of the absolute value of the difference between the firm's total investment and the median total investment across all firms in the same industry. We measure industry-adjusted capex (*Ind. Adj. Capex*), as the natural logarithm of the absolute value of the difference between firm-level capex and the median capex across all firms in the same industry. Tobin's *Q*, used to proxy for firm valuation, is measured as

[12] In calculating these two variables, we use capital stake, not vote.

[13] Since our sample ends in 2012, we need to assume that the end of the investment is in December 2012 for those large shareholders who still hold a stake in December 2012.

the natural logarithm of the sum of the market value of equity plus book value of total liabilities, all divided by the book value of assets.

< Insert Table 1 around here >

2.2.2 Family Firms

An important benefit of the SIS Ägarservice AB data is that they aggregate closely related owners, like family members, into single groups (sfär), basically ownership coalitions (Cronqvist and Nilsson, 2003). According to the database, a group is constituted by family members and other owners closely associated to the family; such as cofounders, managers who took part in an MBO and so on. In defining family firms, Isakov and Weisskopf (2012) take a similar approach. In addition to founder family members, they include individuals who have invested in the firm for a long time and have shaped the firm to a great extent. For example, the Swatch group has been controlled by a family other than the founder of the group for about 20 years. However, this family has put a great effort into making the company today's Swatch.

Sweden has plenty of such examples. For example, Stena Sphere, one of Sweden's largest family-owned corporate groups is formed by three parent companies: Stena AB (publ), Stena Sessan AB and Stena Metall AB. They all are wholly owned by the Sten A. Olsson family. Stena Sphere's investments, which usually have a long-term perspective and commitment include, among others, Concordia Maritime, Beijer Electronics, and Meda. For example, Stena Group has been controlling Concordia Maritime by holding more than 70% of the firm votes for at least the last 14 years. Similarly, the Wallenberg Group, among others, has been controlling Electrolux for the last 8 years[14]. As a result, in defining family firms by Cronqvist and Nilsson's (2003) and Isakov and Weisskopf's (2012) method, we can distinguish those family owners that are more committed and strategic investors from nonfamily individuals whose motivations for their investments are mainly financial.

Based on this introduction, we define family firms as those whose largest owner is a family (or a family group). This is our primary variable called *family firms* (*FF*), a dummy variable equal to 1

[14] The names of some other groups in Sweden are Douglas, Lundberg Schörling and Stenbeck.

when the largest fraction of the total votes is held by a family and zero otherwise (Anderson and Reeb, 2003a, 2003b; Anderson et al. 2003; Anderson et al. 2009; Gonzalez et al., 2012). We decompose this variable into two other dummy variables: *Founder FF* and *Nonfounder FF*. *Founder FF* equals 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 zero otherwise. *Nonfounder FF* equals 1 when the largest fraction of the total votes is held by families and individuals unaffiliated with the founder and zero otherwise.

As robustness checks, we employ several alternative measures of family ownership. First, we use a continuous version of the family firm dummy variable, *FF-cont.*, that shows the fraction of the total votes held by the family. Second, to check whether our findings are consistent when the family is also a controlling shareholder, we include two thresholds for the family's minimum vote, *FF (5% vote at least)* and *FF (20% vote at least),* each of which equals 1 when the largest fraction of the total votes held by the family surpasses the respective threshold and zero otherwise. These are basically proxies for family-owners that are blockholders at 5% (Villalonga and Amit, 2006; Anderson et al., 2012; Nguyen, 2011) and 20% (Cronqvist and Nilsson, 2003; Isakov and Weisskopf, 2012; Sraer and Thesmar, 2007). Finally, we also use $(FF\text{-}cont.)^2$ to tease out a nonlinear relation between corporate investment and family ownership.

2.2.3 Other Largest Shareholders

In addition to family owners, following Cronqvist and Nilsson (2003), other large owners are defined as follows (the abbreviations used in tables are in parentheses): 1) corporation (*Larg. SH-Corp.*), a dummy variable equal to 1 when the largest fraction of the total votes is held by a corporation and zero otherwise; 2) financial institution (*Larg. SH-Fin Inst.*), a dummy variable equal to 1 when the largest fraction of the total votes is held by a financial institution (mutual funds, pension funds, insurance companies, and banks) and zero otherwise; 3) government (*Larg. SH-Gov.*), a dummy variable equal to 1 when the largest fraction of the total votes is held by the government, a foundation, cooperative, and union and zero otherwise; and 4) individual (*Larg. SH-Indiv.*), a dummy variable equal to 1 when the largest fraction of the total votes is held by a nonfamily individual and zero otherwise.

2.2.4 Investment Horizon and Portfolio Diversification

We proxy for investment horizon with two alternative measures. First, *No. of Years* is the total number of years between the first date when the largest shareholder[15] owns shares in the company (no earlier than the beginning of our period, 1999) and the date when the shareholder sells all shares (or still holds shares at the end of our sample period, 2012). We adopt the identification assumption that investment horizon of an investor is constant over time[16]. The second horizon measure (*No. of Years Dummy*) is based on the first, equal to 1 when the value of *No. of Years* is more than 9.902 (sample mean value) and zero otherwise. This dummy represents long-investment-horizon owners.

Following Faccio et al. (2011), diversification is measured in two ways. *No. of Firms* is the total number of firms[17] in which the largest shareholder[18] invests. The amount of the vote holdings in these firms does not 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/her wealth in *one* single firm. To overcome this limitation, we use another proxy (*1−Herfindahl Index*) calculated as one 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) while 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.

There is a data limitation to both of our diversification measures. For example, on SIS Ägarservice AB, we do not have diversification data for family firms where there is only one member, and this member is an individual (not a company). Similarly, data on the portfolio of the largest shareholder under the *Larg. SH-Indiv*. category are also not available. In other words,

[15] In the case of family *groups*, the horizon of the group member who has the highest share is taken into account, and used as a proxy for the *family* horizon.

[16] In the literature, investment horizon is seen as an exogenous characteristic of an investor and constant over time (Cella, 2012).

[17] Note that SIS Ägarservice 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.

[18] In the case of family *groups*, the portfolio of the group member who has the highest share is taken into account, and used as a proxy for the *family* portfolio.

SIS does not provide data on the (personal) portfolios of individual owners. Also, missing values for the other three largest-owner categories (*Larg. SH-Corp.*, *Larg. SH-Fin Inst.*, and *Larg. SH-Gov.*) leaves us with a subset of our total sample for the diversification analyses.

2.2.5 Ownership and Control

We define control in two ways: 1) *Excess vote*, calculated as the difference between the percentage of votes and the percentage of capital held by the largest shareholder (Villalonga and Amit, 2006; Cronqvist and Nilsson, 2003), and 2) *Dual-class Share*, *a d*ummy variable equal to 1 when the firm has a dual-class share structure and zero otherwise (Villalonga and Amit, 2006; Anderson et al., 2012).

2.2.6 Contestability

To measure the contestability of family ownership, we use two variables: 1) *FF stake is >50%*, a dummy variable equal to 1 when the family owner controls more than 50% of the total voting rights and zero otherwise (Isakov and Weisskopf, 2012), and 2) *FF stake btw 20–50%*, a dummy variable equal to 1 when the family owner controls between 20% and 50% of the total voting rights in the presence of a second blockholder (controlling more than 5%) and zero otherwise (Isakov and Weisskopf, 2012).

2.2.7 Control Variables

We control for factors that potentially affect corporate investment (Anderson et al., 2012). Most of the control variables are obtained from Datastream, but the date of incorporation to calculate firm age is collected manually from annual reports since these data are limited on Datastream. We control for basic firm characteristics. *Leverage* is measured as total debt divided by total assets. *Total assets* is the natural logarithm of total assets. *Dividend/TA* is the ratio of total cash dividends paid to total assets. *Net sales* is the natural logarithm of net sales. *Largest Sh. Vote* is the percentage of the total votes held by the largest shareholder. In addition to firm and ownership characteristics, we control for firm age since firms might involve in less risky activities as they get older. *Firm age* is calculated by subtracting the year of firm's inception from 2012, and then taking the natural logarithm of the result. We also include $(Firm\ age)^2$ in the

regression where we analyze if the relation between firm investment and age is nonlinear. Finally, we also control for industry and year fixed effects.

3. Descriptive and Univariate Statistics

Table 2 shows the descriptive and univariate statistics for our sample of firms. Panel A presents the descriptive statistics, and Panel B shows mean difference tests for variables between family and nonfamily firms. Panel C provides mean values of key variables across different types of largest shareholder, while Panel D is the correlation matrix of the selected variables.

< Insert Table 2 around here >

As seen in Panel A, total investment to assets has a mean value of 11.90% (9.39% in Anderson et al., 2012). When we break total investment into two components, we find that capital expenditures account for 44.20%, and R&D expenses account for 55.80% (67.80% and 32.20% in Anderson et al., 2012) of total investment, respectively. Market value (Tobin's *Q*) of firms is, on average, 1.877.

Panel A also shows that family firms constitute 42.7% of our firm-year observations, based on our *FF* definition.[19] Founder family firms make up 23.6% of the total firm-year observations, while nonfounder family firms are observed less frequently, 19.1% of the total observations. When we use a threshold to define family firms, 42.5% of the total observations are identified as family firms who have family blockholders with a minimum 5% of the firm's total votes. A more parsimonious cut-off point is defining family blockholders with a minimum of 20% of total votes: 37.1% of our firm-year observations are classified as family firms at that threshold.

Categorizing firms based on the identity of the largest shareholder, financial institutions and nonfamily individuals, accounting for 20.5% and 20.3% of all observations, respectively, place second and third after family owners (Panel A). Firms whose largest shareholder is either a corporation or the government are the least common in our sample.

[19] Our study compares to Cronqvist and Nilsson (2003) whose focus is on controlling shareholders with at least 25% of the firm's total votes. Their sample is composed of 309 firms listed on the Stockholm Stock Exchange, and covers 1991–1997. Their total firm-year observations are 1,317, and family firms constitute 58.8% of them.

Panel A further shows that the investment horizon of the largest shareholders is, on average, 10 years. The maximum investment horizon for our sample firms is 13 while the minimum length is zero. When we particularly look at family firms, we see that families, on average, invest in a firm for 11 years, which is slightly above the sample mean.[20] However, unlike the assumption used in the literature that family firms have long-term investment horizon, we find heterogeneity in investment horizon of families: similar to other types of large shareholders, the minimum period that families invest in a firm can very well be just a few months while the maximum length of their investment can be up to 13 years. This suggests that families do not always have long-term investment horizon.

Moreover, it is shown in Panel A that the largest shareholders in Sweden are rather diversified: mean value of (*1−Herfindahl Index*) is 0.504, and the largest shareholder, on average, invests in 32 firms (where unreported ln(*No. of Firms*) is 2.035). These univariate results can be compared to 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 while it is 1.420 for ln(*No. of Firms*). This comparison suggests that the largest shareholders in Sweden are more diversified than those in Europe. In addition, similar to Faccio et al. (2011), some shareholders are found to be well diversified (the maximum value for (*1−Herfindahl Index*) is 1, and for *No. of Firms* it is 476), while some are totally undiversified (the minimum value for (*1−Herfindahl Index*) is zero, and for *No. of Firms* it is 1).

When we only look at family firms, we find that families also seem to diversify their wealth well (Panel A). We show that families, on average, invest in 12 firms, which is lower than the sample mean. However, the diversification level of family portfolios is even slightly better than that of any other largest shareholders in the sample ((*1−Herfindahl Index*) has a mean value of 0.598 in family firms). Similar to the horizon variable, what is our concern here is to check if there is any heterogeneity in the degree of portfolio diversification of family owners. Families are found to invest maximum in 113 firms, again which is lower than the sample maximum value, whereas

[20] This is consistent with Anderson et al. (2012), who used the length of the depreciation periods of capital investments as proxy for families' investment horizon to get some insights into families' investment horizons. Their unreported results suggest that assets family firms buy depreciate later than those nonfamily firms buy. This implies that family firms have longer horizons relative to nonfamily firms.

(*1−Herfindahl index*) result shows that families can almost fully diversify their wealth (0.932). On the other hand, families can have totally undiversified portfolios since the minimum *No. of Firms* is 1, and the minimum (*1−Herfindahl Index*) is zero. Overall, contrary to the literature's assumption that family owners are undiversified, our univariate findings suggest heterogeneity in family-portfolio diversification levels.

The last point to highlight in Panel A is contestability of family owners. Family firms with a majority of firm's total votes constitute 17% of the total firm-year observations while family firms with total votes between 20% and 50% make up 17.6% of all observations.

Panel B presents mean difference tests for key variables between family and nonfamily firms. Family firms show (statistically significant) differences from nonfamily firms for all variables except leverage and firm age. The tests show that family firms' total corporate investment, as well as R&D expenses, is less than that of nonfamily firms. However, family firms have more capital expenditures than nonfamily firms. Family owners' investment horizons are longer than those of nonfamily owners. We note that portfolios of family owners are, on average, formed by fewer firms than those of nonfamily owners. However, according to (*1−Herfindahl index*) values, families seem to diversify their wealth in their portfolios better than nonfamily owners.

With the sample grouped into categories representing firms with different types of large shareholders, Panel C presents mean values of some key variables. First, we find that the largest shareholders' investment horizon is the longest in family firms, yet the government is also found to make long-term investments. This is not surprising since the government usually undertakes capital-intense and long-run investments in a country, such as building roads, bridges and so on. We observe that corporations have the shortest investment horizon. Second, the results from the diversification variables overall suggest that corporations and the government have the least diversified portfolios. We note that family owners diversify their wealth as do financial institutions and individual blockholders. This finding challenges, once again, the commonly used assumption in the literature that family owners are undiversified. Third, looking at the ownership and control variables, we find that excess vote is most commonly used in firms owned by the government and families. The dual-class structure is adopted mostly by family-owned firms, and used the least by firms owned by corporations and financial institutions. We note that founder family firms are the ones that employ a dual-class share structure the most. When family firms,

particularly founder family firms, hold votes of a firm, they hold votes to the greatest extent compared to other types of largest owners. In other words, concentration of votes is the highest in family firms, especially in founder family firms. This is possibly an intended and strategic move by families, wishing to increase their voice in the firm, a wish probably not shared by other types of large shareholders.

Panel D provides the correlation matrix of the selected variables. We observe a significant negative (positive) relation between nonfounder (founder) family ownership and total investment, yet a positive (negative) one between nonfounder (founder) family ownership and capital expenditures. Total investment is negatively correlated with the horizon variable and positively correlated with the diversification variable.

Some unreported descriptive statistics show that family firms are observed most commonly in three industries: industrial goods and services (27.85% of the observations), technology (13.92%), construction and materials (11.96%). Family firms are not observed at all in three other industries: utilities, chemicals, and food and beverage. Moreover, looking at the identity of the *second* largest shareholders, we find that family is the second most commonly observed owner (forming 13% of firm-year observations) while the most commonly observed owner type is financial institutions (41% of the observations).

4. Empirical Findings

4.1 Family Horizon and Corporate Investment

In order to analyze if investment horizon of family owners[21] matters for corporate investment, we have two main sets of regressions. We look at the effect on total investment and capital expenditures in two regressions:

$$\begin{aligned} \textit{Total Investment}_{it} = {} & \beta_0 + \beta_1(\textit{Family Firm}_{it}) + \beta_2(\textit{Family Firm}_{it} \times \textit{Horizon}_{it}) \\ & + \beta_3(\textit{Horizon}_{it}) + \beta_4(\textit{Ownership \& Control Variables}_{it}) \\ & + \beta_5(\textit{Contestability Variables}_{it}) + \beta_6(\textit{Control Variables}_{it}) + e_{it} \end{aligned} \quad (1)$$

[21] Our firm-year observations are 2,158; however, the sample we use for the horizon analyses contains 784 observations due to having many missing values in the R&D variable in calculating the total investment.

$$\begin{aligned} \textit{Capital Expenditures}_{it} = {} & \alpha_0 + \alpha_1(\textit{Family Firm}_{it}) + \alpha_2(\textit{Family Firm}_{it} \times \textit{Horizon}_{it}) \\ & + \alpha_3(\textit{Horizon}_{it}) + \alpha_4(\textit{Ownership \& Control Variables}_{it}) \\ & + \alpha_5(\textit{Contestability Variables}_{it}) + \alpha_6(\textit{Control Variables}_{it}) + u_{it}. \end{aligned} \quad (2)$$

The regressions also include industry and year fixed effects because family firms are concentrated in certain industries in our sample and because of the possibility that some year-specific shocks might influence all the firms similarly. White's heteroskedasticity-robust standard errors are used. Table 1 presents all the variable definitions. Nonfamily firms are the reference case in the regressions without interaction terms. With interaction terms, the reference case is family firms with a *shorter* investment horizon.

Before starting with the horizon analysis, we first show that, as seen in the regressions without interaction terms throughout Tables 3 and 4, family firms devote less (more) money to long-run investment (capex) than nonfamily firms devote.

< Insert Table 3 around here >

Table 3 presents the main results for equation 1. Column 1 tests equation 1 without an interaction term. After adding an interaction term (between family ownership and horizon) to the model (Column 2), we have a new interpretation of all coefficients. The interaction term implies that horizon's effect on corporate investment is different depending on the value of the family-firm dummy. In equation 1, β_1 is the coefficient of a categorical variable (*FF*), while β_3 is the coefficient for a continuous variable (*No. of Years*). In such a case, the interaction term is interpreted as follows: horizon's effect on corporate investment is $\beta_2 \times FF + \beta_3 = \beta_2 + \beta_3$ for a family firm ($FF = 1$) and β_3 otherwise ($FF = 0$). In interpreting the results, our concern is the former effect, so both constitutive terms should be included in the regression (Brambor, Clark, and Golder, 2005). In light of these explanations, we find a positive association between horizon and corporate investment for family firms ($\beta_2 \times FF + \beta_3 > 0$). In other words, for two family firms, a family firm with a *longer* horizon is expected to have a higher level of corporate investment than a family firm with a *shorter* horizon. This finding suggests that family firms

with long-term investment horizons do not attempt to mitigate firm risk via reduced corporate investment.

In Columns 3 and 4, we decompose the family firm variable into two, *Founder FF* and *Nonfounder FF*. Column 3 shows that nonfounder family firms are negatively related with total investment. By including the interaction terms between horizon and the two family-firm subcategories, we find that founder family firms with longer investment horizons invest more than founder family firms with shorter investment horizons.

We test if control enhancing mechanisms, as well as contestability of family ownership have any impact on investment policies (Columns 5 and 6). Total investment has a negative relation with the presence of a dual-class share structure and with families having between 20% and 50% and higher than 50% of firm's total votes. Overall, we find that family firms entrenching their control via higher level of votes and firms with dual-class shares engage in a lower level of corporate investment.

In the last column in Table 3, we investigate whether the *identity* of the largest shareholder (family, corporation, financial institution, government, or individual) plays a role in investment policies. We confirm that family firms invest less in long-run projects. Firms whose largest shareholder is a corporation also show similar patterns: they also avoid long-run projects.

In our analyses, we further decompose total investment into capital expenditures and R&D. Anderson et al. (2012) suggest that R&D expenses are associated with higher idiosyncratic risk compared to capital expenditures. Therefore, we test if family firms in fact seek to reduce firm risk, and accordingly invest more in capital expenditures and less in R&D. The estimation outputs of these analyses are provided in Table 4. We only present the results from the capital expenditure analyses (equation 2[22]), however the way that the dependent variable is constructed (capital expenditures is measured as capital expenditures divided by total investment, and total investment is the sum of capital expenditures and R&D expenses) allows us to also calculate the effect on R&D expenses.

[22] In constructing capex (that is capex/total investment) we lose observations due to many missing values in the R&D variable. Therefore, we run the regressions with an alternative measure of capex, which is the natural logarithm of capex and get qualitatively similar results.

< Insert Table 4 around here >

Column 1 shows that family firms have more capital expenditures than nonfamily firms. The coefficient on the family firm dummy shows that family owners invest more in capex, and less in R&D compared to nonfamily owners, suggesting that family firms seem to reduce firm risk by investing more in capital expenditures and less in R&D.

Having interacted the family-ownership variable with the horizon variable, however, we find that family owners with longer investment horizons devote less money to capital expenditures than family owners with shorter investment horizons (Column 2). The coefficients show that long-investment-horizon firms invest around 4.7% (as a fraction of firm's total investment) less in capex. We find this number by dividing the effect of horizon on investment ($\alpha_2 \times FF + \alpha_3 = -0.022 + 0.001 = -0.021$) by the mean value of our capex ratio, which is capex over total investment ($-0.021/0.442 = -4.7\%$). Similarly, we can calculate the effect on R&D by simply dividing the effect (0.021) by the mean value of R&D ratio (0.557): we find that longer-investment-horizon family firms invest in R&D 3.8% more than shorter-investment-horizon family firms. These results indicate that family owners with long-term view on the firm in which they invest seem not to reduce firm risk via investment policies.

In Columns 3 and 4, we decompose family firms into two groups as founder and nonfounder family firms. Both founder and nonfounder family firms with long-term investment horizons are found to invest less in capital expenditures, and consequently more in R&D expenses. This suggests that both founder and nonfounder family firms with longer horizons do not attempt to reduce firm risk via corporate investment.

Control-enhancing mechanisms, as well as contestability of the largest shareholders, are tested in Columns 5 and 6. Overall, we find positive relations between capital expenditures and higher levels of family votes, and adopting a dual-class share structure. These results might indicate that large shareholders try to mitigate firm risk especially when they have such control-enhancing mechanisms as employing different classes of shares or increasing the amount of votes they hold.

The last column in Table 4 (Column 7) shows that, when we take the identity of the largest shareholder into account, family firms are still found to devote more funds to capital

expenditures. Firms whose largest owner is the government also exhibit similar characteristics. However, firms whose large shareholder is a nonfamily individual invest less in capex.

Lastly, unreported estimation results with the "*No. of Years Dummy*" horizon variable are qualitatively similar to those estimated with our main horizon proxy, "No. of Years."

4.2 Family Diversification and Corporate Investment

To analyze the relation between diversification[23] level of family portfolios and corporate investment, we have two main sets of regressions: total investment and capital expenditures, respectively.

$$\begin{aligned} \textit{Total Investment}_{it} = {} & \gamma_0 + \gamma_1(\textit{Family Firm}_{it}) + \gamma_2(\textit{Family Firm}_{it} \times \textit{Diversification}_{it}) \\ & + \gamma_3(\textit{Diversification}_{it}) + \gamma_4(\textit{Ownership \& Control Variables}_{it}) \\ & + \gamma_5(\textit{Contestability Variables}_{it}) + \gamma_6(\textit{Control Variables}_{it}) + \nu_{it} \end{aligned} \quad (3),$$

$$\begin{aligned} \textit{Capital Expenditures}_{it} = {} & \rho_0 + \rho_1(\textit{Family Firm}_{it}) + \rho_2(\textit{Family Firm}_{it} \times \textit{Diversification}_{it}) \\ & + \rho_3(\textit{Diversification}_{it}) + \rho_4(\textit{Ownership \& Control Variables}_{it}) \\ & + \rho_5(\textit{Contestability Variables}_{it}) + \rho_6(\textit{Control Variables}_{it}) + \varepsilon_{it} \end{aligned} \quad (4)$$

The regressions also include industry and year fixed effects. White's heteroskedasticity-robust standard errors are used. Table 1 provides the variable definitions. Nonfamily firms are the reference case in the regressions without interaction terms. With interaction terms, the reference case becomes family firms with *less diversified* portfolios.

Before starting with the diversification analysis, we first show that, as seen in the regressions without interaction terms throughout Tables 5 and 6, family firms devote less (more) money to long-run investment (capex) than nonfamily firms.

< Insert Table 5 around here >

[23] We use a subset of our sample (N = 420) due to the data limitation mentioned earlier regarding the diversification variables.

Table 5 presents the estimation results for equation 3. In Column 1, we confirm our prior findings that family firms devote less capital to corporate investment than nonfamily firms devote. We also find a positive relation between diversification level of (any type of) large shareholder and total investment, which is in line with Faccio et al. (2011). When looking specifically at family firms, having interacted the family firm dummy variable with the diversification variable, we find that family firms with diversified owners invest more than those with less diversified owners ($\beta_2 \times FF + \beta_3 > 0$; Column 2). This result suggests that higher levels of family-portfolio diversification do seem to promote long-term investments.

Looking at the decomposition of family firms, we find that both founder and nonfounder families with well-diversified portfolios spend more on total investment (Column 4). They both seem to take advantage of diversifying risk, and thus choose riskier long-term projects.

The last column in Table 5 (Column 5) presents the results of the analysis where the identity of the largest shareholders is taken into account. We confirm that family firms invest less in long-run projects.

Table 6 presents the estimates of equation 4.[24] Family firms have more capex than nonfamily firms, and there is a negative relation between portfolio-diversification level and capex (Column 1). The estimation with the interaction term in Column 2 shows that family owners with well-diversified portfolios invest more in less risky capex (relative to R&D) than those with less diversified portfolios. However, when dividing family firm into the two components, we find that only nonfounder family firms with diversified owners invest more in capex (Column 4). These results indicate that family portfolio-diversification levels, particularly nonfounder family, do not promote undertaking long-run investments.

< Insert Table 6 around here >

Considering all other types of large shareholders in the regression, we confirm that large family owners invest more in capex (Column 5).

[24] In constructing capex, we lose observations due to many missing values for R&D. Therefore, we run the regressions with an alternative measure of capex, ln(*capex*), and we get qualitatively similar results.

Lastly, unreported estimation results using the *No. of Firms* diversification variable are qualitatively similar to those estimated with the (*1−Herfindahl index*) proxy.[25]

4.3 Additional Analyses

In this section, we run numerous additional tests.[26] Tables 7 and 8 present the results from these tests. Table 7 focuses on possible nonlinearity between corporate investment and family ownership and between corporate investment and firm age. The sensitivity of our findings to the definition of the family-firm variable is also analyzed. Table 8 presents sample-split analyses testing if the relation between total investment and family ownership is dependent on such firm characteristics as firm riskiness and age.[27]

Column 1 in Table 7 analyzes if the relation between corporate investment and family ownership is nonlinear since, as the ownership stake of a shareholder increases, his/her incentive structure can change (Anderson and Reeb, 2003a; Morck, Shleifer, and Vishny, 1988). To test this, we include both the family firm continuous variable (*FF-cont.*) and the squared value of the family firm continuous variable, $(FF\text{-}cont.)^2$, in the regression at the same time. However, we do not find that family ownership is nonlinearly related to total investment.

< Insert Table 7 around here >

We further check if firm age exhibits a nonlinear relation to risk taking (Gonzalez et al., 2012) which is reflected in our study through corporate investment policies. We find that total investment decreases as the firm gets older. However, after a certain age, level of corporate

[25] Some further unreported robustness results exhibit qualitatively similar findings when we assign zero to (*1−Herfindahl Index*) for those "not available" data points. For such cases, we assign the lowest (*1−Herfindahl index*) score by making the fair assumption that these individual family members have only one firm in their portfolios.

[26] In order to not lose many observations from our sample, we run these tests on the sample with which the horizon analyses are conducted (N = 784).

[27] Unreported additional results present qualitatively similar findings when we include both horizon and diversification variables in the same regression – the sample size becomes smaller, though.

investment increases. This inflection point is reported as roughly 175 years[28] in Column 2. Our findings conclude that firms older than 175 years engage in long-term investments more.

Sensitivity of the family-firm definition is investigated in the last two columns of Table 7. We set two thresholds to denote a family firm: family owners holding a minimum of 5% and 20% of the firm's total votes. Accordingly, in Columns 3 and 4, we use the variables, *FF (5% vote at least)* and *FF (20% vote at least)*, respectively. Both of the specifications show similar results to our main estimation: Family firms with long-term investment horizons devote more capital to total investment than family firms with shorter investment horizons.

Table 8 provides findings from the sample-splits done based on two firm characteristics: 1) firm riskiness and 2) firm age. First, we analyze if firms with a high level of risk are more likely to invest less in long-term projects since they are already risky (Anderson et al., 2012). In other words, we investigate if investment policies of family and nonfamily firms are different by holding risk "constant"; that is, looking at both types of firms in the same riskiness category. We split the sample into two based on the level of firm risk which is measured as volatility of return on assets (ROA). Volatility of ROA is defined as the five-year volatility of a firm's ROA, where ROA is the ratio of EBIT to total assets. The standard deviation is calculated over the following five-year overlapping periods between 1999 and 2012: 1999–2003, 2000–2004, …, 2008–2012. The median value of the volatility of ROA (5.010) is taken as the cut-off point to divide the sample into two. Columns 1–4 present results from this analysis. In line with Anderson et al. (2012), our findings indicate that family firms, which bear a higher level of risk relative to nonfamily firms with the same level of risk, invest around 16%[29] less in long-term projects. We further find that nonfounder firms, which are already risky, choose to have less long-run investments whereas founder family firms, which face a lower level of risk, prefer to invest in long-term projects. Overall, the findings suggest that risky family firms, in particular risky nonfounder family firms, devote less resource to long-term projects.

< Insert Table 8 around here >

[28] Inflection point is calculated as $-(\beta_{age}/(2\times\beta_{age\ sq.}))= -(-0.187/(2 \times 2.86e{-}06)) = 174.82$.

[29] This difference is calculated as $(e\beta_2 - 1) \times 100\% = (e(-0.171) - 1) \times 100\% = 15.7\%$.

Second, Columns 5–8 in Table 8 provide insights into the relation between corporate investment and family ownership conditional on firm age. The literature suggests that firms might engage in less-risky projects as they get older, and hence they might avoid long-term projects (Anderson et al., 2012). To test this hypothesis, we split the sample in two based on firm age. We took the median firm age of the sample, 30 years, as the cut-off point. The findings show that family firms in a late stage in their lifecycle devote 12.5% less capital to long-term projects than nonfamily firms at a similar age. When we decompose the family firm variable, we find similar results for nonfounder family firms, but not for founder family firms.

4.4 Endogeneity between Family Ownership and Corporate Investment

In order to deal with a potential endogeneity problem arising from omitted-variable bias, we first control for time-varying observable variables that might affect both family ownership and corporate investment in our regressions. Second, we add year and industry fixed effects to capture potential effects of any unobservable unit- and industry-invariant factors.

Moreover, endogeneity might also result from reverse causality and affect our results. There might be reverse causality in the relation between family ownership and corporate investment. More specifically, based on some unobservable factors, families might optimally choose to invest in firms with lower levels of investment.

< Insert Table 9 around here >

To deal with these potential endogeneity issues, we employ instrumental-variable (IV) regression. Following the literature, we construct three alternative IVs: 1) average family stake across all firms in each industry,[30] 2) lagged family ownership (Gonzalez et al., 2012), and 3) the natural logarithm of total assets (Anderson and Reeb, 2003b). The second-stage estimations presented in the three columns in Table 9 correspond to these three IVs. The three columns present a negative relation between family ownership and corporate investment. Overall, after controlling for endogeneity concerns, we still find that family firms devote less capital to long-run investments.

[30] Inspired by Faccio et al. (2011), the intuition behind this IV is to capture the "natural" degree of family ownership across all other firms that are involved in similar activities.

4.5 Corporate Investment Efficiency in Family Firms and Firm Valuation

In this last section, we evaluate how shareholders value corporate investment policies of family firms versus nonfamily firms. We show that family firms invest less in long-run projects than nonfamily firms. We analyze how this lower level of investment in family firms is valued by outside shareholders. According to the *family-investment efficiency* hypothesis (Anderson et al., 2012), family monitoring provides efficiency in corporate investments, thus leading to fewer resources dedicated to investments compared to the case in nonfamily firms. This lower, but efficient, level of corporate investment is, therefore, viewed positively by outside shareholders. On the other hand, the *risk aversion* hypothesis (Anderson et al., 2012) suggests that a lower level of corporate investment reflects preferences to reduce firm risk, which would be valued negatively by shareholders.

We test these two competing hypotheses with two alternative estimations using two different subsamples (Table 10). We measure "lower level of investment" with "below industry investment." In other words, we define firms having lower levels of investment (total investment or capex) as those that invest below median firm in the same industry.

< Insert Table 10 around here >

Accordingly, industry-adjusted total investment (*Ind. Adj. Total Invest.*) is measured as the natural logarithm of the absolute value of the difference between firm-level total investment and the median total investment across all firms in the same industry. Industry-adjusted capex (*Ind. Adj. Capex*) is measured as the natural logarithm of the absolute value of the difference between firm-level capex and the median capex across all firms in the same industry. These two industry-adjusted measures are below zero for firms with "below industry investment" (Columns 1 and 2). The dependent variable, the proxy for firm value, in both regressions is Tobin's *Q*, measured as the sum of market value of equity plus book value of total liabilities, all divided by book value of assets.

We find that only a reduced level of total investment (not capital expenditures) is valued negatively by shareholders, supporting the risk-aversion hypothesis. To sum up, the findings suggest that families cut down investments in order to mitigate firm risk. Since this reduced firm

risk is an indicator of the families' extracting private benefits at the expense of minority shareholders, the market reacts to this firm risk reduction negatively.

5. Conclusion

Using an unbalanced panel dataset composed of 208 listed Swedish firms and covering the period from 1999 through 2012, we explore whether family ownership matters for corporate investment policies. Sweden offers uniquely detailed and accurate ownership data. Exploiting this detailed data, we find heterogeneity in both families' investment horizons and family-portfolio diversification levels. These findings challenge the two assumptions used in the family-firm literature: 1) Families have long-term investment horizons in the firms in which they invest and 2) families hold undiversified portfolios. Interrogating these assumptions specifically, this paper investigates if these heterogeneities have any effects on corporate investment.

In the base investigation for our study, we first show that family firms invest less in long-run projects than nonfamily firms. We have three main findings regarding *horizon*. First, families with longer investment horizons prefer to choose long-run investments compared to families with shorter investment horizons. Second, decomposing total investment into capex and R&D, we find that capex is higher in family firms, indicating that families devote more funds to less risky capex than to relatively more risky R&D expenses. However, families with long-term investment horizons are found to invest less in capex (relative to R&D). These findings are consistent with our first results from the total-investment analysis. Third, decomposing family firms into two groups, founder and nonfounder families, we find that our evidence is mostly driven by nonfounder family firms since these types of firms invest less in long-run projects (and invest more in capex). However, those founder and nonfounder family firms whose horizons are longer seem to devote more capital to long-run projects (and devote less money to less risky capex).

We have three main findings regarding *diversification*. First, we find a positive relation between diversification level of (any type of) the largest shareholder and total investment. Then, we present the evidence that family firms with diversified owners, compared to those with less diversified owners, invest more in long-run projects by taking advantage of a high level of portfolio diversification. Second, however, diversified family owners prefer less risky capex

(rather than relatively more risky R&D). Total investment and capex findings all together imply that the type of the long-run investment might matter. Third, looking at the two subcategories of family firms, the results from both founder and nonfounder firms confirm these findings.

In sum, family firms seem to avoid long-run, so-called risky, investments. However, family owners who have long-term investment *horizons* in the firm appear more likely to invest in long-run corporate projects, and families with *diversified* portfolios seem to devote more capital to long-run projects, although the type of the long-run project is still less risky: diversified family owners prefer *capex* which is less risky relative to R&D expenses. Moreover, we find that, consistent with Anderson et al. (2012), a lower level of investment in family firms is valued negatively by outside shareholders.

Our results could be related to Anderson and Reeb (2003b), who find that family firms do not seem to reduce firm risk via *debt* and *corporate diversification.*[31] Therefore, instead of creating agency conflict (via reduced firm risk), family ownership, in their paper, is found to even mitigate agency conflict, thus reflecting an effective organizational structure. In contrast, we, first, suggest that family firms with diversified owners are to some extent associated with reduced firm risk via the choice on the type of investment strategies (increased agency cost) because they choose to invest more in less risky *capex* even though the level of *total investment* in firms with diversified family owners increases with a higher level of diversification. Second, when the family has a long-term investment horizon in the firm, then we find that family ownership is not associated with increased agency cost. This is because long-investment-horizon family owners prefer long-run projects.

Our findings are confirmed when the identity of the largest shareholders is taken into account. Another supplementary analysis shows that family firms that entrench their control via a higher level of votes, as well as firms that have dual-class shares, engage in less corporate investment.

We conduct a number of additional analyses. We present that firm age shows a nonlinear relation with total investment. Firms that are older than 175 years engage in more long-term investments. We further find that our results remain the same when we use alternative measures for our

[31] Anderson and Reeb (2003b) find that family firms have less corporate diversification, and a similar debt level compared to nonfamily firms.

variable of interest, which is family ownership. Moreover, we conduct sample-split tests to analyze if the relation between total investment and family ownership is dependent on such firm characteristics as firm riskiness and age. First, we give the evidence that already-risky family firms, in particular nonfounder family firms, avoid long-run projects. Founder family firms bearing a low level of firm risk, on the other hand, prefer long-run projects. Second, we show that old family firms, especially nonfounder family firms, invest less in long-run projects. We also test for potential endogeneity concerns, and our findings are not affected by such concerns. Alternative measures for horizon and diversification also provide qualitatively similar results.

References

Andres, C., (2008), "Large Shareholders and Firm Performance: An Empirical Examination of Founding-Family Ownership," *Journal of Corporate Finance* 14, 431–445.

Anderson, R., A. Duru, and D. Reeb, (2009), "Founders, Heirs, and Corporate opacity in the United States," *Journal of Financial Economics* 92, 205–222.

Anderson, D., A. Duru, and D. Reeb, (2012), "Investment Policy in Family Controlled Firms," *Journal of Banking and Finance* 36, 1744–1758.

Anderson, R., S. A. Mansi, and D. Reeb, (2003), "Founding Family Ownership and the Agency Cost of Debt," *Journal of Financial Economics* 68, 263–285.

Anderson, R., and D. Reeb, (2003a), "Founding-Family Ownership and Firm Performance: Evidence from the S&P 500," *Journal of Finance* 58, 1301–1327.

Anderson, R., and D. Reeb, (2003b), "Founding-Family Ownership, Corporate Diversification, and Firm Leverage," *Journal of Law and Economics* 46(2), 653–684.

Amore, M. D., A. Minichilli, and G. Corbetta, (2011), "How Do Managerial Successions Shape Corporate Financial Policies in Family Firms?" *Journal of Corporate Finance* 17, 1016–1027.

Bach, L., (2010), "Why Are Family Firms So Small?" Working Paper, Paris School of Economics.

Bennedsen, M., K. Nielsen, F. Pérez-Gonzalez, and D. Wolfenzon, (2007), "Inside the Family Firm: The Role of Families in Succession Decisions and Performance," *Quarterly Journal of Economics* 122, 647–691.

Berle, A., and G. Means, (1932), *The Modern Corporation and Private Property*, New York, NY: MacMillan.

Bianco, M., M. E. Bontempi, R. Golinelli, and G. Parigi, (2012), "Family Firms' Investment, Uncertainty and Opacity," *Small Business Economics*, 1–24.

Bjuggren, P. O., J. Dzansi, and J. Palmberg, (2007), "Investment Performance of Swedish Listed Family Firms," Working Paper, Jönköpings International Business School.

Brambor, T., W. R. Clark, and M. Golder, (2005), "Understanding Interaction Models: Improving Empirical Analyses," *Political Analysis* 14(1), 63–85.

Burkart, M., F. Panunzi, and A. Schleifer, (2003), "Family Firms," *Journal of Finance* 58(5), 2167–2202.

Cella, C., (2012), "Institutional Investors and Corporate Investment," Available at SSRN 1572814 (2011).

Cronqvist, H., and M. Nilsson, (2003), "Agency Cost of Controlling Shareholders," *Journal of Financial and Quantitative Analysis* 38(4), 695–719.

Faccio, M., M. T. Marchica, and R. Mura, (2011), "Large Shareholder Diversification and Corporate Risk Taking," *Review of Financial Studies* 24(11), 3601–3641.

Giannetti, M., and A. Simonov, (2006), "Which Investors Fear Expropriation? Evidence from Investors' Portfolio Choices," *Journal of Finance* 61(3), 1507–1547.

Gomez-Mejia, L. R., K. T. Haynes, M. Nunez-Nickel, K. J. L. Jacobson, and J. Moyano-Fuentes, (2007), "Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence from Spanish Olive Oil Mills," *Administrative Science Quarterly*, 52(1), 106–37.

Gonzalez, M., A. Guzman, C. Pombo, and M.-A. Trujillo, (2012), "Family Firms and Debt: Risk Aversion versus Risk of Losing Control," *Journal of Business Research*.

Heaney, R., and M. Holmen, (2008), "Family Ownership and the Cost of Diversification," *Applied Financial Economics* 18(21), 1721–1737.

Hiebl, M. R. W., (2013), "Risk Aversion in Family Firms: What Do We Really Know?" *Journal of Risk Finance* 14(1), 49–70.

Isakov, D., and J. P. Weisskopf, (2012), "Are Founding Families Special Blockholders? An Investigation of Controlling Shareholder Influence on Firm Performance," Working Paper, University of Fribourg.

Jensen, M. C., and W. H., Meckling, (1976), "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics* 3, 305–360.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer, (1999), "Corporate Ownership around the World," *Journal of Finance* 54, 471–517.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny, (1998), "Law and Finance," *Journal of Political Economy* 106, 1113–1155.

Maury, B., (2006), "Family Ownership and Firm Performance: Empirical Evidence from Western European Corporations," *Journal of Corporate Finance* 12, 321–341.

Morck, R., A. Shleifer, and R. Vishny, (1988), "Management Ownership and Market Valuation: an Empirical Analysis," *Journal of Financial Economics* 20, 293–315.

Naldi, L., M. Nordqvist, K. Sjöberg, and J. Wiklund, (2007), "Entrepreneurial Orientation, Risk Taking, and Performance in Family Firms," *Family Business Review* 20(1), 33–47.

Nguyen, P., (2011), "Corporate Governance and Risk-Taking: Evidence from Japanese Firms," *Pacific-Basin Finance Journal* 19(3), 278–97.

Palia, D., S. A. Ravid, and C. J. Wang, (2008), "Founders versus Non-founders in Large Companies: Financial Incentives and the Call for Regulation", *Journal of Regulatory Economics* 33(1), 55-86.

Paligorova, T., (2010), "Corporate Risk Taking and Ownership Structure," Working Paper, Bank of Canada.

Pérez-Gonzalez, F., (2006), "Inherited Control and Firm Performance," *American Economic Review* 96, 1559–1588.

Shleifer, A., and R. W. Vishny, (1986), "Large Shareholders and Corporate Control," *Journal of Political Economy* 94, 461–89.

Shleifer, A., and R. W. Vishny, (1997), "A Survey of Corporate Governance," *Journal of Finance* 52, 737–784.

Sraer, D., and D. Thesmar, (2007), "Performance and Behavior of Family Firms: Evidence from the French Stock Market," *Journal of the European Economic Association* 5, 709–751.

The Swedish Corporate Governance Code, Applicable from 1 February 2010, Swedish Corporate Governance Board.

Villalonga, B., and R. Amit, (2006), "How Do Family Ownership, Control and Management Affect Firm Value?" *Journal of Financial Economics* 80, 385–417.

Table 1 Definition of Variables

Dependent Variables	
Total Inv./Assets	The sum of R&D and capital expenditures, all divided by total assets
Capex/Total Inv.	Capital expenditures divided by the sum of R&D and capital expenditures
R&D/Total Inv.	R&D expenditures divided by the sum of R&D and capital expenditures
Tobin's Q	The natural logarithm of the sum of market value of equity plus book value of total liabilities, all divided by book value of assets
Test Variables	
Family firms (FF)	
FF	Dummy variable that equals 1 when the largest fraction of the total votes is held by a family and zero otherwise
FF-cont.	% of votes held by the family
Founder FF	Dummy variable that equals 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 zero otherwise
Nonfounder FF	Dummy variable that equals 1 when the largest fraction of the total votes is held by families and individuals unaffiliated with the founder and zero otherwise
FF (5% vote at least)	Dummy variable that equals 1 when the largest fraction of the total votes held by the family is at least 5% and zero otherwise
FF (20% vote at least)	Dummy variable that equals 1 when the largest fraction of the total votes held by the family is at least 20% and zero otherwise
Ind. Adj. Total Invest.	The natural logarithm of the absolute value of the difference between firm-level total investment and the median total investment across all firms in the same industry
Ind. Adj. Capex	The natural logarithm of the absolute value of the difference between firm-level capex and the median capex across all firms in the same industry
Other Largest Shareholders	
Larg. SH-Corp.	Dummy variable that equals 1 when the largest fraction of the total votes held by a corporation and zero otherwise
Larg. SH-Fin Inst.	Dummy variable that equals 1 when the largest fraction of the total votes held by a financial institution (mutual funds, pension funds, insurance companies and banks) and zero otherwise
Larg. SH-Gov.	Dummy variable that equals 1 when the largest fraction of the total votes held by the government, a foundation, cooperative and union and zero otherwise
Larg. SH-Indiv.	Dummy variable that equals 1 when the largest fraction of the total votes held by an (a nonfamily) individual and zero otherwise
Horizon	
No. of Years	The total number of years between the first date when the largest shareholder owns shares in the company (no earlier than the beginning of our period, 1999) and the date when the shareholder sells all shares (or still holds shares at the end of our sample period, 2012)
No. of Years Dummy	Dummy variable that equals 1 when the value of *No. of Years* is more than 9.902 (sample mean value) and zero otherwise
Diversification	
1−Herfindahl Index	1 − the sum of the squared weights that each investment has in the largest shareholder's portfolio
No. of Firms	The total number of firms that constitutes the largest shareholder's portfolio
Ownership & Control	
Excess Vote	(% of votes held by the largest shareholder) – (% of capital held by the largest shareholder)
Dual-class Share	Dummy variable that equals 1 when the firm has dual-class shares and zero otherwise

Contestability	
FF stake is >50%	Dummy variable that equals 1 when the family's votes is more than 50% of total voting rights and zero otherwise
FF stake btw 20–50%	Dummy variable that equals 1 when the family's votes is between 20% and 50% of total voting rights in the presence of a second blockholder (with vote larger than 5%) and zero otherwise

Control Variables

Leverage	Total debt/total assets
Total Assets	The natural logarithm of total assets
Firm Age	The natural logarithm of firm age
Dividend/TA	Total cash dividends paid divided by total assets
Net Sales	The natural logarithm of net sales
Largest Sh. Vote	% of votes held by the largest shareholder

Table 2 Descriptive and Univariate Statistics

Panel A: Descriptive Statistics of Variables (firm-year)

	Mean	Median	Stdev	Max	Min	Q1	Q3	N
Dependent Variables								
Total Inv./Assets	0.119	0.072	0.148	1.779	0.002	0.040	0.140	799
Capex/Total Inv.	0.442	0.454	0.330	1.000	0.000	0.110	0.720	799
R&D/Total Inv.	0.557	0.545	0.330	1.000	0.000	0.280	0.890	799
Tobin's Q	1.877	1.353	1.606	16.733	0.278	1.049	2.029	2,046
Test Variables								
Family firms (FF)								
FF	0.427	0.000	0.494	1.000	0.000	0.000	1.000	2,148
FF-cont.	18.560	0.000	25.651	88.400	0.000	0.000	33.125	2,148
Founder FF	0.236	0.000	0.424	1.000	0.000	0.000	0.000	2,148
Nonfounder FF	0.191	0.000	0.393	1.000	0.000	0.000	0.000	2,148
FF (5% vote at least)	0.425	0.000	0.494	1.000	0.000	0.000	1.000	2,148
FF (20% vote at least)	0.371	0.000	0.483	1.000	0.000	0.000	1.000	2,148
Larg. SH-Corp.	0.130	0.000	0.336	1.000	0.000	0.000	0.000	2,148
Larg. SH-Fin Inst.	0.205	0.000	0.404	1.000	0.000	0.000	0.000	2,148
Larg. SH-Gov.	0.033	0.000	0.180	1.000	0.000	0.000	0.000	2,148
Larg. SH-Indiv.	0.203	0.000	0.402	1.000	0.000	0.000	0.000	2,148
Horizon								
No. of Years	9.902	11.753	3.940	13.350	0.000	6.499	13.252	2,148
No. of Years (for *FF* only)	11.427	13.252	3.163	13.339	0.304	11.178	13.252	919
No. of Years Dummy	0.612	1.000	0.487	1.000	0.000	0.000	1.000	2,148
No. of Years Dummy (for *FF* only)	0.773	1.000	0.418	1.000	0.000	1.000	1.000	919
Diversification								
1−Herfindahl Index	0.504	0.593	0.360	0.999	0.000	0.065	0.830	826
1−Herfindahl Index (for *FF* only)	0.598	0.721	0.264	0.932	0.000	0.433	0.808	313
No. of Firms	32.387	7.500	78.564	476.000	1.000	2	19	826
No. of Firms (for *FF* only)	11.984	11.000	9.257	113.000	1.000	5.750	16.000	313
Ownership & Control								
Excess Vote	19.877	18.650	14.230	86.100	−14.900	10.000	26.600	2,148
Dual-class Share	0.553	1.000	0.497	1.000	0.000	0.000	1.000	2,148
Contestability								
FF stake is >50%	0.169	0.000	0.375	1.000	0.000	0.000	0.000	2,148
FF stake btw 20–50%	0.176	1.000	0.381	1.000	0.000	0.000	0.000	2,148
Control Variables								
Leverage	0.205	0.167	0.191	1.010	0.000	0.020	0.340	2,068
Total Assets (in million)	11,468	1,065	33,555	361,239	7.290	346	5,901	2,073
Firm Age	56.513	30.000	69.998	599.000	4.000	18	74	2,137
Dividend/TA	0.025	0.013	0.046	0.959	0.000	0.000	0.030	2,016
Net Sales (in million)	10,131	11,540	28,750	31,000	0.000	326	4,249	2,072
Largest Sh. Vote	32.817	27.300	21.118	88.400	0.200	15.700	45.875	2,148

Panel B: Family Firms versus Nonfamily Firms

	FF	Non-FF	Mean Equality Test
Dependent Variables			
Total Inv./Assets	0.096	0.136	3.758***
Capex/Total Inv.	0.547	0.364	−8.048***
R&D/Total Inv.	0.452	0.635	8.048***
Test Variables			
Horizon			
No. of Years	11.427	8.762	−16.455***
No. of Years Dummy	0.773	0.489	−13.976***
Diversification			
1−Herfindahl Index	0.598	0.446	−5.987***
No. of Firms	11.984	44.836	5.950***
Ownership & Control			
Excess Vote	23.337	17.290	−9.963***
Dual-class Share	0.745	0.410	−16.398***
Control Variables			
Leverage	0.203	0.204	0.197
Total Assets (in million)	15,855	8,120	−5.210***
Firm Age	57,937	55.560	−0.772
Dividend/TA	0,034	0.019	−7.111***
Net Sales (in million)	15,449	6,154	−7.351***

Panel C: Mean Value of Key Variables Across Largest Shareholder Categories

			Nonfounder		Financial		
	FF	Founder FF	FF	Corporation	Inst.	Government	Individual
Horizon							
No. of Years	11.427	11.807	10.958	6.865	7.935	11.558	10.346
No. of Years Dummy	0.773	0.802	0.737	0.301	0.390	0.819	0.654
Diversification							
1−Herfindahl Index	0.598	0.552	0.601	0.199	0.593	0.313	0.600
No. of Firms	11.984	9.272	12.189	2.742	75.903	7.760	7.058
Other Variables							
Excess Vote	23.337	23.296	23.386	20.382	13.258	24.852	18.140
Dual-class Share	0.745	0.869	0.592	0.304	0.301	0.569	0.560
Largest Sh. Vote	43.381	49.008	36.458	27.676	18.845	33.277	27.905

Panel D: Correlation Matrix of Selected Variables

	FF	*Founder FF*	*Nonfounder FF*	*Total Inv./Ass.*	*Capex/Tot. Inv.*	*No. of Years*	*1−Herfin. Ind.*
FF	1.000						
Founder FF	0.551***	1.000					
Nonfounder FF	0.662***	−0.259***	1.000				
Total Inv./Ass.	−0.085**	0.125***	−0.210***	1.000			
Capex/Tot Inv.	0.243***	−0.049	0.325***	−0.485***	1.000		
No. of Years	0.289***	0.229***	0.129***	−0.084**	0.213***	1.000	
1−Herfin. Ind.	0.399***	0.150**	0.341***	0.120*	0.052	0.050	1.000

Table 3 Family Horizon and Corporate Investment 1

	Dependent Variable: Ln(*Total Inv./Assets*)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FF	−0.057	−0.372**			−0.193		−0.097*
	(0.042)	(0.186)			(0.181)		(0.056)
Founder FF			0.075	−0.323		−0.134	
			(0.072)	(0.237)		(0.214)	
Nonfounder FF			−0.146**	−0.358*		−0.194	
			(0.068)	(0.216)		(0.213)	
Larg. SH-Corp.							−0.143**
							(0.073)
Larg. SH-Gov.							−0.201
							(0.160)
Larg. SH-Indiv.							0.052
							(0.083)
Horizon							
No. of Years	0.001	−0.006	−0.001	−0.007	−0.001	−0.001	−0.001
	(0.008)	(0.009)	(0.007)	(0.009)	(0.011)	(0.011)	(0.011)
FF×No. of Years		0.030**			0.037***		
		(0.015)			(0.014)		
Founder FF×No. of Years				0.034*		0.045***	
				(0.018)		(0.017)	
Nonfounder FF×No. of Years				0.021		0.025*	
				(0.016)		(0.015)	
Ownership & Control							
Excess Vote					0.002*	0.001	
					(0.001)	(0.001)	
Dual-class Share					−0.107***	−0.142***	
					(0.042)	(0.042)	
Contestability							
FF stake is >50%					−0.630***	−0.659***	
					(0.076)	(0.079)	
FF stake btw 20–50%					−0.268***	−0.237***	
					(0.063)	(0.067)	
Controls							
Leverage	−0.879***	−0.795***	−0.893***	−0.827***	−0.880***	−0.948***	−1.029***
	(0.097)	(0.081)	(0.102)	(0.085)	(0.076)	(0.075)	(0.115)
Ln(*age*)	−0.019	−0.030	−0.023	−0.032	−0.021	−0.020	−0.007
	(0.020)	(0.023)	(0.021)	(0.023)	(0.019)	(0.018)	(0.027)
Ln(*total assets*)	−0.108***	−0.110***	−0.095***	−0.098***	−0.120***	−0.102***	−0.093***
	(0.013)	(0.013)	(0.015)	(0.013)	(0.015)	(0.014)	(0.015)
Dividend/TA	0.001	0.049	−0.353	−0.280	0.238	−0.196	−0.000
	(0.529)	(0.568)	(0.650)	(0.676)	(0.565)	(0.673)	(0.530)
Intercept	−0.080	0.054	−0.270	−0.146	0.065	−0.237	−0.138
	(0.247)	(0.237)	(0.268)	(0.247)	(0.281)	(0.273)	(0.281)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.202	0.204	0.207	0.206	0.228	0.234	0.213
Observations	784	784	784	784	784	784	785

Table 4 Family Horizon and Corporate Investment 2

	Dependent Variable: *Capex/Total Inv.*						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FF	0.077***	0.310***			0.227***		0.074***
	(0.016)	(0.032)			(0.040)		(0.018)
Founder FF			0.028	0.156*		0.043	
			(0.026)	(0.097)		(0.073)	
Nonfounder FF			0.110***	0.336***		0.261***	
			(0.013)	(0.043)		(0.055)	
Larg. SH-Corp.							0.005
							(0.022)
Larg. SH-Gov.							0.070**
							(0.035)
Larg. SH-Indiv.							−0.045**
							(0.022)
Horizon							
No. of Years	−0.004**	0.001	−0.003	0.001	−0.000	−0.001	−0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
FF×No. of Years		−0.022***			−0.024***		
		(0.003)			(0.002)		
Founder FF×No. of Years				−0.012*		−0.014**	
				(0.007)		(0.006)	
Nonfounder FF×No. of Years				−0.022***		−0.023***	
				(0.003)		(0.003)	
Ownership & Control							
Excess Vote					0.001	0.001	
					(0.001)	(0.001)	
Dual-class Share					0.030***	0.042***	
					(0.010)	(0.011)	
Contestability							
FF stake is >50%					0.292***	0.300***	
					(0.039)	(0.036)	
FF stake btw 20–50%					0.094**	0.083*	
					(0.042)	(0.045)	
Controls							
Leverage	0.346***	0.284***	0.351***	0.291***	0.292***	0.310***	0.480***
	(0.071)	(0.072)	(0.070)	(0.072)	(0.079)	(0.079)	(0.066)
Ln(*age*)	0.046***	0.054***	0.047***	0.055***	0.045***	0.045***	0.039***
	(0.013)	(0.012)	(0.013)	(0.012)	(0.010)	(0.009)	(0.015)
Ln(*total assets*)	0.051***	0.053***	0.046***	0.049***	0.061***	0.055***	0.044***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.0029	(0.001)
Dividend/TA	0.670***	0.634***	0.801***	0.725***	0.490***	0.636***	0.717***
	(0.240)	(0.207)	(0.250)	(0.228)	(0.189)	(0.212)	(0.240)
Intercept	−0.230***	−0.329***	−0.160***	−0.275***	−0.420***	−0.324***	−0.196***
	(0.068)	(0.070)	(0.062)	(0.063)	(0.087)	(0.079)	(0.065)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.381	0.394	0.386	0.396	0.436	0.442	0.406
Observations	784	784	784	784	784	785	785

Table 5 Family Diversification and Corporate Investment 1

	Dependent Variable: Ln(*Total Inv./Assets*)				
	(1)	(2)	(3)	(4)	(5)
FF	−0.204**	−0.079			−0.352***
	(0.095)	(0.046)			(0.111)
Founder FF			0.034	−0.947**	
			(0.126)	(0.442)	
Nonfounder FF			−0.215**	−0.068	
			(0.102)	(0.076)	
Larg. SH-Corp.					−0.073
					(0.140)
Larg. SH-Gov.					−0.496***
					(0.182)
Larg. SH-Indiv.					−0.584***
					(0.218)
Diversification					
1−Herfindahl Index	0.308***	0.361***	0.298***	0.355***	0.299**
	(0.033)	(0.046)	(0.037)	(0.046)	(0.129)
FF×(*1−Herfindahl Index*)		−0.226*			
		(0.129)			
Founder FF×(*1−Herfindahl Index*)				1.278**	
				(0.563)	
Nonfounder FF×(*1−Herfindahl Index*)				−0.259*	
				(0.140)	
Controls					
Leverage	−1.464***	−1.497***	−1.474***	−1.524***	−1.295***
	(0.186)	(0.199)	(0.196)	(0.206)	(0.297)
Ln(*age*)	0.099***	0.101***	0.093***	0.097***	0.090*
	(0.025)	(0.026)	(0.025)	(0.025)	(0.050)
Ln(*total assets*)	−0.083***	−0.078***	−0.083***	−0.078***	−0.056**
	(0.021)	(0.023)	(0.021)	(0.023)	(0.026)
Dividend/TA	0.206	0.107	0.004	−0.068	−0.550
	(1.924)	(1.884)	(2.034)	(2.020)	(1.350)
Intercept	−0.913**	−1.025**	−0.913**	−0.984**	−1.034**
	(0.455)	(0.501)	(0.469)	(0.502)	(0.443)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.170	0.168	0.170	0.167	0.176
Observations	420	420	420	420	420

Table 6 Family Diversification and Corporate Investment 2

	Dependent Variable: *Capex/Total Inv.*				
	(1)	(2)	(3)	(4)	(5)
FF	0.090***	−0.009			0.147***
	(0.019)	(0.042)			(0.038)
Founder FF			0.065	−0.218	
			(0.044)	(0.236)	
Nonfounder FF			0.092***	−0.007	
			(0.018)	(0.043)	
Larg. SH-Corp.					0.092**
					(0.048)
Larg. SH-Gov.					0.183***
					(0.063)
Larg. SH-Indiv.					0.031
					(0.075)
Diversification					
1−Herfindahl Index	−0.035*	−0.078***	−0.034*	−0.077***	0.070
	(0.022)	(0.020)	(0.021)	(0.020)	(0.044)
FF×(*1−Herfindahl Index*)		0.180***			
		(0.054)			
Founder FF×(*1−Herfindahl Index*)				0.414	
				(0.341)	
Nonfounder FF×(*1−Herfindahl Index*)				0.182***	
				(0.054)	
Controls					
Leverage	0.454***	0.480***	0.455***	0.480***	0.527***
	(0.075)	(0.072)	(0.075)	(0.073)	(0.102)
Ln(*age*)	0.013	0.011	0.013	0.013	0.018
	(0.010)	(0.010)	(0.010)	(0.010)	(0.017)
Ln(*total assets*)	0.037***	0.033***	0.037***	0.033***	0.025***
	(0.003)	(0.004)	(0.003)	(0.004)	(0.009)
Dividend/TA	1.026	1.104	1.047	1.144*	1.213***
	(0.735)	(0.704)	(0.729)	(0.703)	(0.467)
Intercept	0.035	0.124**	0.035	0.133***	0.035
	(0.052)	(0.054)	(0.053)	(0.057)	(0.153)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.304	0.307	0.302	0.304	0.311
Observations	420	420	420	420	420

Table 7 Family Horizon and Corporate Investment – Additional Analyses 1

	Dependent Variable: Ln(*Total Inv./Assets*)			
	Nonlinear. of Family Own. (1)	Nonlinearity of Age (2)	FF with at least 5% vote (3)	FF with at least 20% vote (4)
FF-cont. (%)	−0.568			
	(0.731)			
(*FF-cont.*)^2	−0.124			
	(0.619)			
FF		−0.187		
		(0.176)		
FF (5% vote at least)			−0.193	
			(0.181)	
FF (20% vote at least)				−0.388*
				(0.237)
Horizon				
No. of Years	0.003	−0.001	−0.001	0.005
	(0.010)	(0.010)	(0.011)	(0.009)
FF-cont. or *FF*×*No. of Years*	0.094***	0.037***		
	(0.037)	(0.014)		
FF (5% vote at least)×*No. of Years*			0.037***	
			(0.014)	
FF (20% vote at least)×*No. of Years*				0.034*
				(0.018)
Controls				
Leverage	−0.935***	−0.860***	−0.880***	−0.986***
	(0.079)	(0.078)	(0.076)	(0.075)
Ln(*age*)	−0.026		−0.021	−0.023
	(0.017)		(0.019)	(0.020)
Ln(*total assets*)	−0.112***	−0.122***	−0.120***	−0.108***
	(0.016)	(0.016)	(0.015)	(0.075)
Dividend/TA	0.350	0.285	0.238	0.427
	(0.544)	(0.580)	(0.565)	(0.523)
Age		−0.001*		
		(0.001)		
(*Age*)^2		2.86e−06*		
		(1.71e−06)		
Intercept	−0.063	0.046	0.065	−0.161
	(0.288)	(0.315)	(0.281)	(0.272)
Inflection Point	0.2	174.82	—	—
Industry Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
Adj. R^2	0.223	0.227	0.228	0.222
Observations	784	784	784	784

Table 8 Family Ownership and Total Investment – Additional Analyses 2

	Dependent Variable: Ln(*Total Inv./Assets*)							
	High-risk firms		Low-risk firms		Young firms		Old firms	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FF	−0.171**		0.014		0.066		−0.129**	
	(0.082)		(0.059)		(0.095)		(0.065)	
Founder FF		−0.068		0.210***		0.261		0.026
		(0.130)		(0.079)		(0.195)		(0.089)
Nonfounder FF		−0.275***		−0.072		−0.106		−0.201***
		(0.112)		(0.071)		(0.222)		(0.070)
Horizon								
No. of Years	0.005	0.003	−0.008	−0.013	−0.006	−0.010	0.019**	0.015*
	(0.017)	(0.016)	(0.009)	(0.010)	(0.016)	(0.014)	(0.009)	(0.009)
Controls								
Leverage	−0.446	−0.455	−1.015***	−1.012***	0.502	0.510	−1.275***	−1.260***
	(0.305)	(0.306)	(0.292)	(0.283)	(0.356)	(0.341)	(0.234)	(0.233)
Ln(*age*)	0.034	0.029	−0.013	−0.013				
	(0.064)	(0.069)	(0.041)	(0.042)				
Ln(*total assets*)	−0.149***	−0.140***	−0.053***	−0.033**	−0.266**	−0.244***	−0.047***	−0.031*
	(0.035)	(0.040)	(0.014)	(0.015)	(0.025)	(0.041)	(0.016)	(0.017)
Dividend/TA	1.671	1.367	−0.798	−1.191**	1.428*	1.036	−1.031	−1.475*
	(1.046)	(1.255)	(0.580)	(0.571)	(0.809)	(1.169)	(0.804)	(0.818)
Intercept	0.698*	0.571	−0.974***	−1.275***	2.377***	2.034***	−1.215***	−1.422***
	(0.406)	(0.462)	(0.389)	(0.400)	(0.479)	(0.732)	(0.495)	(0.499)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.160	0.161	0.159	0.170	0.195	0.199	0.100	0.110
Observations	402	402	392	392	368	368	428	428

Table 9 Endogeneity between Corporate Investment and Family Ownership

	Dependent Variable: Ln(*Total Inv./Assets*)		
	2SLS	2SLS	2SLS
	(1)	(2)	(3)
FF	−3.865***		−3.411***
	(0.804)		(0.770)
FF-cont.		−0.004***	
		(0.001)	
Horizon			
No. of Years	0.086***	0.001	0.076***
	(0.020)	(0.008)	(0.019)
Controls			
Leverage	−3.348***	−0.910***	−3.054***
	(0.542)	(0.1239	(0.535)
Ln(*age*)	−0.121***	−0.012	−0.109**
	(0.044)	(0.018)	(0.056)
Ln(*total assets*)	0.207***	−0.100***	0.169**
	(0.063)	(0.012)	(0.077)
Dividend/TA	6.288***	0.271	5.539***
	(1.652)	(0.563)	(2.162)
Intercept	−5.818***	−0.176	−5.135***
	(1.188)	(0.265)	(1.339)
Industry Fixed Effect	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes
Adj. R^2	−3.198	0.203	−2.436
Observations	784	725	784

Table 10 Corporate Investment Efficiency and Firm Valuation

	Dependent Variable: Ln(Tobin's *Q*)	
	Ln(*Ind. Adj. Total Invest.*) <= 0.00	Ln(*Ind. Adj. Capex*) <= 0.00
	(1)	(2)
FF	2.697***	0.222*
	(0.532)	(0.128)
Total investment	0.110***	
	(0.039)	
Capex		0.022*
		(0.012)
FF×total investment	−0.248***	
	(0.045)	
FF×capex		−0.011
		(0.010)
Controls		
Leverage	−1.114***	−0.572***
	(0.208)	(0.104)
Ln(*age*)	−0.041	0.041***
	(0.049)	(0.017)
Ln(*net sales*)	−0.112***	−0.032**
	(0.029)	(0.014)
Dual-class Share	−0.354***	−0.032
	(0.056)	(0.033)
Largest Sh. Vote	0.003*	−0.002***
	(0.001)	(0.001)
Intercept	0.797	0.582***
	(0.617)	(0.197)
Industry Fixed Effect	Yes	Yes
Year Fixed Effect	Yes	Yes
Adj. R^2	0.380	0.269
Observations	257	976