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The Governance and Finance of Norwegian Family Firms: Main Characteristics of the Population

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Abstract

Family firms are special because the controlling owner is a group of people who are more tightly related sociologically than are other controlling owners. This situation means characteristics of the owner may be unusually important for how family firms behave and perform. We analyze a wide range of governance and finance and characteristics in all Norwegian family firms with limited liability over the period 2000–2015.

Large, representative samples of family firms have barely been analyzed in the finance literature at the aggregate level. The main reasons are that almost all family firms are private, that high-quality economic data on private firms are seldom available, that data on family relationships between owners are particularly difficult to obtain, and that economists tend to consider the family firm an anachronistic organizational form in frictionless markets. Our study fills parts of this gap in the literature. We document distinguishing features of family firms by contrasting their governance and finance to that of nonfamily firms. The novel nature of our analysis makes us mostly describe the main patterns and aggregate picture through descriptive statistics rather than explore behavioral hypotheses through statistical tests.

We define a family firm as one where more than half the equity is owned by individuals related by blood or marriage up to the fourth degree of kinship. Our sample has about 86,000 family firms and nonfamily firms per year. Many private firms are organized in corporate groups with parents and subsidiaries. We report a firm separately if it has no parent, while reporting one observation for a corporate group by consolidating its activities.

We find that family firms in the aggregate account for 66% of all firms, 33% of the employment, 22% of the sales, and 13% of the assets during the sample period. The macro-economic significance of family firms relative to that of nonfamily firms increases over time.

Family firms have very concentrated ownership regardless of firm size, and most firms have owners from the family, only. Counting the controlling family as one owner, the largest owner holds 93% of the equity in family firms and 50% in nonfamily firms. The family dominance at the shareholder meeting carries over to both the boardroom and the CEO position. For instance, the family holds every board seat in 76% of the firms and holds both the CEO and chair positions in 72%. The family firm's board is unusually small and stable over time. Compared to nonfamily firms, family firms have directors and CEOs who are older and also more often females.

Family firms tend to be smaller than nonfamily firms are. The median family firm is about 60% the size of the median nonfamily firm, employs 3 people, and sells for NOK 3.7 mill as measured in 2015 purchasing power. Like nonfamily firms, most family firms are small, but hundreds of them are unusually large. This skewness towards small size on the one hand and a long, thin right tail on the other reflects our finding that the size distribution of family firms is lognormal.

Family firms grow less than nonfamily firms do, and the growth is independent of firm size. Family firms are also more labor intensive, primarily because they are smaller. Small family firms (which we define as firms with sales below NOK 5 mill. and less than five employees) have more liquid assets, and their asset liquidity increases steadily over time. Small family firms are also younger and riskier than are other family firms.

The financing of family firms and nonfamily firms does not differ much on average over the sample period, but family firms finance themselves increasingly more with equity than nonfamily firms do. Family firms pay dividends slightly more often and pay more when paying. Dividends from both family firms and nonfamily firms drop sharply and permanently after a

dividend tax increase for individuals in the middle of the sample period. This regulatory shock may partially explain both the reduced payout and the increasing use of equity financing in family firms over time.

Family firms are more profitable than nonfamily firms are. This is true for family firms vs. nonfamily firms as a whole, across firms with different size, across firms with and without minority owners, and across most industries. There are also major profitability differences across different types of family firms. An important challenge for future research is to uncover where the excess performance of family firms comes from.

Table of contents

1. Introduction

We provide background and motivation for our study in Section 1.1, outline the structure of the report in Section 1.2, and summarize the chapter in Section 1.3.

1.1. Motivation

Existing research on corporate governance (Hermalin and Weisbach, 2017) and corporate finance (Eckbo, 2007) is heavily biased towards firms that are public (listed on a stock exchange and widely held) rather than private (not listed and closely held). Because almost every family firm is private, the lack of research on private firms carries over to family firms. Our study contributes to filling this gap by analyzing a wide range of corporate governance and finance characteristics in all Norwegian family firms during the period 2000–2015. We define a family firm as one that is majority-owned by individuals related by blood or marriage.

Family firms are special because the controlling owner is a group of people who are more tightly related sociologically than are most other controlling owners. The firm's behavior may reflect the joint maximization of family goals and business goals, which may make characteristics of the owner unusually important for the firm (Bennedsen, Perez-Gonzalez, and Wolfenzon, 2010). Such owner characteristics may be the family's history as owners of the firm, the number, age, and talent of current family members, the presence of the founder in the firm's governance, the distribution of ownership within the family, and the size, illiquidity, and concentration of the family's wealth. We analyze how owner characteristics may materialize in firm behavior by comparing family firms to nonfamily firms regarding their behavior as economic entities.

There are at least three reasons why financial economists have paid limited attention to private firms in general and to family firms in particular. First, public firms may look more attractive to analyze because the quality of the firms' behavior may be measured by the observable market value and not just by the book (accounting) value, which is normally the only option in private firms. Thus, performance is harder to measure when the firm is private.

Second, information about public firms is more easily available because regulation puts stronger requirements on information production. Public firms must publish standardized, audited accounting statements to the general public, and data vendors make this information easily accessible to investors, analysts, and researchers worldwide. In contrast, reliable accounting data for private firms are much harder to obtain in most countries. Correspondingly, while data on the governance of public firms are easily accessible, no broad database exists for the governance of private firms, such as their ownership structure and board composition. And even if governance data were available, family firms cannot be identified and analyzed reliably without knowing the relationship by kinship or marriage between owners, directors, and CEOs. Such data are normally only obtainable for smaller samples because the family relationships must be collected by hand from sources that are not computer-readable.

Third, economists studying organizational forms tend to consider the family firm an outlier and an anachronism (Bennedsen, Perez-Gonzalez, and Wolfenzon, 2010). This may partly be because corporate governance researchers have mainly studied the widely held firm and the resulting separation between strong managers and weak owners (Berle and Means, 1932; Roe, 1994; Hermalin and Weisbach, 2017). The reason may be lacking recognition of the fact that family firms continue to play a strong economic role around the world (Franks, Mayer, and Rossi, 2009; Mehrotra et al., 2013). This prevalence of the family firm, despite lower frictions in capital and labor markets, may jointly refute the idea that the family firm is a viable

organizational form only in underdeveloped markets (Khanna and Yafeh, 2007). Moreover, most governance researchers may simply have overlooked the family firm because the ruling paradigm concerns the widely held firm and the resulting separation between weak owners and strong managers (Berle and Means, 1932; Roe, 1994; Hermalin and Weisbach, 2017).

The limited insight into the economics of family firms is problematic because these firms are important. Using Norwegian population data over sixteen years, we show that the family firm is consistently the most common organizational form in the economy and makes a large contribution to aggregate activity. Judging from more limited samples in other countries, this is also the situation internationally (Amit and Villalonga, 2014). Therefore, one needs to understand the family firm in order to understand the most common firm in the economy.

Unfortunately, existing findings for widely held firms may not apply to family firms. We will show repeatedly in our sample that family firm status correlates with the firm's environment and its governance. For instance, family firms are almost always private and cannot finance themselves in an active equity market. This means their shares can only be traded at high transaction costs, and that their minority shareholders are less protected by regulation than if the firm were public. Family firms have much more concentrated ownership than most nonfamily firms have, higher insider ownership, smaller boards, and more often have their owners in CEO and chair positions. Theory suggests that such characteristics matter for the firm's behavior, such as its decisions about investments, labor intensity, capital structure, dividend policy, growth, and risk management. This behavior may matter for the family firm's economic performance, such as the return on capital invested. The literature has just started addressing these questions except for the very small subsample of public family firms, which may be fundamentally different from their private counterparts.

1.2. Outline

To improve the situation described in Section 1.1, we build a comprehensive database on governance and finance characteristics for the population of firms with limited liability. We use this database to describe these characteristics in detail, highlighting the difference between family firms and nonfamily firms as well as the difference between subgroups of family firms, such as small vs. large firms. Moreover, we analyze whether being a family firm matters for how governance and finance interact with performance.

Chapter 2 presents main components of the existing theory and evidence. We summarize important regulatory restrictions on corporate governance and on financial reporting in Chapter 3, while we describe the database in Chapter 4, where we also explain how we account for the individual firms within a group of firms that are majority-controlled by one owner.

Chapter 5 measures the macro-economic role of family firms and how the prevalence of family firms varies across industries and years. In Chapter 6 on corporate governance we first analyze the ownership structure, paying the attention to ownership concentration and insider ownership. Because our database includes all firms in the economy, we can describe the ownership structure of any firm by ultimate (i.e., direct + indirect) ownership. Accounting for indirect ownership is important because the use of holding companies to own operating companies more than tripled after a dividend tax reform in 2006 that discouraged the use personal ownership (Berzins, Bøhren, and Stacescu, 2018a).

We describe board composition by a series of characteristics that distinguish one board from another, such as board size, CEO-chair duality, the directors' ownership, their age, and the gender mix.

Chapter 7 provides an overview of corporate finance characteristics, reporting summary statistics for the main variables, which are size, growth, asset structure, capital structure, dividend policy, and profitability. We analyze the shape of the distributions for some of these characteristics, such as the distributional form for firm size in the economy. We relate some characteristics to each other, such as the firm's size and growth. Finally, we show how the firm's performance interacts with its governance and finance. We pay particular attention to how performance relates to family firm status. Chapter 8 provides an overall summary.

We illustrate our results in Chapters 4–7 using simple graphs, while we report 12 comprehensive tables at the end of the report for readers who want more details. Moreover, the Appendix contains a series of graphs not used in the text, but that may still be useful.

1.3. Summary

Existing research on corporate governance and finance has largely ignored family firms, despite the fact that they are the most common organizational form in the economy and make a large contribution to aggregate activity. The reasons for this lack of attention may be that almost all family firms are private rather than public, that data about family relationships are particularly difficult to collect, and that economists may consider the closely held family firm an anachronism compared to the widely held public firm. The contribution of our study is to use a proprietary database to analyze a wide range of governance and finance characteristics in all Norwegian family firms from 2000 to 2015. We define a family firm as a firm that is majority-owned by individuals related by blood or marriage.

Family firms are special because the controlling owners are tightly related sociologically. This means the firm's behavior may depend on family characteristics like the number, age, talent, and wealth of the family members. We analyze how owner characteristics may influence firm behavior by comparing family firms to nonfamily firms regarding their governance and finance. Our main finding is that the behavior and performance of family firms does indeed differ from what we observe in comparable nonfamily firms.

Chapter 2 sets the stage by presenting main elements of the existing theory and evidence, while Chapter 3 summarizes the regulation of corporate governance and financial reporting. Chapter 4 describes the database, which is more extensive than what has been available for family firm research in the past. Norwegian law is special by mandating every limited liability firm to publish standardized accounting statements. The firm must also publish the identity of its CEO and directors as well as every owner's equity holding. Moreover, we use census data on family relationships between all CEOs, directors, and owners. The database has 16 years of individual firm data on corporate governance, family relationships, and corporate finance. The sample we use has about 57,000 family firms and 29,000 nonfamily firms on average per year.

Chapter 5 documents the macro-economic role of family firms, while Chapter 6 on corporate governance analyzes ownership structure and board composition. We describe ownership structure by both direct and ultimate ownership. Board composition involves characteristics like board size, CEO-chair duality, director ownership, director age, and gender.

In Chapter 7 we analyze corporate finance characteristics, such as asset structure, capital structure, and dividends. Finally, we study how corporate finance and governance interact with performance, paying particular attention to whether family firm status matters for performance.

Every chapter is concluded by a short summary, and Chapter 8 recaptures the major points from all preceding chapters.

2. Theory and evidence

This chapter summarizes important theory and empirics on family firms. We start in Section 2.1 by defining a family firm, discussing why family firms are special in Section 2.2. The theory and empirics on the governance of family firms is presented in Section 2.3, while we address their finance decisions in Section 2.4. We summarize in Section 2.5.

2.1. Defining the family firm

There is no common definition of a family firm in the literature. In fact, more than 90 definitions exist (European Commission, 2009), making it difficult to compare findings across empirical studies. This problem also applies to the main economic relationship analyzed in the family firm literature, which is how the firm's performance depends on the family's involvement in the firm's governance (Bennedsen, Pérez-González, and Wolfenson, 2010; O'Boyle, Pollack, and Rutherford, 2012; Amit and Villalonga, 2014). To illustrate, Villalonga and Amit (2006) find that the relationship between performance and family firm status is positive, negative, or insignificant, depending on how a family firm is defined.

2.1.1. Our definition

We define a family firm as a firm that is majority-owned by individuals related by blood or marriage. This definition reflects both governance and sociology, which are the two dimensions that jointly produce the unique properties of a family firm. We outline these properties in Section 2.2.

Regarding the governance dimension of our family firm definition, control of the firm's decision-making is the fundamental right (Tirole, 2001). Because the shareholders elect the board, which hires and fires the CEO, owners with a majority stake at the shareholder meeting can control every formal governance position without other shareholders' consent. Therefore, our definition requires that a group of owners holds more than half the voting rights. These controlling owners can single-handedly choose their participation intensity in the firm's governance, such as whether to be on the board, be the chair, or be the CEO.

Regarding the sociology dimension, we consider only firms where the group of controlling owners consists of individuals who are a particularly coherent entity. We require that the group is tied together by blood or marriage up to the fourth degree of kinship. This means the family also includes members like great-great-grandparents, great-aunts and great-uncles, aunts and uncles, cousins, grand-nieces, and grand-nephews.[1]

2.1.2. Other definitions

We prefer our definition using majority control and sociological coherence to definitions in the literature that use either lower control thresholds than 50%, looser sociological criteria than blood or marriage, or governance positions held rather than ownership. For instance, a family firm in Maury (2006) is one where the largest owner has at least 10% of the equity and is either a true family, all personal shareholders as a group regardless of the relationship between them, or a private firm. This definition classifies too many firms as family firms from both a control perspective and a sociology perspective.

[1] https://sdsos.gov/elections-voting/assets/Kinship%20Chart.pdf).

Other definitions reflect only whether the family holds governance positions, regardless of whether the family is an owner (Anderson and Reeb, 2003; Villalonga and Amit, 2006; Bennedsen et al., 2007). Thus, such definitions ignore ownership altogether, using instead participation in governance as the only criterion.

We think the important property of a family firm definition is that it reflects the family's option to take governance positions, not whether this option has actually been exercised. Hence, what matters is majority ownership, which produces the option to govern. This option will presumably be exercised whenever the family finds it optimal. A firm that is majority-owned by a family that holds neither a board seat nor the CEO position will not be a family firm under a definition that uses only governance positions. Conversely, a firm where the family owns nothing, but holds a board seat, will be classified as a family firm by such a definition. In contrast, our definition classifies the first firm as a family firm regardless of the family's participation in governance, but not the latter, despite the family's participation. What matters is the right to participate, not actual participation. That right is produced by ownership.

Finally, definitions using governance positions rather than ownership are useless when studying why some controlling families participate more in governance than others (Bøhren et al., 2018). The reason is that a participation-based definition of the family firm depends on the family's choice of participation, which is the very decision the researcher wants to explain. Definitions using the option to participate rather than actual participation avoids this problem.

2.2. Why are family firms special?

Our definition of a family firm from Section 2.1 implies that such firms have concentrated ownership in general and a controlling shareholder in particular. More importantly, the definition implies that the controlling shareholder is a group of people who are knit together by deeper and wider relationships than just a shared interest in maximizing the market value of the firm. This is normally not the case in other firms with concentrated ownership, such as firms controlled by a group of institutional investors or the state.

The fact that the controlling owners are family members who own together is the reason why the behavior of family firms may be special. This situation suggests that, besides characteristics of the firm, characteristics of the owner are unusually important for how the firm behaves. That is, the governance of the firm depends on the governance of the family controlling the firm (Bennedsen, Pérez-González, and Wolfenson, 2010). We next discuss three family characteristics that we call family demographics, information advantages, and private benefits, respectively.

2.2.1. The family demographics

Family demographics that may matter for the firm's behavior are characteristics like the number of family members, their age, talent, the presence of the founder, the ratio of owning to non-owning family members, the family's wealth and income, the liquidity of the wealth, and the risk of the wealth. For instance, larger families with several trained members may more easily fill governance position with qualified candidates, families with illiquid wealth may make the firm pay high dividends and reduce investments, and families with undiversified wealth may make the firm diversify in the product market to reduce the risk of the family's overall portfolio. Accordingly, understanding why family firms are special may require an understanding of family demographics.

Data on family demographics are potentially very useful not just for family firm research, but for corporate governance research in general (Bennedsen, Pérez-González, and Wolfenson, 2010). Making a causal explanation (i.e., explaining what influences what) of a firm's performance by its governance is difficult in all firms because causation may run both ways: Governance may not just cause performance, but may also be caused by it. Moreover, variables that are omitted from the analysis may cause both governance and performance. Thus, as usual in the social sciences, it is much easier to show correlation than causation. This endogeneity problem may be reduced if there are exogenous owner characteristics that influence governance directly, while they influence performance only indirectly through governance.

Such exogenous characteristics are called instruments, and family demographics may play this role. For instance, family size may matter for the family's participation in governance, but not for the firm's performance except indirectly through the family's participation. That is, performance may be high not because the family is large, but because larger families have higher capacity to govern the firm. This means we can explain performance by the predicted participation due to family size (the instrument, i.e., an exogenous explanatory variable) rather than by the actual participation (the endogenous explanatory variable), which may depend not just on family size, but also on the firm's performance due to reverse causation (Bøhren et al., 2018).

For these reasons, demographic data about the controlling family may make important contributions to governance research in general by reducing the endogeneity problem in governance-performance tests. Unfortunately, such data are always difficult to obtain, if not impossible. Therefore, the literature has barely addressed the relationship between family demographics and family firm performance (Perez-Gonzalez, 2006, Bennedsen et al., 2007).

2.2.2. The family's information advantages

Compared to other controlling shareholders, family members know each other particularly well after having interacted more or less intensively all their lives. The information asymmetry between the firm's owners is smaller than in other firms, making it easier for the family to find its best representatives as officers and directors.

The family is also often close to the family firm's operations. For instance, the family holds both the chair and CEO positions in 79% of Norwegian family firms (Bøhren et al., 2018). This means the family is unusually well informed about the firm's prospects. Compared to other controlling owners, this situation makes family owners less exposed to asymmetric information problems between the firm and its owners. This is an important advantage, as reduced information asymmetry between the firm and its financiers reduces the cost of capital (Leland and Pyle, 1977; Anderson, Mansi, and Reeb, 2003).

2.2.3. The family's private benefits

The third family characteristic that may influence the firm's behavior is private benefits for the controlling family (Jensen and Meckling, 1976). Examples are when a firm with the controlling family's name has high reputation in the public (social prestige), when a family-controlled newspaper influences the common opinion (political impact), when the firm hires family members with lower skills than outside candidates have (nepotism), and when family members buys from the firm at below-market prices (tunneling).

These examples also illustrate that private benefits may or may not be costly for minority owners. The first two examples may not produce negative consequences for them, while the

third and fourth do. Thus, private benefits increase the family's utility of controlling the firm, while the effect on minority owners is neutral or negative.

Private benefits may influence the firm's behavior. A feeling of pride for the family firm's name and loyalty to the founders may make firm survival particularly important to the controlling family. For this reason, the family firm may be more long-termist and patient than other firms in its investment, financing, and employment decisions (Sraer and Thesmar, 2007). The particular concern for survival may also make the family firm adopt less aggressive growth strategies and choose industries and products with less risk than what firms controlled by nonfamily owners would have done (Almeida and Wolfenson, 2006).

2.3. The governance of family firms

Agency costs are driven by agency problems, which are due to conflicts of interest between the firm's stakeholders (Jensen and Meckling, 1976). Our family firm setting makes it useful to decompose the overall agency problem into the first and the second agency problem, respectively (Villalonga and Amit, 2006). The first agency problem concerns conflicts of interest between the firm's owners and managers. The second agency problem concerns conflicts of interest between owners with unequal power, such as the majority owner vs. the minority owners. These two agency problems are also called the vertical and the horizontal agency problem, respectively (Roe, 1994).

2.3.1. The two agency problems

The first agency problem is more serious than the second when ownership is diffuse. Because diffuse ownership implies low power for owners relative to managers, the monitoring problem between owners and managers is major. Because all owners are generally small, however, the conflict between large and small owners is minor. This situation is common in public firms, but cannot happen in family firms regardless of listing status.

The second agency problem dominates the first when ownership is concentrated, like in family firms (La Porta et al., 2000, Faccio et al., 2001; Villalonga and Amit, 2006): Because the large owners are powerful, owners are less at the mercy of managers, making the first agency problem minor. Because the large owners may more easily make decisions that benefit themselves at the small owners' expense, the second agency problem may be major.

Corporate governance mechanisms are tools for reducing agency costs, i.e., for minimizing the value destruction caused by the first and the second agency problem. We classify these mechanisms as ownership structure (2.3.2), board composition (2.3.3), and financial policy (2.3.4). The effect of these three mechanisms on performance depends on issues we classify as endogeneity and optimality (2.3.5), and competition (2.3.6), respectively. In each section we outline the theoretical idea and summarize empirical findings, highlighting the relationship between the firm's performance and the governance mechanism in question. Much more comprehensive expositions are available in the surveys of Shleifer and Vishny (1997), Becht et al. (2003), Bennedsen, Pérez-González, and Wolfenzon (2010), and Amit and Villalonga (2014). The two latter surveys deal exclusively with family firms.

2.3.2. Ownership structure

We discuss two ownership dimensions and relate them to the firm's performance. These two dimensions are particularly important for family firms, and we call them ownership concentration and owner type, respectively (Edmans and Holderness, 2017).[2] The most important owner types in a family firm setting are inside and outside owners. Inside owners are the firm's directors and officers, while outside owners are the other owners. Because the relationship between ownership concentration and performance may depend on owner type (i.e., which type the large owner is), ownership concentration and owner type are not independent in a performance setting.

The primary governance role of outside owners is to monitor management from a distance, including the use of hands-off strategies like voting with their feet. In contrast, inside owners reduce the need for monitoring by being directly involved with strategic decision-making in the board room and with the firm's daily operations. Compared to outside ownership, inside ownership addresses the first agency problem more directly and comprehensively by reducing the source of the problem, which is the separation between ownership and daily control. This means the ownership incentives for officers and directors replace the need for monitoring by outside owners. This convergence-of-interest idea predicts that insider ownership and performance are positively related because insider ownership reduces the first agency problem.

The downside of insider ownership is that powerful inside owners may entrench themselves and expropriate outside owners, thereby increasing the second agency problem. However, this second agency problem is smaller the more the controlling stake exceeds the minimum of 50%. For instance, a family owning 51% pays only 51% of the loss they cause the firm that underprices goods to the family. The remaining 49% must be paid by the minority. In contrast, a family owning 99% pays 99% of the loss, while the minority pays only 1%.

By definition, family firms are controlled by a family through ownership. Also, the controlling family is often involved as inside owners. This means the owners are good owners relative to the first agency problem. The second agency problem works against family owners, however, as they are not just large, but may also be an unusually coherent and internally loyal group sociologically. These properties, which we discussed in Section 2.2, may make it particularly difficult for small owners to protect their rights. Accordingly, the second agency problem is potentially serious unless the firm is almost fully owned by the family.

An important empirical paper in this literature is Villalonga and Amit (2006), who show in their sample of very large public family firms in the United States that family firms on average outperform nonfamily firms. However, this is not the case across all types of family firms, as the superior market value depends critically on the family's role in governance. First, family history matters, as superior performance for family firms is only found in the first generation of owners. Compared to similar nonfamily firms, family firms in the second generation are underperforming, whereas family firms in the third and later generations are like other firms. Second, the founder is critical even in the first generation, as abnormal value creation only happens when the founder is either the CEO or the chairperson monitoring a professional CEO. The equity of first generation family firms with active founders is typically worth 25% extra, while family ownership without active family participation in board or management produces no excess value, even in the first generation. Third, mechanisms that separate ownership from control, such as pyramids and dual class shares, destroy market value.

[2] The governance literature has mostly ignored ownership duration, where the issue is whether the holding period of influential owners matters for the firm's performance (Bøhren, Priestley and Ødegaard, 2008). We will ignore duration except by referring to the popular opinion that controlling shareholders in family firms hold their shares longer than other owner types.

This evidence suggests that the market value, which reflects the security benefits accruing to all shareholders, is not higher in family firms than in other firms unless the family provides certain combinations of ownership, monitoring, and management. The market value is enhanced if the family has low incentives to exploit other owners, if the family takes positions as officers and directors, and, most importantly, if the founder is actively involved. These findings support the idea that firms are more efficiently run when the first agency problem is small, and that the second agency problem is less serious when powerful shareholders do not capture a high portion of the value creation through private benefits.

The studies of private firms, which cannot measure performance by market value, mostly use book returns on assets (ROA). Like for public firms, the evidence is mixed. For instance, O'Boyle, Pollack, and Rutherford (2012) analyze 32 performance studies of private family firms across many countries and time periods, concluding that the results are ambiguous.

Overall, the empirical literature on the relationship between family ownership and performance lacks a clean conclusion. This is true both for private and public family firms and across different countries (Miller et al., 2007; O'Boyle, Pollack, and Rutherford, 2012; Amit and Villalonga, 2014). The estimated relationship is sometimes positive, sometimes negative, and sometimes insignificant. One reason for the inconsistent evidence is the use of different family firm definitions across the studies. Another reason we will discuss in Section 2.3.5 is that most empirical tests in this literature ignore the possibility that governance is endogenous rather than exogenous relative to performance. If this possibility is not captured by the empirical methodology, the measured relationship between family ownership and performance will be biased and therefore misleading.

2.3.3. Board composition

The board structure may matter for performance by influencing the alignment of interest between principals and agents, the production of information for the directors' monitoring and advice functions, and for the board's effectiveness as a decision-maker (Adams, Hermalin, and Weisbach, 2010).

Regarding interest alignment, having owners on the board concerns insider ownership, which we discussed in Section 2.3.2. Alignment may also depend on director independence, the argument being that independent directors may be better monitors, but weaker advisors. Regarding information production, directors with multiple directorships may provide valuable information networks to other firms, but may also become too busy. Finally, decision-making effectiveness concerns the costs and benefits of a heterogeneous board. Increased diversity may for instance be obtained by increased board size, gender balance, and age differences. The possible cost of more diversity is less focus, higher conflict, and longer decision-time.

The empirical state of the art may be illustrated by a study of the boards in Norwegian public firms (Bøhren and Strøm, 2010). The evidence suggests that good boards are small and have members with high ownership stakes, wide networks, and a homogenous background. We do not know whether such findings can be carried over to family firms, which are very heavily dominated by the controlling family. For instance, we will show in Chapter 5 that the controlling family holds the chair in 91% of Norwegian family firms.

2.3.4. Financial policy

The firm's financing and dividend decisions can be used to limit management's discretion over free cash flow, which is the liquid assets available after all value-creating projects have been

financed. Projects may be financed with debt rather than equity, and earnings may be paid out as dividends or used to repurchase shares rather than retained in the firm (Easterbrook, 1984; Jensen,1986). Thus, owners may reduce agency costs through high leverage and high payout.

The optimal use of financial policy as a disciplining mechanism may depend on the ownership structure in general and on the owner type in particular. Regarding the first agency problem, financial policy is particularly useful for outside owners, who may be unable to monitor management closely. Inside owners are different, as they can exert control in the board room rather than just block management's access to resources by forcing cash flow out of the firm as dividends or debt repayment (Khan et al., 2006). Regarding the second agency problem, inside owners can reduce it by choosing high payout. This policy reduces the threat to outside owners that corporate resources will be used for the benefit of insider owners, only.

Existing empirical research tends to treat financial policy as control variables that reflect determinants of performance that are independent of governance, such as the interest tax shield of debt. An early exception in the analysis of public firms is Agrawal and Knoeber (1996), who model the debt to equity ratio as one of seven governance mechanisms. They find no clear evidence that financial policy is used as a disciplining mechanism along the lines suggested by corporate governance theory. In contrast, Berzins, Bøhren, and Stacescu (2018) find that dividend policy is used by majority owners to reduce the second agency problem. For instance, the average payout is 50% higher if the majority owner's equity stake is 55% (high conflict potential with the minority) rather than 95% (low conflict potential). Such minority-friendly payout is also associated with higher subsequent minority investment. These results suggest that controlling owners voluntarily use dividends to reduce the second agency problem and build trust, rather than opportunistically preferring private benefits to dividends.

2.3.5. Endogeneity and optimality

We have so far described three main corporate governance mechanisms (ownership, board composition, and financial policy) and how they may matter for performance. This perspective raises two questions for empirical tests, where governance mechanisms are used to explain performance, and where the findings are very mixed. The first question is whether governance mechanisms are endogenous or exogenous, both relative to each other and to performance. The second is how optimal governance can be detected in the data. The answers are important for how empirical tests should be conducted and for how the results should be interpreted.

Governance mechanisms are endogenous relative to each other when they are substitutes or complements. For instance, high dividends may be less important when insider ownership is high (i.e., dividends and insider ownership are substitutes), such as in family firms. Board diversity may be easier to obtain when the board is large (i.e., board diversity and board size are complements), such as in public firms. Internally related governance mechanisms create multicollinearity, which brings noise to the tests by making them too seldom detect significant relationships that do exist in the data (Greene, 2017). Thus, one should ensure that failure to reject the null hypothesis is not due to internally endogenous governance mechanisms.

Governance mechanisms are also endogenous when causation runs from performance to governance rather than just the other way. Such reverse causation may for instance occur when industries with high performance attract family ownership, as opposed to when family ownership makes the firm perform well.

Finally, we make governance mechanisms endogenous in the empirical analysis if we ignore explanatory variables that influence both governance and performance. For instance, we may regress performance on the equity held by the controlling family, but exclude the family's

wealth. This omitted wealth may influence both the family's ability to own equity and the family's choice of growth and hence the firm's performance. In both cases (reverse causation and omitted variables, respectively), the empirical model is misspecified, making the estimates biased (Greene, 2017). One way to reduce this problem is to use instrumental variables. As we discussed in Section 2.2.1, a promising area of family firm research is to use family demographics as instruments to identify the relationship between governance and performance.

Turning to how optimal governance can be detected in the data, Demsetz (1983) argues that if the governance mechanisms are optimally installed, every mechanism satisfies the zero marginal value condition. This means small changes in any mechanism leaves firm value practically unaltered. Moreover, the set of optimal governance mechanisms may vary from firm to firm, depending on governance-exogenous characteristics like firm size. Thus, the equilibrium condition implies that no governance mechanism relates significantly to performance in a cross-sectional regression of performance on governance. Conversely, significant relationships reflect disequilibrium and a potential for value-improving governance.

The equilibrium hypothesis assumes every governance mechanism can be chosen freely, which is not the case in practice. For instance, any Norwegian firm with more than 200 employees must have one third of its directors chosen by and from the employees, no investor can hold more than 20% of a bank's equity without special permission from the government, and every firm of the ASA type (which includes all public firms) must have at least 40% of each gender among its directors. Because regulation may force governance mechanisms away from their free optimum, the equilibrium hypothesis cannot be used to argue that the expected coefficient is zero in regressions of performance on governance.

2.3.6. Competition

The governance mechanisms considered so far are specific to the investor, such as owner type, or specific to the firm, such as dividend policy. However, these mechanisms and their relationship to performance may also be driven by characteristics of the firm's environment. Competition seems to be such a characteristic.[3]

Competition in the firm's product, labor, and takeover market may act as a substitute for the governance mechanisms. Tougher competition moves product prices closer to marginal production costs in the most efficient firm, making it harder for any firm to survive. Conversely, monopoly power enables inefficient firms to persist. Thus, regardless of the firm's governance, competition disciplines management towards making value-maximizing decisions. This discipline means the firm's governance will only matter for managerial effort when competition is soft. Thus, the competition argument predicts that the relationship between corporate governance and performance is weaker the stronger the competition.

The empirical findings support this idea. For instance, Palmer (1973) finds that the relationship between ownership structure and performance in manufacturing firms in the United States is stronger the higher the firm's market power. Giroud and Mueller (2010) study what happens to the performance of firms in the United States when takeover threats are reduced through new antitakeover provisions at the state level. They find that in industries with strong product market competition, neither the firm's market value nor operating performance changes as the takeover threat falls. In contrast, firms in non-competitive industries experience

[3] La Porta et al. (2000) initiated a new research tradition in governance by arguing theoretically and showing empirically that the ownership concentration in a country depends on how well the legal regime protects owners in general and minority owners in particular. Because we analyze governance differences between firms within one country, however, legal regime per se plays no role in our study.

both abnormally low stock returns at the announcement of the new law and reduced operating performance once the law is in effect.

These findings suggest that the significant relationship between governance and performance found in the literature may be driven by firms in non-competitive industries. Giroud and Mueller conclude that tests of the governance-performance relationship should include competition as a control variable. Along these lines, a study of Norwegian banks finds that the stronger the local competition between shareholder-owned banks and ownerless banks, the smaller the performance difference between the two organizational forms (Bøhren and Josefsen, 2013). Again, this result supports the idea that competition is a powerful external governance mechanism, and that this effect may dominate the effect of the internal governance mechanisms on performance. Similar evidence is reported by Giroud (2011).

2.4. The finance of family firms

The literature on corporate finance is comprehensive and often only tangential to our study. Therefore, we limit ourselves to issues that are particularly relevant for family firms. We ignore corporate finance issues already discussed in Section 2.3, which are the performance of family firms and the governance reasons for choosing a certain capital structure and dividend policy. Because almost all family firms are private, we start by discussing how the restricted equity market of the private firm sets the stage for the firm's behavior.

2.4.1. The private firm

This literature compares public (listed) and private (nonlisted) firms. The theoretical literature argues that public firms offer their owners better share liquidity, better diversification, and better risk-sharing (Pagano, 1993; Admati, Pfeiderer and Zechner, 1994). On the other hand, agency theory argues that because most public firms have less concentrated ownership than private firms have, the liquidity and risk benefits of public firms may be offset by the cost of weaker monitoring incentives for the owners (Coffee, 1991; Bhide, 1993). However, high ownership concentration may produce excessive monitoring, as tight monitoring reduces the manager's incentive to exert effort (Burkart, Gromb and Panunzi, 1997; Maug, 1998).

Boot, Gopalan and Thakor (2008) use these ideas to show theoretically that share liquidity is a two-edged sword. The benefit is the reduced cost of capital due to the owners' ability to trade liquid shares at low transaction costs. The cost is that the share liquidity allows the ownership structure to shift more easily. The resulting uncertainty about future ownership exposes management to more unpredictable owner intervention and a less tailor-made employment contract. This potential mismatch between principal and agent reduces managers' incentives to exert effort, which lowers the value of the public firm.

The existing empirical studies do not relate directly to these theories on listing status. Analyzing the announcement return to bidders in acquisitions across 17 Western European countries, Faccio, McConnell and Stolin (2006) distinguish between transactions involving public targets and private targets. They find no excess bidder returns when the target is public, but a significantly positive excess return of 1.48% when the target is private. Similar differences in bidder returns have been documented in acquisitions in the United States (Moeller, Schlingemann and Stulz, 2004). This evidence suggests that for the subsample of private firms that are acquired by a public firm, there is a positive net benefit for the owners of being public rather than private.

2.4.2. Risk

The controlling family has normally invested a large fraction of its wealth in the firm. Family members may also work for the firm in governance roles and as employees (Bøhren et al., 2018). This situation makes both the family's financial wealth and human capital undiversified, exposing the family to more risk than if the investments and the employment were less concentrated. Moreover, as we discussed in Section 2.2.3, private benefits may make survival of the family firm particularly important for the controlling family.

This setting of concentrated wealth, concentrated human capital, and concern for firm survival suggests that family firms will take less risk than nonfamily firms. We will describe in the following how this risk aversion may materialize in the family firm's decision-making.

2.4.3. Asset structure

The controlling family's concern for risk may influence the family firm's asset structure (i.e., the composition of the assets) in several ways. First, because different industries have different risk, family control may be more common in industries with low risk than in industries with high risk. Thus, there may be an inverse relationship between the prevalence of family firms in an industry and the industry's risk.

Second, while other owners can diversity their wealth in the capital market by holding moderate equity stakes in many firms, the controlling family has decided to not follow this strategy. Instead, the undiversified family with concentrated equity investment may make the firm diversify in the product market on the family's behalf. That is, the family firm may establish a broad product portfolio rather than specialize in a narrow range of products. Provided the family firm's products are not equally exposed to the same risk factors, the cash flows of the products will not move in tandem. The lower the correlation between the cash flows, the less risky the family firm's overall cash flow. Hence, family firms may be more prone than nonfamily firms to diversify by operating in several industries (Faccio, Marcia, and Mura, 2011).

Finally, a firm is less risky the higher the ratio of variable costs to fixed costs (Lev, 1974). This is true regardless of the firm's industry and product portfolio. Therefore, we would expect family firms to be more common in industries with high labor intensity (i.e., low capital intensity). This industry preference also follows from the argument we will make in Section 2.4.4 that family firms are more capital-constrained than other firms.

Summarizing, the controlling family's concern for risk may induce the family firm to settle in industries with relatively low risk, to operate in several industries rather than just one, and to choose a labor-intensive technology.

2.4.4. Capital structure

The capital structure reflects the firm's financing decisions in general and the mix of debt financing and equity financing in particular. Three concerns that seem particularly important for the family firm's capital structure are the value of family control, the restricted equity market for the firm's equity, and the family's exposure to risk, respectively.

As we argued in Section 2.2.3, the family's majority stake may generate benefits reaped only by the controlling family (private benefits). This means that in order to remain in control, the family is reluctant to issue equity that brings the family's stake below 50%. Therefore, more than other firms, the family firm may more often finance growth with new debt than new equity,

particularly when the controlling stake is close to 50%. This preference for control increases optimal leverage.

Almost all family firms are privately held, which means the market for their equity is thin (Section 2.4.1). Accordingly, raising new equity is costlier for family firms than for public firms. This cost difference may be negative for debt, possibly because the risk aversion and the long-term perspective of family firms will align the interests of owners and creditors (Lagaras and Tsoutsoura, 2015). Thus, the lack of an active equity market pushes the family firm towards financing with debt rather than equity.

Higher debt increases the risk of the equity (Modigliani and Miller, 1958). Because controlling owners of family firms have better reasons to limit their firm's risk than other owners have, family firms will have less debt than nonfamily firms.

Taken together, the value of control and the thin equity market both suggest that family firms will have more debt than nonfamily firms, while the risk argument suggests the opposite. The net effect of family control on capital structure depends on the relative importance of these concerns, which may vary from firm to firm, depending on family demographics and the firm's need for financing growth.

2.4.5. Dividends

Two characteristics of the family firm and its controlling owner suggest that dividends should be higher than in nonfamily firms. First, family firms are almost always private, making it costly for owners to sell their illiquid shares when dividends are insufficient to finance consumption (Miller and Modigliani, 1961).[4] Thus, the owners are better served with dividends. Second, selling the family's shares may mean loss of control.

The argument against dividends is the mirror image of the two arguments we just made for high payout: It is costly to raise new equity, and it may also mean loss of control unless the family participates pro rata in the new issue. Therefore, the equity financing of the family firm's growth should come from retained earnings rather than new equity. Because high dividends imply low retained earnings, dividend payments should be low.

Like for capital structure, we conclude that whether family firms pay higher or lower dividends than nonfamily firms depends on the circumstances. High costs of selling existing equity suggest dividends are high, while high costs of selling new equity suggest the opposite.

2.4.6. Growth

There are several reasons to expect that family firms have lower growth than nonfamily firms. Family firms may be more capital-constrained because their controlling owner has limited funds. Family firms may also be more reluctant to issue new equity to nonfamily investors because it may threaten the family's control. Finally, the family's concern for firm survival discourages aggressive growth strategies, which increase risk (Berk, Green, and Naik, 1999).

[4] In addition to financing consumption, dividends may also finance other liquidity needs, such as those created by the wealth tax payment in a Norwegian setting. Wealth tax payments do not seem to have a large effect on aggregate dividends in our sample. For instance, there are just small payout differences between family firms and firms controlled by foreigners not exposed to the wealth tax. We would need a more focused research design in order to understand such specific reasons why family firms pay dividends (Berzins, Bøhren, and Stacescu, 2018b)t.

2.4.7. Size

We have argued that compared to nonfamily firms, family firms make strategic decisions that produce less aggressive growth and lower risk. For these reasons, we expect family firms to be smaller than nonfamily firms.

2.5 Summary

We define a family firm as a firm that is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. This definition reflects both governance and sociology, which are the two properties that jointly produce the unique features of a family firm. There are about 90 different definitions of the family firm in the literature. Most of them use either lower control thresholds than 50%, looser sociological criteria than blood or marriage, or governance positions held by the family rather than their ownership.

Family firms are special because the controlling owner is a group of people who are more tightly related sociologically than are other controlling owners. This means characteristics of the owner may be unusually important for how the firm behaves. We call these characteristics family demographics, information advantages, and private benefits, respectively.

Family demographics that may matter for the family firm are characteristics like the number, age, and talent of family members, the presence of the founder, owning vs non-owning family members, and the size, liquidity, and risk of the family's wealth. Family demographics data may improve the quality of governance-performance tests, which struggle to identify causal relationships. Because family demographics data are difficult to obtain, however, the relationship between family demographics and firm performance is underexplored.

Compared to other controlling shareholders, family members have an information advantage because they know each other better. Therefore, the family may more easily find their best representatives in the firm's board and management team. The family is also unusually well informed about the firm's prospects, which reduces the cost of capital.

Private benefits for the controlling family may be reaped when the family name is used by a firm with high reputation, when a family-controlled newspaper has political impact, when the firm hires family members with lower skills than outside candidates have, and when family members transact with the firm at below-market prices. The private benefits make firm survival particularly important for the family, which may make the family firm more concerned with long-termism, moderate growth, and moderate risk.

Most firms face costly agency problems. What we call the first agency problem is due to conflicts of interest between owners and managers, while the second agency problem is due to conflicts between large and small owners. The first agency problem is small in family firms, while the second may be serious. Corporate governance mechanisms are tools for minimizing the value destruction caused by agency problems. Important governance mechanisms for family firms are ownership structure, board composition, and financial policy.

The empirical evidence on the relationship between family control and firm performance is unclear. One reason is that different studies use different definitions of a family firm. There are also three methodological challenges. First, governance mechanisms may be internally related, which will understate the statistical significance of a relationship. Second, the estimated relationship may be biased because governance may depend on performance, and because omitted variables influence both governance and performance. Third, if governance mechanisms can be chosen freely and are optimally installed, equilibrium implies that no

governance mechanism relates significantly to performance in a properly specified regression. Thus, governance may matter for performance, but this will not show up in the empirical tests.

The composition of the board may influence the alignment of interest between principals and agents, the production of information for monitoring and advice, and the board's effectiveness as a decision-maker. The evidence suggests that good boards are small and have members with high ownership stakes, wide networks, and a homogenous background. It is unclear whether such findings from public firms with diffuse ownership carry over to the typical board of family firms.

Finance characteristics that may differ between family firms and other firms are the size, growth, asset structure, capital structure, dividend policy. The importance of firm survival and the controlling family’s undiversified wealth and human capital may make family firms gravitate towards industries with low asset risk, to operate in several industries, and to choose labor-intensive technologies.

The value of control and the thin equity market facing almost every family firm suggest that family firms will have more debt than nonfamily firms. Because the risk argument suggests the opposite, the net effect of family control on capital structure is unclear. Correspondingly, the same circumstances determine whether family firms pay high or low dividends. High costs of selling existing equity suggest dividends are high, while high costs of selling new equity suggest the opposite. Concerns for the two agency problems strengthen the argument for high leverage and high payout, as this policy makes it harder to finance value-destroying projects.

Family firms may have lower growth than nonfamily firms have. The controlling owner has limited funds, may be reluctant to issue new equity outside the family, and is concerned with firm survival and moderate risk-taking. Due to this risk and growth strategy, we expect family firms to be smaller than nonfamily firms.

3. Institutional framework

This chapter summarizes major regulatory restrictions on the governance (Section 3.1) and the financial reporting (Section 3.2) of Norwegian firms with limited liability. Because almost all family firms in the Norwegian economy are private, we compare the institutional framework of public and private firms to show possible regulatory reasons why family firms are different.

3.1. The regulation of corporate governance

The legal tools for influencing a firm's governance system consist of the two corporate laws (*Aksjeloven* and *Allmenaksjeloven*), the securities law (*Børsloven*), the listing requirements of the Oslo Stock Exchange (*Børsforskriften)*, and the Corporate Governance Codes (*Norsk anbefaling for eierstyring og selskapsledelse*) issued by The Norwegian Corporate Governance Board (NUES).[5] This section describes this judicial regime from a corporate governance perspective. Our discussion of how public firms are regulated draws heavily on Berzins, Bøhren and Rydland (2008).

We start by clarifying the differences between the two alternative legal forms of a limited liability corporation. Subsequently, we discuss the role of the fiduciary duty, the regulation of the shareholder meeting, legal restrictions on board composition, mechanisms for separating cash flow rights from voting rights, regulatory protection of minority shareholders, and the reporting and disclosure system for share ownership. Whenever relevant, we highlight the regulatory difference between public and private firms.

3.1.1. The legal form

The corporate law from 1976 was modified by an amendment in 1996 stating that a limited liability firm can be an AS (*aksjeselskap*) or an ASA (*allmennaksjeselskap*).[6] An ASA must have a share capital of at least 1 million NOK. A public firm must be an ASA, whereas a private firm can always choose the AS legal form, where the minimum share capital is currently 0.03 million NOK. Further regulatory differences between these two legal forms will be clarified throughout this chapter. By year-end 2015, only 211 of the 263,186 Norwegian firms with limited liability were organized as an ASA (here we count firms individually and not as part of a group). 169 of ASA firms were listed.

3.1.2. The fiduciary duty

Unlike in the United States, but consistently with the more common stakeholder idea in Europe (Allen, Carletti and Marquez, 2009), there is no law, public regulation or consistent legal practice giving the board and the management team an explicit duty to maximize equity value. On the other hand, no regulation obliges the firm to prioritize other stakeholders than owners or to trade off conflicts of interest between stakeholders in specific ways, such as rules for handling disagreements between owners, creditors, and employees. Therefore, owners cannot rely on the courts to enforce equity value maximization. Nevertheless, the general disciplining pressure on managers towards equity value maximization has probably increased over our sample period, also in private family firms. This trend is due to a growing use of incentive

[5]Aksjeloven, Allmenaksjeloven, Børsloven, and Børsforskriften are available at www.lovdata.no. The Corporate Governance Codes can be downloaded at http://nues.no/.

[6] This amendment is referred to as law no. 80 of 1995 and was introduced to align Norwegian corporate law with EU law.

contracts written on earnings, shares, and options and also to the trend in Europe and Asia to challenge the stakeholder approach by the narrower shareholder approach to corporate governance. This tendency is evident worldwide in the corporate governance codes, which have currently been issued by more than 100 countries (http:/ecgi.global/content/codes).

Corporate governance codes make explicit recommendations on top of the mandatory rules set by the law. In particular, the codes make normative statements on issues like the structure of the shareholder meeting (general assembly), the board of directors, and the management team. Firms listed on the Oslo Stock Exchange (OSE) must publish a statement in their annual report specifying item by item whether or not the firm complies with the governance codes established by NUES. Non-compliers are expected to give a valid reason. This is called the principle of comply-or-explain. Like in other countries, the main stakeholder NUES code is the owner, and the recommendations mostly try to ensure that owners' interests are met.

There is no governance code for private firms. Therefore, almost no Norwegian family firm is exposed to an externally given governance code. Chapter 6 will show that the ownership structures of family firms and nonfamily firms are fundamentally different. This fact means the nature of the agency problem is also different in the two firm types. Hence, good governance systems in nonfamily firms may be bad in family firms and vice versa. Also, because the relationship between governance and performance is underexplored for private firms, the idea of making one-size-fits-all governance codes for private firms is premature.

3.1.3. The shareholder meeting

Any owner can put items on the agenda for the regular shareholder meeting (*generalforsamling*). Owners with at least 5% of the cash flow rights in an ASA and 10% in an AS can force an extraordinary shareholder meeting. Firms with less than 20 owners are not required to have the standard-form shareholder meeting specified in the corporate law. Instead, the board may send the issues to the owners, who vote by mail. Owners cannot vote by mail in other firms. Chapter 6 will show that most family firms have less than 20 owners. Accordingly, the option to have a nonstandard shareholder meeting and vote by mail is the rule rather than the exception in family firms.

Changes in the corporate charter (*vedtekter*) need a 2/3 supermajority, whereas most other issues need simple majority (1/2). Nonvoting shares are not powerless relative to voting shares regarding charter amendments. Although a supermajority of 2/3 of the voting shares is required, there must also be a 2/3 supermajority among all shareholders (i.e., voting and nonvoting as one group). According to this second requirement, nonvoting shares have full power.

Regardless of whether the threshold is 1/2 or 2/3, what matters is not the number of shares issued, but the number of shares present at the shareholder meeting, either physically or by proxy (*fullmakt*). Hence, if shareholder turnout is 40%, if takes only 20% rather than 50% of the firm's share capital to have simple majority.

3.1.4. The board

Firms with more than 200 employees must have a two-tiered board (supervisory board and regular board) unless a majority of the employees vote against it. Firms with 200 employees or less can also have a two-tiered board if owners and employees agree.[7] The supervisory board (*bedriftsforsamling*) elects the regular board (*styre*) and makes the final decision on significant

[7] The news, banking, and insurance industries are exempted from the two-tiered board regulations.

new investments and restructurings that reduce the number of employees. However, supervisory boards are very seldom used in practice. Less than 2% of the Norwegian firms eligible for a supervisory board in 2014 chose to have it (Hagen, 2016). Thus, the supervisory board is not important in the governance structure of large Norwegian family firms.

If the firm employs more than 200 employees, one third of the directors in both boards must be elected by and from the employees. The use of labor representation presupposes a majority vote among the employees if the firm employs between 200 and 31 people.[8] This lower bound and the flexibility above the lower bound means that many quite large firms have no employees on the board. Also, the fraction of employee directors will vary considerably in firms where employees are on the board. All votes in both boards are on a one-person-one-vote basis except when the charter assigns excess voting rights to the chair. Therefore, even though the law assigns formal voting rights to employees, the decisive power is still in the owners' hands, who never have less than 2/3 of the votes.

The CEO of an ASA cannot be on its board, while the CEO of an AS can, including holding the chair position. The board of all ASA firms must have at least 40% of each gender among its shareholder-elected directors. There is no gender quota for AS firms.

3.1.5. Cash flow rights and voting rights

One-share-one-vote is the basic principle in the corporate law. However, the law allows for two exceptions that enable the firm to separate ownership (cash flow) rights from control (voting) rights, provided the exceptions are stated in the corporate charter. First, an ASA can issue up to 50% of its shares as nonvoting, and there is no upper limit for an AS. Second, firms may write restrictions on the voting rights into the corporate charter.[9]

There is no general regulation on voting right restrictions (*stemmerettsbegrensning*). Shareholders may increase their power by shareholder agreements (*aksjonæravtale*) with each other, which are regulated only to a limited extent. If a public firm is aware of a shareholder agreement between its shareholders, it must file the agreement with the OSE. Because the parties themselves have no filing obligation, however, public information on shareholder agreements from the OSE is rather useless. Also, we lack reliable information about the use of shareholder agreements in family firms. However, the most common type of shareholder agreement in family firms is probably between the members of the controlling family. Because our analysis assumes the decision-making unit is the family rather than each family member, not observing shareholder agreements should not cause major problems in our setting.

Finally, a shareholder may transfer voting right to others by proxy votes (*fullmakt*). There are no restrictions on the use of proxy votes, but their existence can only be observed if they are actually used at the shareholder meeting.

Norway has no general regulation on how much a firm can invest in other firms.[10] To capture the effect of such intercorporate investments, all equity stakes in a firm must be traced

[8] Employees may elect up to one third of the directors and at least two directors if the firm employs between 51 and 200. They may also elect one director in firms with more than 30 and less than 51 employees.

[9] As pointed out in Section 3.1.3, nonvoting shares cannot vote on matters that require a simple majority, but enjoy full rights in one of the two voting rounds for charter amendments, which require a 2/3 supermajority. Examples of matters involving charter amendments are share issues, mergers, voting right restrictions, and changes in corporate objectives.

[10] Financial firms cannot freely own other firms' shares. Insurance companies can hold up to 15% of the cash flow or voting rights in other firms, and mutual funds can own up to 10%. Banks have no such direct restrictions on fractions, but there is one cap on the total amount of equity investments across all firms and another cap on the investment in each separate firm. The upper limit on total equity holdings is a certain percentage of the bank's equity and subordinated debt. The general property of

through all layers of intermediate corporate shareholdings (like holding companies and interlocking pyramids of operating companies) back to the ultimate personal owner or the state. Because we have data on all firms in the economy, we use this approach in Chapter 6.

3.1.6. Minority protection

The basic regulatory tool for minority protection is the principle of equal proportional rights (*en-aksje-en-stemme*). The law states that no corporate charter can limit the owner's right to attend the shareholder meeting, be present by a proxy representative, bring along an advisor, put a case on the agenda for voting, receive the same information as any other shareholder does, and to bring decisions made at the shareholder meeting up for the courts. The law also gives a pre-emptive right for every shareholder to participate in equity issues. This right can only be waived by a 2/3 majority vote (voting shares and voting plus nonvoting shares). Moreover, the board has a legal obligation to treat all owners equally.

Several other regulations prevent the transfer of wealth from small to large owners. A flagging system informs small owners of public firms when shares are transferred to or from large owners. The rule is that investors passing up or down through the thresholds of 5%, 10%, 15%, 20%, 25%, 1/3, 50%, 2/3 and 90% of the outstanding cash flow or voting rights must notify both the firm and the OSE. Owners passing the 1/3, 40%, and 50% voting rights threshold must give a tender offer (*pliktig tilbud*) to all the other owners.[11]

There is neither a flagging system nor a mandatory bid rule for private firms. However, the 90% freezeout (*tvangsinnløsning*) rule is independent of listing status. An owner holding more than 90% of the shares is obliged to buy the shares from any owner who wants to sell. The rule is symmetric, as an owner holding more than 90% has the right to buy out the minority.

The insider trading (*innsidehandel*) rules state that, regardless of whether or not you are affiliated with the firm, it is illegal to trade in the firm's shares using private (inside) information that is relevant for pricing, but not reflected in the price. This rule applies to public and private firms alike. A public firm must provide the OSE with a list of all individuals who have access to inside information (*primærinnsidere*). These individuals must report all their trades to the OSE no later than the morning after the trading day. In a private ASA, such information must be reported to the board, which keeps the information in a register not open to the public. Owners of AS firms have no such reporting obligations. These insider trading rules are independent of the number of shares held and whether they are voting or nonvoting.

Several additional ownership rights are granted to shareholders who represent a certain minimum of the share capital. Owners of at least 5% of the share capital in an ASA or 10% in an AS can force the appointment of an additional auditor and initiate an extraordinary shareholder meeting. Shareholders owning at least 10% of the share capital in either firm type can prompt an investigation of management's actions or sue any member of the management team, the two boards, the auditor, and other shareholders.[12] The litigation costs are paid by the

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this regulation is that the smaller the investing bank and the larger the firms it invests in, the smaller the maximum fraction that can be owned.

[11] The listing requirements ensure a minimum shareholder dispersion at the initial public offering (IPO). At least 25% of the shares must be owned by the general public, each shareholder must own shares for at least NOK 10,000, and the firm must have at least 500 investors (100 investors for listing on Oslo Access, which is generally for small and young firms). After the IPO, there is no explicit regulation of ownership dispersion except that if a concentrated ownership structure produces a sufficiently low trading volume, the firm may be delisted at the discretion of the OSE.

[12] These hurdles are lower for ASAs with more than 100 employees. Just 10% of the owners of such firms are needed to support the claim, even if they represent less than 10% of the share capital.

firm. However, Norwegian minority shareholders are not protected by a cumulative voting system, and no shareholder can vote by mail except when the board of firms with less than 20 owners chooses to have the shareholder meeting by mail (see Section 3.1.3).

3.1.7. The recording of ownership

Every ASA must report each transaction of its equity to VPS (*Verdipapirsentralen*), which is the securities registry. This system means the VPS files contain the full ownership structure for every public and private ASA since 1989.[13]

Firms organized as an AS must keep a so-called Ownership Book (*Aksjeeierbok*), which keeps track of all trades in the firm's share. This register is open to the public. However, the register is only available on a firm-by-firm basis, and it is not computer-readable.

3.2. Financial accounting regulation

The Accounting Law (*Regnskapsloven*) does not distinguish between ASA firms and AS firms, but between small, medium, and large firms.[14] Within the framework of the law, Accounting Standard 08 specifies many detailed accounting rules.[15] This section summarizes major differences in financial reporting requirements between small firms and large firms.

A small firm according to the Accounting Law is a firm that meets at least two of the following three requirements:

1. Less than 70 million NOK of sales
2. Less than 35 million NOK of assets
3. Less than 50 employees.

Starting with the population of all 199,000 limited liability firms in 2015 in table 4.1, we find that 115,000 pass the sample filters (to be presented in Chapter 4). 109,000 of these firms are small in a financial reporting sense. Thus, the accounting rules for small firms apply to 95% of our sample. However, because a subsidiary may use its owner's accounting principles, the actual fraction of firms following the rules for small firms is probably lower.

The accounting regulation for small firms is special along two dimensions. First, certain items do not have to be reported. The small firm may choose to not report the cash flow statement. Moreover, the small firm does not have to account for its subsidiaries by a consolidated accounting statement, provided the consolidated accounting variables do not exceed the size threshold for small firms as specified above. Also, the cost of share-based incentive pay does not have to be expensed, and production costs may only reflect the variable part. Small firms may neither specify deferred taxes nor the insured pension liabilities.

[13] The notification sent to VPS specifies the identity of the buyer and seller, the time of the transaction, the number of securities traded, and the price. A change in the number of securities outstanding must be reported, such as stock splits, treasury stock issues, and issues of new shares. The database is computer readable and provides a consistent time series of complete ownership structure data for any owner for almost 30 years, which is exceptional by international standards. More details can be found in Bøhren and Ødegaard (2000, Section 2.3).

[14] A fourth size category was introduced in the Accounting Law in 2018. The IFRS (International Financial Reporting Standards) is mandatory for consolidated accounts unless the firm follows US GAAP.

[15] The Accounting Law is available at www.lovdata.no, whereas the Accounting Standard 08 is at www.regnskapsstiftelsen.no.

The second difference between small and large firms is that although the profit and loss statement, balance sheet, and footnotes are mandatory components of the financial reporting for all firms, small firms can specify some of these items by simpler procedures. For instance, income from multi-component contracts may not have to be recognized until every component is sold, lease obligations may not be capitalized, and shares may be reported at their historic cost. Some footnotes may be ignored, such as the breakdown of wages into components, specification of extraordinary items, and transactions with subsidiaries.

Up through the year 2011, all firms must have their accounting statements audited by a statutory auditor. From 2012 the firm can choose to not have an auditor if sales are below NOK 6 mill., assets are below NOK 23 mill., and the average number of employees during the year is below 10.

Public firms must have a state-authorized auditor, whereas other firms can choose between state-authorized or state-registered auditor.[16] The accounting statements must be submitted to the Public Accounting Register every year (*Brønnøysundregistrene;* www.brreg.no/english). Failure to do so within 17 months after fiscal year-end produces automatic liquidation by the court. Chapter 4 describes how our database relates to this register.

3.3. Summary

The regulation of corporate governance occurs through the corporate law, and public firms are also regulated by the securities law, the listing requirements of the Oslo Stock Exchange (OSE), and by the Corporate Governance Code. A limited liability firm is either an AS or an ASA, the ASA legal form is mandatory for public firms, and private firms above a minimum size can choose between the two legal forms. Less than 0.1% of the firms in the population are ASA firms.

Charter amendments require a 2/3 supermajority vote by both the voting capital and the share capital (voting + nonvoting) represented at the shareholder meeting. Most other issues at the meeting need simple majority only by the voting shares. Any owner can put issues on the agenda for the ordinary shareholder meeting, and no charter can limit the owner's right to attend, be present by proxy, bring an advisor, put a case on the agenda, receive the same information as other owners do, and bring decisions made at the shareholder meeting to court. Unless waived by a 2/3 majority, every owner has a pre-emptive right to participate in new equity issues. The owner needs 5% of the cash flow rights (i.e., of the share capital) in an ASA and 10% in an AS to call an extraordinary shareholder meeting or ask for an additional auditor. A flagging system informs all owners of a public firm when large owners trade, and owners passing certain voting right thresholds must give a tender offer to all remaining owners. The flagging rule and the mandatory bid rule apply to public firms, only, while the 90% freezeout rule applies to all firms. Shareholder with at least 10% of the cash flow or voting rights can, at the firm’s expense, prompt an investigation of management's actions or sue management, the board, the auditor, and the co-owners.

Firms with more than 200 employees must have a two-tiered board unless vetoed by the employees or the firm belongs to a few exempted industries. The supervisory board elects the regular board and makes the final decision on large investments and disinvestments. It turns out that very few firms choose to have two-tiered boards.

[16] The educational requirements for are more extensive and demanding for state-authorization than for state-registration (Hope and Langli, 2010).

One third of the directors come from the employees in firms with more than 200 employees. The CEO of an ASA cannot be on its board, and ASA boards must have at least 40% of each gender among its owner-elected directors. Trades by primary insiders in public firms must be reported to the OSE the next morning. Owners with inside information in private firms have no such reporting obligations.

Cash flow rights can be separated from voting rights through nonvoting shares and by voting restrictions in the charter. Owners may also establish shareholder agreements, transfer voting rights by proxy votes, and build pyramids by intercorporate investment. Our database has no information on share classes, shareholder agreements, voting caps, and proxy votes. Because we know the ownership structure of all firms, however, we can undo all pyramiding of cash flow rights. Moreover, because our unit of analysis is the family rather than its individual members, shareholder agreements within the family seem unimportant in our setting.

ASA firms must report each transaction of its outstanding equity to the securities registry. AS firms must report the transactions in a register that is open to the public, is only available on a firm-by-firm basis, and is not computer-readable.

The accounting law does not distinguish between ASA and AS firms, but between firms in three different size groups. Small firms, which account for the vast majority of the population, can choose to not report certain accounting items, not consolidate the accounts, to specify certain items by simpler procedures, and to ignore some footnotes. All firms must submit accounting statements to a public register every year. If this does not happen within 17 months after the end of the fiscal year, the firm is automatically liquidated by the court.

4. The database

Section 4.1 specifies the sources of the database and describes its contents. We report the size of the population, the filtering procedure, and the resulting size of the sample of family firms and nonfamily firms in Section 4.2. The system for classifying firms into industries and industry sectors is described in Section 4.3. Our database used covers the period 2000–2015.

4.1 Sources and contents

Accounting, ownership, and board data are delivered by Experian (www.experian.no). Data on family relationships are from Folkeregisteret (www.skatteetaten.no/en/person/national-registry), which stores the census data. These two data sets are organized as one integrated database by the Centre for Corporate Governance Research (CCGR, www.bi.edu/ccgr). Statistics Norway (www.ssb.no/en) and Skattedirektoratet (www.skatteetaten.no/en/person) have delivered the data on shareholder wealth and income from the tax returns as well as data on individual salary and dividend income.

As we described in Section 3.2, every Norwegian firm with limited liability is legally obliged to publish standardized accounting statements every year. The firm must also report the identity of its CEO, directors, and owners, as well as each owner's equity holding in the firm. These data are submitted to a state agency (Brønnøysundregistrene; www.brreg.no/home). Experian buys these data.

We compute several main measures from the basic data to organize the data along two major dimensions: links between the firms and links between the owners. We construct the ultimate ownership measure in every firm by combining direct ownership data with computed indirect ownership. The ultimate owner can only be an individual (national, personal taxpayer or foreigner), state, financial institution or a firm with unknown owners (domestic of foreign).

We group individuals into families using four vertical degrees of kinship, both up and down (e.g., a parent is up while a child is down) and two lateral degrees (e.g., cousins are second lateral degree). Families are firm-centric to avoid overlap between large families. We construct families from both family members with active governance role in the firm and from family members with no such role, including family members who own nothing in the firm. This way of defining the family in terms of its members rather than just its owning members may better capture the potential pool of governance talent in the family.

Many firms in our sample belong to business groups (*konsern*). Groups emerge for various reasons including tax, regularity, business relationships, and historic reasons. The definition of groups in the literature varies from firms linked by loose business relationships to strong ownership ties. We use the most common type of groups in Norway, which is firms with ownership ties. A clear distinguishing feature of a group in this setting is that the firms have integrated decisions to some extent, but still remain separate entities. An alternative to a group is one firm that is a product of many merged entities. Consequently, it is important for the realisms of the empirical analysis to have an overview of the entire group and avoid considering member firms as independent entities when in reality they are not.

A group in our data is constructed by examining majority ownership links between firms, where the majority link can also be indirect as long as it goes through another corporate entity. We find that the groups are up to ten levels deep. For each such group we estimate aggregate group level measures, such as assets and sales. While each firm in the group reports accounting

statements and has a board, the main corporate and governance decisions are normally made at the top of the group hierarchy.

For these reasons, we identify the firms in the group with the most representative finance and governance activities, respectively. These entities may be two different firms in the group. We find the two candidates by examining the levels where the group has collapsed to one firm. At that level, we identify a firm with the largest assets and the largest board size, respectively. We use the group's consolidated accounts when available, using our own consolidation procedure when consolidated accounts are not available. Our own consolidation procedure closely follows general consolidation rules. Because a group is represented as one firm in our analysis, we interchangeably refer to groups as either groups or firms.

4.2 Population, filters, and sample size

Table 4.1 shows details of the sample construction and identifies subsamples. We report the number of firms in Part I, sales in Part II, assets in Part III, and employment in Part IV.

[Table 4.1]

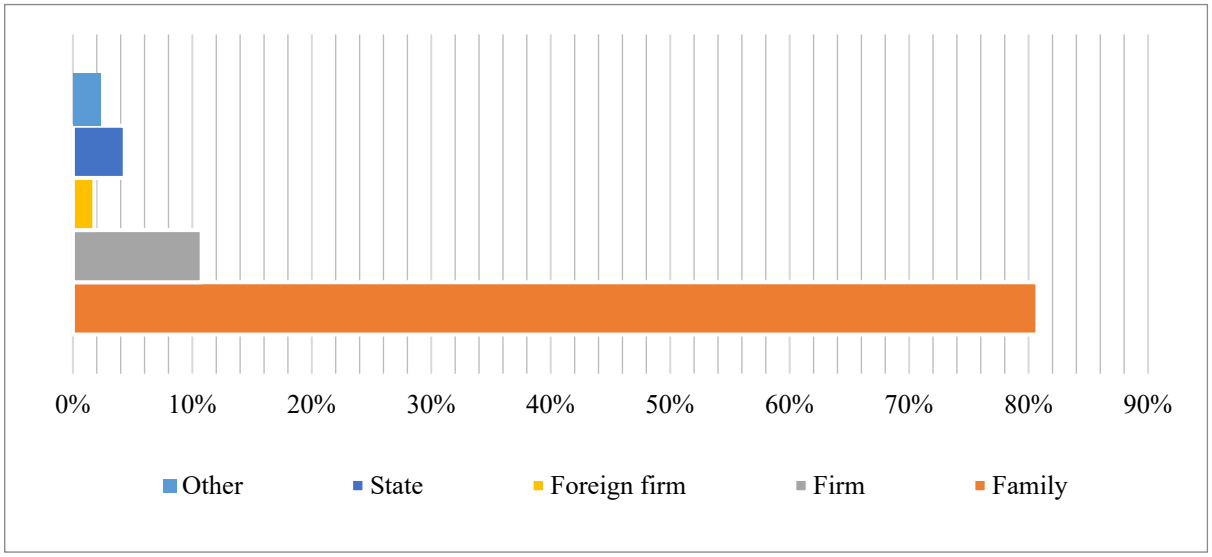
We start with the population of limited-liability firms. Part I reports 199,475 firms in 2015. Excluding financial firms in 2015 loses 11,426 firms. Of the remaining 188,049 firms 160,477 do not belong to groups. Among the 27,572 firms in groups, 26,769 are in groups that are two or three levels deep, while 803 firms are in groups more than three levels deep.

Filters 6, 7, and 8 ensure activity by requiring positive sales, assets, and employment. These filters incrementally eliminate 11%, 0.3%, and 31% of the sample, respectively.

Our main sample grows from 81,000 in year 2000 to 115,000 in 2015, of which there are 35,000 nonfamily firms and 80,000 family firms. We identify the firm as a family firm if a family owns a majority equity stake in the firm.

One may wonder who the largest owners are in the nonfamily firm subsample. Figure 4.1 shows that the most common owner in such firms is a family, representing 80% of the cases. Other cases also exist, where the largest owner is a domestic or foreign firm, the state, or a financial institution. Notice that all firms with majority ownership in a firm are added to groups and would not impact this classification.

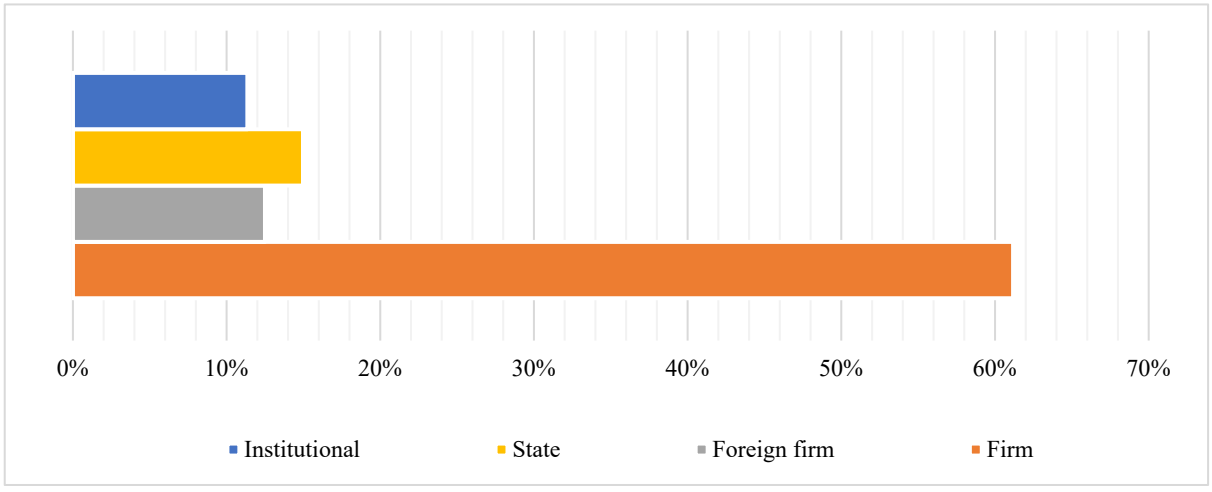
Figure 4.1: Nonfamily firms by largest owners



With the exception of the last two years of the sample period, the number of nonfamily firms is quite stable over time, while the number of family firms increases. Only 14 basis points of the firms are listed.

We define single-owner firms as firms where the largest owner has at least 99% of the equity. Among the nonfamily firms that are single-owner, Figure 4.2 shows the single owner is a firm in 60% of the cases. The remaining cases are quite evenly split between the state, a foreign firm, and a national institutional owner.

Figure 4.2: Nonfamily single-owner firms by largest owners



We split the sample into several subsamples in order to uncover patterns in the data that depend on firm and owner main characteristics. To account for differences in size, we define three size groups using the firm's sales and the number of employees as our criteria:[17]

- *Large firm*: Sales exceed NOK 100 mill. (2015 cpi-adjusted), and the number of employees exceeds 100.
- *Medium firm:* Sales are between NOK 10 mill. and 100 mill. (2015 cpi-adjusted), and the number of employees is between 10 and 100.
- *Small firm*: Sales are below NOK 10 mill. (2015 cpi-adjusted), and the number of employees is below10.

To account for the absence vs. presence of potential conflicts between the owners, we split the sample into firms without vs. with more than one owner:

- *Single-owner firm:* One family or nonfamily owns more than 99% of the equity.
- *Multip*le-*owner firm*: No family or nonfamily owns more than 99% of the equity.

Startup firms may differ from other firms. To distinguish between such firms from other firms, we split the sample into sole entrepreneurships and classic firms, respectively:

- *Sole entrepreneurship firm*: The firm is less than 10 years old and has a controlling personal owner. These firms belong to the family firm overall group.
- *Classic firm:* The family firm is not a sole entrepreneurship.

To illustrate these definitions with figures, there are 1,108 large nonfamily firms and 359 large family firms in 2015. Large family firms represent 0.4% of all family firms, but account for 40% of sales, 50% of assets, and 20% of employment. Sole entrepreneurships account for 40% of all family firms, 20% of their sales, 10% of their assets, and 20% of their employment. We will look more closely at these relationships is Chapter 5.

In the chapters that follow, we state amounts in terms of NOK as of December 31, 2015, which is the end of the sample period. Growth rates are in real terms, i.e., percentage change in excess of observed inflation. Returns on assets and equity are also in real terms.

4.3 Industry classification

All firms are classified according to its NAIC industry code. The industry classification system in Norway changed from SIC2002 to SIC2007 as of 2008. We have mapped the old system into the new system on firm-by-firm basis in order to follow our sample firm classification over time. Chapters 5 and 7 will analyze industry distribution in detail. We group industries in 19 sectors and list them in Table 4.1.

[17] Various size difinitions exist. For example, EU has adopted SME size guidelines (see European Commission, 2003) with employment, asset, and sales cutoff points. The classification test is employment plus either assets or sales. A medium SME has <250 employees, <=EUR50M sales, <=EUR43M assets; a small SME has <50 employees, <=EUR10M sales, <=EUR10M assets. A micro SME has <10 employees, <=EUR2M sales, <=EUR2M assets. The Norwegian Accounting Law (*Regnskapslove*n) also has a size difinition. A small firm has two of the following properties: <NOK70M sales, <NOK35M assets, <50 employees. These definitions do not make CPI adjustments and poorly serve as meaningful cutoff points for our size subsamples. We docuemnt this problem in Section 3.2of Chapter 3.

Table 4.1. Industry sectors

Sector	Sector label
0	Unknown: not reported by company
1	Farming and food
2	Forestry
3	Fishing
4	Mining and oil
5	Light industry
6	Heavy industry
7	Utilities
8	Construction
9	Retail and wholesale
10	Transport
11	Tourism
12	Publishing, media, IT, telecom
13	Financials
14	Real estate
15	Services
16	Social services
17	Sport activities, gaming
20	Multi sector: several sectors reported

4.4 Summary

Our dataset includes every firm with limited liability registered in Norway from 2000 to 2015. Norwegian law mandates every such firm to publish an annual report each year that consists of a standardized income statement and balance sheet. The rules governing the structure and contents of these accounting statements apply to all limited liability firms, but firms below a certain size may report fewer variables. The firm must publish the identity of its CEO, directors, and owners, and the fraction of equity held by every owner.

There are about 146,000 firms with limited liability in our database on average per year, rising from about 114,000 firms at the beginning of the sample period to about 199,000 at the end. We require all firms to be active, exclude financial firms, and we classify all firm in a group into one firm that represents the group. The resulting sample we are studying has on average roughly 57,000 family firms and 29,000 nonfamily firms per year. We split this sample into subsamples in order to account for the role of firm size, potential owner conflicts, and startup activity.

5. The macro-economic significance of family firms

The purpose of his chapter is to document the absolute and relative size of family firms in the Norwegian economy.

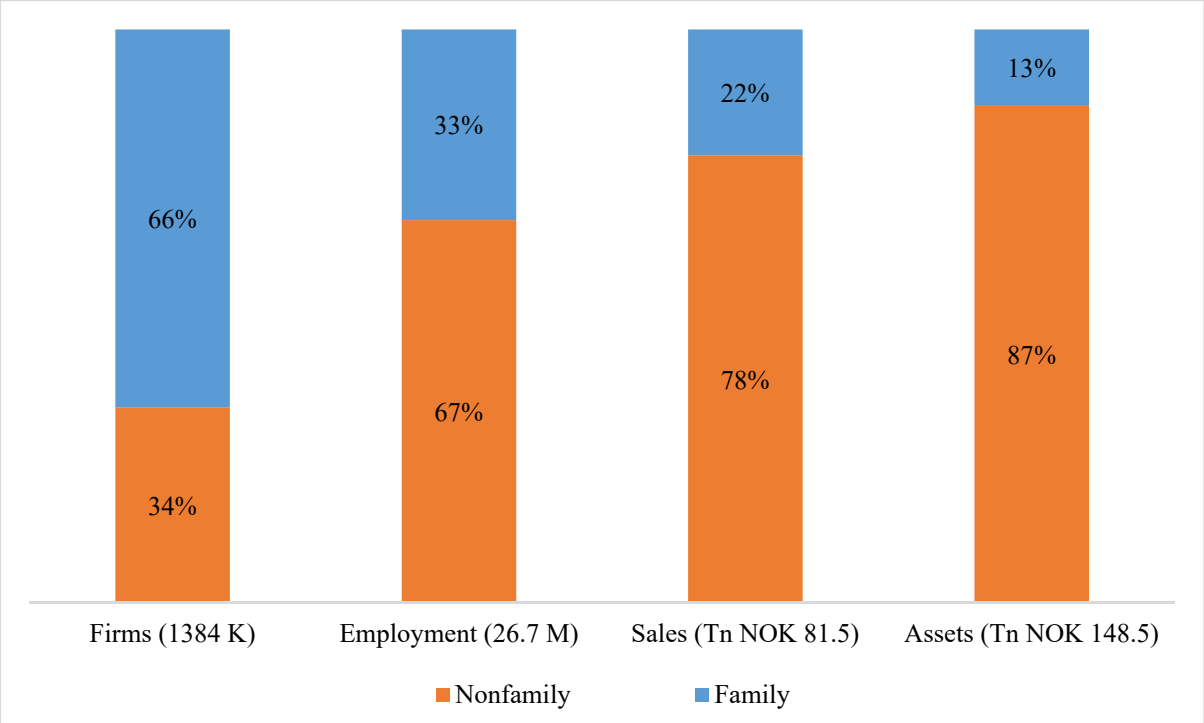
5.1 Family firms compared to nonfamily firms

The most common measures of economic activity at the firm level are the number of firms, the sales, assets, and employment. Table 5.1 shows the aggregate value of these activity measures relative to all firms for our sample as defined in Table 4.1. We present the figures for each year in the sample period and also for the pooled sample of all years.

[Table 5.1]

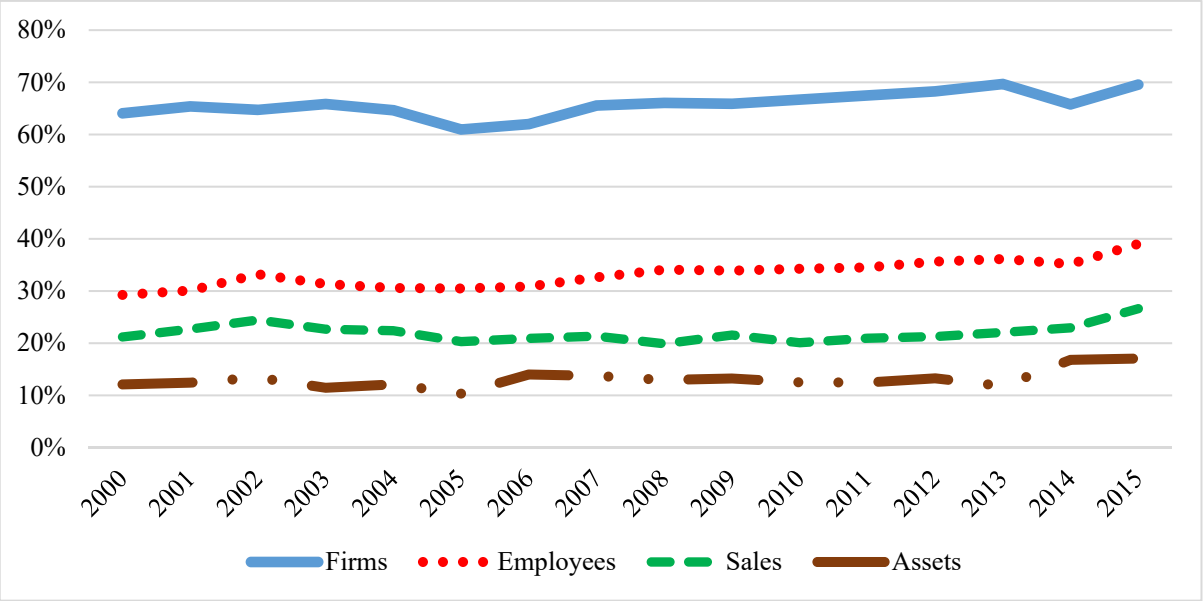
Considering first the pooled sample for the whole sample period 2000–2015 at the bottom of the table, family firms account for 66% of all limited-liability firms, 33% of employment, 22% of sales, and 13% of all assets. These figures, which are based on every observation over 16 years, are visualized in Figure 5.1.

Figure 5.1: Macro-economic significance of family firms vs. nonfamily firms, 2000–2015



As shown by Figure 5.2, there is an increasing trend over time in every measure of family firm significance. For instance, family firms employ 29% of the corporate labor force in 2000, 34% in 2008, and 39% in 2015. While 64% of all firms are family-controlled in 2000, 70% of them are in 2015.

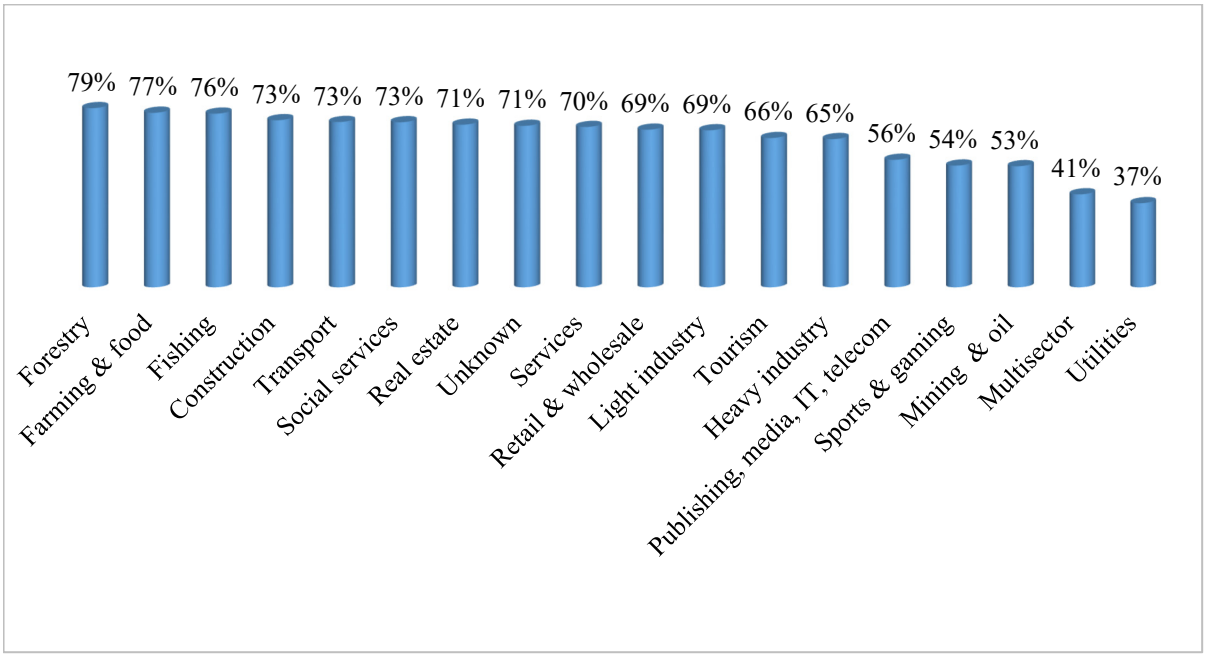
Figure 5.2: Macro-economic significance of family firms over time



5.2 Family firms across industries

Family firms are more common in some industries than in others. As shown by Figure 5.3, the prevalence varies considerably between a high of 79% in forestry and a low of 37% in utilities. Moreover, family firms constitute 69% of all firms in retail & wholesale, which is also the industry with the highest number of family firms in the economy (22,780 firms; not shown in the figure). In contrast, only 53% are family firms in mining & oil, which also has few family firms (432 firms; not shown in the figure).[18]

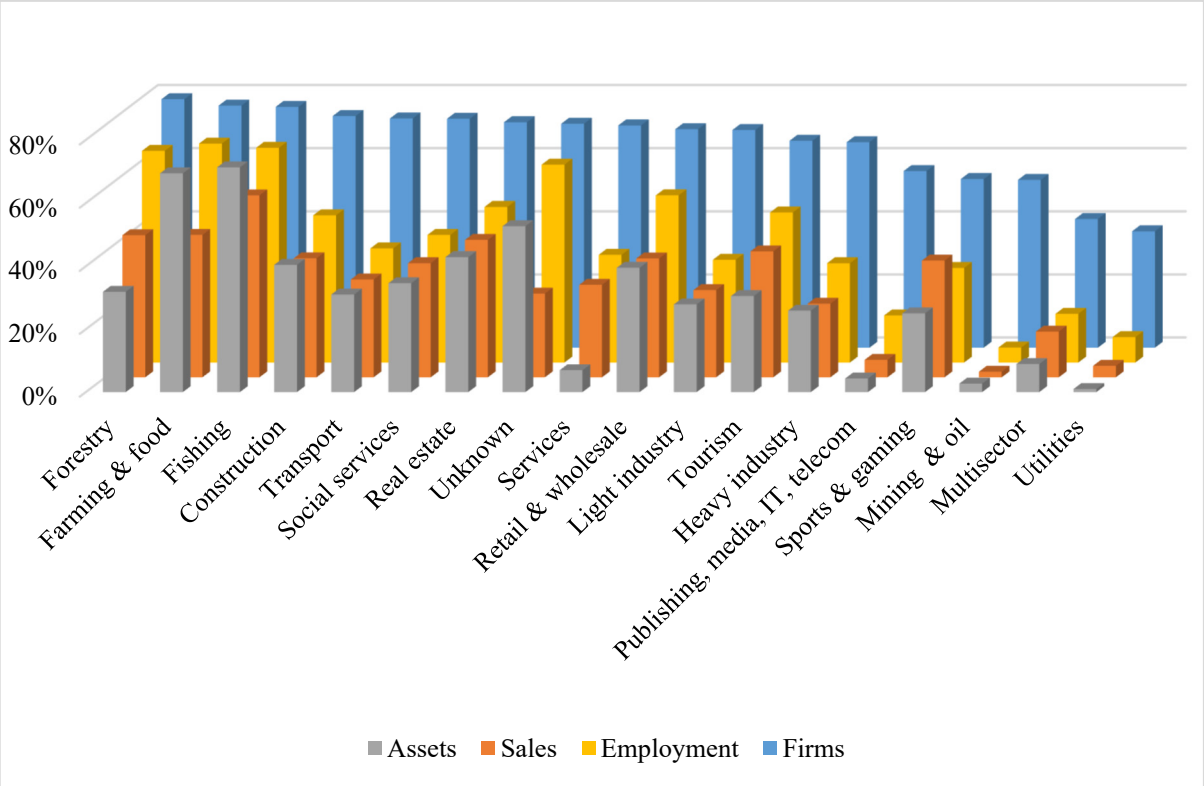
Figure 5.3: The prevalence of family firms across industries, 2015



[18] "Unknown" reflects that the firm's industry cannot be identified, while "Multisector" means the firm is registered in more than one of the industries used in the figure.

Table 5.1 shows that for all family firms as a whole, there is not a one-to-one relationship between the relative number of family firms and the significance of family firms as measured by the three activity indicators employment, sales, and assets. Firms instance, while family firms account for 66% of all firms, they account for only 18% of all assets. This imbalance becomes very clear and gets more substance when we measure the significance of family firms within each industry in Figure 5.4.

Figure 5.4: The significance of family firms within industries, 2015



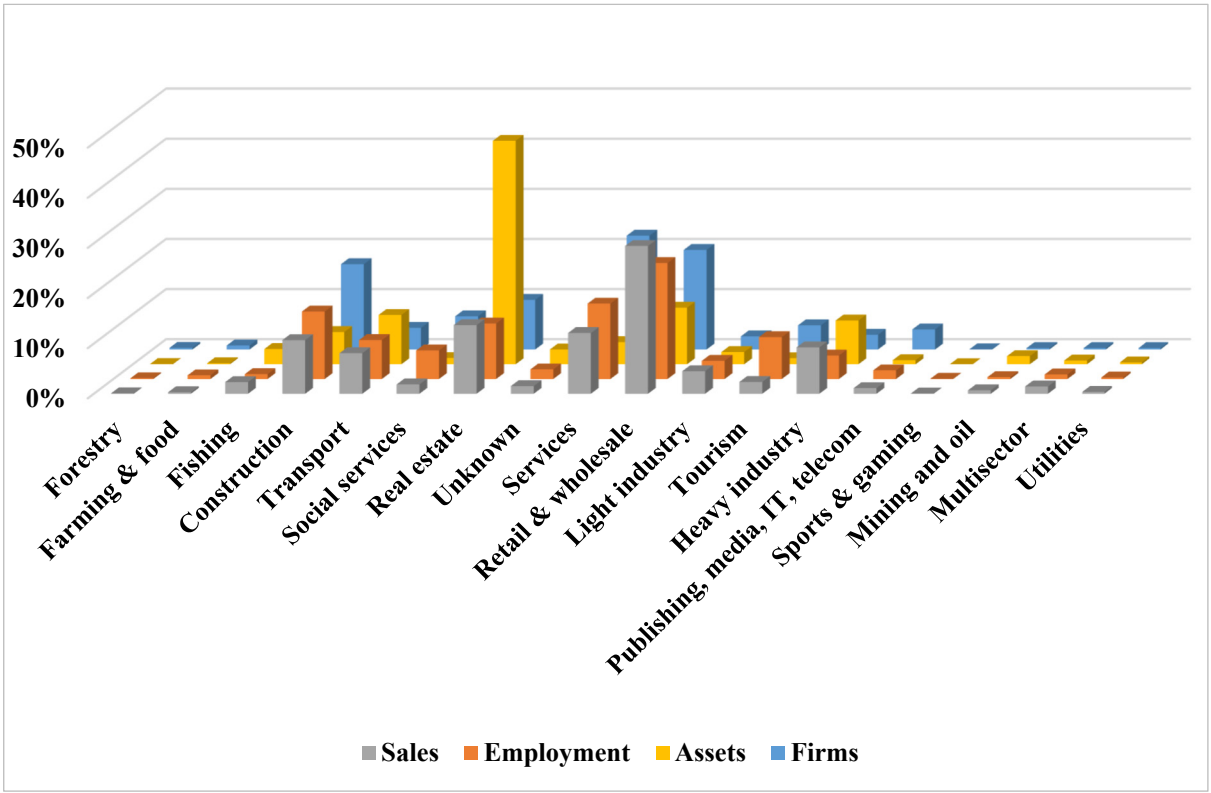
The industries are ranked from left to right in the figure using the percentage of family firms from Figure 5.3. If family firms were like other firms in its industry regarding employment, sales, and assets, every bar for a given industry would have the same height. That is never the case in the figure, as the bar for the proportion of family firms is always higher than the three other bars are. This property reflects that family firms are smaller than other firms. Moreover, the bar for employment is always higher than the bar for assets. This property reflects that, compared to nonfamily firms in the same industry, the technology of family firms is more labor intensive.

Nevertheless, this pattern varies across industries. To illustrate, forestry has a very uneven distribution of characteristics, the proportion of firms, employment, sales, and assets being 79%, 67%, 45%, and 32%, respectively. Fishing has a more even distribution, the proportions being 76%, 68%, 58%, and 71%. Thus, compared to forestry, the family firms in fishing are much more like other firms in its industry, including the relative use of labor and capital.

While Figure 5.4 compares family firms to nonfamily firms, Figure 5.5 compares the family firms to each other. Specifically, the height of a bar in Figure 5.5 shows the proportion of the family firms' aggregate activity coming from the industry in question. The figure shows, once more, that the proportion of family firms in an industry may not correlate with the

industry's macro-economic significance. For instance, the industry with the highest proportion of family firms (forestry) accounts for a negligible part of firms, employment, sales, and assets in family firms as a whole. The four industries with the largest contribution are construction, real estate, services, and retail & wholesale. Moreover, the high labor intensity of services and retail & wholesale make these industries contribute a lot to family firm employment. Conversely, the asset intensity of real estate makes the real estate industry by far the largest contributor to the assets of family firms as a whole.

Figure 5.5: The significance of family firms across industries, 2015



5.3 Summary

We have shown that family firms account in the aggregate for 66% of all limited-liability firms, 33% of the employment, 22% of the sales, and 13% of the assets during our sample period 2000–2015. The relative significance of family firms has been steadily increasing over time, the above proportions in 2015 being 70%, 39%, 27%, and 17%, respectively.

These numbers document that the family firm is by far the most common way of organizing economic enterprise. Because the proportion of firms exceeds the proportion of employment, sales, and assets in every industry, family firms tend to be smaller and more labor intensive than other firms. Family firms also gravitate towards industries that use more labor and less assets, although there are variations across industries. Moreover, certain industries contribute much more than others do to the macro-economic significance of family firms.

These findings may suggest that, compared to nonfamily owners, most family owners are more constrained by limited funds, more reluctant to grow even if they could, more often choose industries with lower capital requirements, and more often specialize in managing labor. We address these relationships using corporate finance data in Chapter 7.

6. Corporate governance

Building on the existing theory and empirics of corporate governance from Chapter 2, we report our findings on the ownership structure in Section 6.1, board composition in Section 6.2, and the CEO in Section 6.3.

We present extensive descriptive statistics in Tables 6.S1–6.S4. Table 6.S1 shows distributional properties (mean, median, standard deviation, and percentile 5, 25, 75, and 95) of each ownership, board, and CEO variable for family firms and nonfamily firms. Table 6.S2 compares the mean value of these variables across the different subsamples of family firms, which are sole entrepreneurship vs. classic, large vs. medium vs. small, and single-owner vs. multiple-owner. While these two tables capture the entire sample period 2000–2015, Table 6.S3 shows distributional properties and Table 6.S4 shows mean values in the most recent sample year (2015).

Each table has three panels in the leftmost column called Ownership, Board, and CEO, respectively. Tables 6.S1 and 6.S3 describe the family firms in Part I and the nonfamily firms in Part II.

[Table 6.S1]

[Table 6.S2]

[Table 6.S3]

[Table 6.S4]

6.1 Ownership structure

As we described in Chapter 4, our database includes all firms in the Norwegian economy. This means we can measure ultimate ownership, which is the owner's direct equity stake in the firm plus the indirect stake owned through corporate intermediaries. Suppose a share in firm A is held by a Norwegian firm B and not by an ultimate owner, which is person, the state, or a foreigner in our setting. Because we have access to the ownership structure of all firms, we can trace the identity of the owner through firm B and possibly through other firms owning B until we find the ultimate owner. The ultimate equity stake in firm A is the sum of direct and indirect stakes in A held by an ultimate owner. The indirect stake is the product of the stakes held along the path of indirect holdings from the ultimate owner to firm A (LaPorta et al, 1999).

Accounting for indirect ownership is particularly important in our sample period. The number of holding companies more than tripled in 2005 when increased dividend taxation for persons discouraged the use of direct ownership (Berzins, Bøhren, and Stacescu, 2018a). Similarly, shipowners reorganized their corporate groups in order to adapt to the new tax regime for ship-owning firms in 2007.

Panel A in each of the four tables 6.S1–6.S4 shows properties of the ownership structure. The most common measure of ownership concentration is the largest owner's equity stake, which exceeds 50% in all family firms by definition. Because we consider the family a decision-making unit, we count the family as one owner. That is, we sum the equity stakes in the firm owned by each family member and call the sum the family's equity stake. A family firm is a firm where this sum of direct and indirect stakes across all family members exceeds 50%.

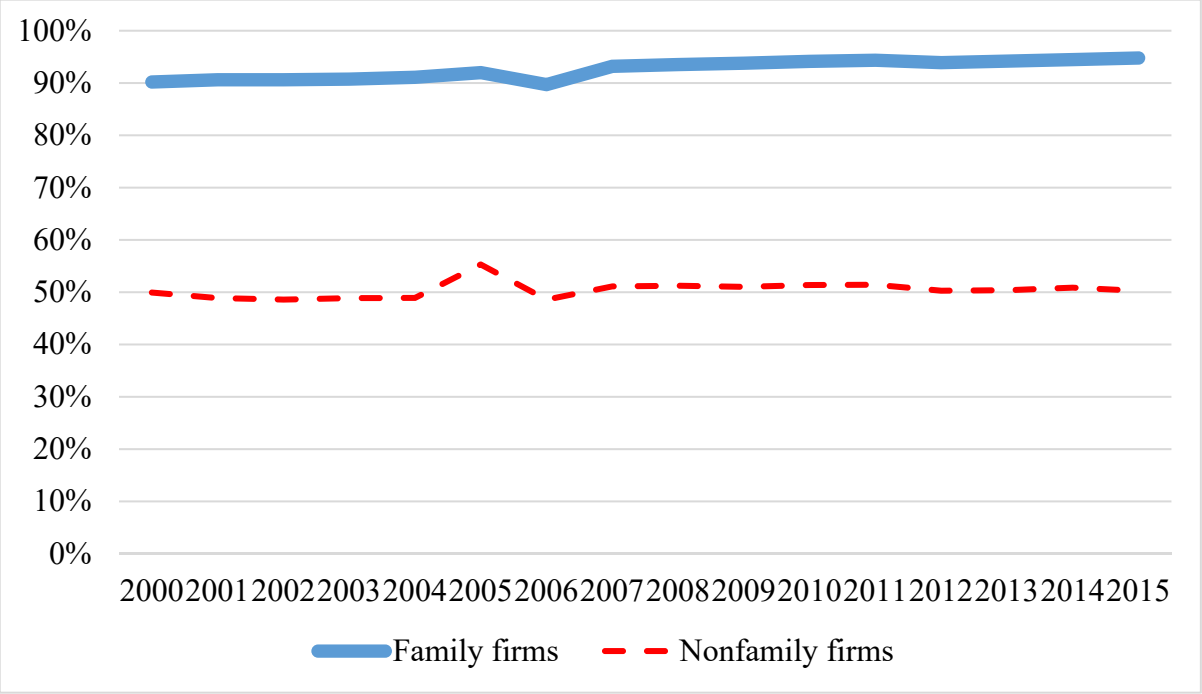
Table 6.S1 shows that, on average across firms and years, the largest owner holds 93% of the equity in family firms and 50% in nonfamily firms. Thus, while the average largest owner in both family firms and nonfamily firms has simple majority (1/2), the largest owner in family firms has supermajority (2/3) by a wide margin. To illustrate, while the largest average owner can single-handedly elect the board in both firm types, that owner in family firms can also amend the charter. In fact, the average controlling family even has the right to buy out the minority owners, which requires a 90% stake (Bøhren and Krosvik, 2013).

Family firms and nonfamily firms both have few owners on average, but there are fewer owners in family firms (2.0 vs. 4.4 on average, respectively). Combining this relationship with the very high ownership concentration in family firms, it is not surprising that the average stake of the second largest owner is smaller, being 14% in family firms and 22% in nonfamily firms.

While 75% of the family firms have no other owners than the controlling family, such single-owner firms constitute only 15% of the nonfamily firms. Moreover, officers and directors as a group, which is what we call the firm's insiders, own 92% of the equity in family firms and 69% in nonfamily firms.

Ownership concentration in the population stays very stable over time. This property is illustrated by Figure 6.1. The upper graph shows the year-by-year holding of the average largest owner in all family firms as a whole, where three of four firms are single-owner, i.e., largest owner has 100%. The lower graph shows the largest holding in multiple-owner firms, where the largest owner has less than 100%. Ownership concentration persists at around 92% over the sample period in family firms as a whole and at around 75% in multiple-owner family firms.[19]

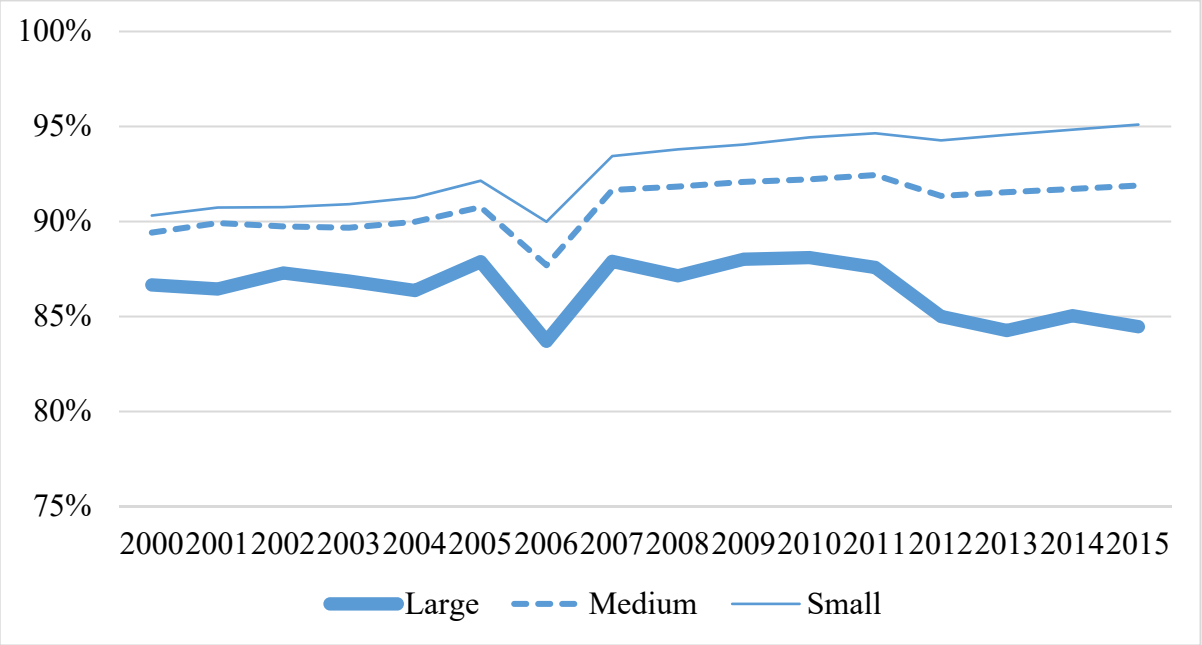
Figure 6.1: The average equity holding of the firm's largest owner over time



[19] The blip in each graph is probably due to a peculiarity in the registration system that year.

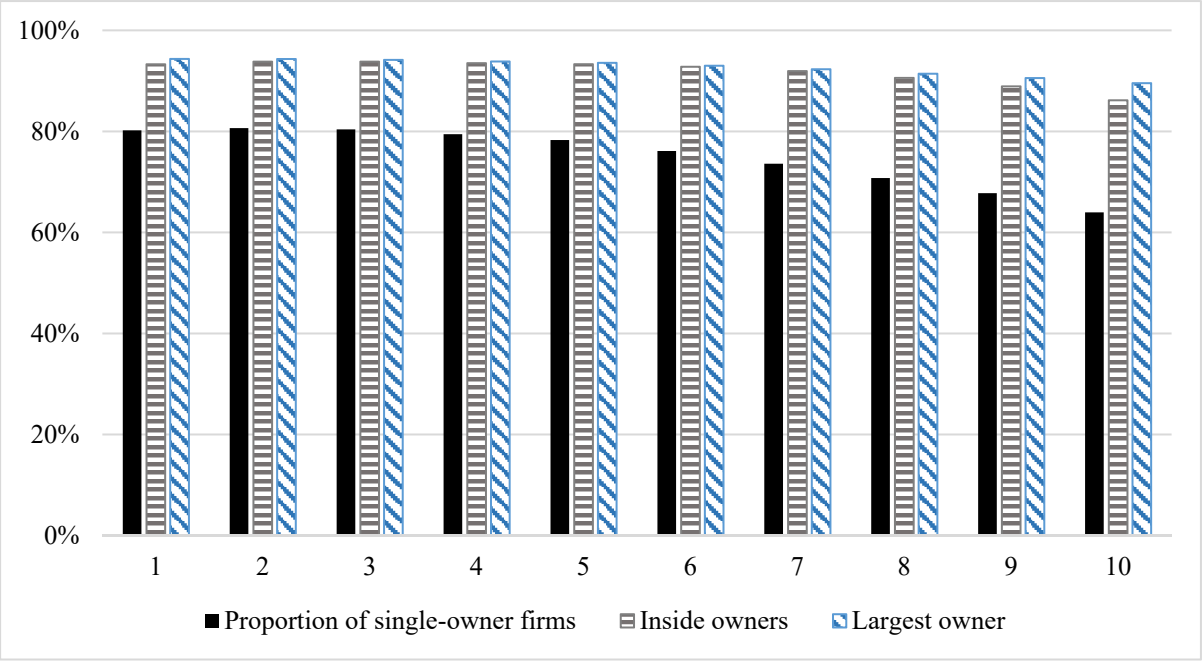
As documented many places in tables 6.S1–6.S4, ownership concentration differs across subsamples of family firms. Moreover, we will show in Chapter 7 that the size of the family firm matters for several corporate finance characteristics, including performance. As shown by Figure 6.2, size also matters for ownership concentration. The figure shows that the holding of the largest owner is around 94% in small firms, 91% in medium firms, and 86% in large firms.

Figure 6.2: The average equity holding of the largest owner in small, medium, and large family firms over time



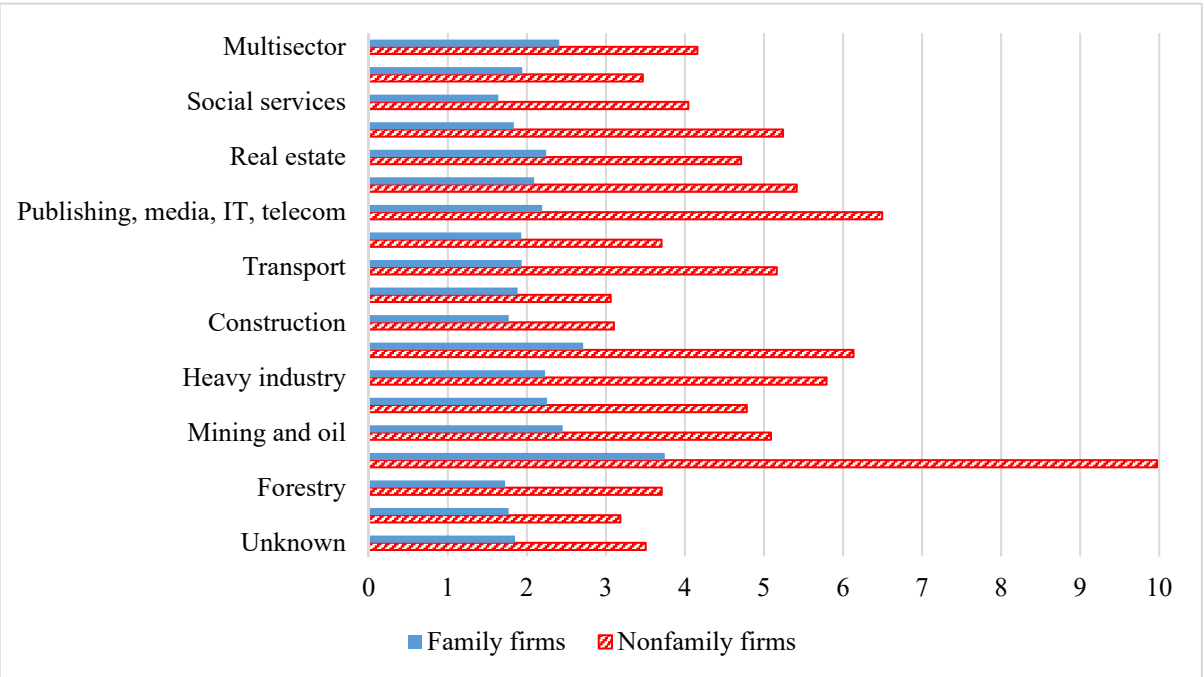
The striking feature in Figure 6.2 is still not that ownership concentration varies with firm size, but rather that the variation is small. This insensitivity of ownership concentration to firm size is illustrated even more clearly by Figure 6.3, which groups firms by size deciles. Each of the ten groups contains an equal number of firms. Group 1 includes the smallest 10% of family firms by sales, while group 10 includes the 10% largest family firms. Within each group we show the average ownership concentration measured alternatively by the largest owner's stake, inside ownership, and the proportion of single-owner firms, respectively. The holding of the largest owner and by insiders are both practically unrelated to firm size. The proportion of firms with 100% ownership concentration does vary with firm size, however, dropping from about 80% of the firms among the smallest firms to about 65% among the largest.

Figure 6.3: Ownership concentration by firm size deciles in family firms, 2000–2015



We documented in Chapter 5 that the prevalence of family firms differs across industries, and that family firms differ more from nonfamily firms in some industries than in others. Figure 6.4 shows ownership concentration measured by the number of owners in family firms and nonfamily firms across industries. In line with the finding reported above that the average number of owners in the population is smaller in family firms than in nonfamily firms (2.0 vs. 4.4), Figure 6.4 shows that this relationship holds in every industry. Fishing is the industry with the highest average number of owners and is also the industry where nonfamily firms have the highest number of owners. Construction and retail are examples of the opposite situation for both firm types.

Figure 6.4: Mean number of owners by industry, 2000–2015



The results in this section reflect two properties of the family firm's ownership structure with important implications for governance (Edmans and Holderness, 2017):

- Ownership concentration is very high.
- Insider ownership is also very high.

These two properties speak directly to what we outlined in Chapter 2 as the first and the second agency problem, respectively. The first agency problem concerns conflicts of interest between the firm's owners and insiders. This alignment problem is less serious when insiders have incentives to act as the owners would have done themselves. That automatically happens when the insiders are in fact large owners, as we have documented for the family firms. Therefore, the first agency problem is mostly negligible.

The second agency problem is potentially serious when ownership is concentrated. This situation may tempt the controlling family to make decisions that benefit themselves at the other owners' expense. However, this problem is smaller the more the controlling stake exceeds the minimum level of 50%. Panel A of tables 6.S1–6.S4 and Figure 6.1–6.4 show that the average family is in the latter situation of a very high control stake. Moreover, there is no second agency problem whatsoever in 75% of the family firms because they have no minority owners. Whatever the family extracts from the firm the family extracts from itself.

We conclude that, compared to other firms, the ownership structure of family firms makes them less exposed to conflicts of interest between owners, offices, and directors and also to conflicts between large and small owners.

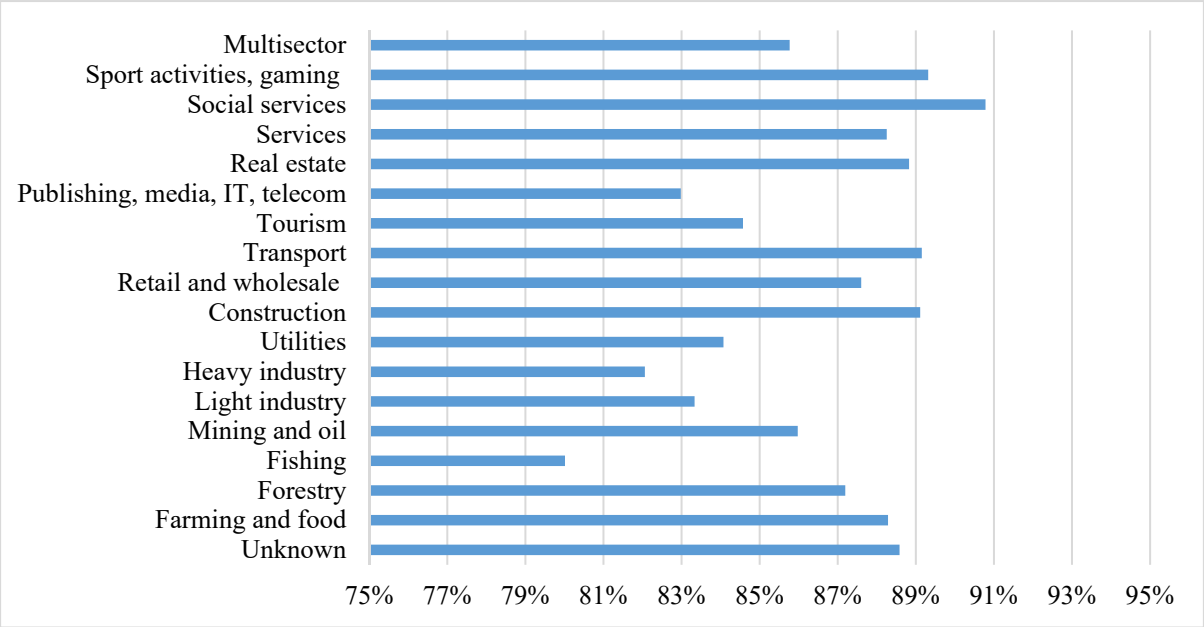
6.2 The board

Panel B of tables 6.S1–6.S4 shows board characteristics. The panel has four sets of variables that reflect the controlling family's participation in the board, the size of the board, the directors' gender, and the directors' age, respectively.

The controlling family is on the board in 98% of the family firms, holds the chair in 88%, at least half the seats in 83%, and holds every seat in 76%. The directors own more shares in family firms than in nonfamily firms (90% vs. 68%). The tendency is even stronger for the chair's ownership (68% vs. 26%).

This situation means that, just like the shareholder meeting (general assembly) in Panel A, the board meeting is totally dominated by the controlling family. In fact, the family's average fraction of share capital and of board seats are quite close, being 93% and 88%, respectively. Figure 6.5 shows the proportion of board seats held by the firm's largest family across industries. The proportion varies between a minimum of 80% in fishing and a maximum of 91% in social services.

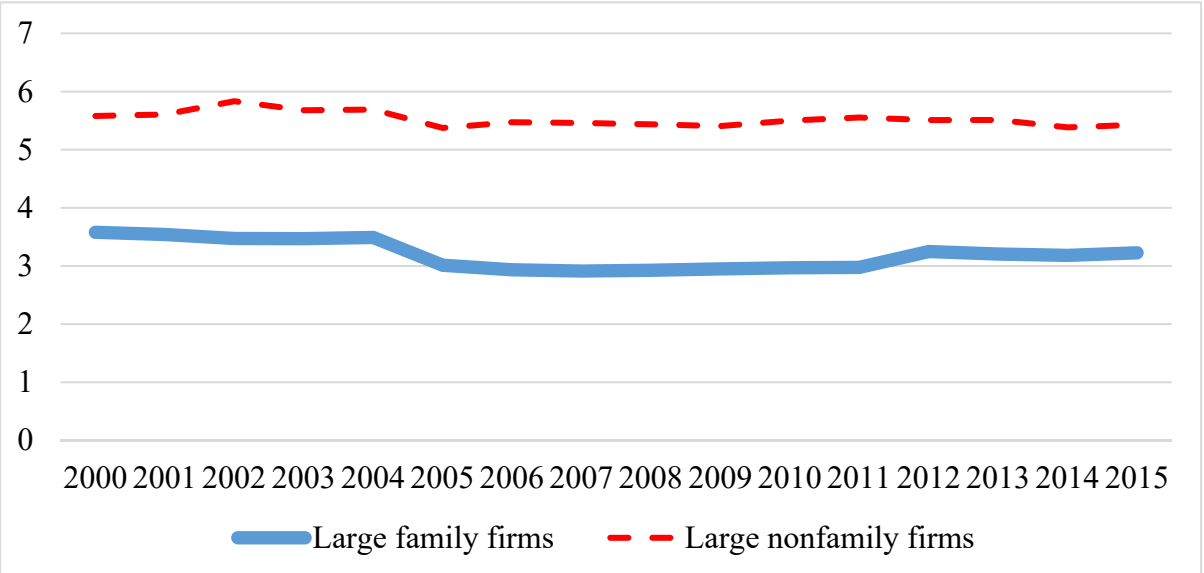
Figure 6.5: The controlling family's proportion of board seats by industry, 2000–2015



Thus, like in Section 6.1, this means the first agency problem is minuscule in the average family firm. However, the composition of the board does not mitigate a potential second agency problem. Although minority owners are on the board in 11% of the cases, their formal power is practically nil because the board always decides by simple majority.

Family firms tend to have smaller boards than nonfamily firms have (1.7 vs. 3.1 seats on average) and directors with longer tenure (2% vs. 7% likelihood of at least one director being replaced in a given year). The tendency for family firms to have small boards persists over time and holds regardless of firm size. Figure 6.6 shows the level and dynamics of board size in large family firms and nonfamily firms. While a large family firm has about 3.5 directors on average, large nonfamily firms have about 5.5, which is close to the average of just about 6 directors for Norwegian public firms (Bøhren and Strøm, 2010).

Figure 6.6: Mean board size in large firms over time



Female directors are more common in family firms than elsewhere (20% vs. 16% of the board seats on average over the sample period). As shown by Figure 6.7, the tendency to use female directors increases over time in both family firms and nonfamily firms.

Figure 6.7: Mean proportion of female directors over time

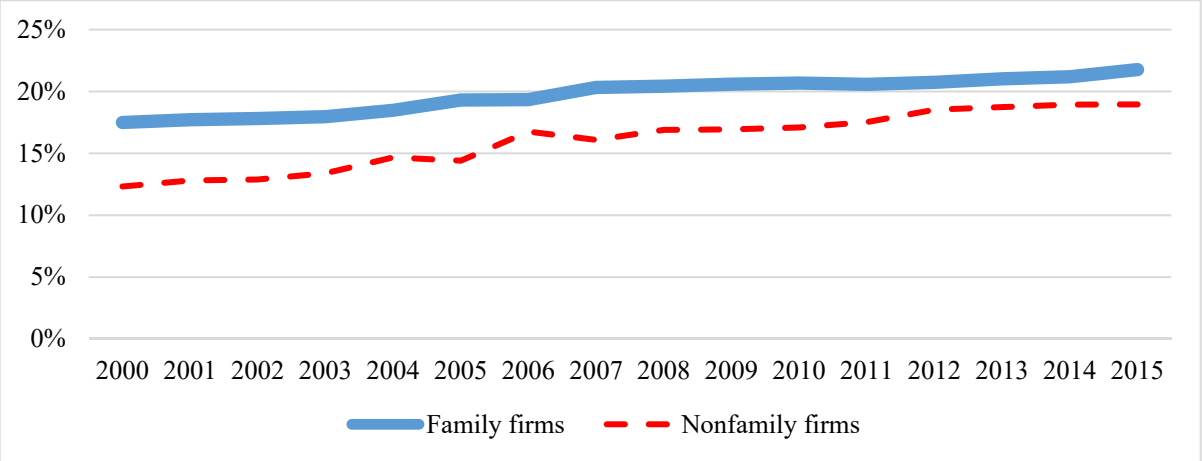
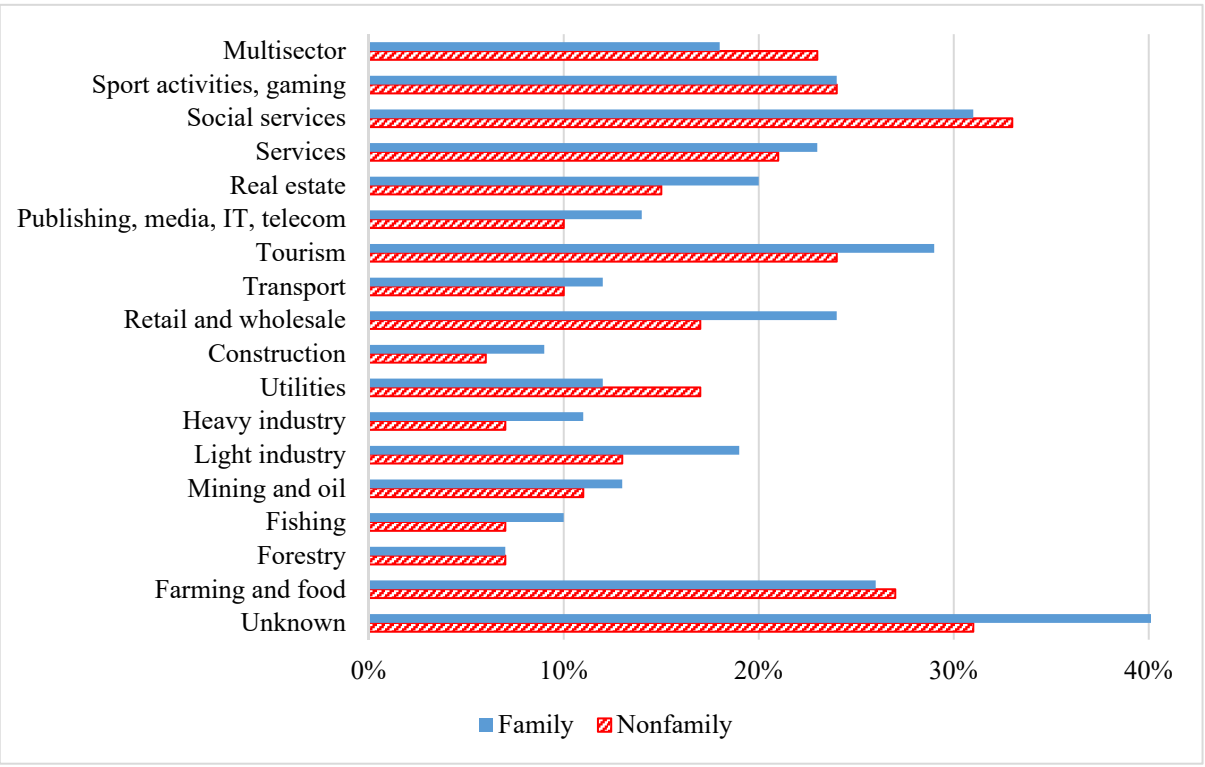


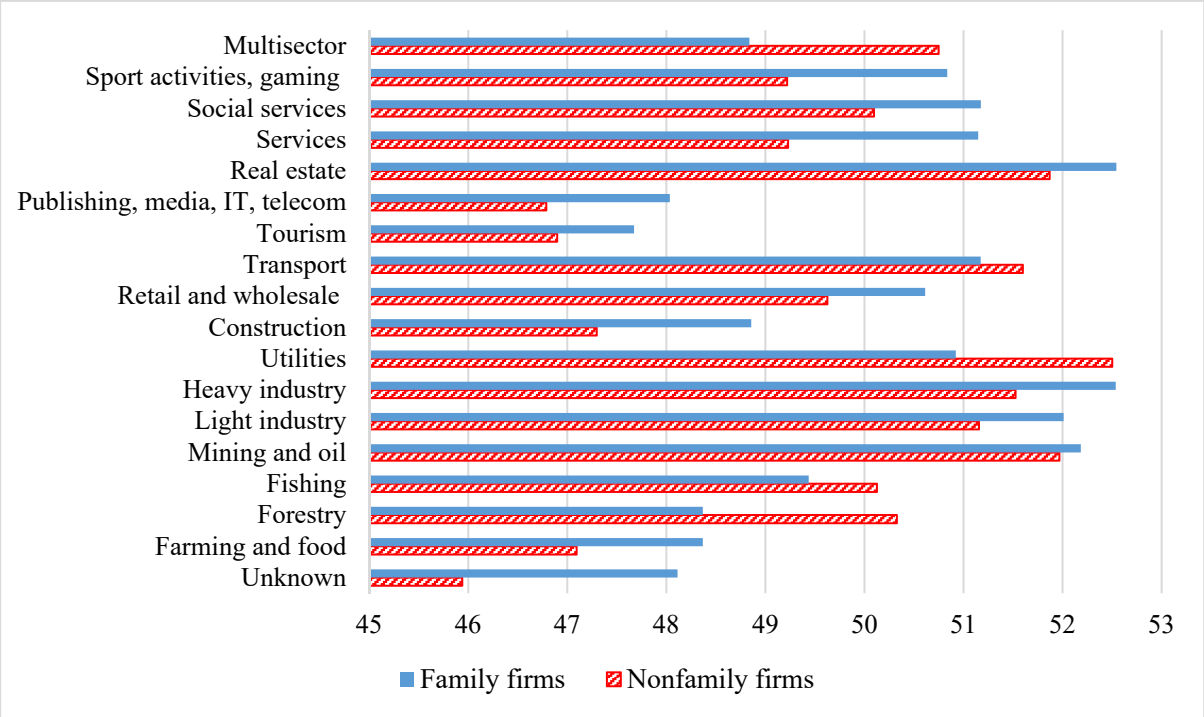
Figure 6.8 shows that there is considerable variation in the use of female directors across industries. Social services is the industry with the highest proportion of female directors in both family firms and nonfamily firms (around 30%), while fishing and construction are at the opposite end (around 10%).

Figure 6.8: Mean proportion of female directors by industry, 2000–2015



The average director is about one year older in family firms than in nonfamily firms (50.6 vs. 49.4 years, respectively). The average female director is about two years younger than males in both firm types. As shown by Figure 6.9, average board age differs across industries. For instance, the average director of a family firm is about 52.5 years old in real estate and 47.5 in tourism. Finally, age diversity as measured by the standard deviation of director age suggests that family firms have the more heterogeneous boards in terms of age.

Figure 6.9: Mean director age by industry, 2000–2015



Taken together, we have found that the boards of family firms tend to be unusually small, stable over time, have more female directors than other boards have, and to have older directors. The controlling family is very much present on the family firm's board. This active involvement reduces the separation between ownership and control, which is positive from a corporate governance perspective. The potential problem is conflicts with minority owners, who seldom have formal power in the boardroom.

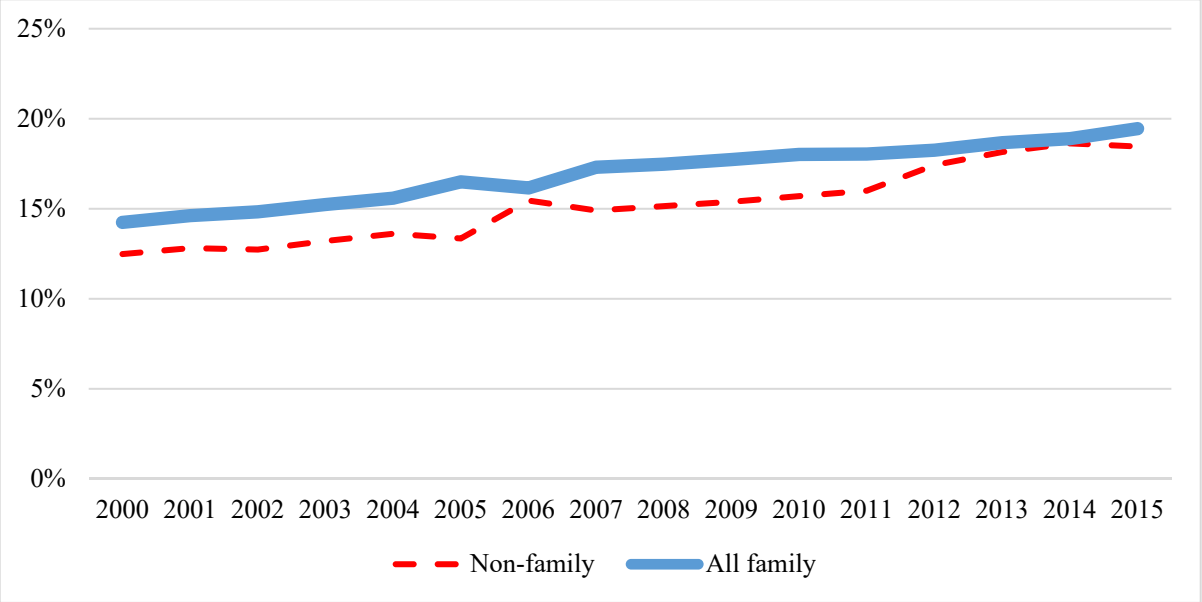
6.3 The CEO

Panel C of tables 6.S1–6.S4 shows that the family's dominance in shareholder meetings and board rooms documented in Section 6.1 and 6.2 carries over to the CEO position. For instance, the family has the CEO in 83% of the firms and both the chair and CEO positions in 72%. Not surprisingly, these figures are considerably lower in the subsample of large family firms, being 56% and 33%, respectively. Again, the first agency problem is practically nonexistent, while there is no obvious mitigation of the second except in large firms.

The proportion of female CEOs is 17% in family firms and 15% in nonfamily firms. Figure 6.10 shows that the use of female CEOs increases over time, and that the level is around 20%

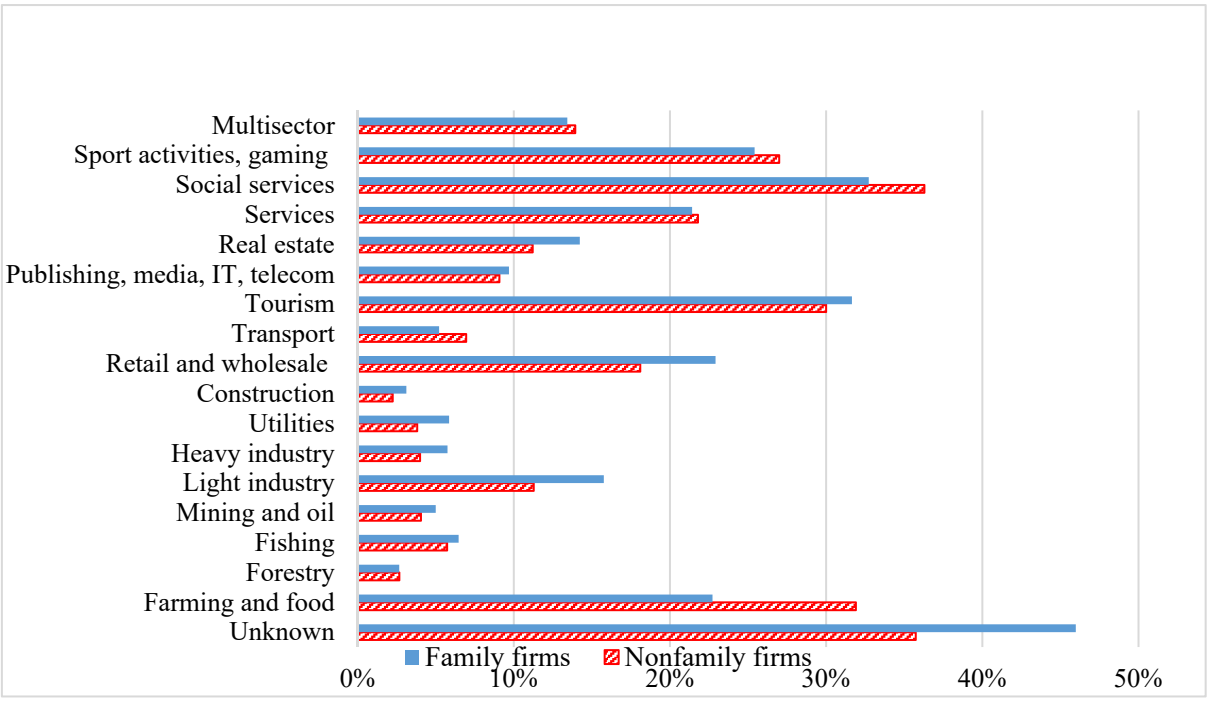
in both firm types by the end of the sample period. Both male and female CEOs are on average about two years older in family firms than in nonfamily firms.

Figure 6.10: Mean proportion of female CEOs over time



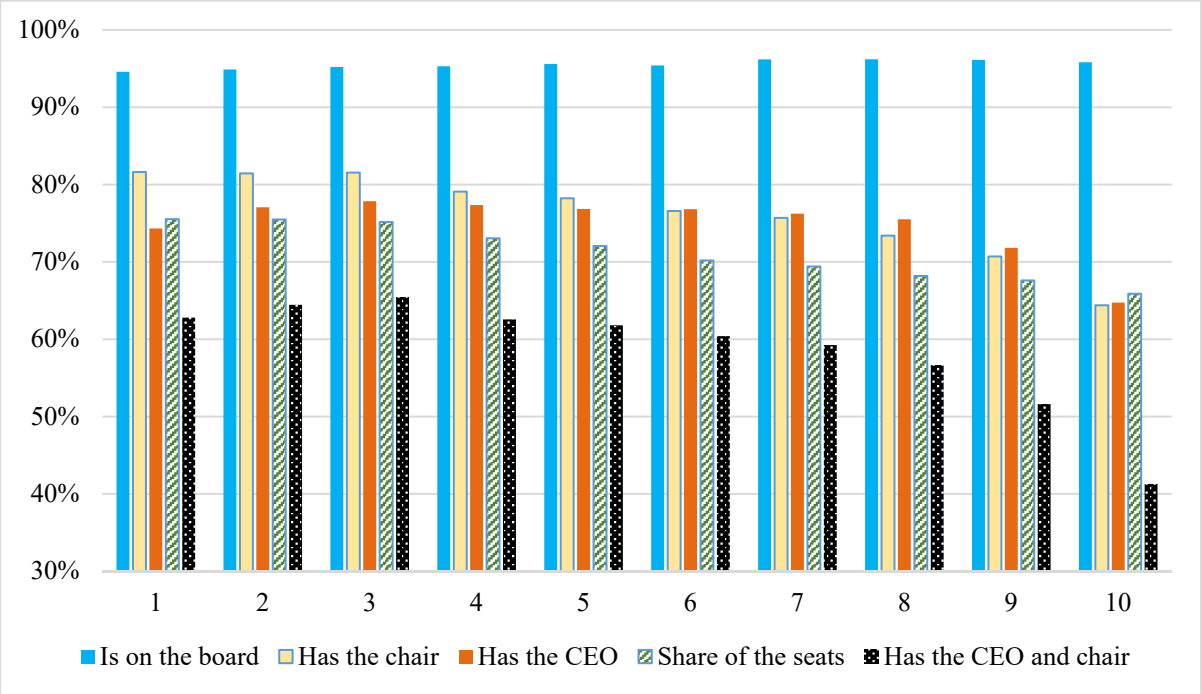
Finally, Figure 6.11 shows that the use of female CEOs depends on the industry in both family firms and nonfamily firms. For instance, while about 35% of family firm CEOs are females in social services, while less than 5% are in construction.

Figure 6.11: Mean proportion of female CEOs by industry, 2000–2015



Overall, our findings for the board and the CEO reflect that the controlling family participates very actively in the family firm's governance. Figure 6.12 summarizes the situation by showing how five indicators of family participation vary with firm size. The figure shows that the only activity indicator that drops considerably with firm size is the family's tendency to hold both the CEO and chair positions. This tendency drops from 60% in the smallest firms to 40% in the largest. Even in the 10% largest family firms, however, the average controlling family holds two thirds of the seats, has the CEO, or has the chair.

Figure 6.12: The controlling family's governance participation by firm size deciles, 2000–2015



6.4 Summary

This chapter has analyzed the characteristics of the family firm's ownership structure, board composition, and CEO, which are the firm's three main governance mechanisms. We find that that potential conflicts of interest between owners, directors, and officers (the first agency problem) are very small in the average family firm. Potential conflicts between the family and the minority owners (the second agency problem) are mitigated by the very concentrated ownership structure even in large family firms, but not by the strong tendency to use family members as officers and directors. Thus, compared to other firms, the ownership structure of family firms makes them less exposed to conflicts of interest between owners, offices, and directors and also to conflicts between large and small owners.

This conclusion holds across different types of family firms, although large family firms have the boards and the CEO backgrounds that resemble the widely held public firm the most. The very strong family dominance in board and CEO positions may create settings where the beneficial effects of family control are offset by the negative effect of recruiting officers and directors from a too limited talent pool.

The boards of family firms tend to be unusually small, stable over time, and to have more female directors than other boards have. Family firms tend to have somewhat older directors and CEOs.

7. Corporate finance

In this chapter we describe main finance characteristics of the family firm. Like in Chapter 6, we primarily describe rather than make strong attempts at explaining how the characteristics have come about. Doing the latter would take us astray, as the overall objective of this report is to uncover main patterns in the data.

We describe a given corporate finance characteristic the way it turns up in the data, mostly trying to understand it only in terms of a small set of simple, general firm properties, which are family firm status, firm size, industry, and dynamics. For instance, we explore whether the firm's risk seems to vary with being or not being a family firm, with firm size, industry, and with calendar time. In contrast, we do not test for theoretically well-founded determinants of risk taking.

We present extensive descriptive statistics in four comprehensive tables and use smaller graphs to visualize main patterns. Table 7.S1 shows distributional properties of each finance characteristic for family firms and nonfamily firms. Table 7.S2 compares the mean value as well as the median value of these characteristics across the subsamples of family firms we defined in Chapter 4 and used in Chapter 6. The reason we report both means and medians is that, unlike for the governance variables in Chapter 6, the histogram for finance variables is often skewed., that is, not symmetric around the mean value.

Tables 7.S1 and 7.S2 use data from the entire sample period 2000–2015. Table 7.S3 and 7.S4 use data only from 2015, showing distributional properties in Table 7.S3 and mean as well as median values in Table 7.S4.

Tables 7.S1 and 7.S3 describe the family firms in Part I and the nonfamily firms in Part II. In tables 7.S2 and 7.S4 we show the mean values in Part I and the median values in Part II.

Each table has six panels in the leftmost column that we call Size, Growth, Assets, Financing, Dividends, and Profitability, respectively. We organize the chapter in subsections using these concepts.

[Table 7.S1]

[Table 7.S2]

[Table 7.S3]

[Table 7.S4]

7.1 Size

Like in Chapters 4–6, we measure size by sales, assets, and employees. The numbers in Panel A show for the firm level what Chapter 5 showed for the aggregate level: Family firms tend to be smaller than nonfamily firms. The average (mean) family firm is about 8% the average nonfamily firm according to assets, 15% according to sales, and 27% according to employment.

Mean values in general and mean values for nonfamily firms in particular are heavily influenced by a few very large firms. Statoil, Telenor, and Yara are examples. This large effect of extreme cases disappears when we compare the medians, which is the observation at the center of the distribution (i.e., half the firms are above the median and half the firms are below): All three size measures suggest that the typical family firm and the typical nonfamily firm are both much smaller than what the means suggest. For instance, median sales are only 5% of mean sales in nonfamily firms, and median assets are only 10% of mean assets in family firms.

Using medians instead of means to measure firm size, we find that the typical family firm is about 60% the size of the typical nonfamily firm, as opposed to typically 20% when using means. Specifically, the median family firm employs 3 people and sells for NOK 3.7 mill., while the median nonfamily firm employs 5 people and sells for NOK 6.4 mill. The corresponding figures for assets are NOK 2.3 mill. and NOK 3.7 mill., respectively.

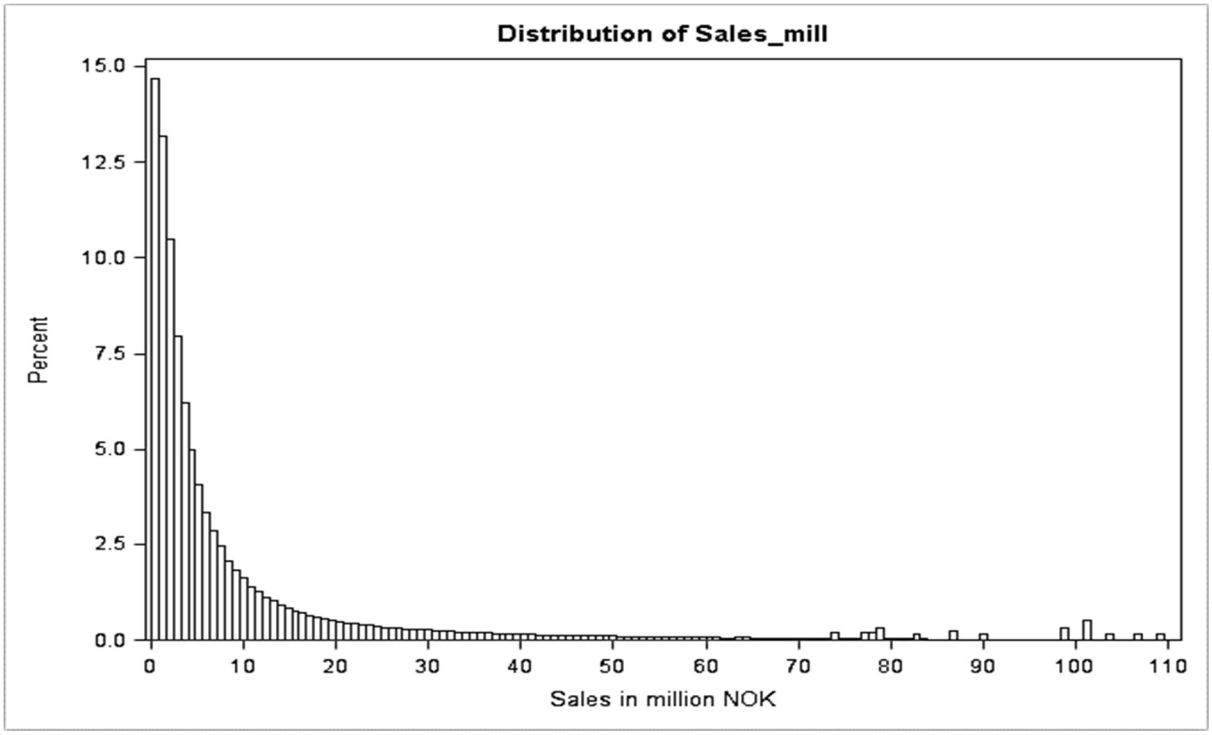
The skewness towards low size can be further illustrated by considering the shape of the distribution in more detail. Considering first the distribution parameters reported in Table 7.S1, they show that:

- 25% of the family firms have sales below NOK 1.4 mill.
- 75% of the family firms have sales below NOK 10.0 mill.
- 95% of the family firms have sales below NOK 52.5 mill.

These numbers do not imply that large family firms do not exist. There are many very large family firms in our sample. For instance, the largest family firm in 2015 had sales of NOK 96 billion, while the tenth largest had sales of NOK 12 billion. The total sales of the ten largest family firms were NOK 397 billion. In comparison, the largest nonfamily firm had sales of NOK 483 billion, the tenth largest had NOK 54 billion, and the ten largest had total sales of NOK 1,173 billion.

Another way of illustrating skewness in the size distribution is by the histogram, which we show for family firms in Figure 7.1. In order to restrict the thin right tail of the distribution for exposition purposes, we exclude firms with sales above NOK 110 mill. These excluded observations represent 18,032 firm-years with sales between NOK 110 mill. and 99,037 mill., the average being NOK 543 mill.

Figure 7.1: The size distribution of family firms by sales, 2000–2015

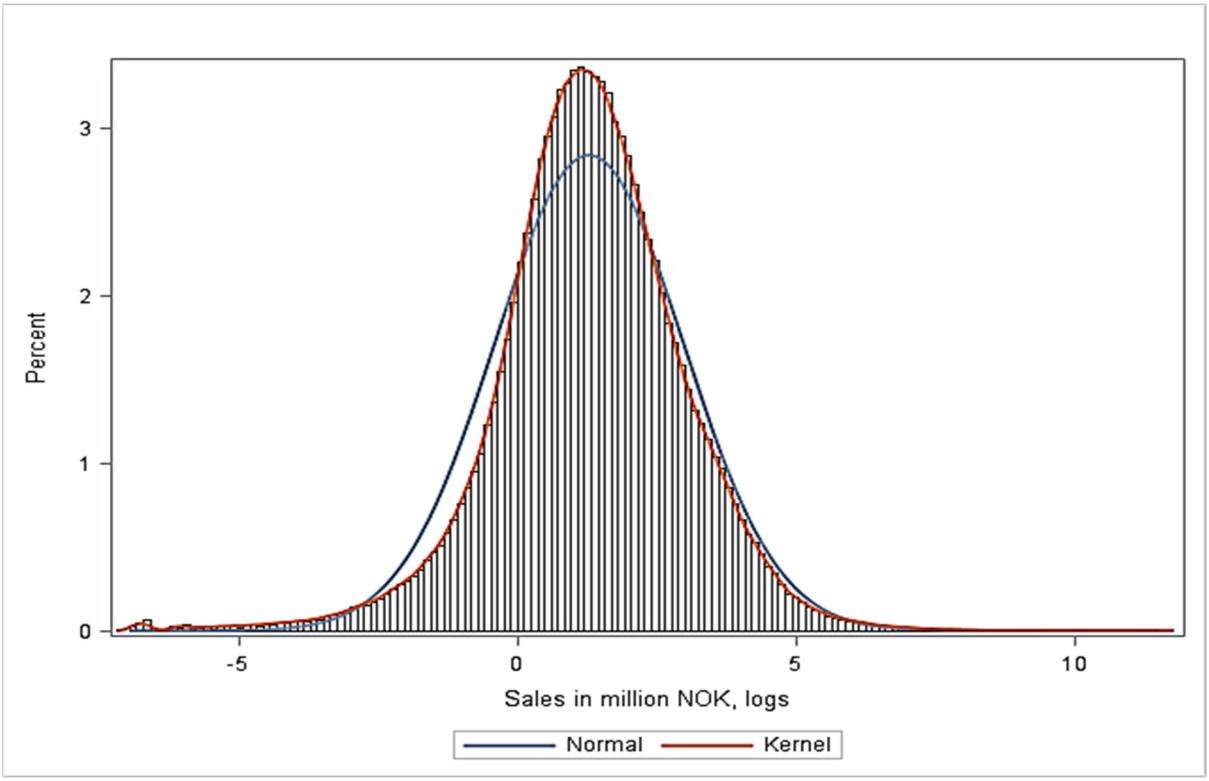


The histogram is very heavily skewed to the left. As we already know from the median, half the observations in this histogram are below NOK 3.7 mill. The histogram also shows that, given the three firm size groups we defined in Chapter 4, a much higher proportion of the family firms are small (less than NOK 10 mill. in sales and less than five employees) than medium and large. The exact proportions are 70%, 29%, and 1%, respectively.

Figure 7.1 resembles a lognormal distribution. That is, if we take the log of the sales and draw the histogram for these log values, the histogram resembles a normal distribution. This property is shown in Figure 7.2, where a normal distribution with the same mean and standard deviation as in the histogram is superimposed on the histogram. The histogram has a higher peak, but the shape and the tails resemble the normal distribution. In fact, the statistical test for log normality suggests that the histogram can be considered lognormal.[20]

It can be shown theoretically that if the distribution of size in a large sample of firms is lognormal, the firm's growth is independent of its size (Sutton, 1997). In that case, large firms are as likely to grow by a given percentage as are small firms. This so-called Gibrat's law may be tested by either its assumptions (i.e., check whether size and growth are independently distributed variables) or by its implication (i.e., check whether the frequency distribution of size across firms has a lognormal shape). Either way, we need a large sample of firms and preferably the whole population to test whether Gibrat's law holds. In our case we have both tools. The test based on distributional properties finds no compelling evidence in the histogram that size and growth are independent. We return to this question in Section 7.2, where we relate growth to size directly.

Figure 7.2: The distribution of the log of sales in family firms, 2000–2015



[20] Using the Anderson-Darling, Cramér-von Mises, and the Kolmogorov-Smirnov tests, the p-values are 1%, 0.5% and 0.5%, respectively.

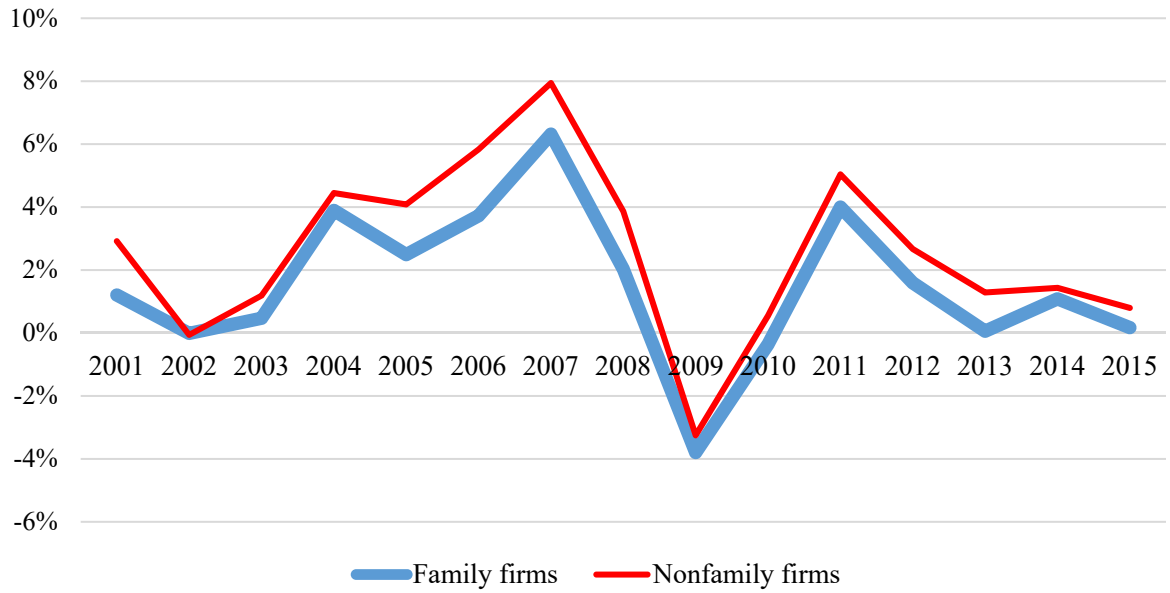
Overall, we find that the typical (median) family firm has about 60% the size of the typical nonfamily firm. The typical family firm employs 3 people and sells for NOK 3.7 mill. Most family firms are small, as 70% of them have sales below NOK 15 mill. Still, several very large family firms exist, reflecting the finding that the size distribution of family firms resembles a lognormal distribution.

7.2 Growth

The annual growth rates in sales, assets, and employment are shown in Panel B of the four tables. Notice that all growth rates are in real terms, i.e., in excess of general inflation. Overall, the average growth rates are pretty close in family firms and nonfamily firms as a whole, although family firms tend have somewhat lower sales growth and somewhat higher asset growth. For instance, median employment growth is 0.0% in both family firms and nonfamily firms, median sales growth is 1.4% in family firms and 2.5% in nonfamily firms, while median asset growth is 0.4% in family firms and 0.2% in nonfamily firms. The mean growth rates are always higher and in the 5.6%–9.2% range.

Figure 7.3 shows the growth in sales for family firms and nonfamily firms over time. The growth varies considerably over time in both firm types, the financial crisis hit the growth rates strongly and equally, and both firm types recovered quickly. Nonfamily firms have lower annual growth every year except for one year, but the difference never exceeds two percentage points and is always less than one percentage point after 2007.

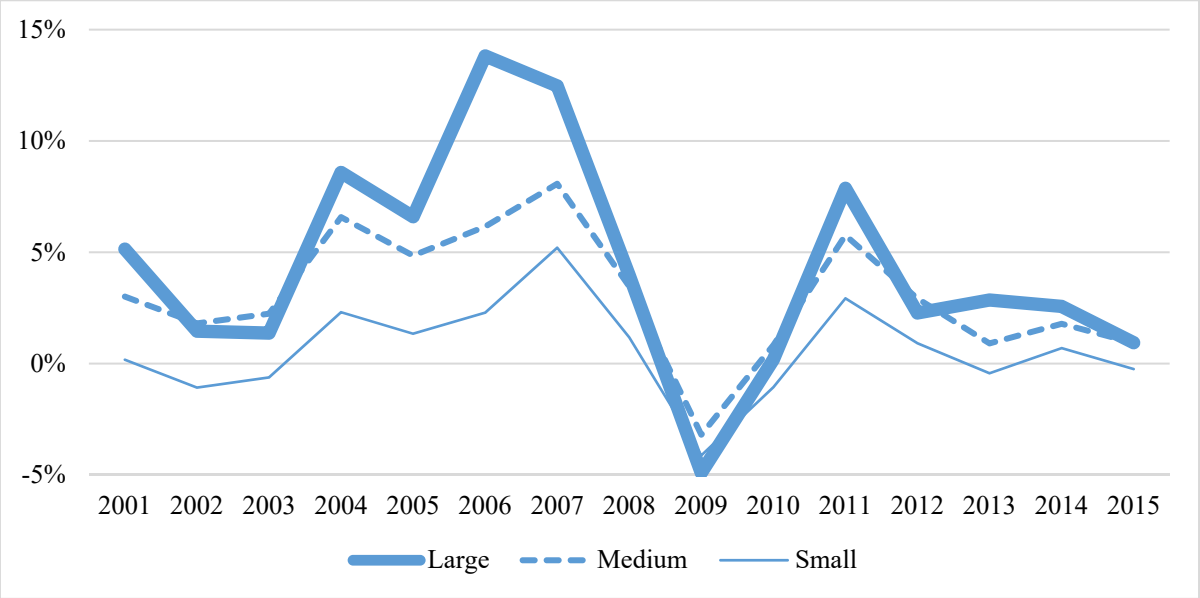
Figure 7.3: Median sales growth in family firms and nonfamily firms over time



As we showed in Figure 7.1, family firms differ greatly from each other in size. Figure 7.4 shows the relationship between firm size and median sales growth, classifying the family firms into small, medium, and large, respectively. The overall impression is that size may

matter for growth, but not much. It turns out that at the individual firm level, the correlation coefficient is only 3% between size as measured by sales and growth as measured by percentage change in sales. That is, size and growth are basically independent. This evidence is consistent with Gibrat's law as discussed in Section 7.1. Thus, the support for a lognormal distribution of sales we found in Figure 7.2 is in line with the finding in this section that size and growth are independent.

Figure 7.4: Median sales growth in large, medium, and small family firms over time



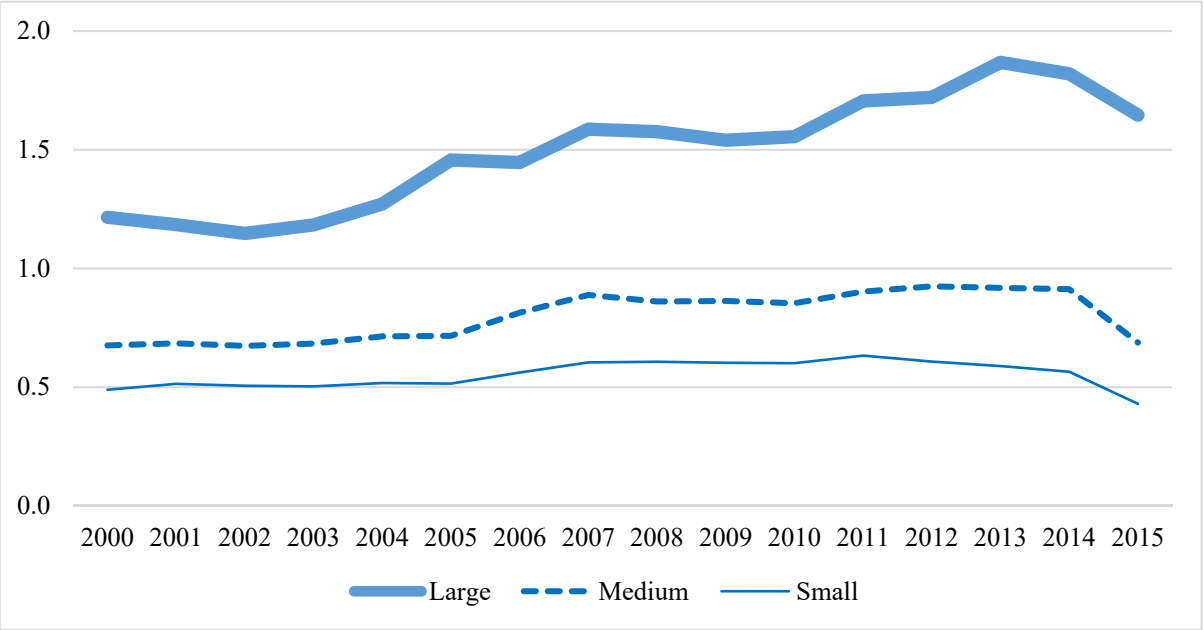
In summary, growth as measured by the percentage increase in real sales varies considerably over time and is typically 1–2% percentage points lower in family firms than in nonfamily firms. The growth of family firms is independent of firm size.

7.3 Assets

The results in Panel C confirm the impression that family firms are less capital intensive than nonfamily firms are. For instance, the average family firm has assets for NOK 2.8 mill. per employee, while the average nonfamily firm has NOK 6.5 mill. However, this difference is primarily due to the fact documented in Section 7.1 that there is a lower proportion of medium and large firms among family firms than among nonfamily firms. Therefore, the median ratios of assets to employees are much closer to each other than the mean are, being NOK 0.6 mill. in family firms and NOK 0.7 mill. in nonfamily firms.

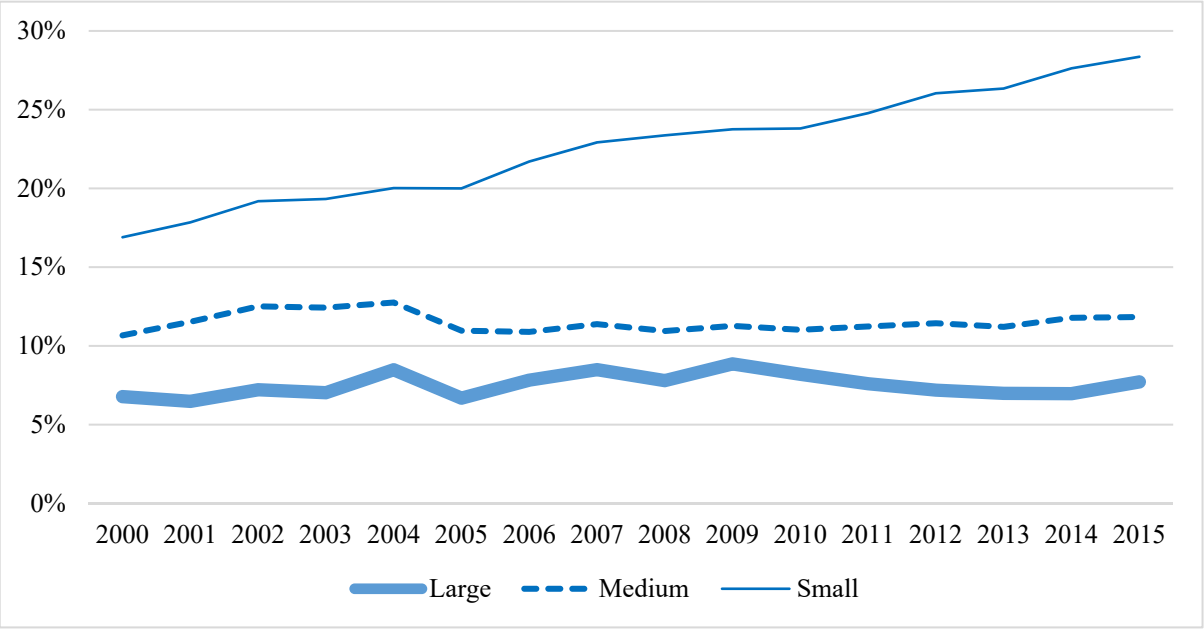
Figure 7.5 shows the same phenomenon across the three size groups of family firms: Capital intensity is greater the larger the firm. The graph also suggests that, unlike small and medium-sized family firms, large family firms have become considerably more capital intensive over time. For instance, median assets per employee is NOK 1.1 mill. in 2002 and 1.9 mill. in 2013.

Figure 7.5: Median assets per employee in large, medium, and small family firms over time



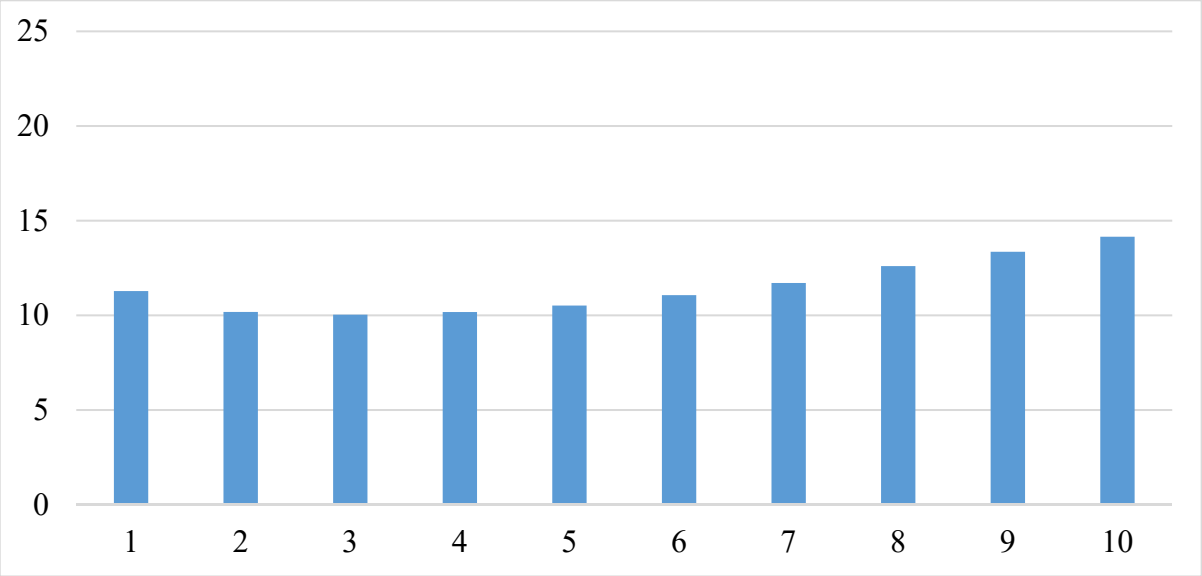
Considering next the composition of the assets, the ratio of cash to assets seems independent of whether the firm is family-controlled, the medians being 18.8% in family firms and 18.4% in nonfamily firms. Like for asset intensity, however, both the level and the dynamics depend on the firm's size. This relationship is illustrated by Figure 7.6, which shows that family firms are more cash rich the smaller they are. Moreover, unlike the medium and the large, the small family firm becomes considerably more liquid over time. For instance, the median cash to assets ratio rises from 17% in year 2000 to 28% in 2015.

Figure 7.6: Median cash to assets in large, medium, and small family firms over time



The mean age is 12 years in both family firms and nonfamily firms, the median being 8 years in both. The age and the size of the firm tend to be positively correlated, although the tendency is rather modest. This relationship is illustrated for family firms by Figure 7.7, which shows mean age in years per firm size decile. The difference in mean age between the lowest and highest deciles is not more than three to four years. If we instead account for firm size by the three size groups, we find that mean firm age in small, medium, and large family firms is 11, 13, and 18 years, respectively. It turns out that 10% of the family firms are 25 years or older, the oldest being 168 years.

Figure 7.7: Mean family firm age by size deciles, 2000–2015



We measure risk by the coefficient of variation for sales, which is the standard deviation of sales divided by mean sales. We use the past three years as the estimation period. Our first result is that risk is practically identical in family firms and nonfamily firms in the aggregate. The median coefficient of variation is 0.15 in both cases, while the mean values are 0.25 in family firms and 0.26 in nonfamily firms.

The second result is that that the level of risk is very stable over time. For instance, median sales volatility is between 0.13 and 0.17 regardless of firm type and year. Third, as documented for family firms in Figure 7.8, risk decreases with firm increasing size: Median sales volatility is 0.16 in small firms and 0.12 in medium and large. Moreover, the largest risk is in the sole entrepreneurships (0.17), which are young and normally also small firms.

Figure 7.8: Risk in four subsamples of family firms, 2000–2015

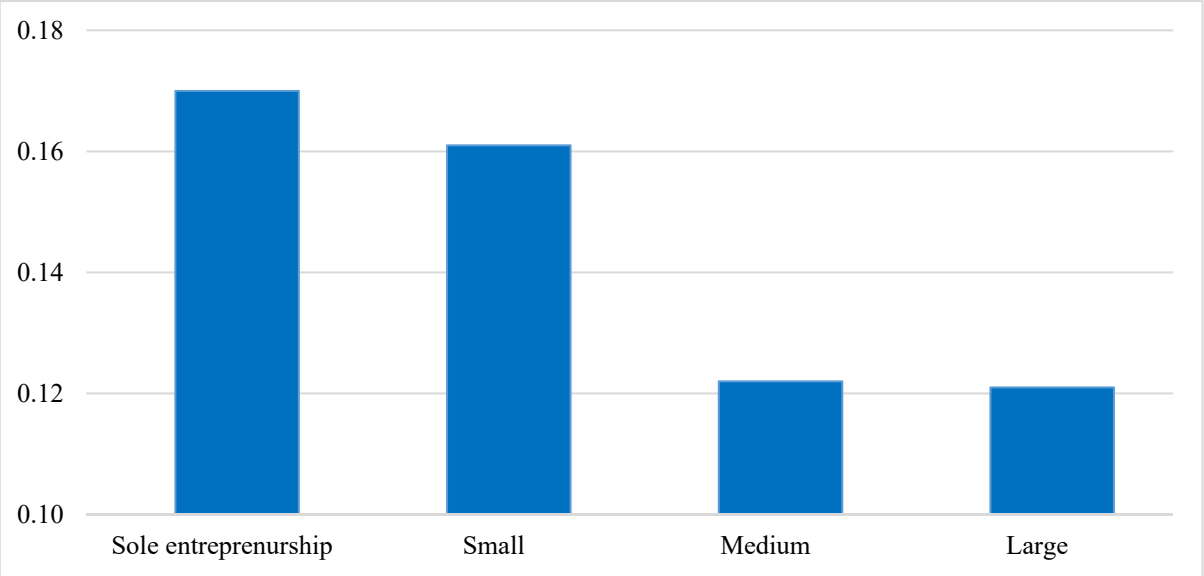
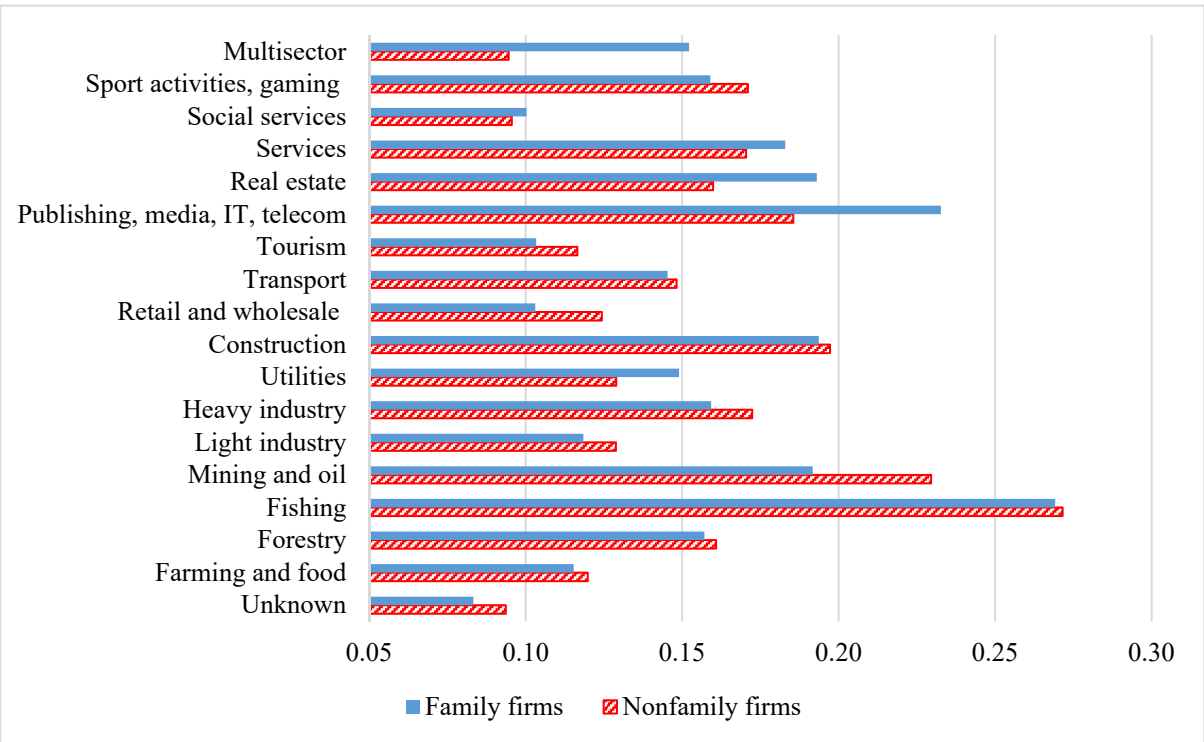


Figure 7.9 shows that risk varies considerably across industries. Moreover, risk taking within an industry sometimes varies strongly between family firms and nonfamily firms. For instance, risk is low in social services and high in fishing for both family firms and nonfamily firms. In contrast, while mining & oil is an industry with relatively high risk for both firm types, family firms take less risk than nonfamily firms as measured by the volatility of sales.

Figure 7.9: Risk by industry, 2000–2015



Summarizing, we have found that family firms are more labor intensive than nonfamily firms are primarily because family firms are smaller. Small family firms are also special because their assets are considerably more liquid than in other family firms. Over time, large family firms become decreasingly labor intensive, while small family firms become increasingly cash rich. The mean (median) age is 12 (8) years in both family firms and nonfamily firms. Older firms tend to be larger than younger firms, as small, medium and large family firms have mean age of 11, 13, and 18 years, respectively. Finally, risk is practically identical on average in family firms and nonfamily firms and is very stable over time. Risk decreases with firm size, is highest in the sole entrepreneurship, and varies considerably across industries.

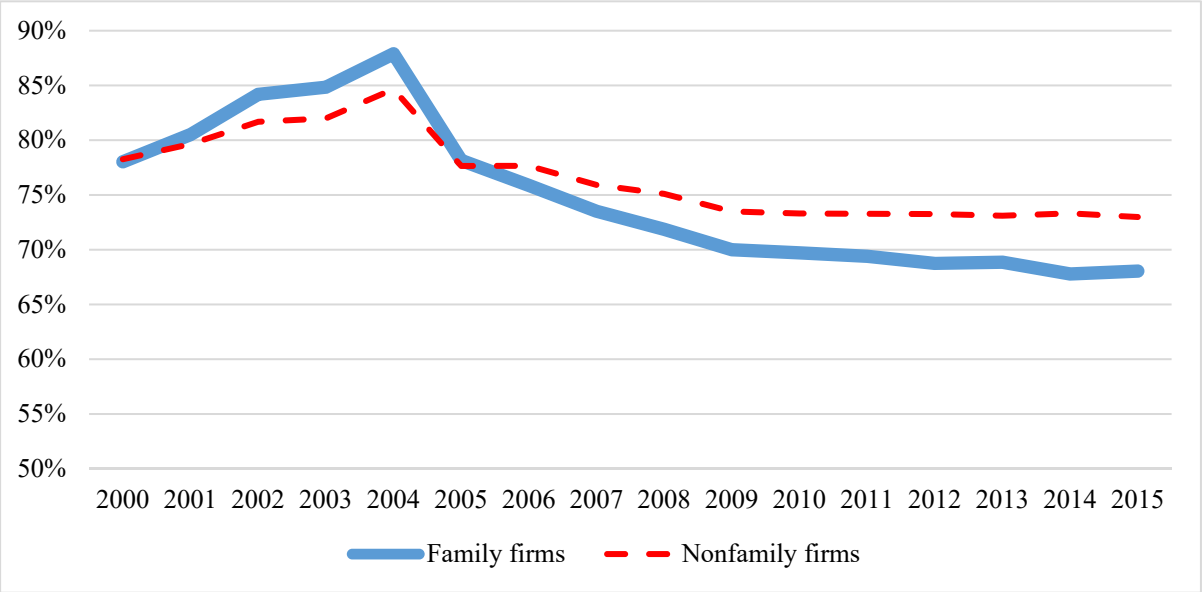
7.4 Financing

Panel D shows that family firms and nonfamily firms are almost identical regarding the median value of main financing characteristics. About 75% of the assets are financed with debt, about 55% of the debt is short-term, and earnings are about 6 times the interest payments. There are no striking differences in financing across different groups of family firms.

Figure 7.10 shows that leverage in family firms and nonfamily firms both peak around year 2004. The reason is probably the dividend tax reform, which was passed in 2005. This reform increased the tax cost of paying dividends to individuals and induced firms to substitute equity by debt, to pay large dividend before the new tax regime became effective in 2006, and to retain more of the earnings afterwards (Berzins, Bøhren, and Stacescu, 2018a). Consistently with these incentives, the figure shows that family firms in particular have gradually reduced their leverage every year after the dividend tax reform. In 2015, median leverage is 68% in family firms and 73% in nonfamily firms.

Overall, the financing patterns do not differ much between family firms and nonfamily firms in the aggregate over the sample period. However, family firms have decreased their leverage more year by year than nonfamily firms have after the dividend tax increase in 2005.

Figure 7.10: The financial leverage of family firms and nonfamily firms over time



7.5 Dividends

The standard measure of payout from the firm to its owners is the payout ratio, which we calculate as dividends divided by after-tax earnings. The numbers in Panel E suggest that, compared to nonfamily firms, family firms pay dividend more often (23% vs. 19% of the cases). They also pay a higher proportion of the earnings when they pay (106% vs. 96%). The combination of these two practices make the average payout from payers and nonpayers as a whole higher in family firms than in nonfamily firms (33% vs. 28%).

The very high average payout for dividend payers over the sample period is driven by unusually high payout just before the dividend tax increase in 2015. The proportion of dividend payers as well as the payout for the payers dropped dramatically after the reform. Showing the patterns separately for large, medium, and small family firms, Figure 7.11 documents that from about 2008 on, the proportion of dividend payers is about 40% in large firms, 25% in medium firms, and 15% in small firms. Figure 7.12 shows that regardless of firm size, the average payout ratio from 2008 on is around 20%.

Figure 7.11: The proportion of dividend payers in large, medium, and small family firms over time

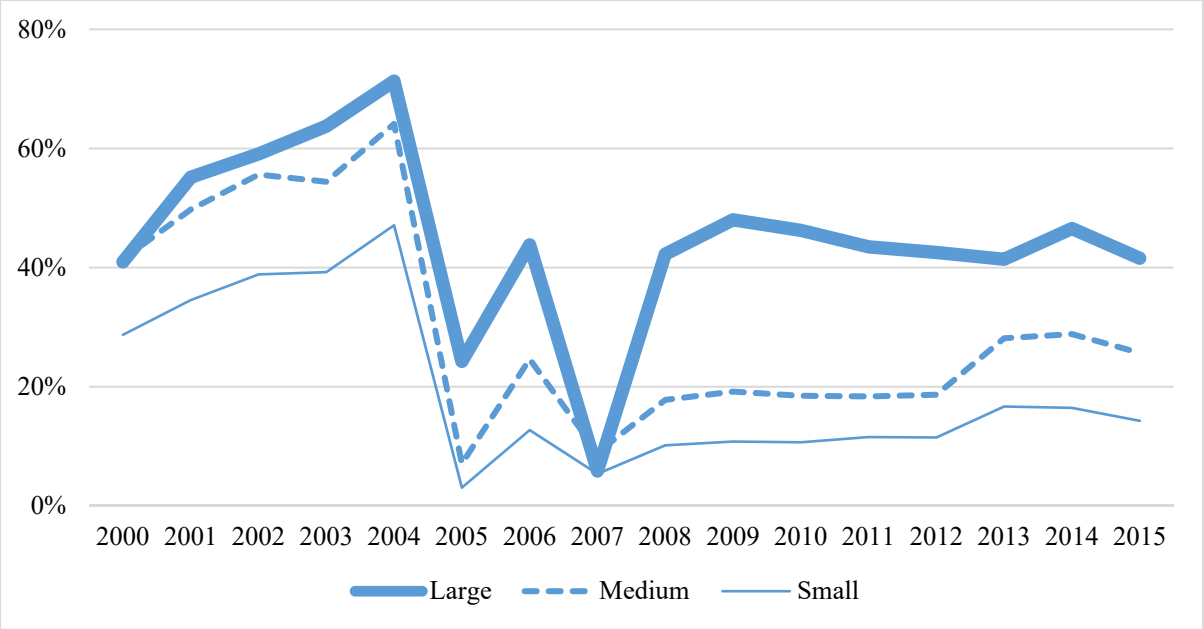
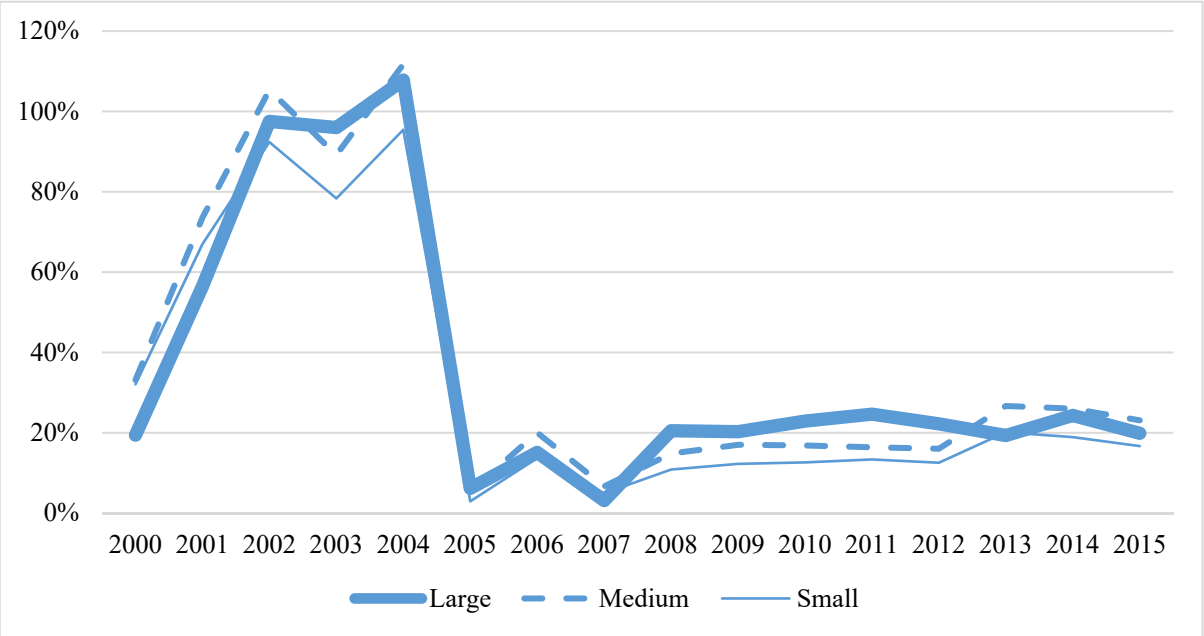


Figure 7.12: The dividend payout ratio in dividend-paying large, medium, and small family firms over time



Summarizing, we have found that family firms pay dividends more often and pay a higher proportion of the earnings when they pay than nonfamily firms do, although the difference is not striking. The payout was very high just before the dividend tax increase in 2006. The payout ratio dropped dramatically regardless of firm size after the dividend increase, while large family firms less often stopped paying dividends than others family firms did. The dividend policy of family firms has been stable since 2008.

7.6 Profitability

Our main measure profitability in Panel E is return on assets (ROA), which we define as operating earnings (which are before interest payments) divided by total assets. Every return measure in the panel is in real terms. Table 7.1 summarizes median ROA across different types of family and nonfamily firms.

Table 7.1: Median return on assets in family firms and nonfamily firms, 2000–2015

	All	Large	Medium	Small	Sole entrepre-neurship	Single-owner	Multiple-owner
Family firm	7.1%	5.6%	6.7%	7.4%	7.5%	7.2%	7.0%
Nonfamily firm	5.3%	4.3%	6.7%	4.1%	3.0%	4.7%	5.4%
Family firm premium	1.8	1.3	0.0	3.3	4.5	2.5	1.6

Considering first the family firms, four features stand out. First, ROA during the sample period is 7.1% for family firms as a whole. Second, profitability decreases with family firm size, as large, medium, and small firms have ROA of 5.6%, 6.7%, and 7.4%, respectively.

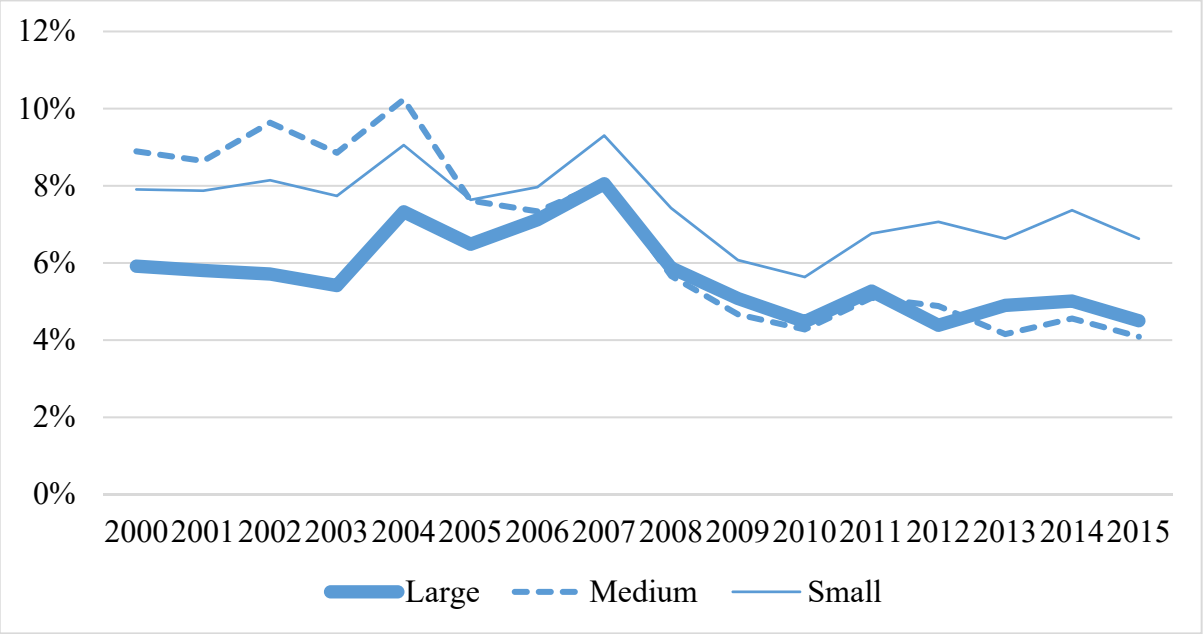
Third, the highest ROA is in the sole entrepreneurship (7.5%), while the lowest is in large firms (5.6%). Fourth, family firms without minority owners (single-owner firms) have slightly higher profitability than firms with minority owners (multiple-owner) have (7.2% vs. 7.0%).

Nonfamily firms in the second row of the table have ROA of 5.3%. The medium-sized firms have the highest profitability (6.7%), while the smallest firms have the lowest (4.1%). Sole entrepreneurships perform like the large firms do, while multiple-owner firms do better than single-owner (5.4% vs. 4.7%). Thus, the level of profitability is generally lower than in comparable family firms, and the relationship between profitability and firm type is different.

We define the family firm premium in the third row as the difference in percentage points between the ROA of family firms and the ROA of nonfamily firms. The table shows that the overall family firm premium is 1.8 percentage points, ranging between 0 as the lowest in medium-sized firms to 4.5 as the highest in sole entrepreneurships.

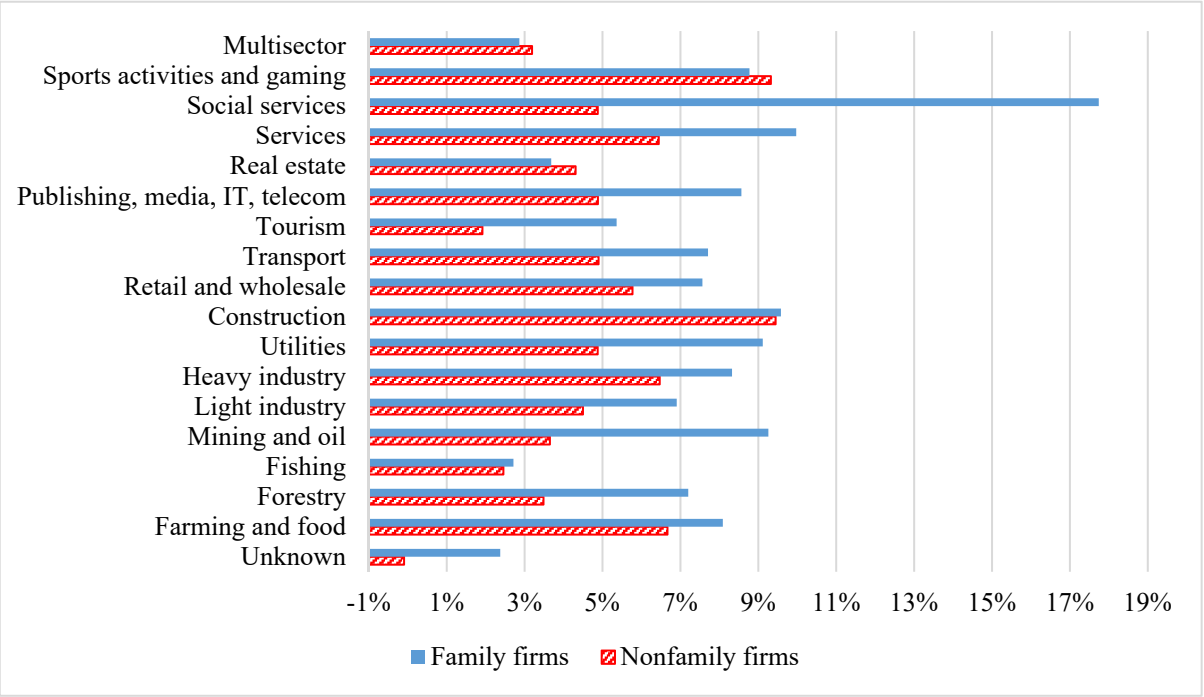
Figure 7.13 shows median ROA per size group of family firms over time. The figure reveals that the profitability difference between medium and large firms in Table 7.1 is due to the years before 2007. Afterwards, the two size classes have very similar median performance. Moreover, the small firms earn a persistent premium of 1–2 percentage points during that period.

Figure 7.13: The median return on assets in large, medium and small family firms over time



The median ROA by industry is shown in Figure 7.14. As expected from the consistent family firm premia in Table 7.1, family firms do better than nonfamily firms in almost every industry. This is particularly the case in industries like social services (18% in family firms vs. 5% in nonfamily firms) and mining & oil (9% s. 4%). Nonfamily firms do slightly better than family firms in sports & gaming (9.3% vs. 8.8%) and in real estate (4.3% vs. 3.7%)

Figure 7.14: The median return on assets in family firms and nonfamily firms by industry, 2000–2015



The ROA reported in the table and in the figures are before corporate tax, showing what the assets pay the owners, creditors, and tax authorities as a group. We have estimated the after-tax ROA and find that it is always very close to 73% of the pre-tax ROA.[21] Thus, after-tax figures for ROA and the family firm premium can be found by multiplying the figures in Table 7.1 by 0.73.

Overall, we have found that, as measured by the median real return on assets, family firms outperform nonfamily firms as a whole, across different firm size groups, across firms with and without minority owners, and across most industries. There are major profitability differences across different types of family firms, the trend being that smaller family firms outperform larger firms, given the way we have defined the firm size classes. Thus, we find a family firm premium when comparing family firms to nonfamily firms, while we find a small firm premium when comparing family firms to each other.

7.7 Summary

This chapter describes main finance characteristics of the family firm. We find that the typical (median) family firm is about 60% the size of the typical nonfamily firm, employing 3 people and selling for NOK 3.7 mill. Seven out of ten family firms have sales below NOK 10 mill. Although there are very many small family firms, there are also many large family firms in the economy. The largest family firm has 2015 sales of NOK 96 billion, and the tenth largest has sales of NOK 12 billion. This skewed distribution towards small size and a long and thin right tail reflects our finding that the size histogram of family firms resembles a lognormal distribution.

[21] The corporate tax rate varies between 28% and 27% during the sample period

Sales growth varies considerably over time and is 1–2 percentage points lower in family firms than in nonfamily firms. The size and the growth of family firms seem to be independent. This relationship is consistent with our finding that the size distribution is lognormal.

The main reason why family firms are more labor intensive than nonfamily firms is that family firms are smaller. Small family firms also have more liquid assets than other family firms, and the liquidity increases strongly over time. Older firms tend to be larger than younger firms, as small, medium and large family firms, the mean age being 11, 13, and 18 years, respectively. We find that median risk is practically identical in family firms and nonfamily firms and is very stable over time. Risk decreases with firm size, and depends on the industry.

The financing of family firms and nonfamily firms does not differ much if we average over the entire sample period. However, family firms decreased their leverage more year by year than nonfamily firms do after 2005, when the tax cost of dividend payments increased.

Family firms pay dividends somewhat more often and pay more when paying than nonfamily firms do. The payout was very high just before the dividend tax increase in 2006, dropping dramatically afterwards regardless of firm size. The dividend policy of family firms has been stable since 2008.

Measuring profitability by median real return on assets, we find that family firms outperform nonfamily firms as a whole, across the three firm size groups, across firms with and without minority owners, and across most industries. We also find major profitability differences across different types of family firms, as smaller family firms outperform larger firms. Thus, we find a family firm premium when comparing family firms to nonfamily firms, while we find a small firm premium when comparing family firms to each other.

8. Summary and conclusions

Motivation. Family firms are important, special, and underresearched. Corporate finance and governance has paid limited attention to family firms, despite the fact that they are the most common organizational form in the economy and contribute strongly to aggregate activity. Defining a family firm as being majority-owned by individuals related by blood or marriage, we argue such firms are special. The reason is that the controlling owners are tightly related sociologically, making the firm's behavior unusually dependent on characteristics of the family. We use data for all Norwegian firms from 2000 to 2015 to analyze how owner characteristics may influence firm behavior by comparing family firms to nonfamily firms. We cover a wide range of topics, using the insight obtained as a stepping stone for more focused analyses of each topic in the future. Our main finding is that the behavior and performance of family firms does indeed differ from what we observe in comparable non-family firms.

Data. The database is unusually broad and detailed. We build a comprehensive and detailed database on firms and their owners for the entire population of family firms and nonfamily firms with limited liability. The database covers a wide range of governance characteristics, such as each equity stake of ultimate owners, the family relationships between owners, officers, and directors, the composition of the board, as well as the age and gender of officers and directors. The finance characteristics include the firm's size, growth, asset structure, capital structure, dividend policy, and profitability. The database also includes family demographics like family size and family wealth.

Sample. We analyze the entire population of firms. There are on average about 146,000 firms with limited liability in our database per year, rising from about 114,000 at the beginning of the sample period to 199,000 at the end. We require all firms to be active, exclude financial firms, and we aggregate any group into one consolidated firm. The resulting sample has on average about 57,000 family firms and 29,000 nonfamily firms per year.

Importance. Family firms make a large contribution to the macro economy. They account in the aggregate for 66% of all firms, 33% of the employment, 22% of the sales, and 13% of the assets during the sample period. The relative significance of family firms compared to nonfamily firms increases over time. Family firms tend to be smaller and more labor intensive than are nonfamily firms, and they gravitate towards industries that use more labor and less assets. Certain industries contribute much more than others to the aggregate macro-economic significance of family firms.

Ownership structure. Family firms have very concentrated ownership. The average controlling family owns 94% of the small family firms, 91% of the medium-sized, and 86% of the large. The extensive ownership of officers and directors makes potential conflicts of interest between owners, directors, and officers (the first agency problem) very moderate in most family firms. The conflict potential between the family and the minority owners (the second agency problem) is mitigated by the very concentrated ownership even in large family firms.

Board composition. The board is strongly dominated by the controlling family. The family is on the board in 98% of the family firms, holds the chair in 88%, holds at least half the seats in 83%, and holds every seat in 76%. The boards of family firms are unusually small, stable over time, have more female directors and also have older directors than other boards have.

CEO. Most family firms have a CEO from the family. The family has the CEO in 83% of the firms and both the CEO and the chair in 72%. The family's involvement is less intensive in large firms, where participation intensity is 56% and 33%, respectively. Family firms tend to have older CEOs and have more female CEOs than nonfamily firms have. The family's

dominance in governance may create settings where the beneficial effect of family control is offset by the negative effect of recruiting officers and directors from a limited talent pool.

Firm size. Family firms tend to be smaller than nonfamily firms. The median family firm is about 60% the size of the median nonfamily firm, employs 3 people and sells for NOK 3.7 mill. Three quarters of all family firm have sales below NOK 10 mill. Nevertheless, there are many large family firms. The largest firm in 2015 has sales of NOK 96 billion, while the tenth largest has sales of NOK 12 billion. This skewness towards small size and a long, thin right tail reflects our finding that the size distribution of family firms is lognormal.

Growth. Family firms grow less than nonfamily firms. Sales growth varies considerably over time and is 1–2 percentage points lower in family firms than in nonfamily firms. The growth of the family firm is independent of its size. This independence between growth and size is consistent with our finding that the size distribution is lognormal.

Asset structure. Small family firms are different. Family firms are more labor intensive than nonfamily firms because family firms are smaller. Small family firms also have more liquid assets than other family firms, and the asset liquidity of small family firms increases remarkably over time. Smaller firms are younger, as small, medium and large family firms have mean age of 11, 13, and 18 years, respectively. Risk is almost identical in family firms and nonfamily firms, very stable over time, decreases with firm size, and is industry-dependent.

Capital structure. Family firms finance themselves increasingly less with debt than nonfamily firms do. The financing of family firms and nonfamily firms does not differ much if we average over the entire sample period. However, family firms have reduced their leverage more year by year than nonfamily firms have after 2005, when the tax cost of paying dividends increased. By 2015, median leverage is 68% in family firms and 73% in nonfamily firms.

Dividend policy. Family firms pay dividends slightly more often and pay more when they pay than nonfamily firms do. The payout was extremely high just before the dividend tax increase in 2006, dropping strongly afterwards regardless of firm size. The dividend policy of family firms has been stable since 2008. The typical proportion of dividend payers is 40% in large firms, 25% in medium-sized firms, and 15% in small firms. Regardless of firm size, the average ratio of dividends to earnings for dividend payers is around 20%.

Profitability. Family firms outperform nonfamily firms. Measuring profitability by median real return on assets, we find that family firms are more profitable than nonfamily firms as a whole, across three different firm size groups, across firms with and without minority owners, and across most industries. We also find major profitability differences across types of family firms, as smaller family firms outperform larger firms. These results mean there is a family firm premium when comparing family firms to nonfamily firms, and a small firm premium when comparing three size classes of family firms to each other. The median family firm premium is around 1.8 percentage points before corporate tax and 1.3 after. An interesting question for future research is where this excess performance of family firms comes from.

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Tables

Table 4.1: Population, filters, and sample of Norwegian firms with limited liability, 2000–2015

Part I: The number of firms

Nr	Filter	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	**Orgtype**	114,274	115,026	117,907	117,992	120,178	126,546	139,633	146,911	149,804	150,758	151,818	155,004	164,738	175,609	191,213	199,475
2	**1+no financials**	112,840	113,451	116,113	116,152	118,224	121,489	126,260	133,056	134,770	135,433	136,303	139,457	151,775	163,585	179,199	188,049
3	**2+no groups**	102,875	102,905	105,710	105,193	107,069	106,902	107,282	112,277	113,103	113,314	113,389	116,166	127,119	137,761	153,755	160,477
4	**2+ groups level 2,3**	9,767	10,323	10,191	10,727	10,919	14,240	18,448	20,233	21,074	21,538	22,271	22,636	23,878	25,023	24,739	26,769
5	**2+groups level >3**	198	223	212	232	236	347	530	546	593	581	643	655	778	801	705	803
6	**2+sales>0**	106,949	107,833	110,206	109,727	111,129	113,549	118,208	125,670	128,668	126,611	127,207	129,491	138,997	148,731	160,455	166,435
7	**6+assets>0**	106,463	107,443	109,797	109,358	110,823	113,265	117,989	125,434	128,414	126,339	126,928	129,229	138,707	148,372	159,910	165,862
8	**7+employees>0 (Base sample)**	81,214	81,716	83,415	82,996	85,459	85,041	83,652	79,476	80,378	81,766	83,024	83,776	87,717	91,332	97,751	115,259
	Nonfamily firms	29,187	28,285	29,427	28,346	30,202	33,198	31,786	27,378	27,275	27,885	27,648	27,230	27,832	27,689	33,455	35,077
	Family firms	52,027	53,431	53,988	54,650	55,257	51,843	51,866	52,098	53,103	53,881	55,376	56,546	59,885	63,643	64,296	80,182
	Sole entrepreneurships	18,476	18,729	18,619	18,901	18,857	18,528	16,421	19,827	19,667	20,323	20,876	21,494	23,467	26,075	27,417	32,281
	Family classic	21,123	22,481	23,144	23,579	24,330	22,232	16,092	22,101	23,094	23,389	24,207	24,727	24,804	25,422	24,939	32,422
	Single-owner	34,458	36,495	36,916	37,471	38,433	37,243	24,200	39,280	40,572	41,621	43,390	44,704	45,694	48,918	49,908	63,019
	Groups, nonfamily firms	3,741	3,853	3,770	3,902	3,966	5,541	6,838	5,219	5,427	5,419	5,586	5,530	5,818	5,959	5,880	6,696
	Groups, family firms	5,473	5,909	5,900	6,199	6,279	7,569	9,926	12,009	12,448	12,867	13,356	13,592	14,088	14,591	14,388	16,509
	Small nonfamily firms	17,340	16,818	17,699	16,707	17,895	18,589	17,979	14,802	14,824	15,236	14,898	14,635	15,337	15,301	19,388	21,063
	Small family firms	38,061	39,026	39,321	39,682	40,167	38,772	37,953	36,823	37,603	38,245	39,503	40,526	43,596	47,058	48,065	62,292
	Medium nonfamily firms	10,804	10,452	10,720	10,626	11,243	13,486	12,736	11,516	11,384	11,573	11,653	11,501	11,434	11,320	12,911	12,906
	Medium family firms	13,634	14,062	14,317	14,624	14,762	12,802	13,624	14,944	15,166	15,306	15,530	15,678	15,914	16,213	15,874	17,531
	Large nonfamily firms	1,043	1,015	1,008	1,013	1,064	1,123	1,071	1,060	1,067	1,076	1,097	1,094	1,061	1,068	1,156	1,108
	Large family firms	332	343	350	344	328	269	289	331	334	330	343	342	375	372	357	359
	Listed firms	183	175	168	151	158	177	172	184	177	165	170	170	167	161	168	157
	Listed nonfamily firms	175	167	159	142	150	168	165	173	165	154	159	157	139	133	142	133
	Listed family firms	8	8	9	9	8	9	7	11	12	11	11	13	28	28	26	24
	Family of base sample	64%	65%	65%	66%	65%	61%	62%	66%	66%	66%	67%	67%	68%	70%	66%	70%
	Single-owner of family	66%	68%	68%	69%	70%	72%	47%	75%	76%	77%	78%	79%	76%	77%	78%	79%
	Sole entrepreneurships of family	36%	35%	34%	35%	34%	36%	32%	38%	37%	38%	38%	38%	39%	41%	43%	40%
	Large of family	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%

This table documents the construction of our base sample and subsamples. Part I reports firm count, Part II sales, Part III assets, and Part IV employees. We start with the population of limited-liability firms. We exclude financial firms, and we group firms majority-owned by other firms into groups and report count across groups of level x. For example, subsidiary and parent form a group of level 2. We ensure economic activity by considering firms with positive sales, assets, and employees. For all these measures we use maximum across consolidated, nonconsolidated, and data that we consolidate. The sample is split into family firms at 50% threshold ownership by a family. A family is a group of individuals related by blood or marriage up to the fourth degree of kinship. The remaining firms in the population are nonfamily firms. Sole entrepreneurships are less than ten years old and have only one owner from the family. In single-owner firms the largest owner holds at least 99% of the equity, while multiple-owner firms are the remaining firms. Large firms have more than NOK 100 mill. (2015 cpi-adjusted) sales and more than 100 employees. Small firms have less than NOK 10 mill. in sales and less than 10 employees, while medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100.

Table 4.1: Population, filters, and sample of Norwegian firms with limited liability, 2000-2015, contd.

Part II: Sales in billion NOK as of 2015

Nr	Filter	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	**Orgtype**	3,931	3,878	3,853	3,929	4,419	4,825	5,340	5,788	6,218	5,319	5,780	5,950	6,341	6,507	6,957	6,486
2	**1+no financials**	3,731	3,677	3,622	3,752	4,221	4,682	5,166	5,578	5,992	5,057	5,353	5,476	5,990	6,290	6,548	6,171
3	**2+no groups**	1,071	1,028	1,100	1,105	1,186	1,180	1,229	1,374	1,323	1,143	1,174	1,242	1,238	1,252	1,750	1,477
4	**2+ groups level 2,3**	1,604	1,538	1,367	1,476	1,773	1,976	1,957	2,284	2,667	2,272	2,352	2,288	2,684	2,761	2,924	2,684
5	**2+groups level >3**	1,056	1,112	1,154	1,171	1,261	1,525	1,980	1,921	2,002	1,642	1,827	1,946	2,068	2,278	1,874	2,011
6	**2+sales>0**	3,731	3,677	3,622	3,752	4,221	4,682	5,166	5,578	5,992	5,057	5,353	5,476	5,990	6,290	6,548	6,171
7	**6+assets>0**	3,731	3,677	3,622	3,752	4,220	4,681	5,166	5,578	5,992	5,057	5,352	5,476	5,989	6,290	6,548	6,171
8	**7+employees>0 (Base sample)**	3,832	3,764	3,755	3,829	4,295	4,643	5,079	5,344	5,867	5,038	5,507	5,678	6,056	6,178	6,517	6,105
	Nonfamily firms	3,020	2,910	2,837	2,961	3,333	3,700	4,016	4,203	4,700	3,951	4,400	4,488	4,768	4,814	5,022	4,480
	Family firms	812	854	918	868	962	943	1,063	1,141	1,168	1,086	1,107	1,190	1,288	1,364	1,495	1,625
	Sole entrepreneurships	168	170	162	184	238	379	366	359	340	323	313	337	336	337	322	298
	Family classic	439	473	487	464	494	382	339	542	590	546	574	631	706	769	811	959
	Single-owner	428	447	475	509	580	534	363	662	668	641	652	694	731	725	661	809
	Groups, nonfamily firms	2,376	2,330	2,189	2,335	2,621	2,910	3,204	3,320	3,851	3,235	3,641	3,643	3,998	4,049	3,852	3,584
	Groups, family firms	423	457	494	435	547	629	738	802	839	777	798	866	940	1,017	1,155	1,245
	Small nonfamily firms	61	58	58	57	63	73	73	66	65	61	61	63	65	65	76	80
	Small family firms	131	130	128	128	135	130	136	148	147	138	139	147	155	162	163	192
	Medium nonfamily firms	602	563	561	568	617	782	900	897	1,091	803	939	857	867	910	1,038	977
	Medium family firms	435	434	435	452	488	423	526	634	644	597	595	630	663	686	713	735
	Large nonfamily firms	2,357	2,289	2,219	2,336	2,653	2,845	3,042	3,240	3,543	3,087	3,400	3,568	3,835	3,839	3,907	3,422
	Large family firms	246	290	355	289	339	390	401	358	377	352	373	413	469	516	620	699
	Listed firms	798	1,106	1,081	1,027	1,198	1,334	1,599	1,577	1,708	1,383	1,481	1,678	1,653	1,555	1,654	1,525
	Listed nonfamily firms	786	1,075	998	1,016	1,186	1,240	1,484	1,537	1,660	1,341	1,432	1,613	1,572	1,482	1,441	1,337
	Listed family firms	11	31	82	11	12	94	114	39	48	42	48	65	81	74	213	188
	Family of base sample	21%	23%	24%	23%	22%	20%	21%	21%	20%	22%	20%	21%	21%	22%	23%	27%
	Single-owner of family	53%	52%	52%	59%	60%	57%	34%	58%	57%	59%	59%	58%	57%	53%	44%	50%
	Sole entrepreneurships of family	21%	20%	18%	21%	25%	40%	34%	32%	29%	30%	28%	28%	26%	25%	22%	18%
	Large of family	30%	34%	39%	33%	35%	41%	38%	31%	32%	32%	34%	35%	36%	38%	41%	43%

Table 4.1: Population, filters, and sample of Norwegian firms with limited liability, 2000-2015, contd.

Part III: Assets in billion NOK as of 2015

Nr	Filter	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	**Orgtype**	6,819	6,593	6,258	7,358	7,490	9,451	8,450	10,000	11,199	10,688	11,327	12,152	12,603	14,543	14,928	15,393
2	**1+no financials**	4,774	4,508	4,240	4,568	5,100	6,899	6,800	7,961	8,513	7,549	7,598	7,765	8,429	11,480	10,432	11,221
3	**2+no groups**	1,079	939	970	999	1,059	1,156	1,249	1,508	1,566	1,445	1,471	1,519	1,533	1,635	2,590	2,070
4	**2+ groups level 2,3**	2,528	2,134	1,965	2,056	2,453	3,632	2,741	3,402	3,580	3,290	3,376	3,364	3,670	3,881	4,815	5,459
5	**2+groups level >3**	1,167	1,435	1,305	1,513	1,588	2,111	2,810	3,050	3,367	2,813	2,751	2,881	3,227	5,964	3,027	3,692
6	**2+sales>0**	4,760	4,493	4,224	4,549	5,076	6,860	6,770	7,932	8,481	7,496	7,561	7,722	8,379	11,441	10,303	11,108
7	**6+assets>0**	4,760	4,493	4,224	4,549	5,076	6,860	6,770	7,932	8,481	7,496	7,561	7,722	8,379	11,441	10,303	11,108
8	**7+employees>0 (Base sample)**	6,283	6,178	5,872	6,963	7,027	8,790	7,519	8,598	9,842	9,186	10,082	10,902	11,190	13,193	13,040	13,838
	Nonfamily firms	5,523	5,409	5,085	6,165	6,176	7,882	6,465	7,416	8,567	7,970	8,822	9,543	9,705	11,638	10,848	11,476
	Family firms	760	768	787	798	851	909	1,053	1,182	1,274	1,216	1,260	1,360	1,486	1,554	2,192	2,362
	Sole entrepreneurships	121	128	116	141	178	341	338	344	353	348	343	367	326	312	298	169
	Family classic	399	408	428	432	449	371	353	562	674	618	671	738	875	916	1,039	1,216
	Single-owner	351	380	397	439	498	493	384	635	671	674	693	743	784	759	772	877
	Groups, nonfamily firms	4,824	4,828	4,446	5,552	5,407	7,086	5,786	6,573	7,409	6,833	7,288	7,834	8,214	10,073	8,564	9,436
	Groups, family firms	495	514	522	515	599	690	826	944	1,069	1,012	1,047	1,150	1,231	1,268	1,938	2,032
	Small nonfamily firms	66	61	61	60	65	77	75	62	66	58	59	60	59	61	73	94
	Small family firms	112	115	113	112	119	117	127	135	136	139	144	152	162	172	176	226
	Medium nonfamily firms	883	887	920	871	1,003	1,837	1,408	1,671	2,229	1,702	2,131	2,140	2,107	2,226	2,633	2,609
	Medium family firms	371	360	345	386	406	380	489	612	631	636	650	666	744	807	819	913
	Large nonfamily firms	4,573	4,461	4,105	5,234	5,109	5,968	4,983	5,684	6,272	6,210	6,632	7,343	7,539	9,352	8,143	8,773
	Large family firms	278	294	329	300	326	412	437	434	507	441	466	542	579	575	1,197	1,223
	Listed firms	2,536	2,600	2,323	2,594	2,706	3,370	2,507	3,038	3,332	3,068	3,196	3,416	3,541	3,777	4,296	4,334
	Listed nonfamily firms	2,508	2,569	2,236	2,568	2,679	3,246	2,376	2,910	3,167	2,933	3,054	3,230	3,355	3,625	3,529	3,550
	Listed family firms	28	31	87	26	27	124	131	128	165	135	142	186	186	152	768	784
	Family of base sample	12%	12%	13%	11%	12%	10%	14%	14%	13%	13%	13%	12%	13%	12%	17%	17%
	Single-owner of family	46%	49%	50%	55%	59%	54%	36%	54%	53%	55%	55%	55%	53%	49%	35%	37%
	Sole entrepreneurships of family	16%	17%	15%	18%	21%	38%	32%	29%	28%	29%	27%	27%	22%	20%	14%	7%
	Large of family	37%	38%	42%	38%	38%	45%	41%	37%	40%	36%	37%	40%	39%	37%	55%	52%

Table 4.1: Population, filters, and sample of Norwegian firms with limited liability, 2000-2015, contd.

Part IV: Employment in thousands

Nr	Filter	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	**Orgtype**	1,738	1,714	1,627	1,694	1,777	1,693	1,626	1,540	1,589	1,579	1,601	1,637	1,666	1,666	1,717	2,172
2	**1+no financials**	1,695	1,666	1,589	1,654	1,740	1,662	1,592	1,501	1,551	1,540	1,554	1,589	1,624	1,633	1,680	2,132
3	**2+no groups**	667	623	637	646	658	606	548	568	568	562	555	553	571	566	651	848
4	**2+ groups level 2,3**	697	725	624	647	746	743	662	644	695	721	725	757	764	766	763	948
5	**2+groups level >3**	331	318	328	361	336	312	382	289	288	257	273	279	289	301	266	335
6	**2+sales>0**	1,677	1,653	1,576	1,649	1,733	1,645	1,580	1,498	1,523	1,500	1,525	1,559	1,585	1,602	1,670	2,094
7	**6+assets>0**	1,677	1,653	1,576	1,648	1,729	1,644	1,580	1,498	1,523	1,500	1,524	1,559	1,585	1,601	1,670	2,093
8	**7+employees>0 (Base sample)**	1,720	1,702	1,614	1,688	1,766	1,675	1,614	1,536	1,560	1,539	1,570	1,607	1,627	1,634	1,706	2,131
	Nonfamily firms	1,217	1,189	1,078	1,159	1,226	1,165	1,116	1,035	1,028	1,017	1,032	1,052	1,047	1,044	1,106	1,299
	Family firms	503	512	536	529	540	511	498	501	532	522	538	555	580	591	600	832
	Sole entrepreneurships	115	115	111	125	160	218	143	177	187	179	175	187	184	182	172	192
	Family classic	264	278	285	277	259	199	158	229	243	242	258	263	281	287	307	450
	Single-owner	278	291	301	318	354	315	184	321	335	337	352	355	369	362	365	526
	Groups, nonfamily firms	851	869	753	828	860	800	792	679	705	711	726	749	746	745	703	851
	Groups, family firms	215	217	226	215	253	281	279	285	308	299	312	328	342	349	356	463
	Small nonfamily firms	59	56	58	55	59	63	62	54	54	55	55	53	55	55	68	97
	Small family firms	121	121	122	121	122	117	115	117	120	121	125	126	132	138	141	227
	Medium nonfamily firms	282	273	268	268	284	321	300	294	265	260	267	267	264	266	312	398
	Medium family firms	250	250	253	251	255	215	238	266	278	279	286	287	295	302	303	434
	Large nonfamily firms	876	861	753	836	884	781	754	687	709	702	710	732	728	723	726	804
	Large family firms	132	141	162	156	163	179	145	118	133	121	128	143	153	150	156	172
	Listed firms	319	303	261	264	299	260	244	142	155	142	141	152	141	146	149	158
	Listed nonfamily firms	312	290	235	257	292	216	229	132	136	133	131	132	128	133	137	146
	Listed family firms	7	13	26	6	7	44	15	10	18	9	10	20	13	13	12	12
	Family of base sample	29%	30%	33%	31%	31%	30%	31%	33%	34%	34%	34%	35%	36%	36%	35%	39%
	Single-owner of family	55%	57%	56%	60%	65%	62%	37%	64%	63%	65%	65%	64%	64%	61%	61%	63%
	Sole entrepreneurships of family	23%	22%	21%	24%	30%	43%	29%	35%	35%	34%	33%	34%	32%	31%	29%	23%
	Large of family	26%	28%	30%	30%	30%	35%	29%	23%	25%	23%	24%	26%	26%	25%	26%	21%

Table 5.1: The macro-economic significance of Norwegian family firms over time

Year	Firms	Employees	Sales	Assets
2000	64%	29%	21%	12%
2001	65%	30%	23%	12%
2002	65%	33%	24%	13%
2003	66%	31%	23%	11%
2004	65%	31%	22%	12%
2005	61%	30%	20%	10%
2006	62%	31%	21%	14%
2007	66%	33%	21%	14%
2008	66%	34%	20%	13%
2009	66%	34%	22%	13%
2010	67%	34%	20%	13%
2011	67%	35%	21%	12%
2012	68%	36%	21%	13%
2013	70%	36%	22%	12%
2014	66%	35%	23%	17%
2015	70%	39%	27%	17%
All	66%	33%	22%	13%

This table shows the importance of family firms relative to all firms in 2000–2015 as measured by the number of firms, employees, sales, and assets. The sample covers all Norwegian limited-liability firms, but excludes financial firms and firms with no sales, employees, or assets. A family firm is majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the owner's direct and indirect equity holdings in the firm. "All" is the pooled sample across the entire sample period.

Table 6.S1: Corporate governance characteristics of all Norwegian firms with limited liability, 2000–2015

Part I: Family firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Ownership								
Largest owner	93%	100%	14%	60%	100%	100%	100%	912,072
Second-largest owner	5%	0%	12%	0%	0%	0%	35%	912,072
Number of owners	1.4	1.0	1.8	1.0	1.0	1.0	3.0	912,072
Inside owners	92%	100%	19%	50%	100%	100%	100%	833,253
Single-owner firm	75%	100%	43%	0%	100%	100%	100%	909,470
B. Board								
Largest family on board	0.98	1.00	0.14	1.00	1.00	1.00	1.00	870,181
Largest family's proportion of seats	88%	100%	25%	33%	100%	100%	100%	854,075
Largest family has majority of seats	0.83	1.00	0.38	0.00	1.00	1.00	1.00	868,890
Largest family has all seats	0.76	1.00	0.43	0.00	1.00	1.00	1.00	868,890
Largest family has chair	0.88	1.00	0.32	0.00	1.00	1.00	1.00	885,063
Chair's ownership	68%	80%	37%	0%	49%	100%	100%	833,253
Directors' ownership	90%	100%	23%	34%	100%	100%	100%	833,253
Minority on board	0.11	0.00	0.31	0.00	0.00	0.00	1.00	909,470
Board size	1.7	1.0	1.0	1.0	1.0	2.0	4.0	893,599
Board turnover	2%	0%	10%	0%	0%	0%	20%	803,932
Proportion of female directors	20%	0%	33%	0%	0%	33%	100%	891,138
Average age, all directors	50.6	50.5	9.8	35.0	44.0	57.0	67.0	894,194
Average age, female directors	49.1	49.0	11.2	31.5	41.0	57.0	68.0	287,317
Average age, male directors	51.2	51.0	10.0	35.0	44.0	58.0	68.0	812,460
Standard deviation, director age	9.3	8.4	6.7	0.7	2.9	14.8	20.3	398,037
C. CEO								
Largest family has CEO	0.83	1.00	0.38	0.00	1.00	1.00	1.00	885,063
Largest family has CEO and chair	0.72	1.00	0.45	0.00	0.00	1.00	1.00	910,745
CEO ownership	77%	100%	27%	25%	51%	100%	100%	718,064
CEO has majority	0.76	1.00	0.43	0.00	1.00	1.00	1.00	718,064
Female CEO	0.17	0.00	0.38	0.00	0.00	0.00	1.00	815,348
Age, female CEO	46.5	46.0	10.7	30.0	39.0	54.0	64.0	139,165
Age, male CEO	49.4	49.0	10.9	32.0	41.0	57.0	67.0	676,183

This table shows ownership, board, and CEO characteristics of all Norwegian firms with limited liability during the period 2000–2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. "Nonfamily firms" are all other firms. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm. The family is counted as one owner. "Inside owners" is the equity proportion held by the firm's officers and directors as a group. "Board turnover" is the proportion of new directors per year.

Table 6.S1: Corporate governance characteristics of all Norwegian firms with limited liability, 2000–2015, contd.

Part II: Nonfamily firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Ownership								
Largest owner	41%	43%	29%	1%	22%	50%	100%	471,900
Second-largest owner	23%	25%	20%	0%	0%	48%	50%	471,900
Number of owners	3.8	2.0	10.0	1.0	1.0	4.0	10.0	471,900
Inside owners	69%	74%	31%	11%	50%	100%	100%	241,463
Single-owner firm	0.15	0.00	0.36	0.00	0.00	0.00	1.00	387,837
B. Board								
Largest family on board	0.83	1.00	0.37	0.00	1.00	1.00	1.00	303,331
Largest family's proportion of seats	37%	33%	27%	0%	20%	50%	100%	302,298
Largest family has majority of seats	0.12	0.00	0.33	0.00	0.00	0.00	1.00	302,963
Largest family has all seats	0.10	0.00	0.30	0.00	0.00	0.00	1.00	302,963
Largest family has chair	0.38	0.00	0.49	0.00	0.00	1.00	1.00	304,499
Chair's ownership	26%	29%	21%	0%	0%	50%	50%	241,463
Directors' ownership	68%	70%	33%	8%	47%	100%	100%	241,463
Minority on board	0.53	1.00	0.50	0.00	0.00	1.00	1.00	387,877
Board size	3.1	3.0	1.6	1.0	2.0	4.0	6.0	457,829
Board turnover	7%	0%	17%	0%	0%	0%	50%	395,471
Proportion of female directors	16%	0%	28%	0%	0%	30%	100%	457,445
Average age, all directors	49.4	49.6	8.8	34.7	43.7	55.0	64.0	454,370
Average age, female directors	47.7	47.3	9.9	32.0	41.0	54.0	64.5	152,767
Average age, male directors	50.0	50.0	9.0	35.0	44.0	56.0	65.0	429,719
Standard deviation, director age	7.2	6.6	4.7	0.7	3.5	10.2	16.0	371,440
C. CEO								
Largest family has CEO	0.39	0.00	0.49	0.00	0.00	1.00	1.00	304,499
Largest family has CEO and chair	0.10	0.00	0.30	0.00	0.00	0.00	1.00	471,891
CEO ownership	36%	38%	15%	9%	25%	50%	50%	215,737
CEO has majority	0.00	0.00	0.01	0.00	0.00	0.00	0.00	215,737
Female CEO	0.15	0.00	0.36	0.00	0.00	0.00	1.00	392,398
Age, female CEO	44.5	44.0	9.9	29.0	37.0	51.0	61.0	60,088
Age, male CEO	47.2	47.0	10.0	31.0	40.0	54.0	63.0	332,310

Table 6.S2: The mean value of corporate governance characteristics in all Norwegian firms with limited liability, 2000–2015

			Family firms							
Variable	**All firms**	**Nonfamily firms**	**All**	**Sole entrepreneurship**	**Classic**	**Large**	**Medium**	**Small**	**Single-owner**	**Multiple-owner**
A. Ownership										
Largest owner	75%	41%	93%	94%	93%	90%	92%	94%	100%	71%
Second-largest owner	12%	23%	5%	5%	5%	6%	6%	5%	0%	24%
Number of owners	2.2	3.8	1.4	1.3	1.4	2.1	1.5	1.3	1.0	2.5
Inside owners	87%	69%	92%	95%	90%	77%	89%	93%	97%	75%
Single-owner firm	0.57	0.15	0.75	0.78	0.73	0.52	0.68	0.78	1.00	0.00
B. Board										
Largest family on board	0.9	0.8	1.0	1.0	99%	1.0	1.0	1.0	1.0	1.0
Largest family's proportion of seats	75%	37%	88%	87%	89%	64%	84%	90%	94%	71%
Largest family has majority of seats	0.65	0.12	0.83	0.80	0.85	0.52	0.77	0.86	0.91	0.59
Largest family has all seats	0.59	0.10	0.76	0.77	0.76	0.35	0.66	0.81	0.87	0.46
Largest family has chair	0.75	0.38	0.88	0.86	90%	0.67	0.83	0.90	0.93	0.75
Chair's ownership	58%	26%	68%	80%	59%	40%	60%	71%	76%	41%
Directors' ownership	85%	68%	90%	91%	89%	75%	87%	91%	95%	73%
Minority on board	0.24	0.53	0.11	0.12	0.1	0.09	0.14	0.10	0.00	0.40
Board size	2.2	3.1	1.7	1.4	1.9	3.2	2.0	1.6	1.6	2.2
Board turnover	4%	7%	2%	2%	3%	8%	3%	2%	2%	4%
Proportion of female directors	19%	16%	20%	18%	21%	20%	17%	21%	20%	19%
Average age, all directors	50.2	49.4	50.6	47.2	52.1	52.1	50.2	50.8	50.6	50.7
Average age, female directors	48.6	47.7	49.1	45.6	49.8	47.9	49.0	49.1	49.1	49.1
Average age, male directors	50.8	50.0	51.2	47.6	52.7	53.0	50.8	51.4	51.2	51.2
Standard deviation, director age	8.3	7.2	9.3	7.7	9.7	10.1	9.6	9.0	9.7	8.7
C. CEO										
Largest family has CEO	0.72	0.39	0.83	0.82	0.84	0.56	0.78	0.85	0.86	0.74
Largest family has CEO and chair	0.51	0.10	0.72	0.72	0.76	0.33	0.65	0.76	0.80	0.52
CEO ownership	68%	36%	77%	92%	67%	54%	71%	80%	85%	53%
CEO has majority	0.59	0.00	0.76	0.97	0.62	0.48	0.69	0.79	0.81	0.63
Female CEO	0.16	0.15	0.17	0.17	0.17	0.08	0.12	0.19	0.18	0.15
Age, female CEO	45.9	44.5	46.5	43.7	47.7	47.8	45.7	46.7	46.6	46.5
Age, male CEO	48.7	47.2	49.4	45.8	51.1	49.7	48.4	49.8	49.5	49.1

This table shows the mean value of ownership, board, and CEO characteristics in all Norwegian firms with limited liability during the period 2000–2015. The sample excludes financial firms and firms with no sales, employees, or assets. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Inside owners" is the equity proportion held by the firm's officers and directors as a group. "Board turnover" is the proportion of new directors per year. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm.

Table 6.S3: Corporate governance characteristics of all Norwegian firms with limited liability in 2015

Part I: Family firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Ownership								
Largest owner	96%	100%	12%	64%	100%	100%	100%	80,182
Second-largest owner	4%	0%	10%	0%	0%	0%	30%	80,182
Number of owners	1.3	1.0	2.7	1.0	1.0	1.0	3.0	80,182
Inside owners	94%	100%	18%	50%	100%	100%	100%	70,956
Single-owner firm	0.82	1.00	0.38	0.00	1.00	1.00	1.00	79,881
B. Board								
Largest family on board	1.0	1.0	0.1	1.0	1.0	1.0	1.0	67,479
Largest family's proportion of seats	91%	100%	22%	33%	100%	100%	100%	65,692
Largest family has majority of seats	0.85	1.00	0.35	0.00	1.00	1.00	1.00	67,029
Largest family has all seats	0.81	1.00	0.40	0.00	1.00	1.00	1.00	67,029
Largest family has chair	0.80	1.00	0.40	0.00	1.00	1.00	1.00	76,799
Chair's ownership	66%	100%	41%	0%	33%	100%	100%	70,956
Directors' ownership	83%	100%	34%	0%	91%	100%	100%	70,956
Minority on board	0.08	0.00	0.26	0.00	0.00	0.00	1.00	79,881
Board size	1.6	1.0	1.0	1.0	1.0	2.0	4.0	69,498
Board turnover	2%	0%	9%	0%	0%	0%	14%	66,908
Proportion of female directors	22%	0%	35%	0%	0%	50%	100%	69,278
Average age, all directors	52.4	52.3	10.3	35.0	45.0	59.7	69.0	69,982
Average age, female directors	50.3	50.0	11.3	32.0	42.5	58.0	69.5	23,618
Average age, male directors	53.1	53.0	10.6	35.0	46.0	61.0	70.0	62,576
Standard deviation, director age	9.3	8.0	6.9	0.7	2.8	15.1	20.5	29,354
C. CEO								
Largest family has CEO	0.83	1.00	0.37	0.00	1.00	1.00	1.00	76,799
Largest family has CEO and chair	0.65	1.00	0.48	0.00	0.00	1.00	1.00	79,881
CEO ownership	83%	100%	26%	30%	60%	100%	100%	62,911
CEO has majority	0.81	1.00	0.40	0.00	1.00	1.00	1.00	62,911
Female CEO	0.19	0.00	0.40	0.00	0.00	0.00	1.00	70,904
Age, female CEO	47.3	47.0	10.9	29.0	40.0	55.0	66.0	13,790
Age, male CEO	50.6	51.0	11.6	31.0	42.0	59.0	69.0	57,114

This table shows ownership, board, and CEO characteristics of all Norwegian firms with limited liability in 2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. "Nonfamily firms" are all other firms. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm. The family is counted as one owner. "Inside owners" is the equity proportion held by the firm's officers and directors as a group. "Board turnover" is the proportion of new directors per year.

Table 6.S3: Corporate governance characteristics of all Norwegian firms with limited liability in 2015, contd.

Part II: Nonfamily firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Ownership								
Largest owner	41%	46%	29%	1%	24%	50%	100%	35,077
Second-largest owner	25%	25%	21%	0%	0%	50%	50%	35,077
Number of owners	4.8	2.0	13.6	1.0	1.0	4.0	15.0	35,077
Inside owners	67%	67%	32%	10%	50%	100%	100%	17,494
Single-owner firm	0.14	0.00	0.35	0.00	0.00	0.00	1.00	28,864
B. Board								
Largest family on board	0.9	1.0	0.3	0.0	1.0	1.0	1.0	22,941
Largest family's proportion of seats	41%	33%	28%	0%	25%	50%	100%	22,812
Largest family has majority of seats	0.14	0.00	0.35	0.00	0.00	0.00	1.00	22,885
Largest family has all seats	0.12	0.00	0.33	0.00	0.00	0.00	1.00	22,885
Largest family has chair	0.41	0.00	0.49	0.00	0.00	1.00	1.00	23,499
Chair's ownership	26%	30%	22%	0%	0%	50%	50%	17,494
Directors' ownership	66%	67%	34%	3%	43%	100%	100%	17,494
Minority on board	0.50	0.00	0.50	0.00	0.00	1.00	1.00	28,872
Board size	3.0	3.0	1.6	1.0	2.0	4.0	6.0	33,354
Board turnover	7%	0%	16%	0%	0%	0%	50%	30,676
Proportion of female directors	19%	0%	29%	0%	0%	33%	100%	33,319
Average age, all directors	50.9	51.0	9.3	34.7	45.0	57.0	66.0	33,486
Average age, female directors	49.2	49.0	10.0	33.0	43.0	55.5	66.0	12,450
Average age, male directors	51.6	52.0	9.6	35.0	45.5	58.0	67.3	31,414
Standard deviation, director age	7.2	6.4	4.9	0.7	3.2	10.3	16.3	27,949
C. CEO								
Largest family has CEO	0.41	0.00	0.49	0.00	0.00	1.00	1.00	23,499
Largest family has CEO and chair	0.11	0.00	0.31	0.00	0.00	0.00	1.00	35,074
CEO ownership	37%	42%	15%	7%	25%	50%	50%	16,743
CEO has majority	0.00	0.00	0.01	0.00	0.00	0.00	0.00	16,743
Female CEO	0.18	0.00	0.39	0.00	0.00	0.00	1.00	28,810
Age, female CEO	45.7	46.0	10.0	29.0	39.0	52.0	62.0	5,317
Age, male CEO	48.6	49.0	10.5	31.0	41.0	56.0	66.0	23,493

Table 6S.4: The mean value of corporate governance characteristics in all Norwegian firms with limited liability in 2015

			Family firms							
Variable	**All firms**	**Nonfamily firms**	**All**	**Sole entrepreneurship**	**Classic**	**Large**	**Medium**	**Small**	**Single-owner**	**Multiple-owner**
A. Ownership										
Largest owner	79%	41%	96%	97%	95%	89%	94%	96%	100%	71%
Second-largest owner	10%	25%	4%	3%	4%	7%	5%	3%	0%	23%
Number of owners	2.4	4.8	1.3	1.2	1.5	2.7	1.5	1.3	1.0	3.1
Inside owners	88%	67%	94%	97%	91%	77%	89%	93%	98%	71%
Single-owner firm	0.64	0.14	0.82	0.88	0.77	0.52	0.68	0.78	1.00	0.00
B. Board										
Largest family on board	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Largest family's proportion of seats	78%	41%	91%	90%	91%	64%	84%	90%	95%	71%
Largest family has majority of seats	0.67	0.14	0.85	0.84	0.87	0.52	0.77	0.86	0.92	0.59
Largest family has all seats	0.63	0.12	0.81	0.83	0.80	0.35	0.66	0.81	0.89	0.45
Largest family has chair	0.71	0.41	0.80	0.70	0.89	0.67	0.83	0.90	0.82	0.72
Chair's ownership	58%	26%	66%	68%	63%	40%	60%	71%	72%	37%
Directors' ownership	79%	66%	83%	76%	88%	75%	87%	91%	86%	68%
Minority on board	0.19	0.50	0.08	0.06	0.09	0.09	0.14	0.10	0.00	0.35
Board size	2.1	3.0	1.6	1.4	1.8	3.2	2.0	1.6	1.5	2.2
Board turnover	3%	7%	2%	2%	2%	8%	3%	2%	1%	4%
Proportion of female directors	21%	19%	22%	22%	22%	20%	17%	21%	21%	23%
Average age, all directors	51.9	50.9	52.4	47.8	54.7	52.1	50.2	50.8	52.3	52.7
Average age, female directors	49.9	49.2	50.3	46.1	51.7	47.9	49.0	49.1	50.2	50.5
Average age, male directors	52.6	51.6	53.1	48.3	55.3	53.0	50.8	51.4	53.0	53.4
Standard deviation, director age	8.2	7.2	9.3	7.8	9.8	10.1	9.6	9.0	9.5	8.9
C. CEO										
Largest family has CEO	0.73	0.41	0.83	0.85	0.82	0.56	0.78	0.85	0.86	0.72
Largest family has CEO and chair	0.49	0.11	0.65	0.61	0.74	0.33	0.65	0.76	0.71	0.44
CEO ownership	73%	37%	83%	96%	72%	54%	71%	80%	89%	52%
CEO has majority	0.64	0.00	0.81	0.98	0.66	0.48	0.69	0.79	0.85	0.59
Female CEO	0.19	0.18	0.19	0.20	0.18	0.08	0.12	0.19	0.19	0.20
Age, female CEO	46.9	45.7	47.3	44.1	49.9	47.8	45.7	46.7	47.3	47.5
Age, male CEO	50.0	48.6	50.6	45.9	53.9	49.7	48.4	49.8	50.5	50.8

This table shows the mean value of ownership, board, and CEO characteristics of all Norwegian firms with limited liability in 2015. The sample excludes financial firms and firms with no sales, employees, or assets. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Inside owners" is the equity proportion held by the firm's officers and directors as a group. "Board turnover" is the proportion of new directors per year. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm.

Table 7.S1: Finance characteristics of all Norwegian firms with limited liability, 2000–2015

Part I: Family firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Size								
Sales (mill. NOK)	19.7	3.7	368.1	0.2	1.4	10.0	52.5	912,072
Assets (mill. NOK)	22.4	2.3	950.3	0.2	0.9	6.5	40.6	912,072
Employment	10.4	3.0	167.6	1.0	1.0	8.0	28.0	912,072
B. Growth								
Sales	7.2%	1.4%	44.7%	-59.1%	-12.3%	17.9%	112.0%	772,388
Assets	6.2%	0.4%	36.3%	-45.1%	-13.0%	19.2%	89.6%	772,388
Employment	6.4%	0.0%	35.2%	-37.5%	0.0%	0.0%	75.0%	772,388
C. Assets								
Cash to assets	27.0%	18.8%	26.0%	0.1%	4.5%	43.6%	81.7%	910,507
Working capital to assets	0.1	0.1	0.4	-0.6	0.0	0.4	0.7	912,072
Sales to assets	2.5	1.9	13.6	0.1	1.0	3.0	6.4	912,072
Assets per employee (mill. NOK)	2.8	0.6	36.4	0.1	0.3	1.4	7.4	912,072
Sales per employee (mill. NOK)	1.9	1.1	9.9	0.1	0.6	1.9	5.1	912,072
Investment rate	38.6%	1.5%	82.4%	-16.0%	0.0%	34.5%	265.9%	555,604
Age	11.5	8.0	11.5	1.0	4.0	16.0	31.0	912,072
Risk	0.25	0.15	0.29	0.02	0.07	0.31	0.86	654,515
D. Financing								
Leverage	76.7%	75.6%	42.2%	17.6%	52.9%	90.0%	152.1%	911,332
Net leverage	47.2%	66.8%	100.9%	-136.2%	25.6%	88.3%	162.7%	906,398
Short- to long-term liabilities	4.2	1.3	8.3	0.0	0.4	3.6	19.8	453,269
Interest coverage ratio	57.8	6.0	170.2	-23.8	0.7	29.1	385.0	644,398
E. Dividends								
Payout ratio for all	32.8%	0.0%	72.4%	0.0%	0.0%	45.0%	138.2%	633,645
Proportion dividend payers	22.5%	0.0%	41.8%	0.0%	0.0%	0.0%	100.0%	912,004
Payout ratio for payers	106.0%	92.6%	95.9%	16.1%	54.9%	115.6%	278.9%	195,774
F. Profitability								
Value added (mill. NOK)	5.1	1.2	118.6	0.0	0.4	2.8	11.2	912,072
Value added per employee (mill. NOK)	0.5	0.4	4.4	0.0	0.2	0.6	1.5	912,072
Return on assets (ROA)	6.0%	7.3%	24.5%	-38.1%	-0.2%	17.6%	42.1%	911,917
Return on invested capital (ROIC)	31.4%	14.5%	117.5%	-120.4%	-1.7%	51.6%	250.0%	910,741
Return on equity (ROE)	32.9%	21.3%	87.4%	-85.5%	0.9%	56.7%	202.1%	784,986

This table shows finance characteristics of all Norwegian firms with limited liability during the period 2000–2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

Table 7.S1: Finance characteristics of all Norwegian firms with limited liability, 2000–2015, contd.

Part II: Nonfamily firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Size								
Sales (mill. NOK)	135.4	6.4	3632.1	0.2	2.1	21.4	203.1	471,900
Assets (mill. NOK)	280.8	3.7	7968.6	0.2	1.1	13.7	196.3	471,900
Employment	39.0	5.0	457.5	1.0	2.0	13.0	84.0	471,900
B. Growth								
Sales	9.2%	2.5%	47.6%	-63.8%	-11.6%	20.6%	124.5%	377,591
Assets	5.6%	0.2%	39.5%	-55.1%	-14.5%	20.2%	90.9%	377,591
Employment	7.4%	0.0%	36.1%	-38.5%	0.0%	9.7%	75.0%	377,591
C. Assets								
Cash to assets	26.8%	18.4%	25.8%	0.2%	4.7%	42.7%	82.1%	471,136
Working capital to assets	0.1	0.1	0.4	-0.6	0.0	0.3	0.7	471,897
Sales to assets	3.0	2.0	28.4	0.1	1.0	3.1	6.3	471,900
Assets per employee (mill. NOK)	6.5	0.7	208.4	0.1	0.3	1.6	11.1	471,900
Sales per employee (mill. NOK)	3.2	1.2	146.3	0.1	0.6	2.3	8.2	471,900
Investment rate	42.7%	5.3%	84.7%	-15.9%	0.0%	41.9%	286.6%	288,155
Age	11.9	8.0	15.4	0.0	3.0	15.0	36.0	471,900
Risk	0.26	0.15	0.29	0.02	0.07	0.32	0.87	312,687
D. Financing								
Leverage	79.7%	76.8%	44.2%	19.6%	55.9%	90.8%	169.6%	471,464
Net leverage	54.9%	68.6%	94.8%	-105.7%	32.4%	89.3%	184.8%	467,217
Short- to long-term liabilities	4.8	1.3	9.5	0.0	0.4	4.0	27.0	231,600
Interest coverage ratio	68.9	5.4	198.7	-59.4	-0.2	34.5	504.0	333,414
E. Dividends								
Payout ratio for all	27.5%	0.0%	60.6%	0.0%	0.0%	35.7%	120.1%	303,815
Proportion dividend payers	19.1%	0.0%	39.3%	0.0%	0.0%	0.0%	100.0%	471,885
Payout ratio for payers	96.4%	90.2%	78.9%	18.6%	56.1%	104.2%	193.5%	86,849
F. Profitability								
Value added (mill. NOK)	40.7	2.0	1,219.7	-0.1	0.5	6.4	55.6	471,900
Value added per employee (mill. NOK)	0.8	0.4	17.8	0.0	0.2	0.8	1.9	471,900
Return on assets (ROA)	1.7%	5.4%	28.0%	-64.6%	-2.9%	15.1%	39.0%	471,846
Return on invested capital (ROIC)	29.4%	11.7%	126.8%	-159.8%	-4.4%	52.1%	283.8%	471,079
Return on equity (ROE)	26.9%	16.8%	94.5%	-133.3%	-1.5%	54.1%	214.3%	399,535

Table 7.S2a: The median value of finance characteristics in all Norwegian firms with limited liability, 2000–2015

Variable	All firms	Nonfamily firms	All	Sole entrepreneurship	Classic	Large	Medium	Small	Single-owner	Multiple-owner
A. Size										
Sales (mill. NOK)	4.3	6.4	3.7	3.0	4.5	358.0	18.1	2.2	3.3	5.0
Assets (mill. NOK)	2.7	3.7	2.3	1.6	3.0	279.2	8.7	1.4	2.1	2.9
Employment	4.0	5.0	3.0	3.0	4.0	176.0	12.0	2.0	3.0	4.0
B. Growth										
Sales	1.8%	2.5%	1.4%	3.5%	0.9%	3.8%	2.9%	0.6%	1.2%	2.1%
Assets	0.4%	0.2%	0.4%	2.5%	-0.2%	3.3%	2.1%	-0.5%	0.3%	0.8%
Employment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
C. Assets										
Cash to assets	18.7%	18.4%	18.8%	20.8%	16.6%	7.5%	11.5%	22.8%	19.6%	16.7%
Working capital to assets	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
Sales to assets	1.9	2.0	1.9	2.0	1.8	1.4	2.2	1.7	1.8	1.9
Assets per employee (mill. NOK)	0.6	0.7	0.6	0.5	0.7	1.5	0.8	0.5	0.6	0.7
Sales per employee (mill. NOK)	1.1	1.2	1.1	1.1	1.1	1.9	1.7	0.9	1.1	1.2
Investment rate	2.7%	5.3%	1.5%	2.0%	2.0%	14.0%	8.6%	0.0%	1.1%	2.7%
Age	8.0	8.0	8.0	4.0	14.0	12.0	10.0	8.0	8.0	9.0
Risk	0.15	0.15	0.15	0.17	0.14	0.12	0.12	0.16	0.15	0.15
D. Financing										
Leverage	76.0%	76.8%	75.6%	78.7%	73.9%	72.4%	79.2%	73.8%	75.4%	76.3%
Net leverage	67.5%	68.6%	66.8%	70.0%	65.7%	69.2%	74.1%	62.1%	66.1%	68.4%
Short- to long-term liabilities	1.3	1.3	1.3	1.3	1.2	1.2	1.5	1.1	1.2	1.4
Interest coverage ratio	5.8	5.4	6.0	6.4	5.7	5.0	6.4	5.8	6.0	5.8
E. Dividends										
Payout ratio for all	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%
Proportion dividend payers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Payout ratio for payers	91.9%	90.2%	92.6%	90.9%	92.6%	39.6%	86.3%	96.0%	93.2%	91.2%
F. Profitability										
Value added (mill. NOK)	1.4	2.0	1.2	1.0	1.4	105.2	3.7	0.9	1.1	1.5
Value added per employee (mill. NOK)	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.4	0.4	0.4
Return on assets (ROA)	6.5%	5.3%	7.1%	7.5%	7.0%	5.6%	6.7%	7.4%	7.2%	7.0%
Return on invested capital (ROIC)	16.9%	15.6%	17.5%	23.3%	15.1%	10.0%	15.9%	18.5%	17.5%	17.4%
Return on equity (ROE)	22.4%	20.8%	23.2%	31.3%	19.5%	13.0%	23.8%	23.1%	23.3%	22.9%

This table shows the median value of finance characteristics in all Norwegian firms with limited liability during the period 2000–2015. The sample excludes financial firms and firms with no sales, employees, or assets. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

Table 7.S2b: The mean value of finance characteristics in all Norwegian firms with limited liability, 2000–2015

			Family firms							
Variable	**All firms**	**Nonfamily firms**	**All**	**Sole entrepreneurship**	**Classic**	**Large**	**Medium**	**Small**	**Single-owner**	**Multiple-owner**
A. Size										
Sales (mill. NOK)	59.1	135.4	19.7	13.6	24.4	1,118.3	34.8	3.2	14.5	33.4
Assets (mill. NOK)	110.5	280.8	22.4	13.7	27.3	1,494.3	35.9	3.2	14.6	43.2
Employment	20.2	39.0	10.4	8.4	12.2	484.4	17.6	3.0	8.3	16.1
B. Growth										
Sales	7.9%	9.2%	7.2%	11.6%	5.3%	9.0%	8.7%	6.6%	6.8%	8.5%
Assets	6.0%	5.6%	6.2%	9.3%	4.8%	8.1%	7.9%	5.5%	5.9%	7.0%
Employment	6.7%	7.4%	6.4%	8.5%	5.6%	5.0%	7.9%	5.7%	6.3%	6.7%
C. Assets										
Cash to assets	26.9%	26.8%	27.0%	28.6%	25.0%	12.3%	19.1%	30.4%	27.7%	25.1%
Working capital to assets	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Sales to assets	2.7	3.0	2.5	2.9	2.3	1.6	2.9	2.4	2.6	2.5
Assets per employee (mill. NOK)	4.0	6.5	2.8	2.1	3.3	8.8	5.4	1.7	2.5	3.6
Sales per employee (mill. NOK)	2.3	3.2	1.9	1.9	1.9	5.2	3.4	1.2	1.8	2.2
Investment rate	40.0%	42.7%	38.6%	44.2%	36.5%	33.7%	42.8%	36.7%	38.2%	39.7%
Age	11.6	11.9	11.5	4.2	15.6	17.8	13.1	10.8	11.1	12.6
Risk	0.25	0.26	0.25	0.27	0.24	0.22	0.22	0.27	0.25	0.25
D. Financing										
Leverage	77.7%	79.7%	76.7%	80.6%	74.1%	69.9%	75.7%	77.2%	76.3%	77.8%
Net leverage	49.8%	54.9%	47.2%	50.5%	46.6%	62.4%	62.1%	41.0%	44.8%	53.9%
Short- to long-term liabilities	4.4	4.8	4.2	4.2	4.1	4.3	5.0	3.7	4.0	4.6
Interest coverage ratio	61.6	68.9	57.8	62.3	54.6	27.3	65.9	54.4	58.3	56.6
E. Dividends										
Payout ratio for all	31.1%	27.5%	32.8%	26.1%	36.3%	36.2%	37.7%	30.4%	31.8%	35.2%
Proportion dividend payers	21.3%	19.1%	22.5%	19.2%	24.8%	45.1%	30.0%	19.2%	21.7%	24.7%
Payout ratio for payers	103.0%	96.4%	106.0%	95.5%	109.3%	71.9%	99.9%	110.5%	107.0%	103.5%
F. Profitability										
Value added (mill. NOK)	17.2	40.7	5.1	3.4	6.4	305.5	7.7	1.2	3.8	8.7
Value added per employee (mill. NOK)	0.6	0.8	0.5	0.5	0.6	1.6	0.7	0.5	0.5	0.6
Return on assets (ROA)	4.5%	1.7%	6.0%	5.7%	6.4%	6.6%	8.4%	5.1%	6.1%	5.5%
Return on invested capital (ROIC)	30.7%	29.4%	31.4%	38.3%	26.9%	31.2%	33.4%	30.7%	31.0%	32.9%
Return on equity (ROE)	30.9%	26.9%	32.9%	38.0%	29.7%	23.6%	36.3%	31.6%	32.4%	34.7%

This table shows the mean value of finance characteristics in all Norwegian firms with limited liability during the period 2000–2015. The sample excludes financial firms and firms with no sales, employees, or assets. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

Table 7.S3: Finance characteristics of all Norwegian firms with limited liability in 2015

Part I: Family firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Size								
Sales (mill. NOK)	20.3	2.7	571.1	0.2	1.0	7.8	47.2	80,182
Assets (mill. NOK)	29.8	1.9	1,941.2	0.1	0.6	6.2	42.8	80,182
Employment	11.1	3.0	155.8	1.0	1.0	9.0	33.0	80,182
B. Growth								
Sales	5.2%	0.2%	44.7%	-65.6%	-14.3%	16.8%	129.7%	65,129
Assets	4.7%	-0.6%	36.8%	-49.4%	-14.2%	17.6%	100.3%	65,129
Employment	38.4%	0.0%	74.3%	-50.0%	0.0%	62.5%	240.0%	65,129
C. Assets								
Cash to assets	31.5%	23.5%	28.7%	0.1%	5.8%	51.8%	89.0%	80182
Working capital to assets	0.2	0.2	0.5	-0.7	0.0	0.4	0.8	80,182
Sales to assets	2.6	1.8	10.2	0.1	0.8	3.1	6.8	80,182
Assets per employee (mill. NOK)	3.1	0.5	37.3	0.1	0.2	1.3	8.9	80,182
Sales per employee (mill. NOK)	1.6	0.8	11.5	0.1	0.4	1.5	4.2	80,182
Investment rate	41.4%	1.1%	88.7%	-20.2%	0.0%	35.5%	339.3%	42,058
Age	11.2	9.0	11.7	0.0	3.0	16.0	31.0	80,182
Risk	0.26	0.15	0.30	0.02	0.07	0.33	0.88	57,552
D. Financing								
Leverage	73.0%	68.1%	50.4%	9.5%	42.1%	90.0%	167.7%	79,974
Net leverage	26.4%	53.6%	144.5%	-249.0%	1.8%	86.8%	192.0%	79,123
Short- to long-term liabilities	4.0	1.0	8.7	0.0	0.3	3.3	19.7	32,563
Interest coverage ratio	91.1	7.8	254.1	-48.3	-0.1	47.5	640.0	48,129
E. Dividends								
Payout ratio for all	18.4%	0.0%	39.7%	0.0%	0.0%	0.0%	106.8%	55,001
Proportion dividend payers	17.1%	0.0%	37.6%	0.0%	0.0%	0.0%	100.0%	80,159
Payout ratio for payers	78.9%	76.8%	44.8%	13.3%	42.7%	101.1%	161.3%	12,806
F. Profitability								
Value added (mill. NOK)	6.1	0.9	315.3	-0.1	0.2	2.3	9.8	80,182
Value added per employee (mill. NOK)	0.5	0.3	4.3	0.0	0.1	0.6	1.4	80,182
Return on assets (ROA)	5.0%	6.6%	29.3%	-50.0%	-1.1%	18.3%	48.4%	80,159
Return on invested capital (ROIC)	34.1%	14.5%	131.2%	-127.3%	-1.3%	54.2%	260.0%	80,055
Return on equity (ROE)	31.6%	17.6%	88.7%	-80.9%	0.4%	51.7%	184.6%	68,330

This table shows finance characteristics of all Norwegian firms with limited liability in 2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

Table 7.S3: Finance characteristics of all Norwegian firms with limited liability in 2015, contd.

Part II: Nonfamily firms

Variable	Mean	Median	Std Dev	5th Pctl	25th Pctl	75th Pctl	95th Pctl	N
A. Size								
Sales (mill. NOK)	12.4	8.0	15.7	0.0	3.0	17.0	35.0	35,077
Assets (mill. NOK)	128.0	5.6	3,011.9	0.2	1.7	20.4	197.1	35,077
Employment	339.6	3.4	9,996.3	0.1	0.9	13.7	208.7	35,077
B. Growth								
Sales	6.1%	0.8%	44.0%	-62.2%	-12.9%	16.9%	129.4%	28,611
Assets	3.2%	-1.0%	38.2%	-56.2%	-15.7%	16.7%	99.3%	28,611
Employment	41.3%	12.5%	75.5%	-43.9%	0.0%	63.6%	250.0%	28,611
C. Assets								
Cash to assets	30.2%	22.4%	28.1%	0.1%	5.4%	49.0%	88.3%	35077
Working capital to assets	0.1	0.2	0.5	-0.8	0.0	0.4	0.8	35,077
Sales to assets	3.2	2.0	31.7	0.1	1.0	3.3	7.1	35,077
Assets per employee (mill. NOK)	7.8	0.5	207.7	0.0	0.2	1.4	12.1	35,077
Sales per employee (mill. NOK)	2.9	0.9	33.5	0.1	0.4	1.9	7.7	35,077
Investment rate	43.7%	4.5%	88.7%	-17.9%	0.0%	41.2%	342.9%	20,326
Age	38.2	6.0	358.9	1.0	2.0	16.0	91.0	35,077
Risk	0.25	0.14	0.29	0.02	0.07	0.31	0.86	24,470
D. Financing								
Leverage	79.1%	73.0%	51.4%	15.8%	50.3%	92.3%	188.8%	35,013
Net leverage	42.1%	62.2%	135.5%	-171.7%	18.7%	89.7%	213.4%	34,553
Short- to long-term liabilities	4.9	1.1	10.2	0.0	0.3	3.9	30.4	14,991
Interest coverage ratio	109.9	7.5	298.5	-90.0	-0.4	53.6	905.3	22,469
E. Dividends								
Payout ratio for all	19.7%	0.0%	40.3%	0.0%	0.0%	0.0%	104.3%	22,527
Proportion dividend payers	16.0%	0.0%	36.7%	0.0%	0.0%	0.0%	100.0%	35,075
Payout ratio for payers	82.4%	85.5%	40.2%	17.8%	51.5%	100.0%	161.3%	5,391
F. Profitability								
Value added (mill. NOK)	35.9	1.8	587.5	-0.1	0.4	6.1	57.5	35,077
Value added per employee (mill. NOK)	0.8	0.3	12.6	0.0	0.1	0.7	1.8	35,077
Return on assets (ROA)	0.6%	4.8%	31.9%	-73.2%	-3.6%	15.2%	42.3%	35,068
Return on invested capital (ROIC)	32.0%	12.2%	139.9%	-164.5%	-3.6%	53.7%	293.3%	35,008
Return on equity (ROE)	28.3%	15.3%	96.7%	-122.1%	-0.8%	49.5%	207.8%	29,387

Table 7.S4a: The median value of finance characteristics in all Norwegian firms with limited liability in 2015

			Family firms							
Variable	**All firms**	**Nonfamily firms**	**All**	**Sole entrepreneurship**	**Classic**	**Large**	**Medium**	**Small**	**Single-owner**	**Multiple-owner**
A. Size										
Sales (mill. NOK)	3.3	5.6	2.7	1.8	4.0	393.0	18.2	1.8	2.4	4.6
Assets (mill. NOK)	2.2	3.4	1.9	0.9	3.4	334.1	10.2	1.2	1.6	3.0
Employment	4.0	6.0	3.0	2.0	4.0	192.0	16.0	2.0	3.0	5.0
B. Growth										
Sales	0.4%	0.8%	0.2%	2.5%	-0.8%	0.9%	0.9%	-0.2%	-0.1%	1.0%
Assets	-0.7%	-1.0%	-0.6%	2.8%	-1.5%	-0.1%	0.4%	-1.0%	-0.7%	-0.3%
Employment	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	21.7%	0.0%	0.0%	12.5%
C. Assets										
Cash to assets	23.1%	22.4%	23.5%	29.9%		7.7%	11.8%	28.4%	25.0%	18.8%
Working capital to assets	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2
Sales to assets	1.9	2.0	1.8	2.2	1.5	1.2	2.0	1.7	1.7	1.9
Assets per employee (mill. NOK)	0.5	0.5	0.5	0.3	0.7	1.6	0.7	0.4	0.5	0.5
Sales per employee (mill. NOK)	0.8	0.9	0.8	0.7	0.9	2.0	1.4	0.7	0.8	0.9
Investment rate	2.1%	4.5%	1.1%	1.3%	1.6%	10.7%	6.8%	0.0%	0.7%	2.7%
Age	9.0	6.0	9.0	3.0	14.0	11.0	10.0	7.0	8.0	10.0
Risk	0.15	0.14	0.15	0.17	0.14	0.10	0.12	0.17	0.15	0.14
D. Financing										
Leverage	69.6%	73.0%	68.1%	74.4%	63.7%	65.1%	71.7%	66.7%	67.6%	69.6%
Net leverage	56.6%	62.2%	53.6%	60.1%	50.5%	62.4%	64.9%	48.1%	51.9%	59.1%
Short- to long-term liabilities	1.1	1.1	1.0	1.2	0.9	1.0	1.2	1.0	1.0	1.2
Interest coverage ratio	7.7	7.5	7.8	9.6	6.7	5.8	7.4	8.0	8.1	6.9
E. Dividends										
Payout ratio for all	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Proportion dividend payers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Payout ratio for payers	79.5%	85.5%	76.8%	78.1%	74.7%	28.6%	66.2%	83.7%	77.5%	75.0%
F. Profitability										
Value added (mill. NOK)	1.0	1.8	0.9	0.7	1.1	123.1	3.0	0.7	0.8	1.2
Value added per employee (mill. NOK)	0.3	0.3	0.3	0.3	0.3	0.6	0.2	0.3	0.3	0.3
Return on assets (ROA)	5.5%	4.9%	5.8%	8.5%	4.7%	4.5%	4.1%	6.6%	6.2%	4.9%
Return on invested capital (ROIC)	19.6%	19.0%	19.8%	34.5%	13.8%	10.1%	16.9%	21.2%	20.6%	17.3%
Return on equity (ROE)	15.5%	15.7%	15.5%	29.9%	10.1%	8.0%	10.5%	17.9%	16.1%	13.3%

This table shows the median value of finance characteristics in all Norwegian firms with limited liability in 2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

Table 7.S4b: The mean value of finance characteristics in all Norwegian firms with limited liability in 2015

			Family firms							
Variable	**All firms**	**Nonfamily firms**	**All**	**Sole entrepreneurship**	**Classic**	**Large**	**Medium**	**Small**	**Single-owner**	**Multiple-owner**
A. Size										
Sales (mill. NOK)	53.1	129.4	20.3	9.2	29.6	1,788.3	39.1	2.8	12.8	47.6
Assets (mill. NOK)	124.1	337.3	29.8	5.3	38.1	3,126.3	49.2	3.4	14.1	87.6
Employment	19.3	36.9	11.1	6.0	15.4	555.7	23.8	3.6	8.4	20.7
B. Growth										
Sales	5.5%	6.1%	5.2%	9.9%	2.9%	0.0%	4.8%	5.4%	4.9%	6.5%
Assets	4.3%	3.2%	4.7%	9.5%	2.3%	1.9%	4.5%	4.8%	4.6%	5.0%
Employment	39.3%	41.3%	38.4%	45.1%	36.0%	16.3%	43.9%	36.6%	37.4%	42.1%
C. Assets										
Cash to assets	31.1%	30.2%	31.5%	35.9%		12.9%	20.3%	35.1%	32.6%	27.8%
Working capital to assets	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1
Sales to assets	2.8	3.2	2.6	3.2	2.1	1.5	2.7	2.5	2.6	2.5
Assets per employee (mill. NOK)	4.5	7.8	3.1	1.4	4.2	9.8	7.1	1.8	2.7	4.4
Sales per employee (mill. NOK)	2.0	2.9	1.6	1.3	1.8	4.8	3.3	1.0	1.5	2.0
Investment rate	42.2%	43.7%	41.4%	48.4%	38.8%	22.7%	41.5%	41.4%	41.1%	41.9%
Age	11.6	38.2	11.2	3.5	16.4	20.5	14.5	10.2	10.5	13.8
Risk	0.26	0.25	0.26	0.27	0.26	0.20	0.22	0.28	0.27	0.25
D. Financing										
Leverage	74.8%	79.1%	73.0%	80.5%	67.2%	63.3%	70.6%	73.8%	72.4%	75.2%
Net leverage	31.2%	42.1%	26.4%	31.8%	24.9%	53.7%	51.0%	18.6%	23.0%	38.8%
Short- to long-term liabilities	4.3	4.9	4.0	4.0	3.9	4.6	4.9	3.7	3.8	4.7
Interest coverage ratio	97.1	109.9	91.1	91.1	90.3	49.1	110.9	83.8	92.0	87.1
E. Dividends										
Payout ratio for all	18.8%	19.7%	18.4%	14.9%	20.8%	19.9%	23.1%	16.7%	17.8%	20.4%
Proportion dividend payers	16.8%	16.0%	17.1%	13.0%	20.3%	41.6%	25.7%	14.3%	16.5%	19.2%
Payout ratio for payers	80.0%	82.4%	78.9%	79.9%	77.7%	41.1%	71.6%	83.4%	79.5%	76.5%
F. Profitability										
Value added (mill. NOK)	15.1	35.9	6.1	4.3	8.0	624.5	8.7	1.2	4.2	12.8
Value added per employee (mill. NOK)	0.6	0.8	0.5	0.5	0.5	1.7	0.7	0.4	0.5	0.6
Return on assets (ROA)	3.6%	0.6%	5.0%	4.3%	5.7%	5.6%	7.0%	4.4%	5.3%	3.1%
Return on invested capital (ROIC)	33.5%	32.0%	34.1%	42.6%	27.7%	18.7%	34.3%	34.2%	35.0%	29.3%
Return on equity (ROE)	30.6%	28.3%	31.6%	40.8%	24.9%	16.3%	29.5%	32.4%	32.6%	26.0%

This table shows the mean value of finance characteristics in all Norwegian firms with limited liability in 2015. The sample excludes financial firms and firms with no sales, employees, or assets. Family firms are in Part I, while nonfamily firms are in Part II. "Family firms" are majority-owned by individuals related by blood or marriage up to the fourth degree of kinship. Ownership is measured as the sum of the shareholder's direct and indirect equity holdings in the firm, and the family is counted as one owner. "Nonfamily firms" are all other firms. "Sole entrepreneurship" is less than ten years old and has only one owning member in the controlling family. "Classic" are all other family firms than sole entrepreneurships. "Large" has sales above NOK 100 mill. and more than 100 employees, "Medium" has sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while "Small" has sales below NOK 10 mill. and less than 10 employees. "Single-owner" has just one owner, which may be a family with several individual owners. "Multiple-owner" has more than one owner, counting the controlling family as one owner. "Investment rate" is the change in fixed assets adjusted for depreciation and writedowns divided by fixed assets at the beginning of the year. The ratio is winsorized at 5% and 95%. "Risk" is the standard deviation of sales divided by average sales during the past three years. "Leverage" is debt divided by total assets, while "Net leverage" is debt minus cash divided by total assets minus cash. "Payout ratio" is dividends divided by net earnings, "Value added" is operating earnings plus salaries, "ROA" is operating earnings divided by assets, "ROIC" is operating earnings divided by assets net of cash and current debt, and "ROE" is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%. Amounts are stated in 2015 purchasing power, and the measures of growth and profitability are net of inflation.

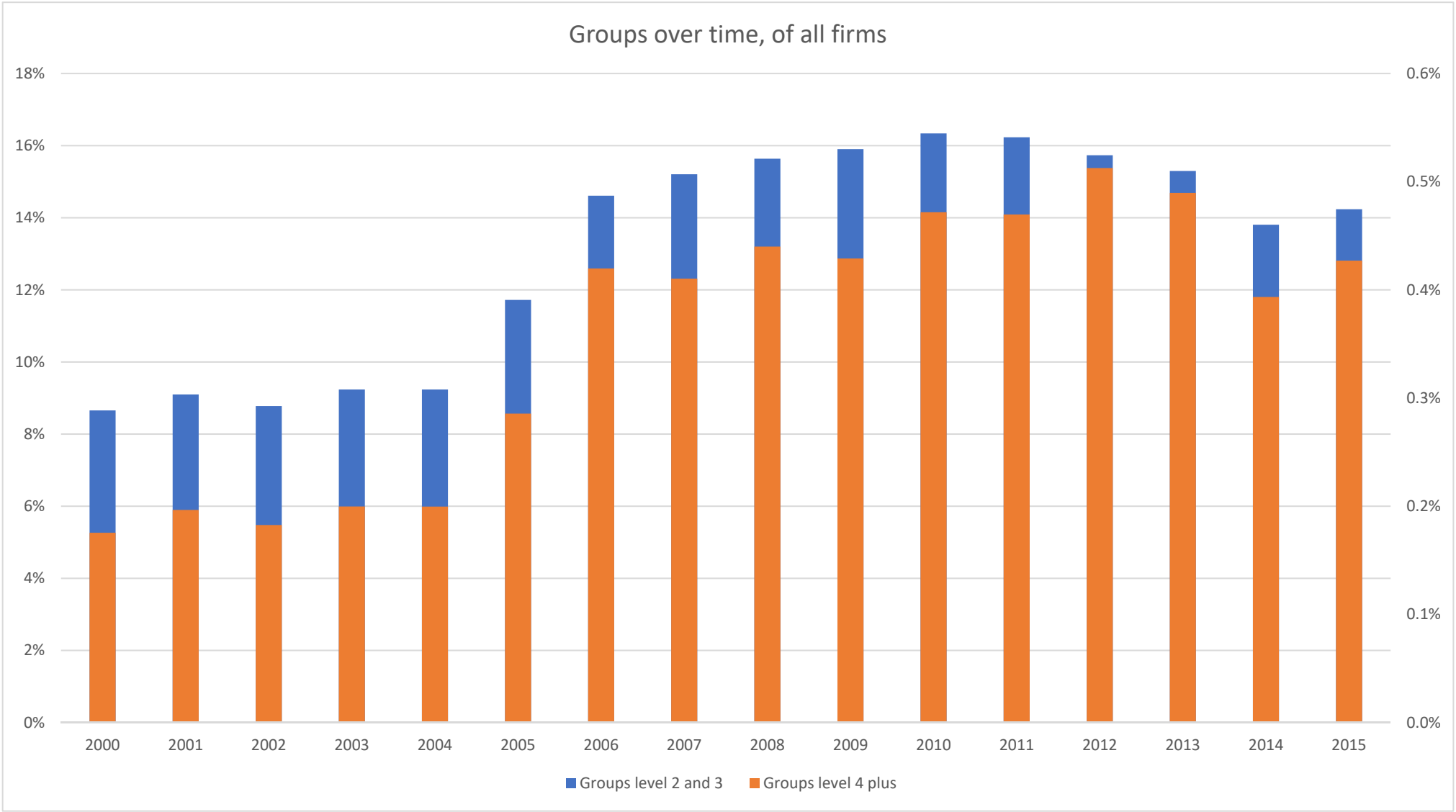
Appendix: Supplementary graphs

Contents

For Chapter 4: The database

1. Groups in the population of firms

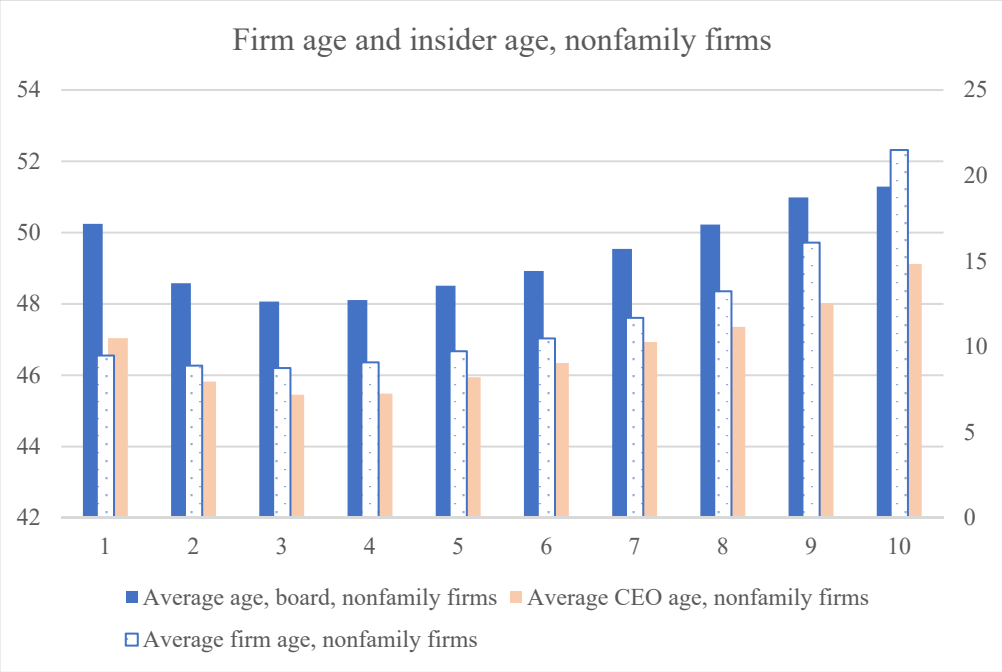
The graphs show the percentage of groups out of all limited liability nonfinancial entities, where an entity is a firm or a group.

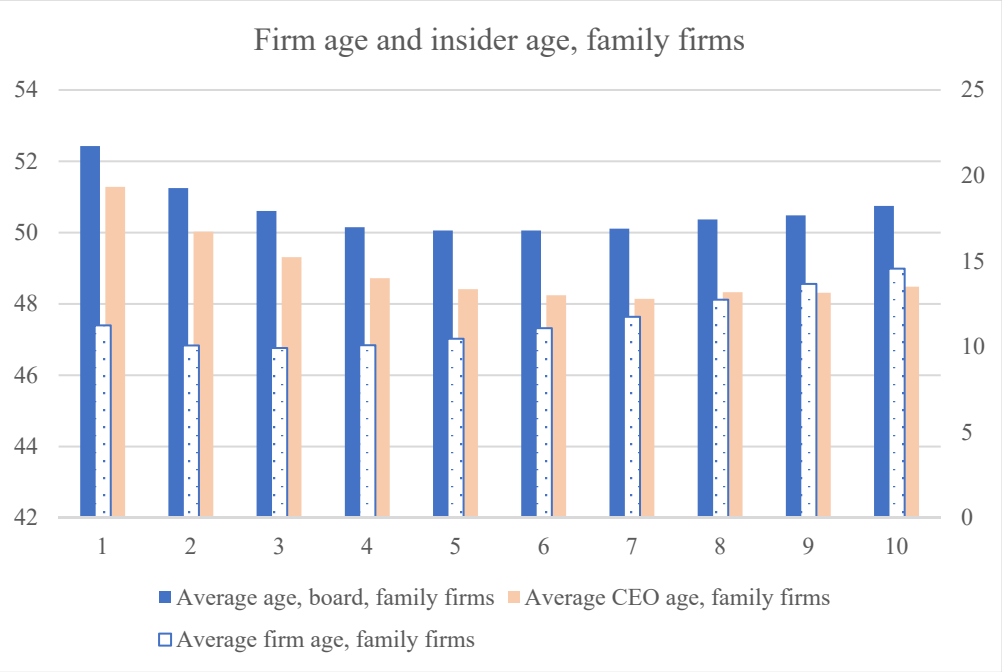


For Chapter 6: Corporate governance

1. Firm age and insider age by firm size

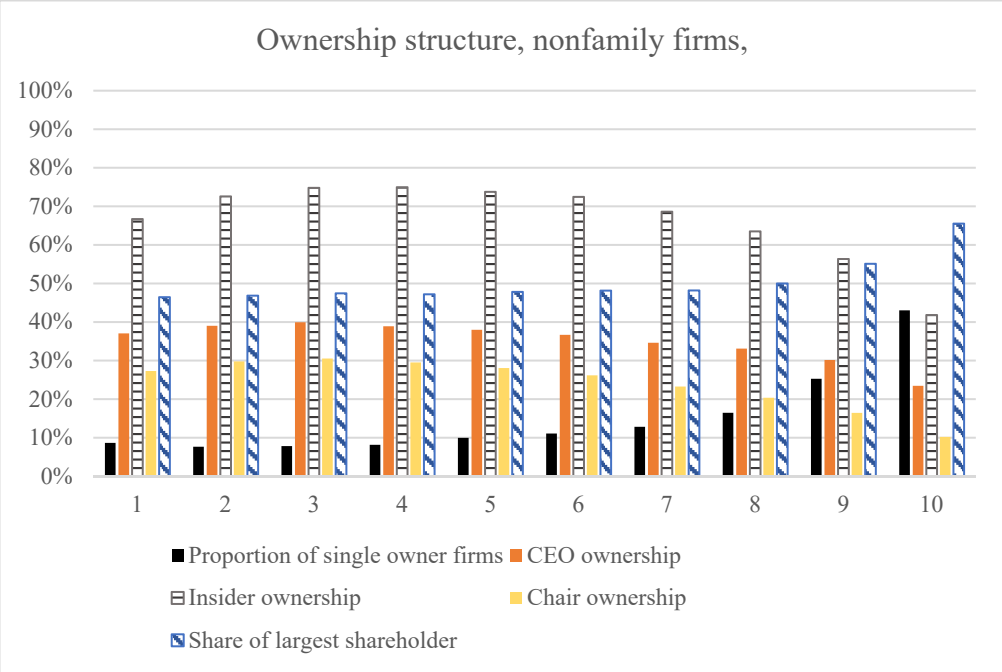
The graphs show the mean age of the firm and the mean age of its directors and CEOs by firm size. We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10.

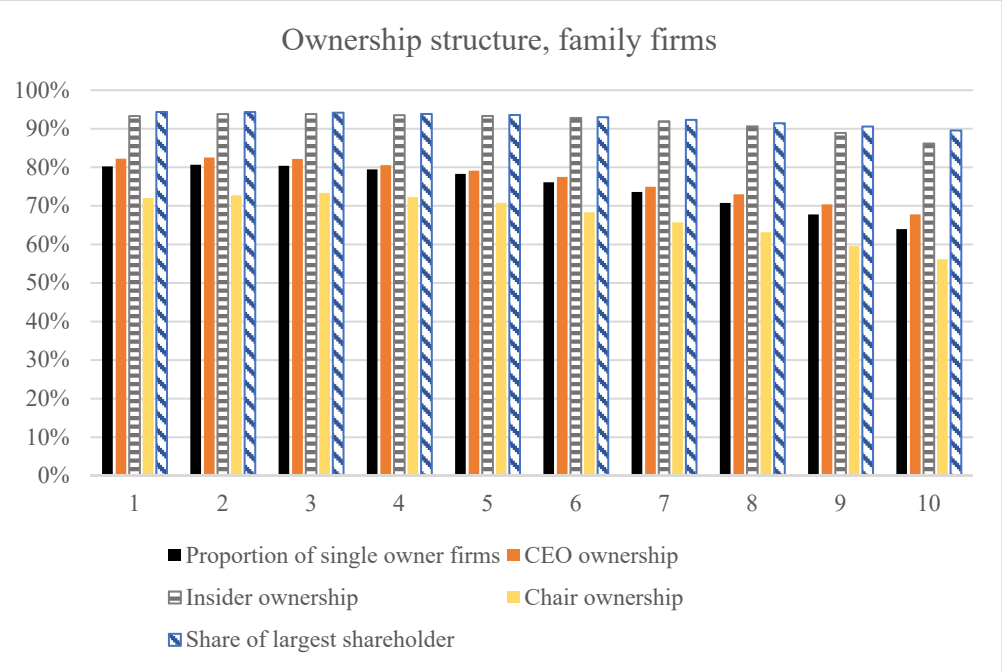


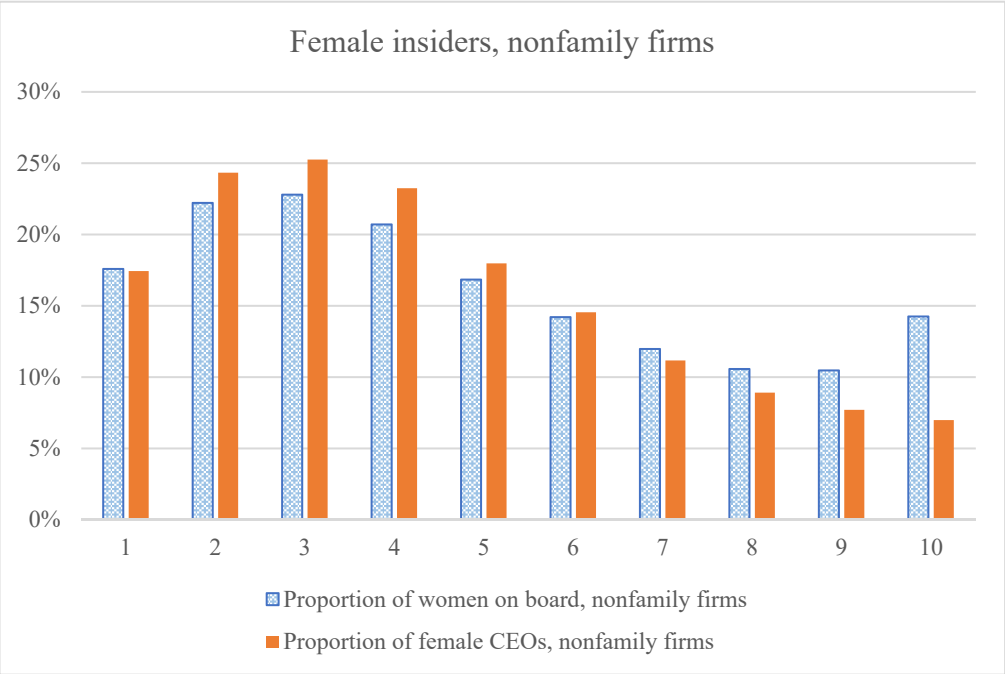


2. Ownership structure and board size by firm size

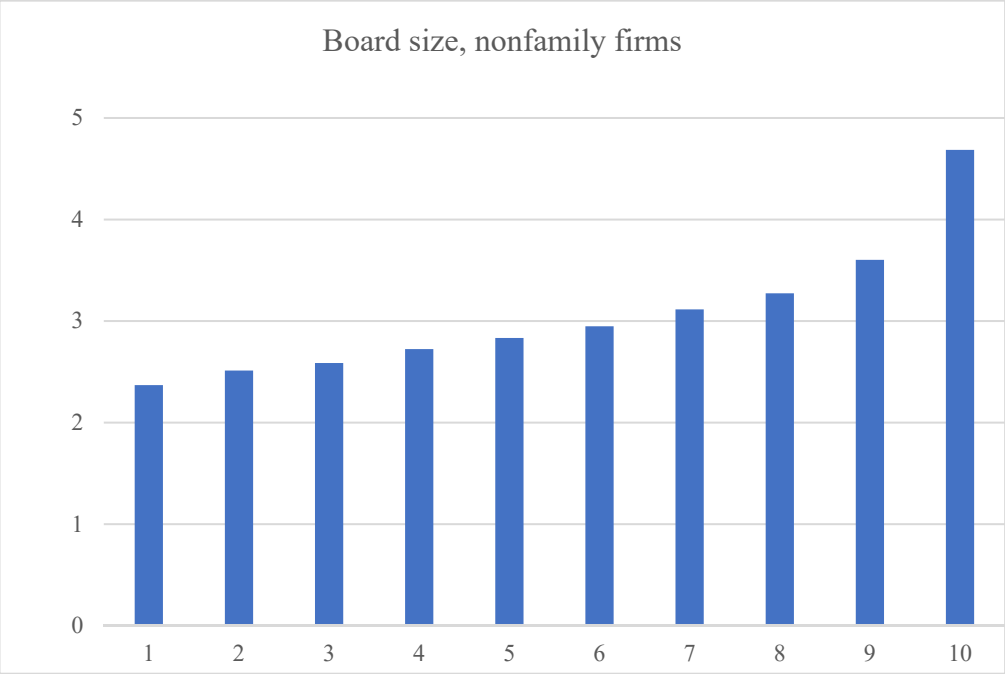
The mean values in the graphs below are presented by size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10.

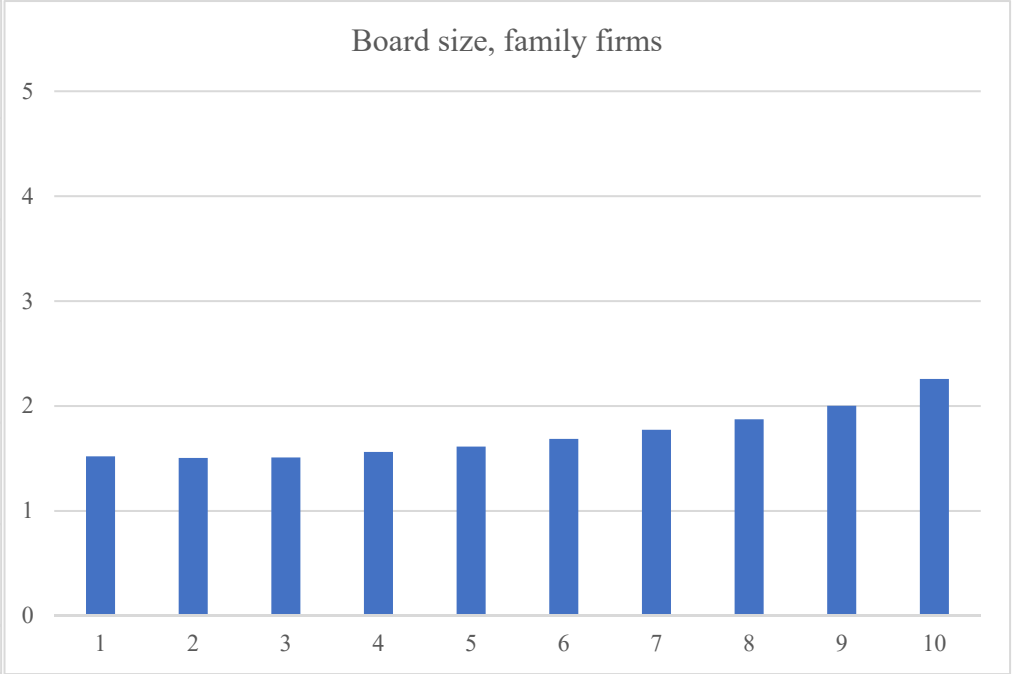





Female insiders, nonfamily firms
30%
25%
20%
15%
10%
5%
0%
1
2
3
4
5
6
7
8
9
10
Proportion of women on board, nonfamily firms
Proportion of female CEOs, nonfamily firms

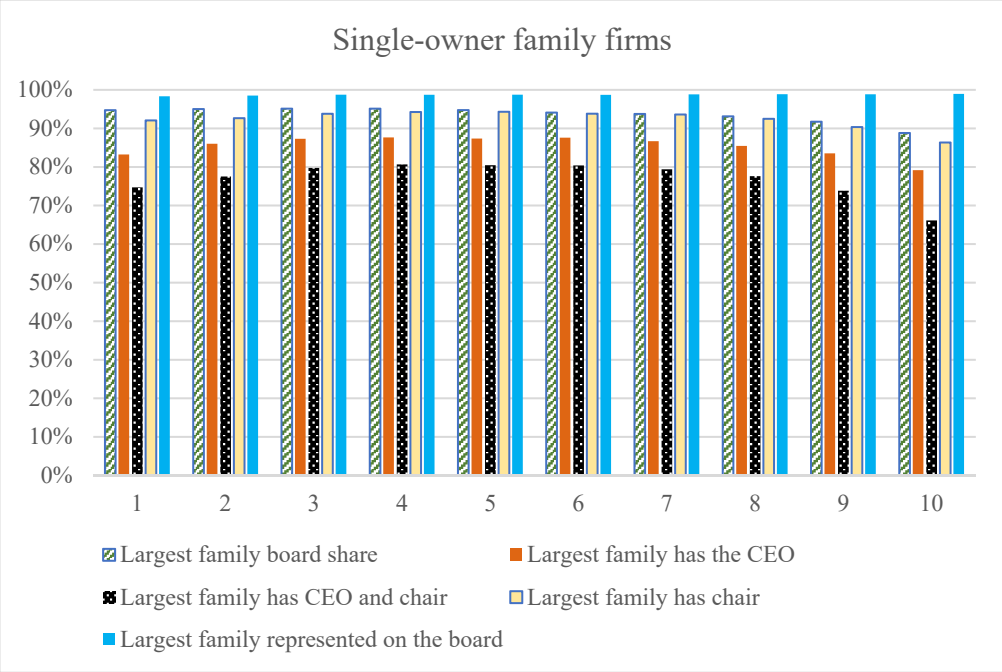

Female insiders, family firms
30%
25%
20%
15%
10%
5%
0%
1
2
3
4
5
6
7
8
9
10
Proportion of women on board, family firms
Proportion of female CEOs, family firms

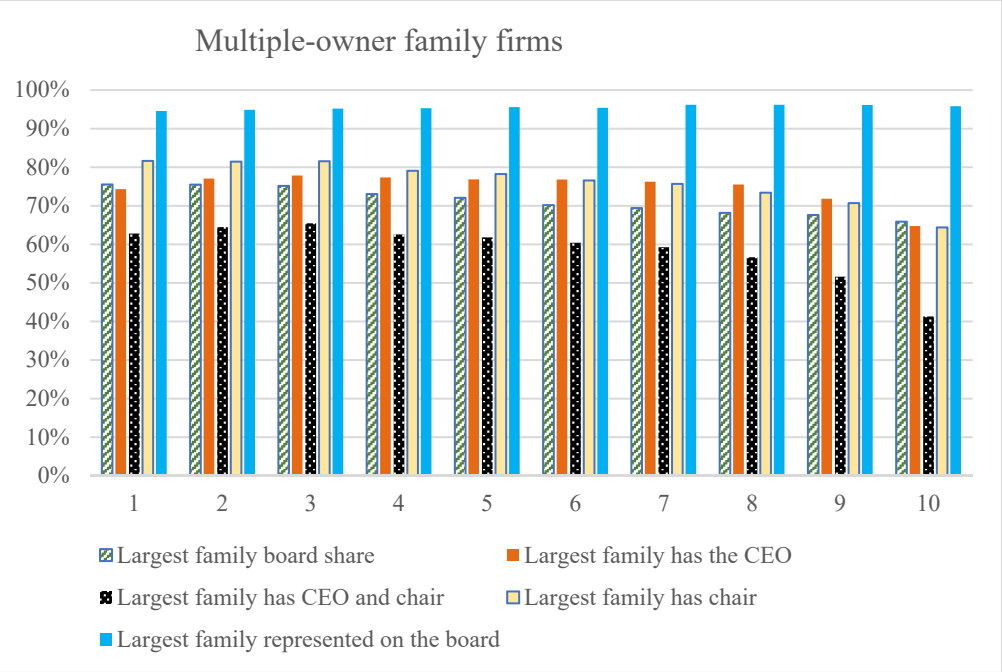

Board size, nonfamily firms
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10


Board size, family firms
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10

3. Family participation by firm size

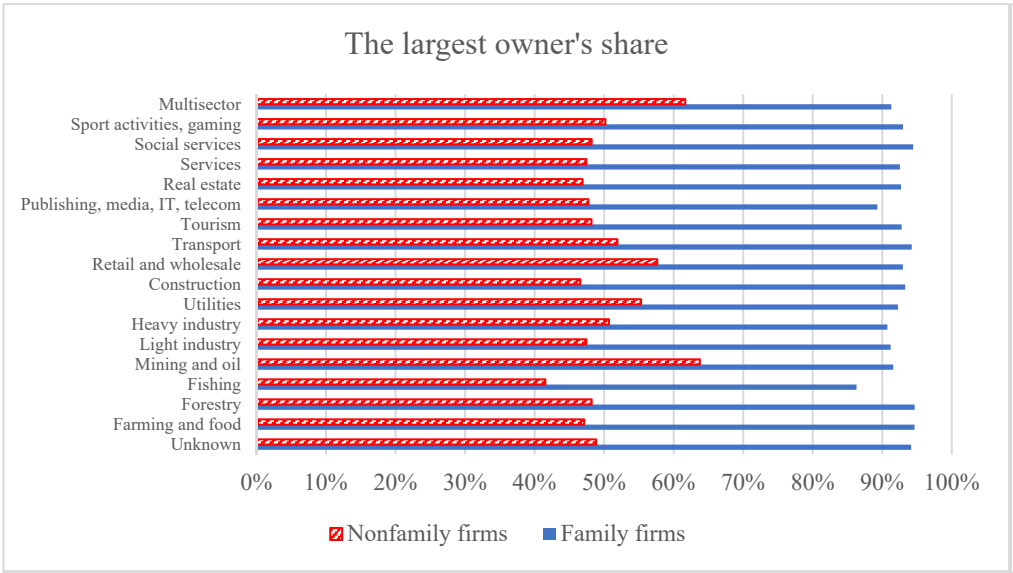
The graphs below show the governance participation of the controlling family in single-owner family firms and in family firms with nonfamily owners (multiple-owner firms), respectively. The mean values are presented by size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10.

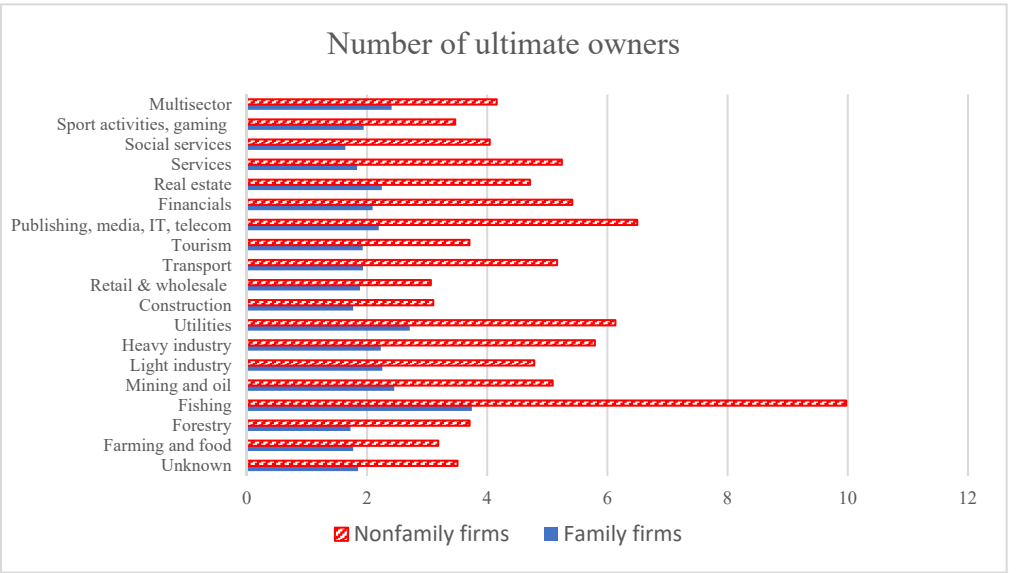


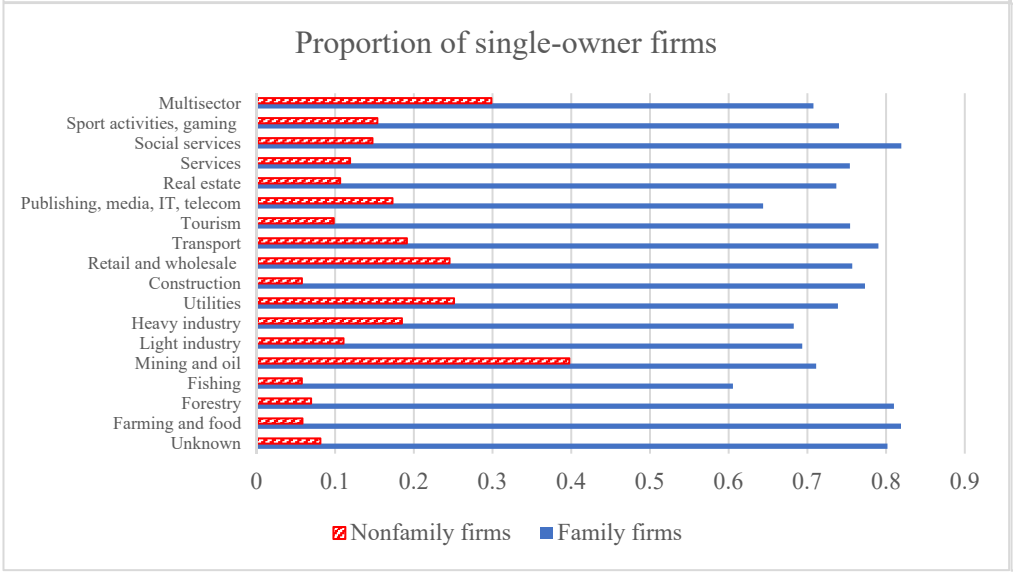


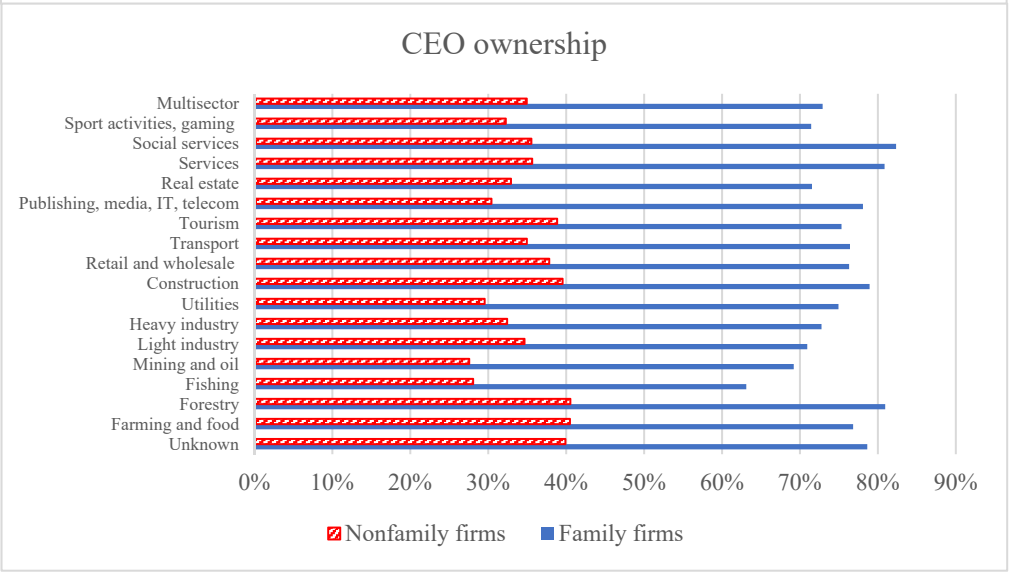
4. Corporate governance characteristics by industry

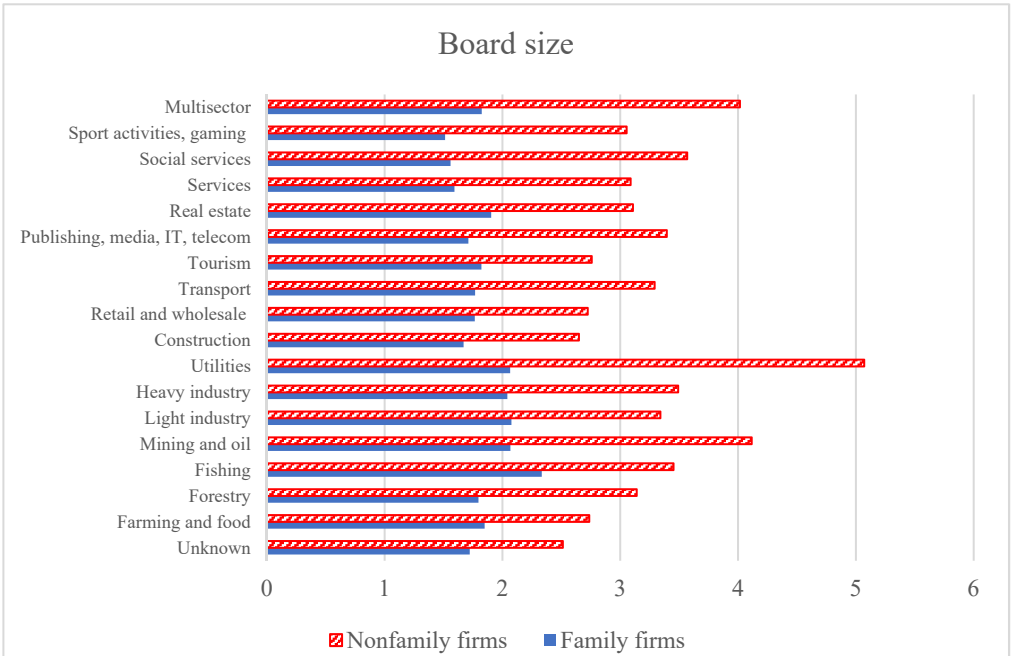
The graphs below present corporate governance characteristics by industry for family firms and nonfamily firms. The numbers are means for all years (2000–2015).

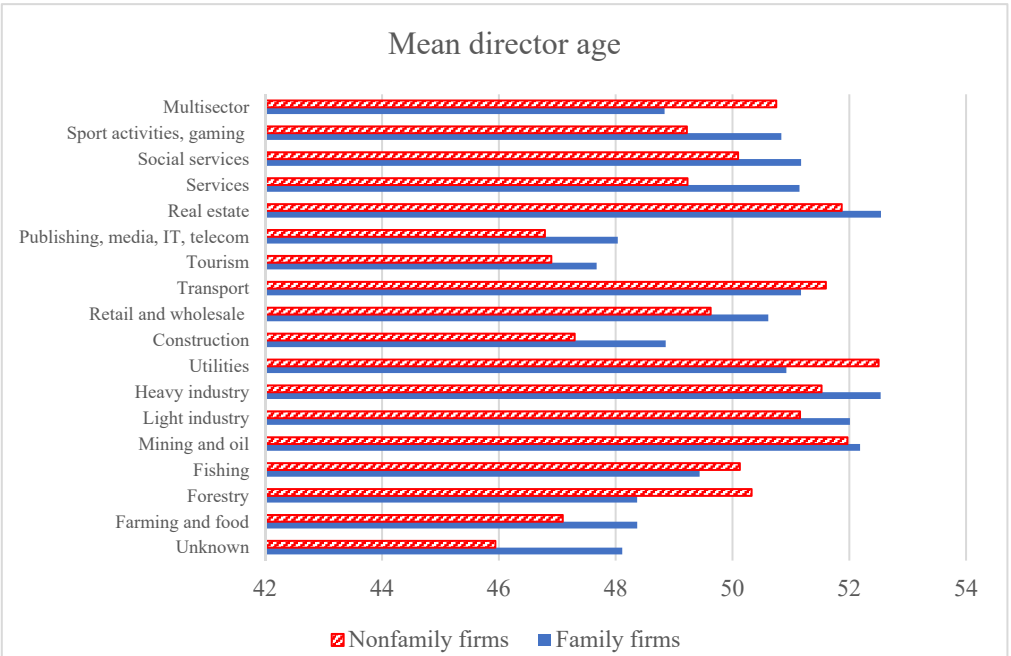


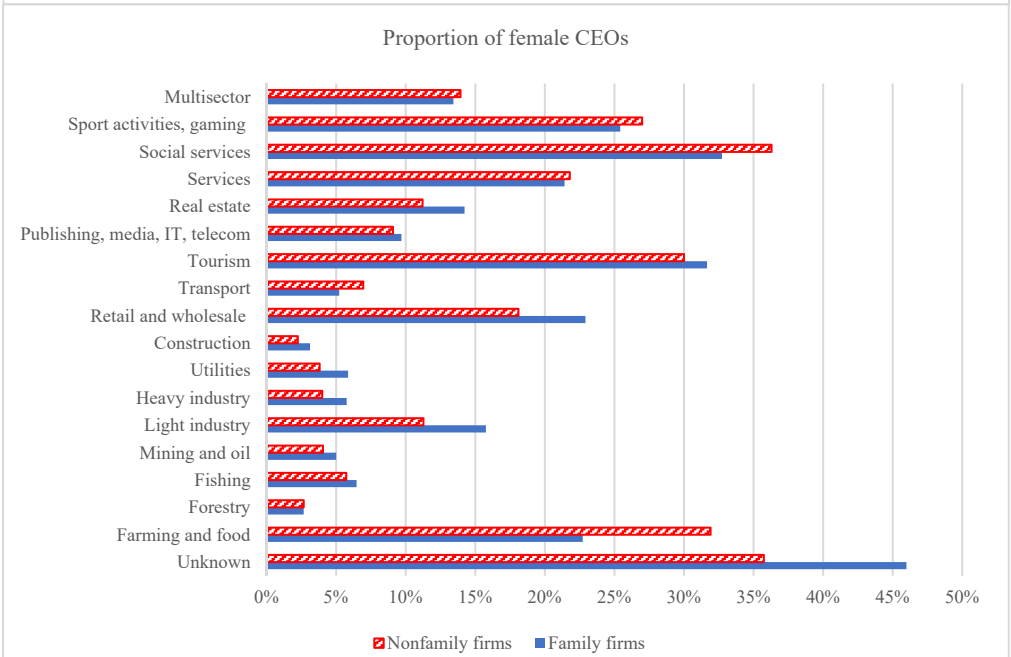


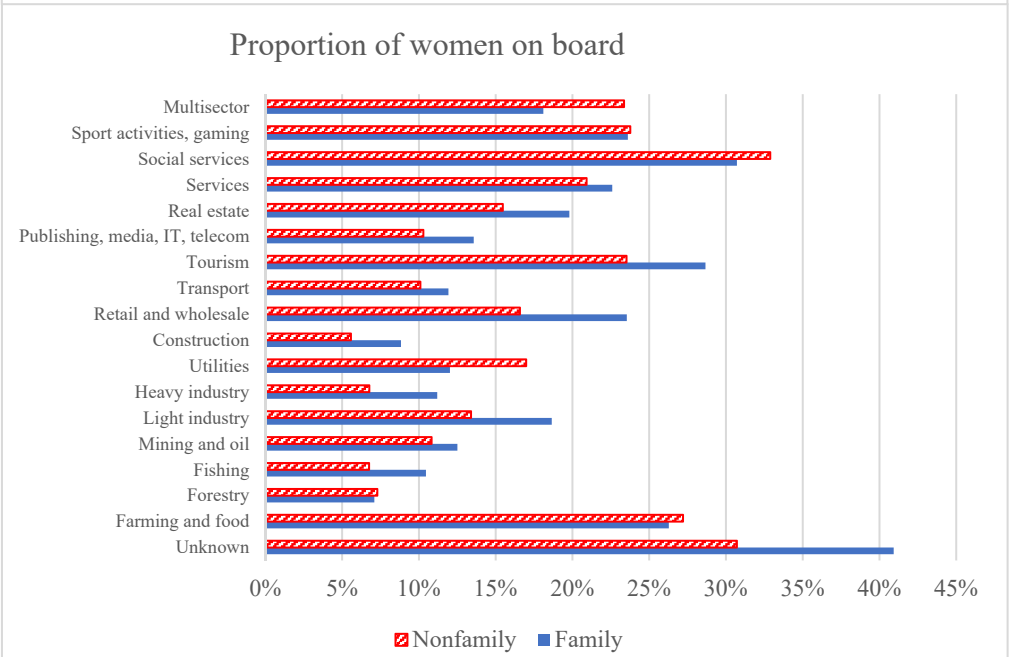





Board size
Multisector
Sport activities, gaming
Social services
Services
Real estate
Publishing, media, IT, telecom
Tourism
Transport
Retail and wholesale
Construction
Utilities
Heavy industry
Light industry
Mining and oil
Fishing
Forestry
Farming and food
Unknown
0
1
2
3
4
5
6
Nonfamily firms
Family firms

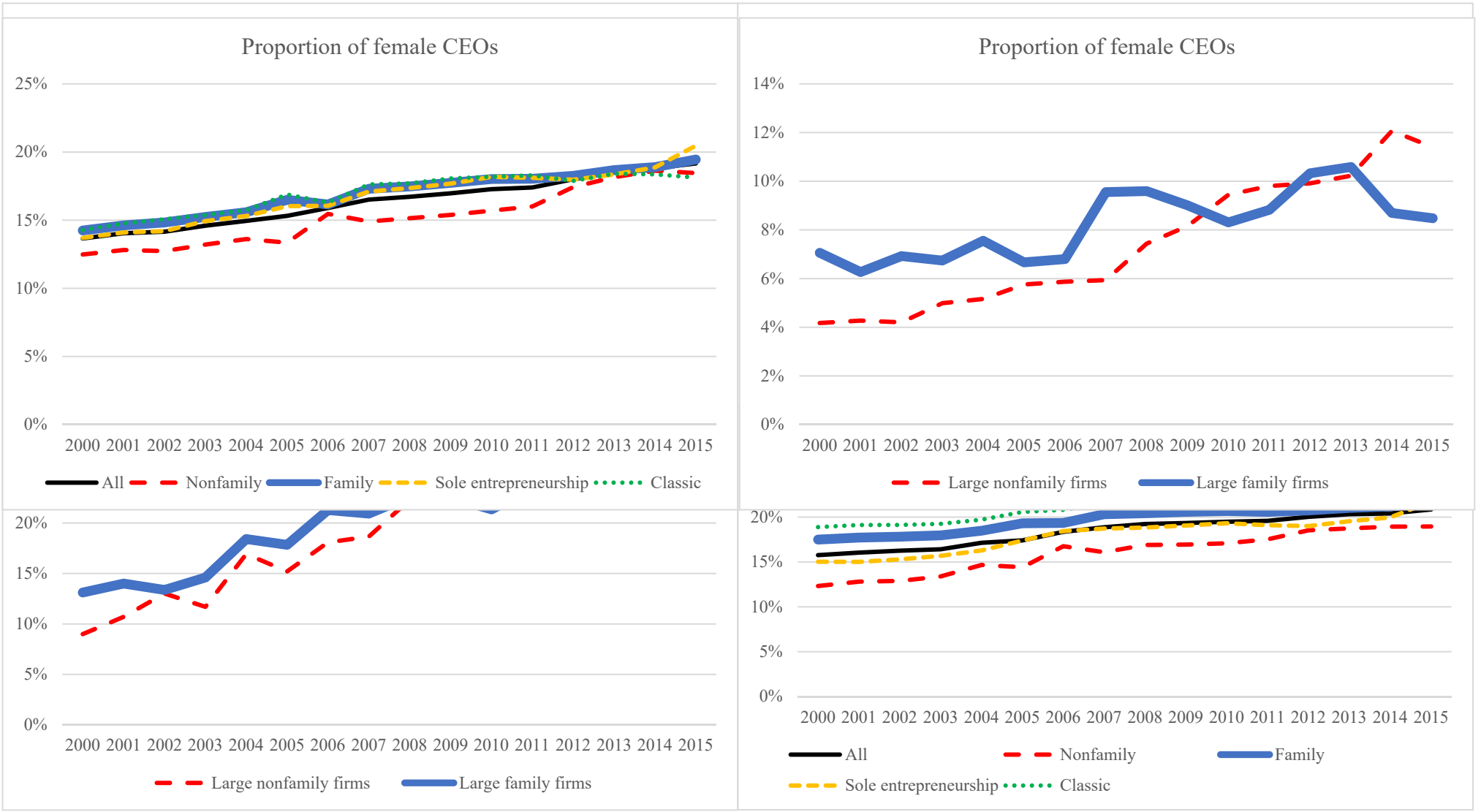

Mean director age
Multisector
Sport activities, gaming
Social services
Services
Real estate
Publishing, media, IT, telecom
Tourism
Transport
Retail and wholesale
Construction
Utilities
Heavy industry
Light industry
Mining and oil
Fishing
Forestry
Farming and food
Unknown
42
44
46
48
50
52
54
Nonfamily firms
Family firms


Proportion of female CEOs
Multisector
Sport activities, gaming
Social services
Services
Real estate
Publishing, media, IT, telecom
Tourism
Transport
Retail and wholesale
Construction
Utilities
Heavy industry
Light industry
Mining and oil
Fishing
Forestry
Farming and food
Unknown
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
Nonfamily firms
Family firms


Proportion of women on board
Multisector
Sport activities, gaming
Social services
Services
Real estate
Publishing, media, IT, telecom
Tourism
Transport
Retail and wholesale
Construction
Utilities
Heavy industry
Light industry
Mining and oil
Fishing
Forestry
Farming and food
Unknown
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
Nonfamily
Family

5. The evolution of corporate governance characteristics over time

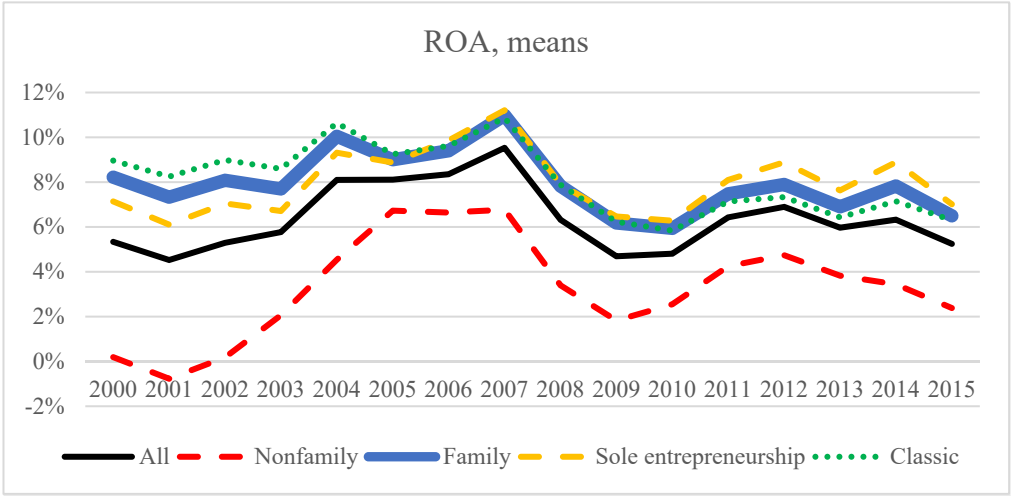
The graphs below present the dynamics of board turnover rates, the proportion of women on board, and the proportion of female CEOs over the 2000–2015 period. Large firms have more than 100 million NOK in average sales per year (at 2015 purchasing power) and more than 100 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms.

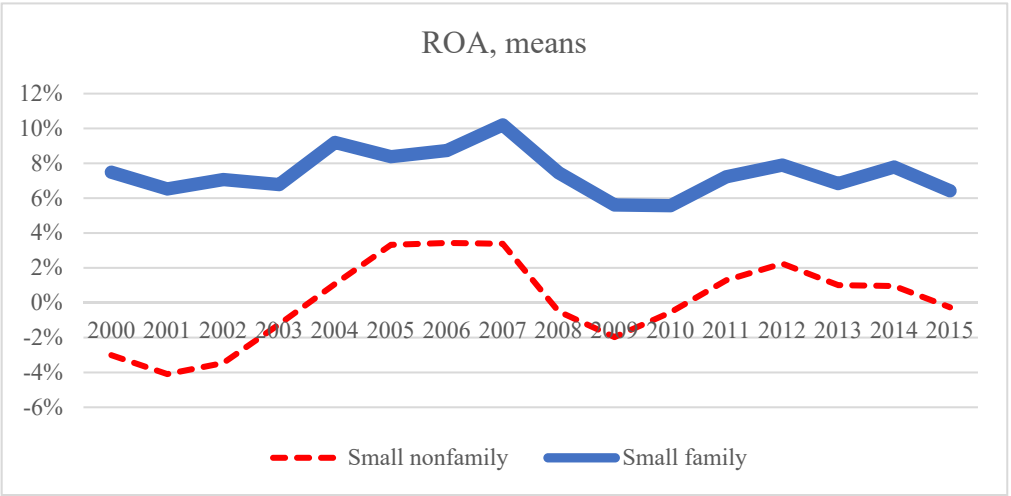


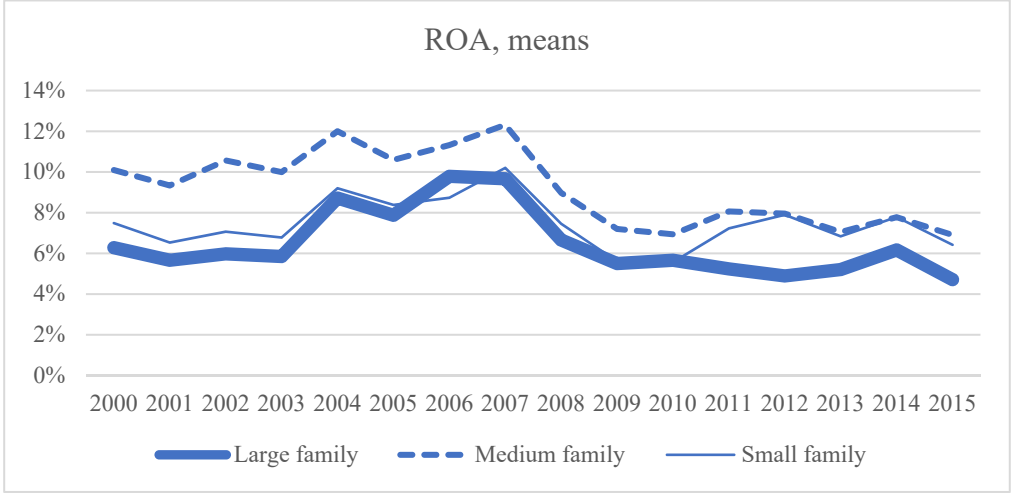
For Chapter 7: Corporate finance

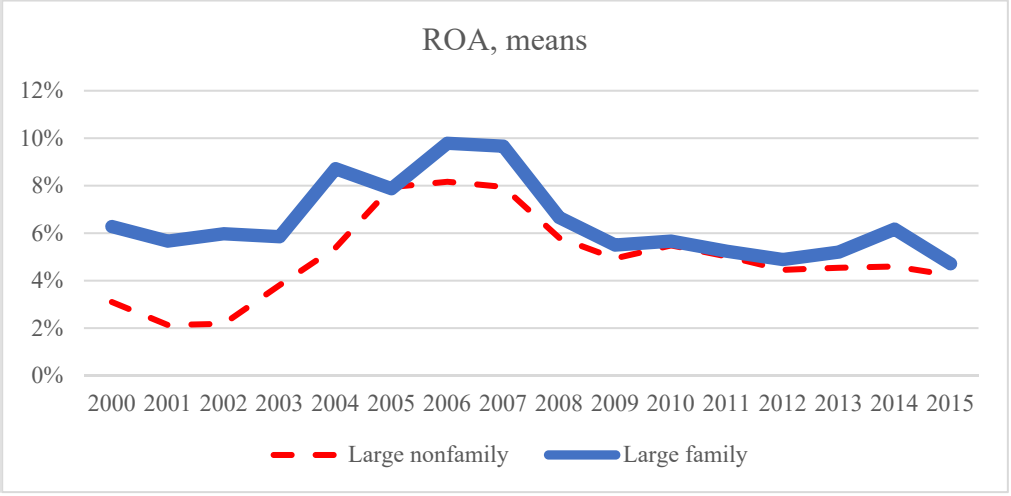
1. Firm profitability over time

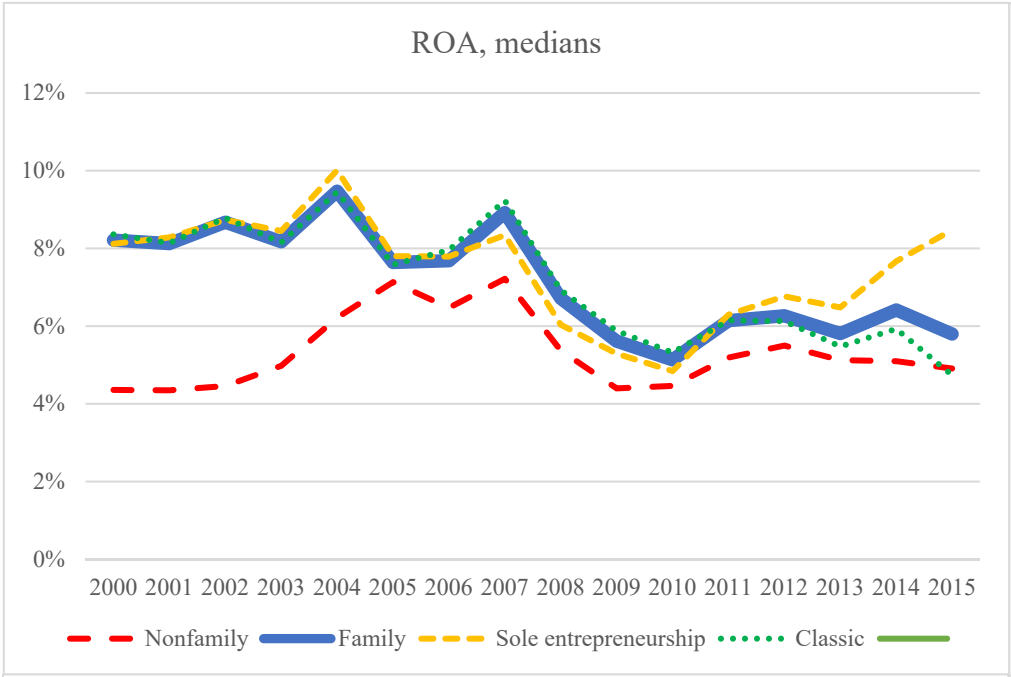
The graphs below present mean returns on assets, equity and invested capital for the 2000–2015 period. Large firms have sales above NOK 100 mill. and more than 100 employees, medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while small firms have sales below NOK 10 mill. and less than 10 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms. ROA is operating earnings divided by assets, ROIC is operating earnings divided by assets net of cash and current debt, and ROE is net earnings divided by the book value of equity. Leverage, net leverage, and the payout ratio are winsorized at 97.5%. ROA, ROE and ROIC are winsorized at the 2.5% and 97.5% tails.

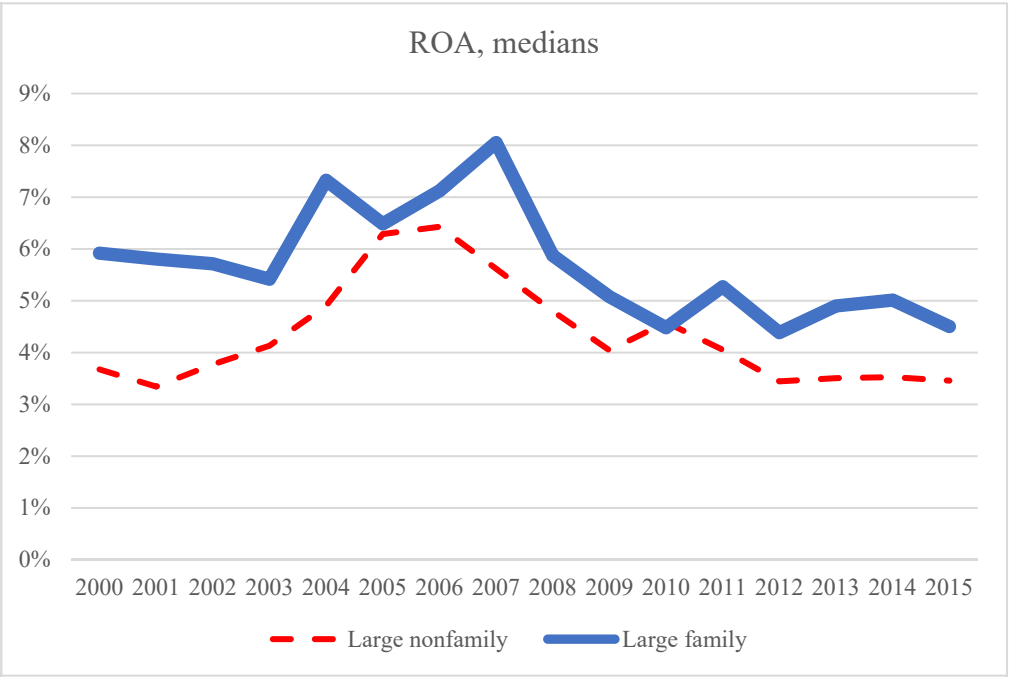


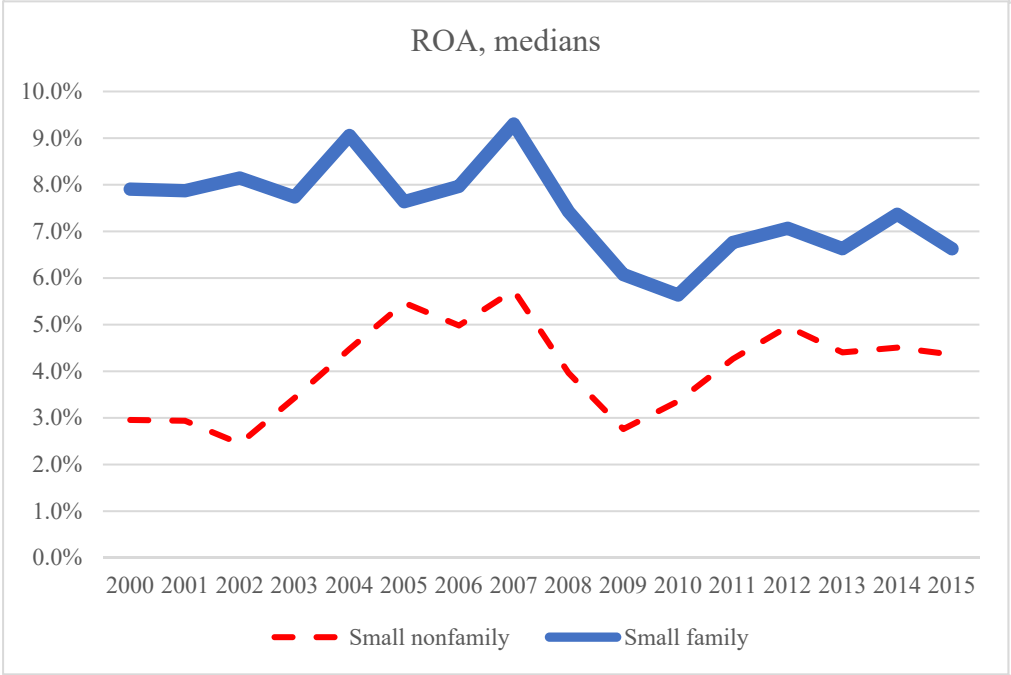


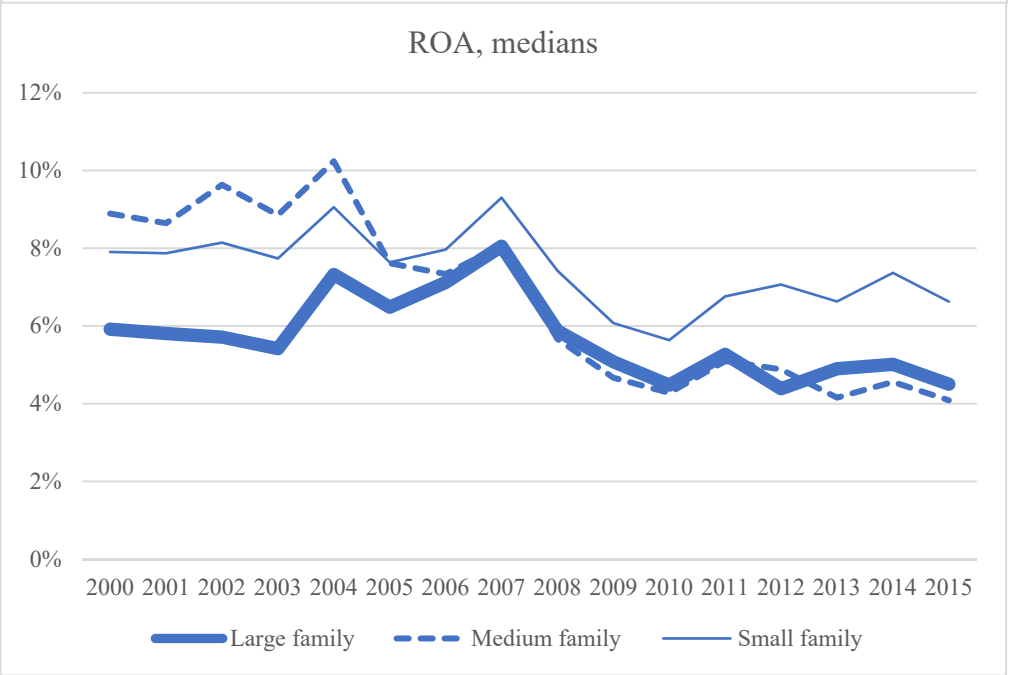


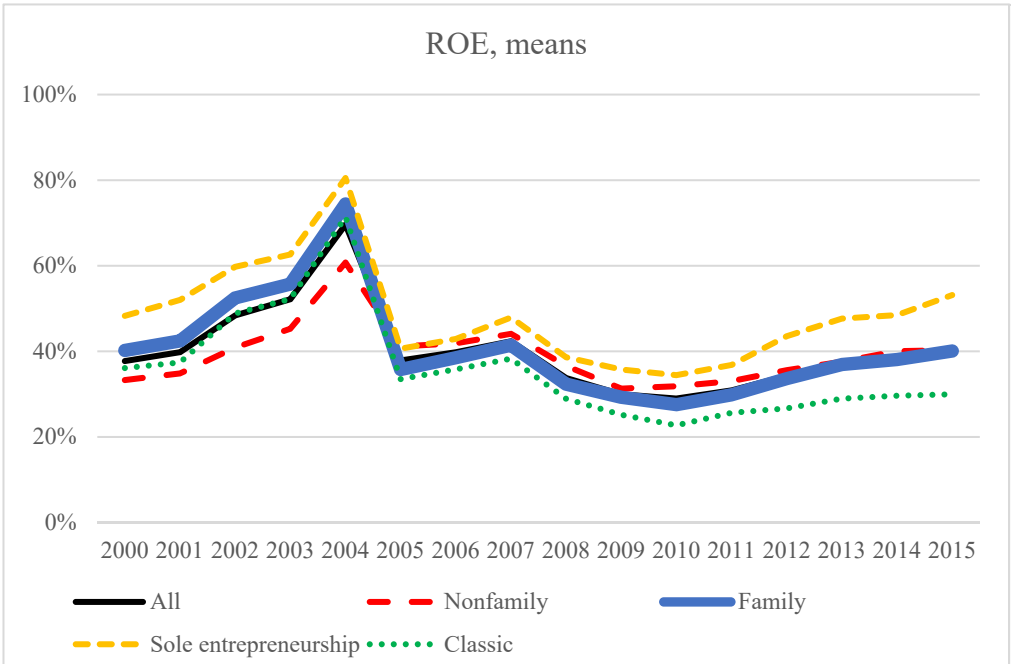


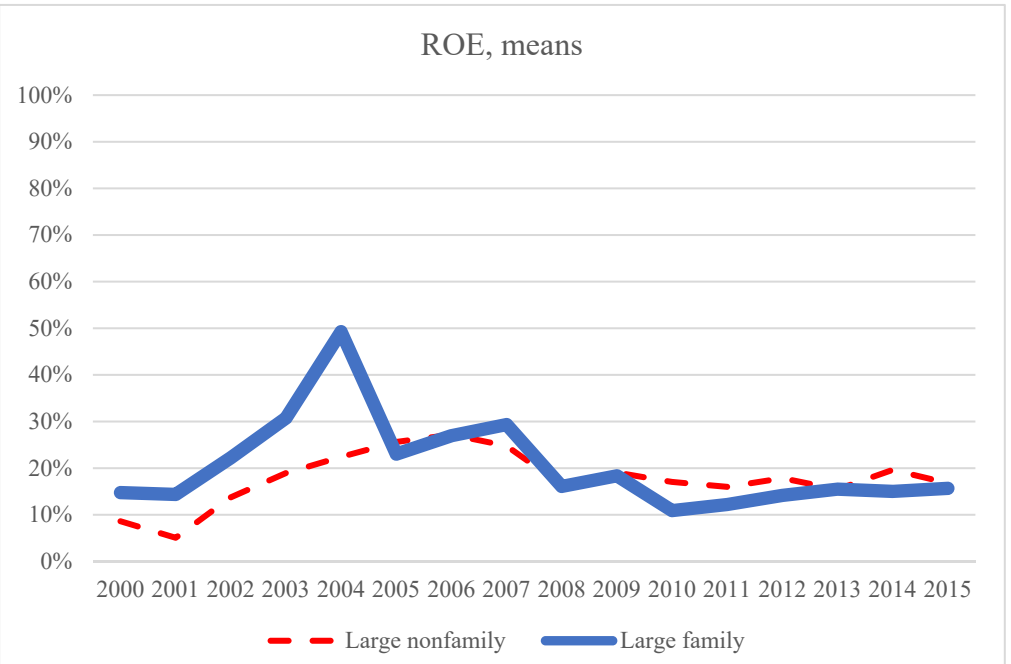

ROA, medians
12%
10%
8%
6%
4%
2%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Nonfamily
Family
Sole entrepreneurship
Classic

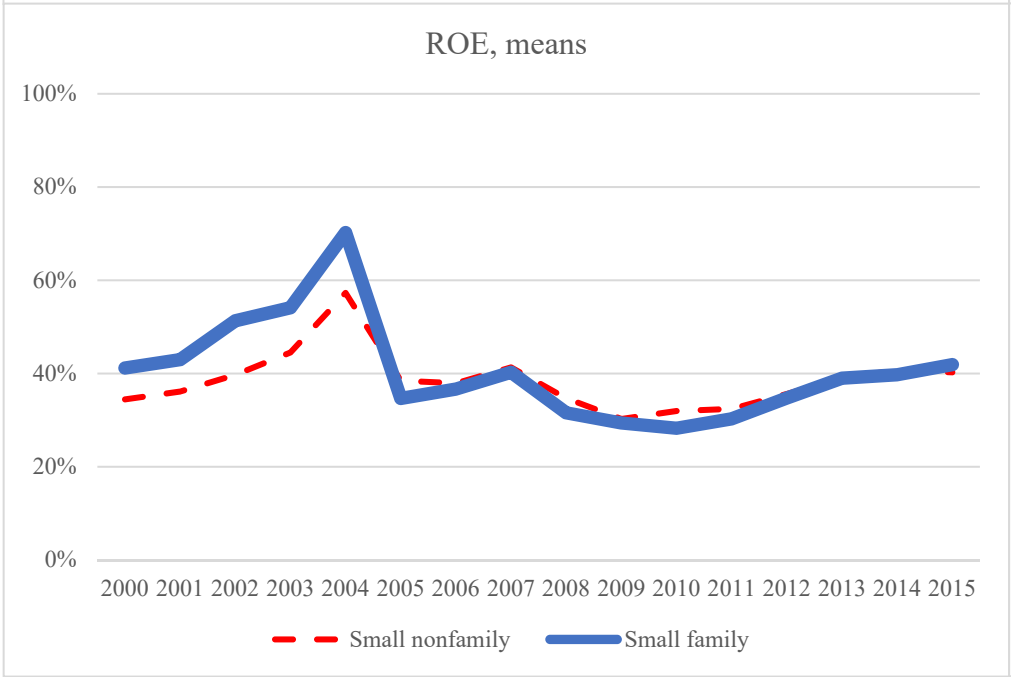

ROA, medians
9%
8%
7%
6%
5%
4%
3%
2%
1%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large nonfamily
Large family

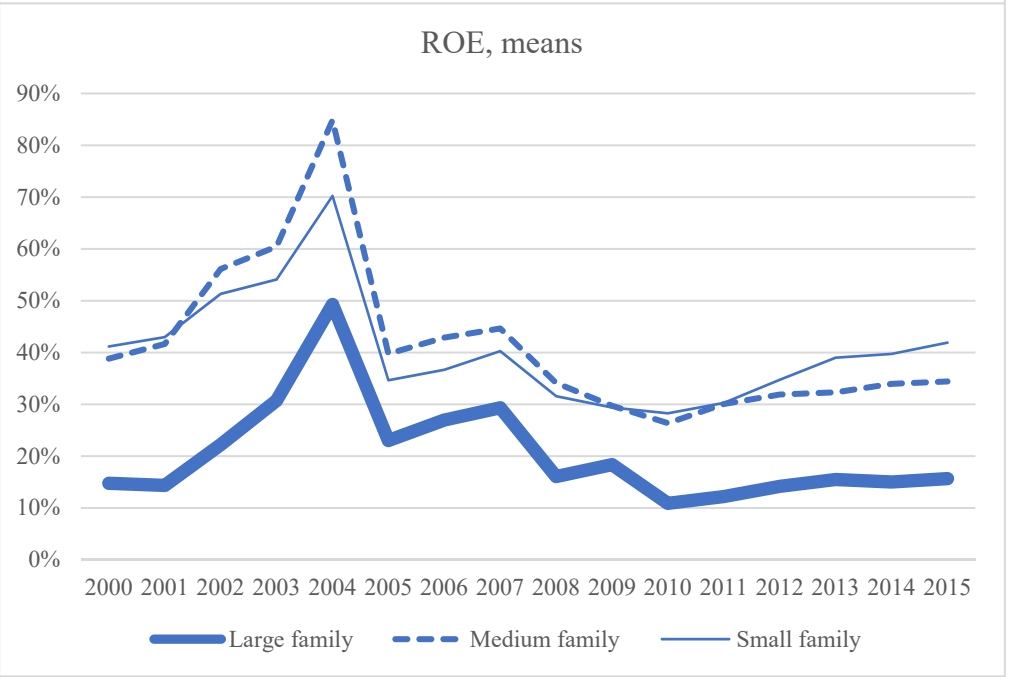

ROA, medians
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Small nonfamily
Small family

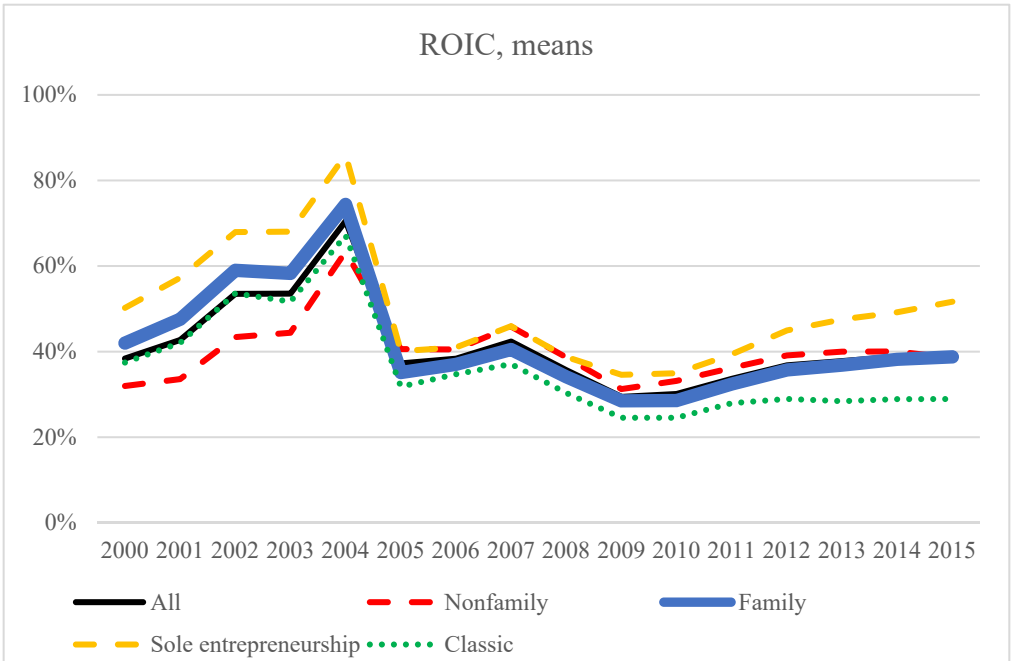

ROA, medians
12%
10%
8%
6%
4%
2%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family

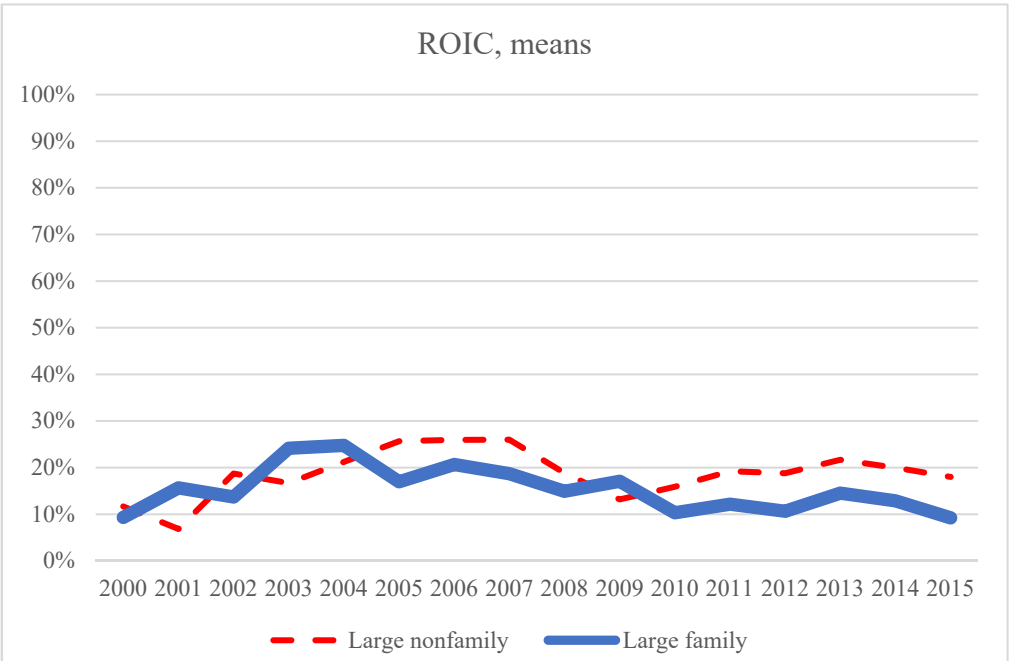

ROE, means
100%
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
All
Nonfamily
Family
Sole entrepreneurship
Classic

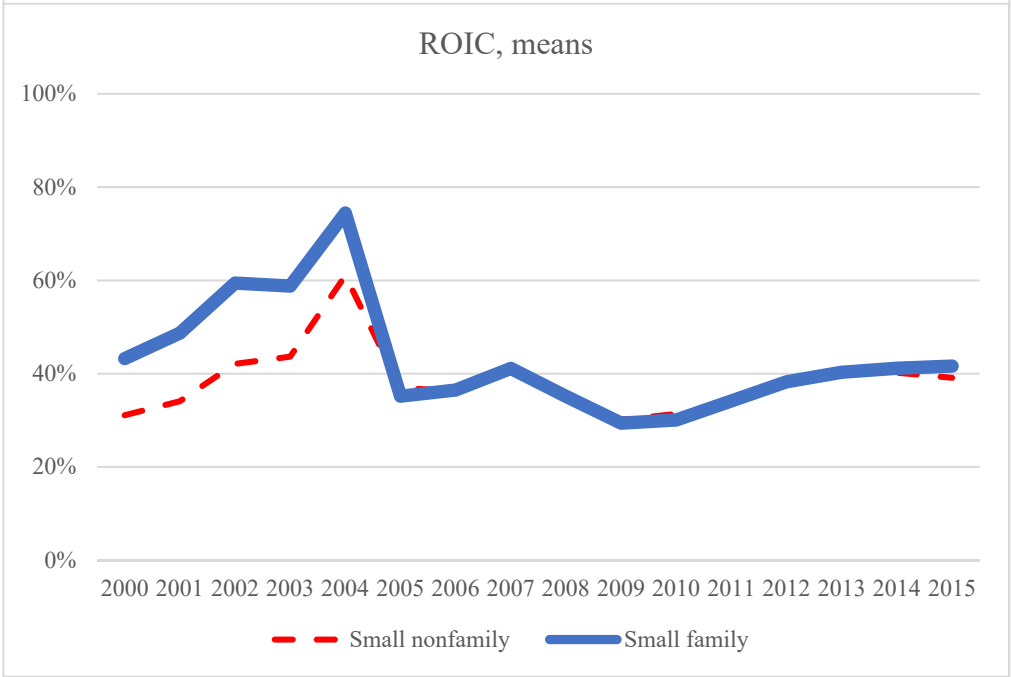

ROE, means
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large nonfamily
Large family

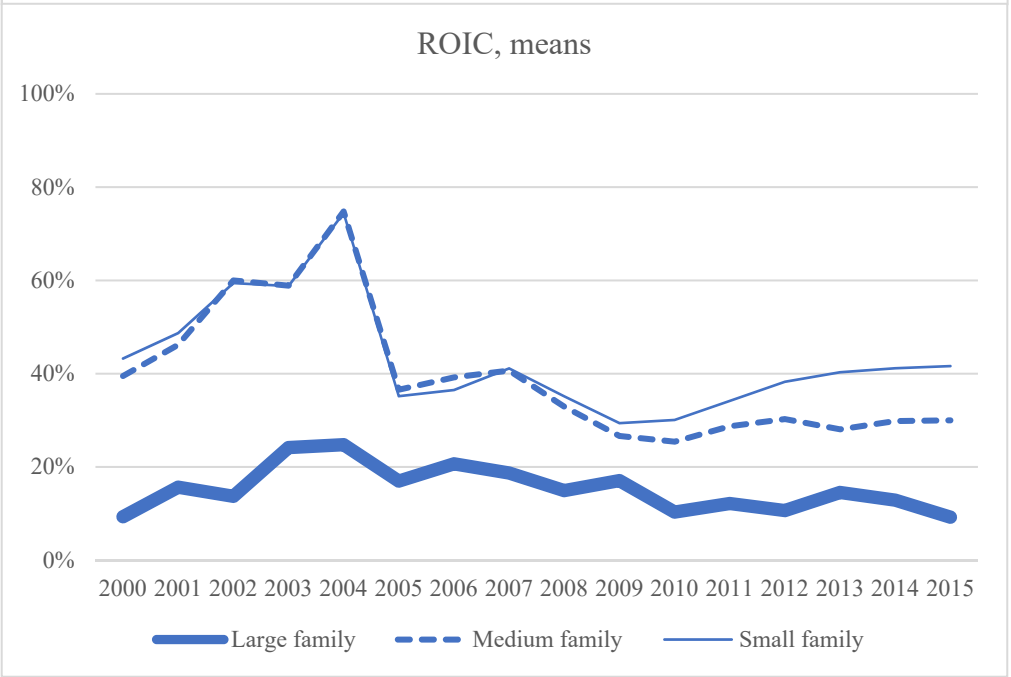

ROE, means
100%
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Small nonfamily
Small family


ROE, means
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family


ROIC, means
100%
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
All
Nonfamily
Family
Sole entrepreneurship
Classic

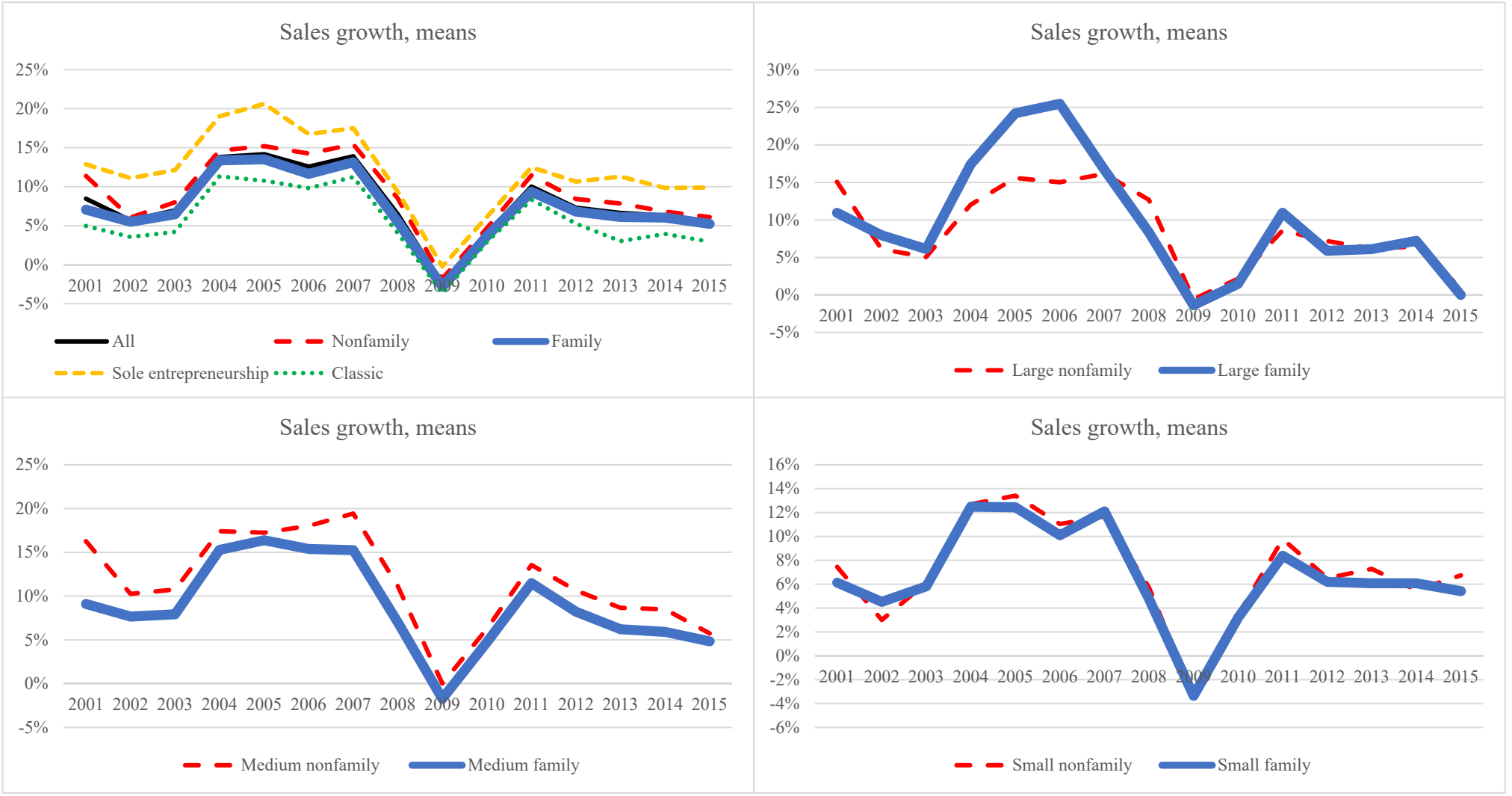

ROIC, means
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large nonfamily
Large family

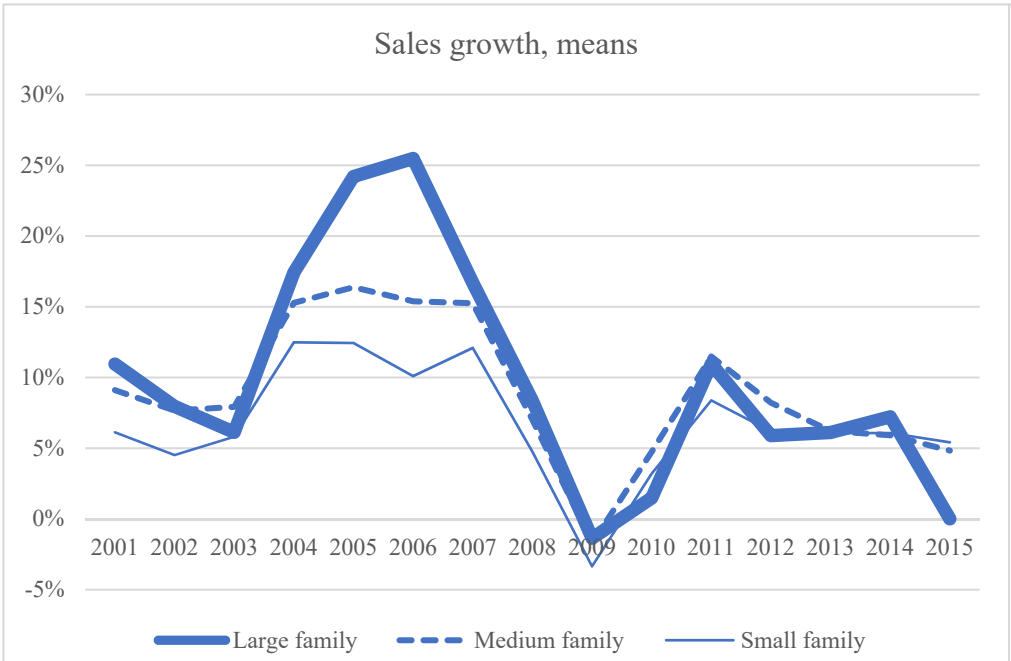

ROIC, means
100%
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Small nonfamily
Small family

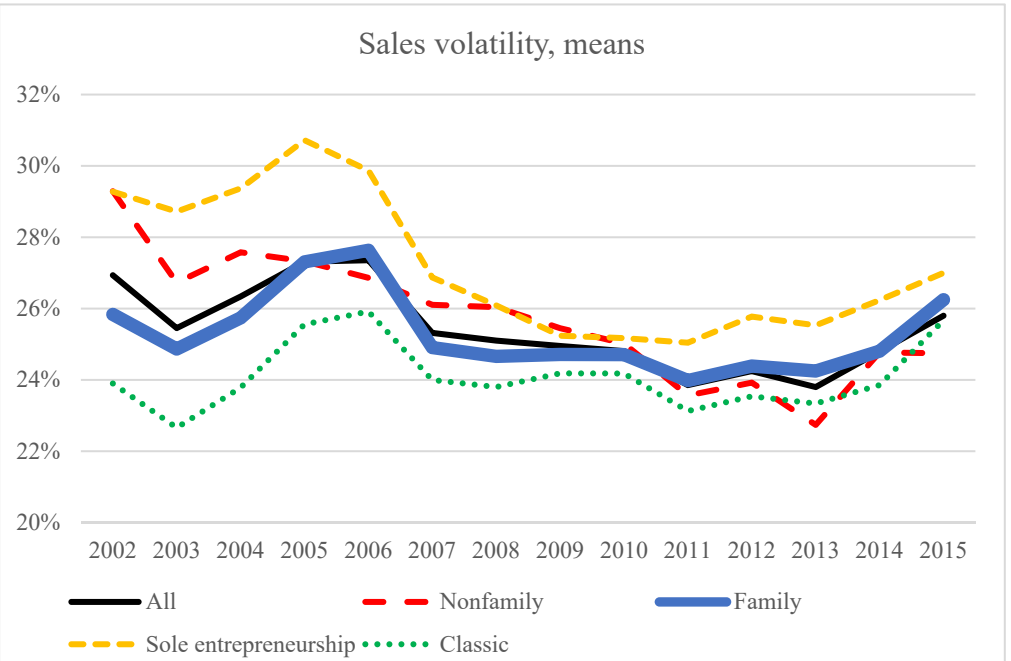

ROIC, means
100%
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family

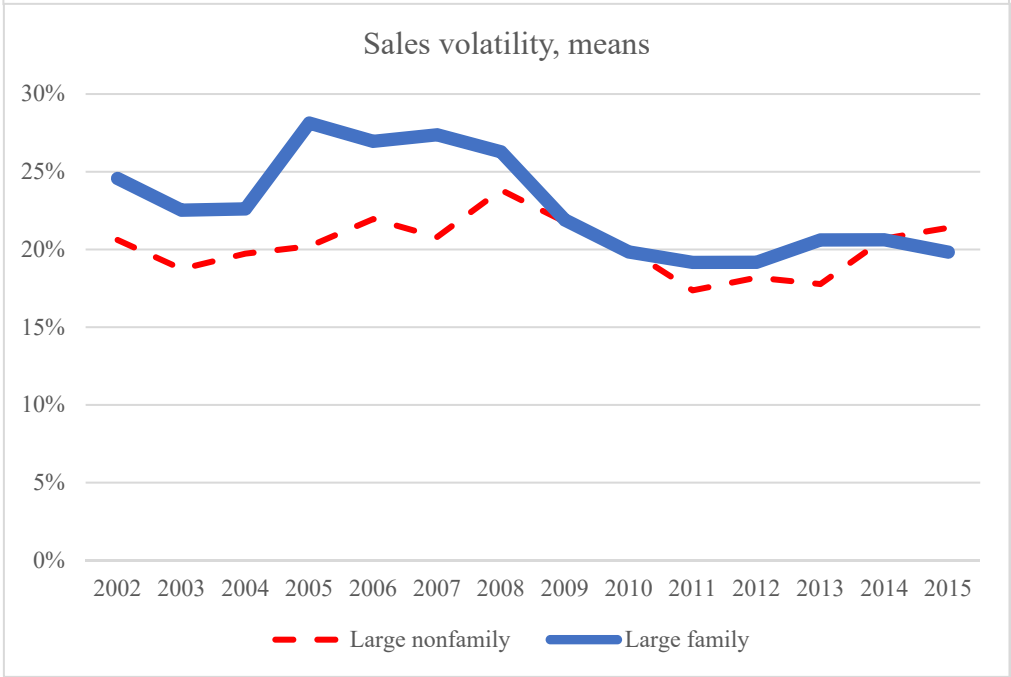
2. Firm growth and risk over time

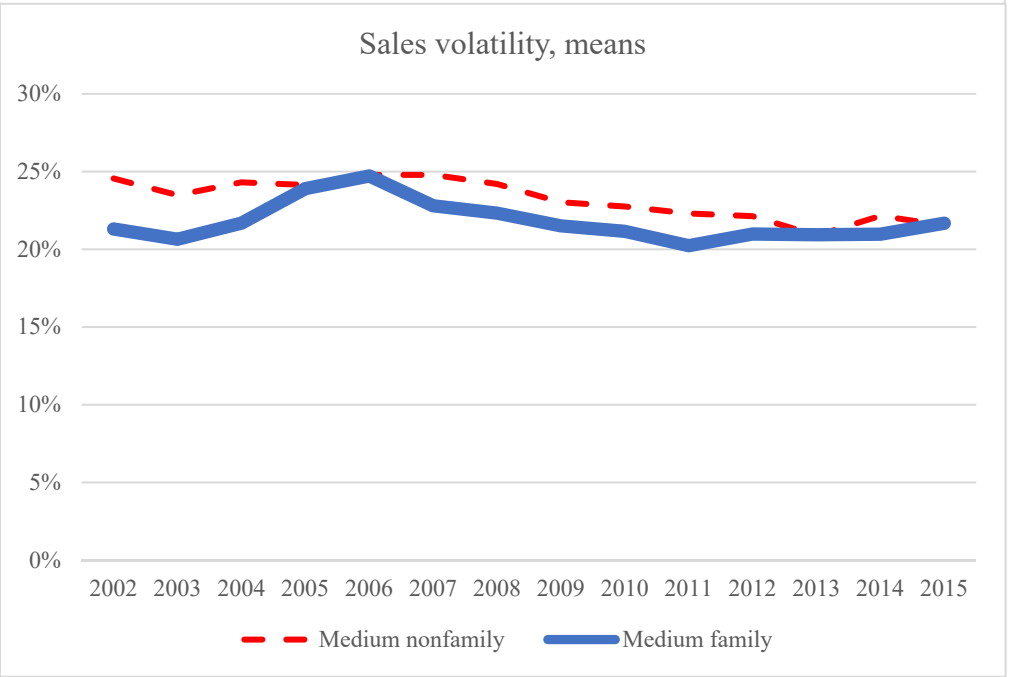
The graphs below present mean sales growth and sales volatility for the 2000–2015 period. Large firms have sales above NOK 100 mill. and more than 100 employees, medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while small firms have sales below NOK 10 mill. and less than 10 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms. Sales growth is the growth rate in real terms relative to the previous year, winsorized at 97.5%. Sales volatility is the standard deviation of sales over the previous three years divided by the average sales over the same period.

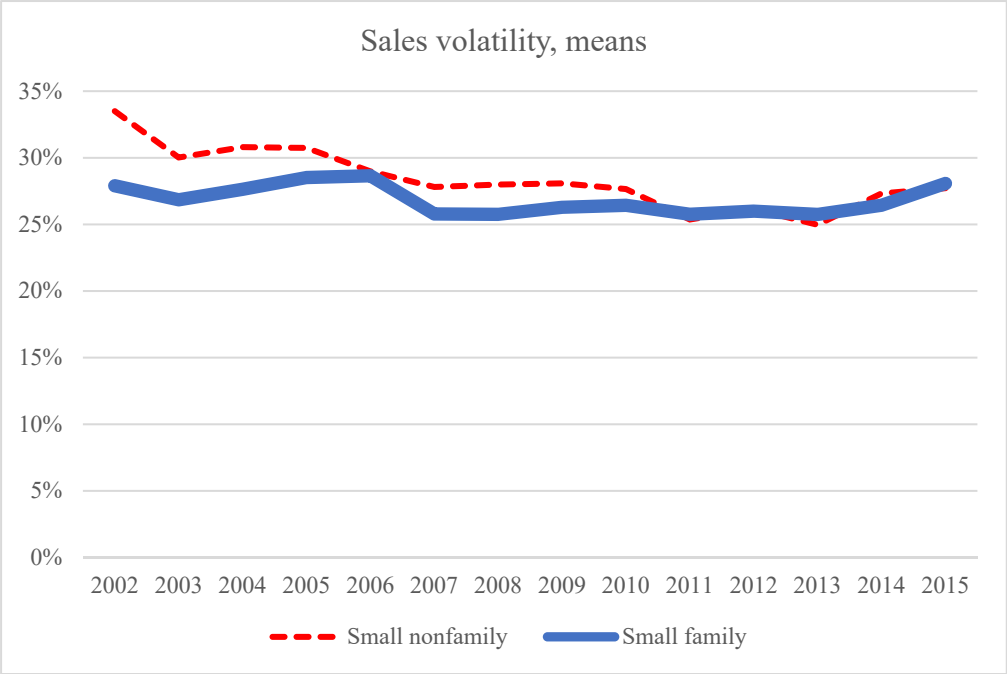


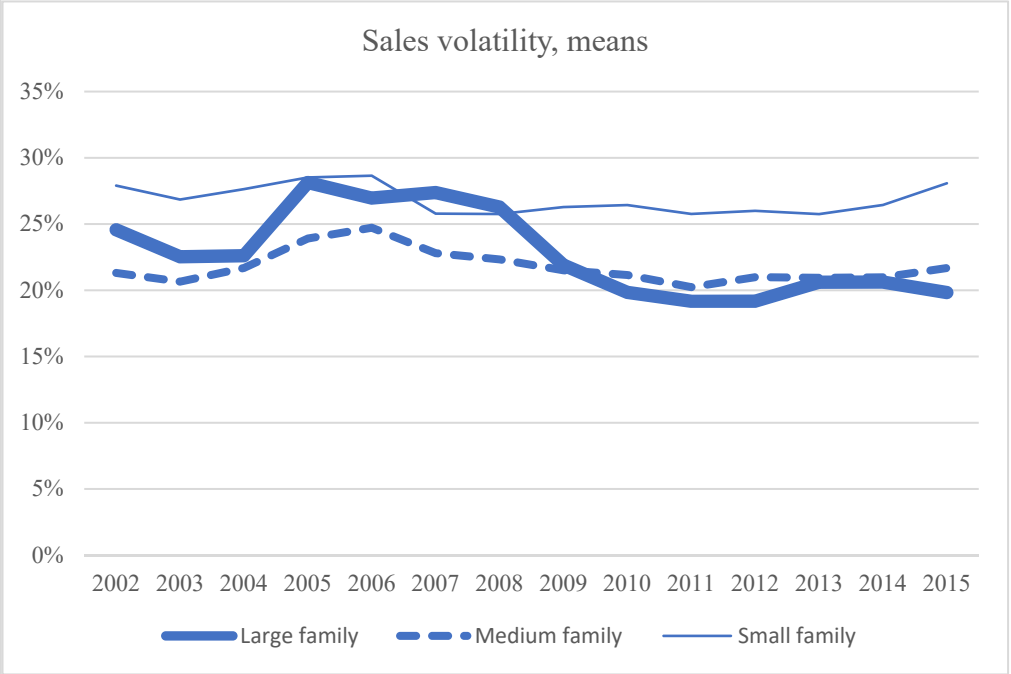

Sales growth, means
30%
25%
20%
15%
10%
5%
0%
-5%
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family


Sales volatility, means
32%
30%
28%
26%
24%
22%
20%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
All
Nonfamily
Family
Sole entrepreneurship
Classic


Sales volatility, means
30%
25%
20%
15%
10%
5%
0%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large nonfamily
Large family

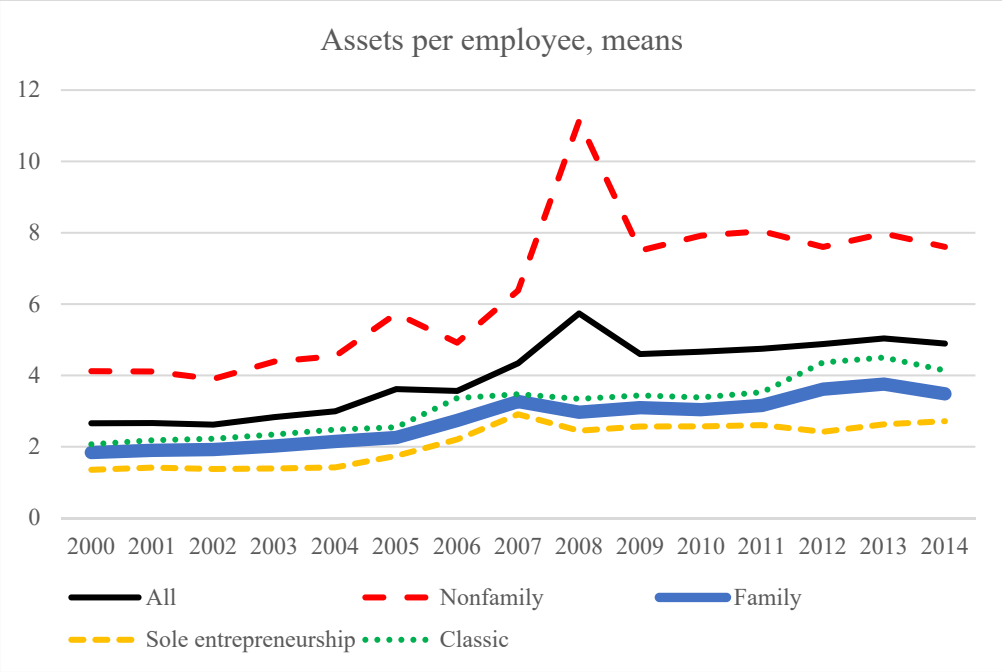

Sales volatility, means
30%
25%
20%
15%
10%
5%
0%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Medium nonfamily
Medium family

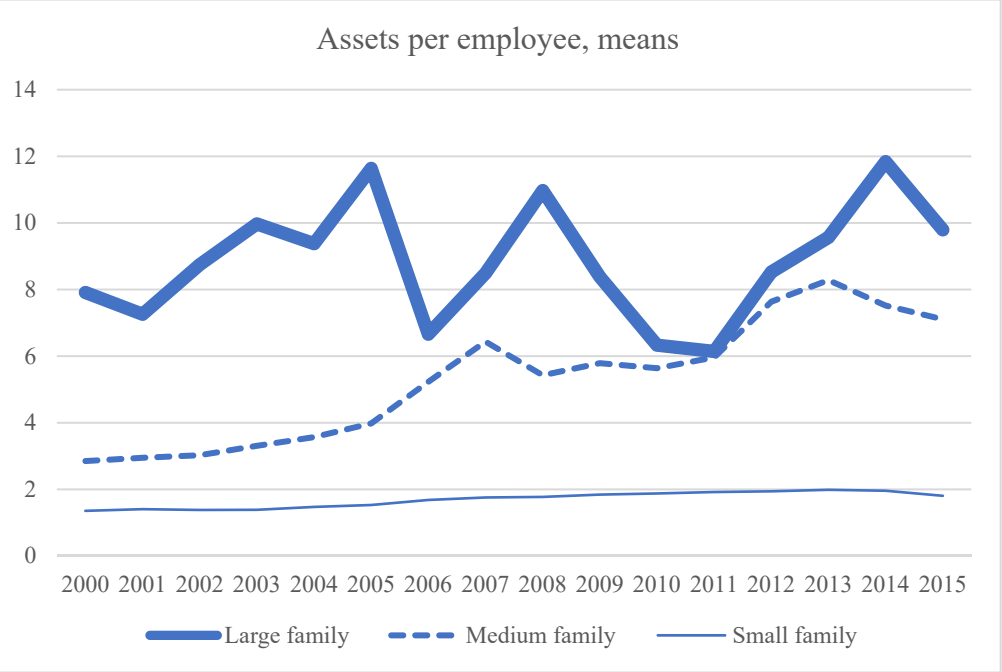

Sales volatility, means
35%
30%
25%
20%
15%
10%
5%
0%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Small nonfamily
Small family


Sales volatility, means
35%
30%
25%
20%
15%
10%
5%
0%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family

3. Capital intensity over time

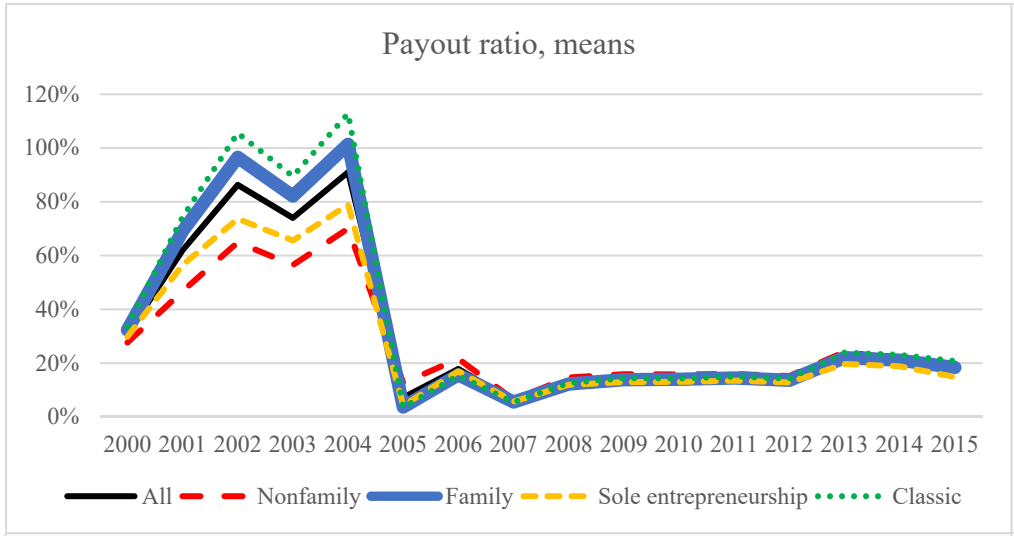
The graphs below show the ratio of total assets (capital) in NOK mill. to the number of employees (labor) for the 2000–2015 period. Large firms have sales above NOK 100 mill. and more than 100 employees, medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while small firms have sales below NOK 10 mill. and less than 10 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms.

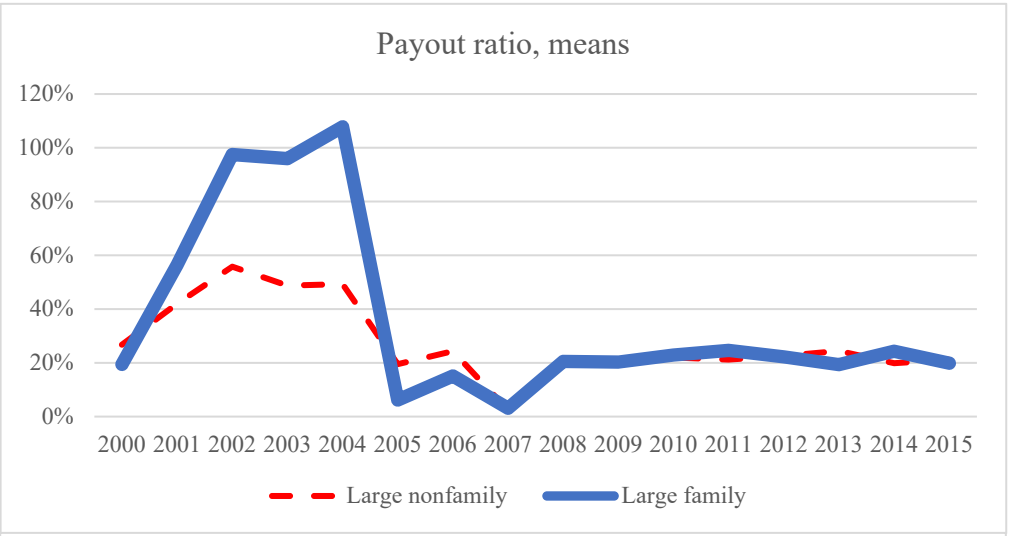


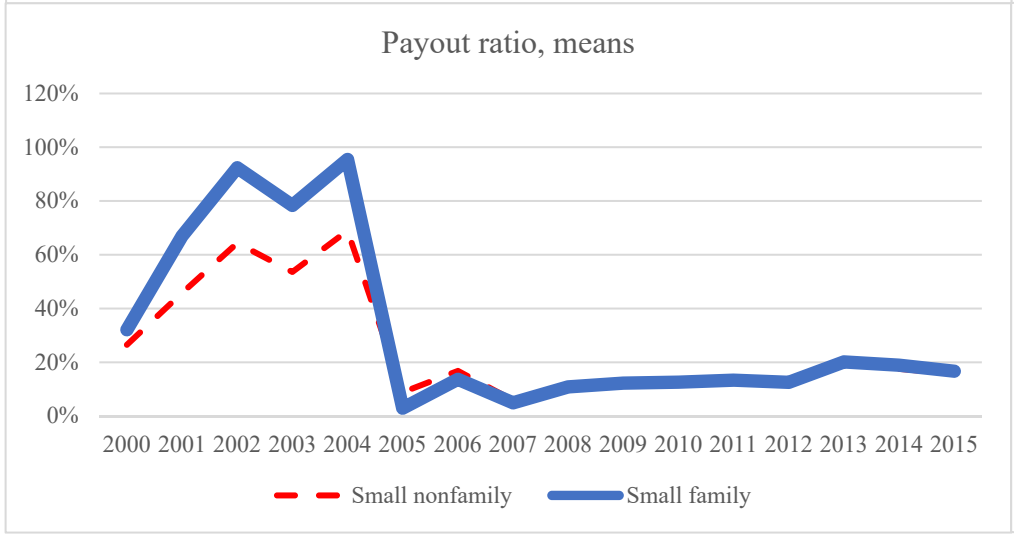


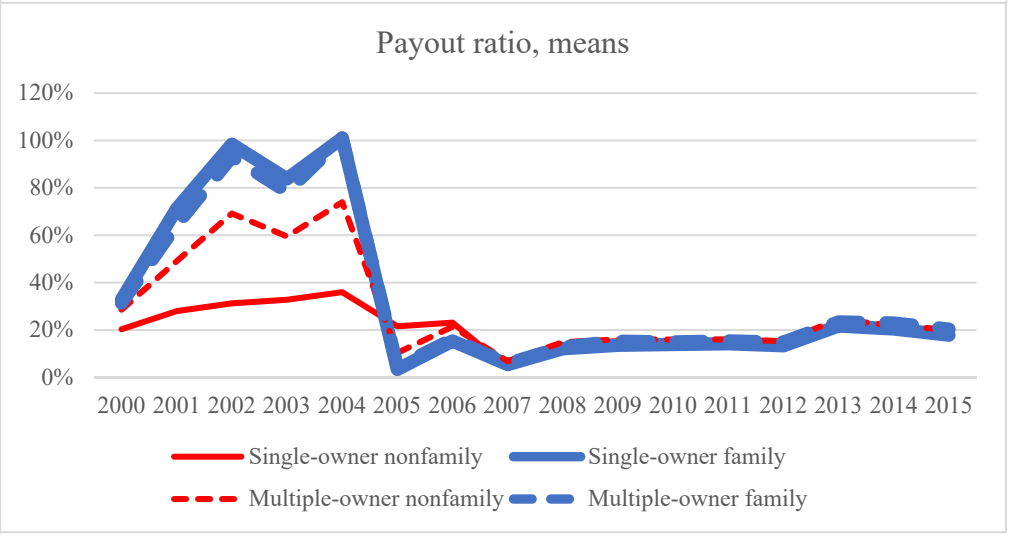
4. Firm dividend payout to shareholders and firm cash holdings over time

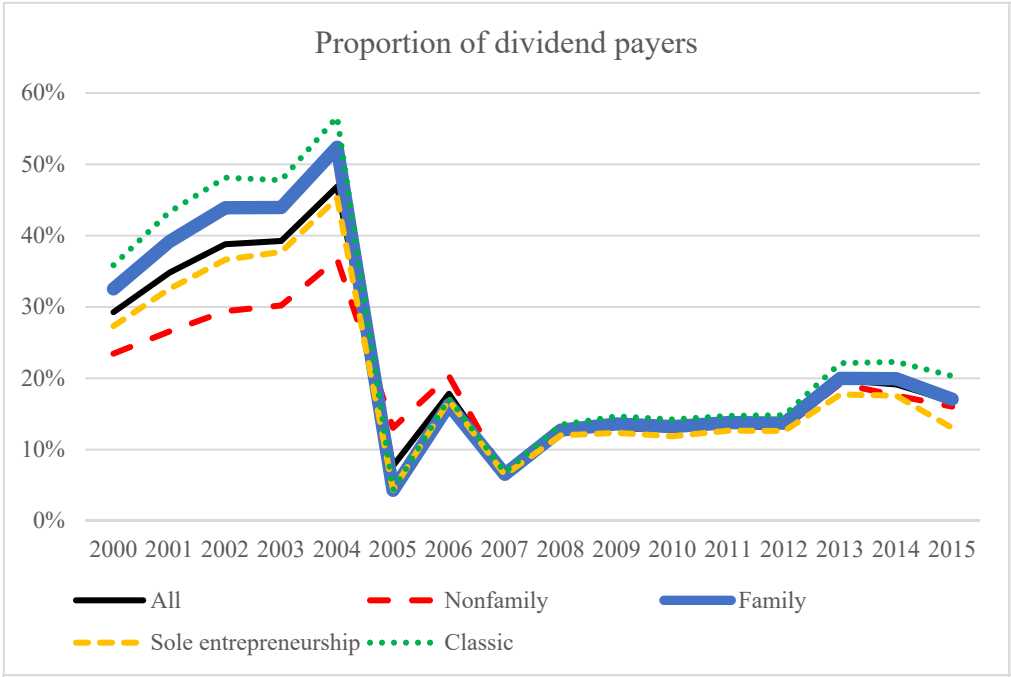
The graphs below show mean payout ratio, the probability of paying dividends and the mean cash holdings (cash to total assets) for the 2000–2015 period. Large firms have sales above NOK 100 mill. and more than 100 employees, medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while small firms have sales below NOK 10 mill. and less than 10 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms. The payout ratio is calculated as the ratio of dividends to operating earnings, winsorized at 97.5%. The 2006 tax reform increased the tax on dividends paid to individuals from 0% to 28%.

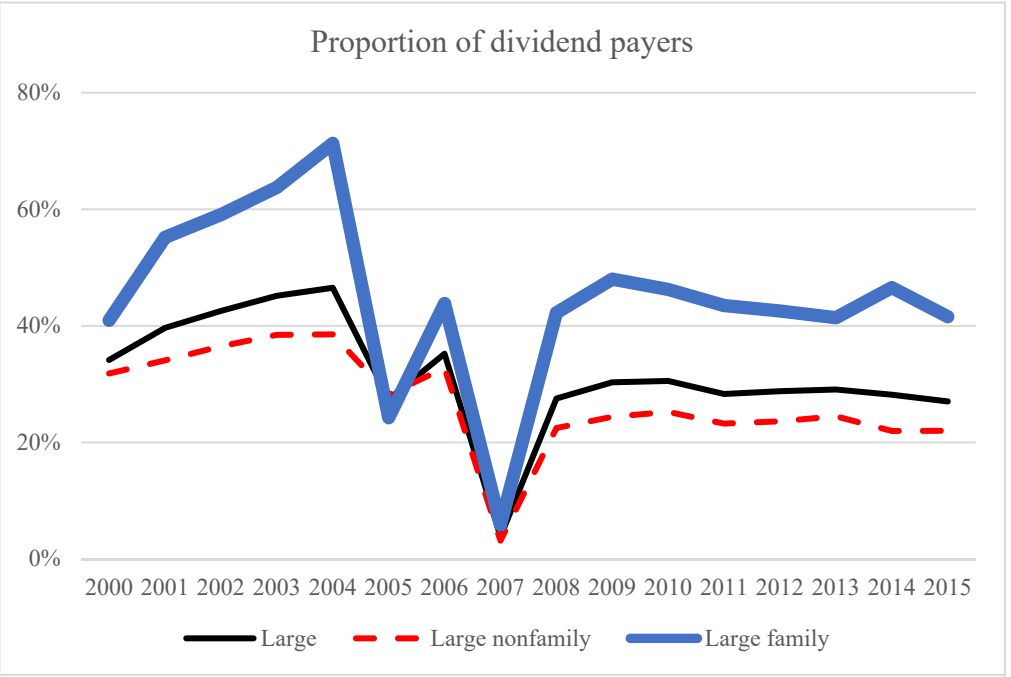


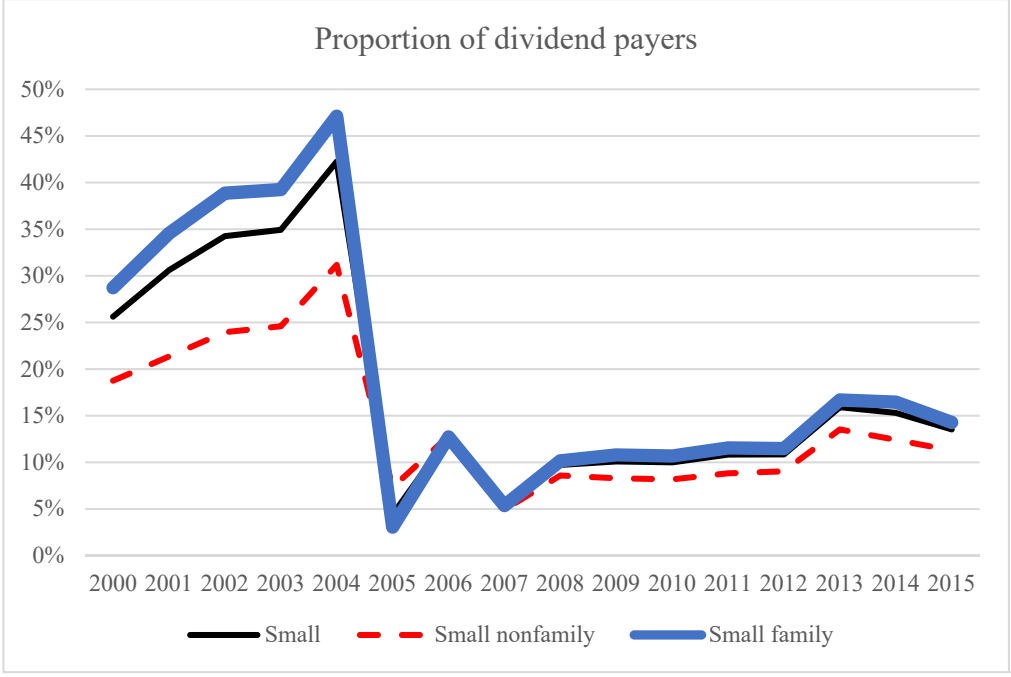


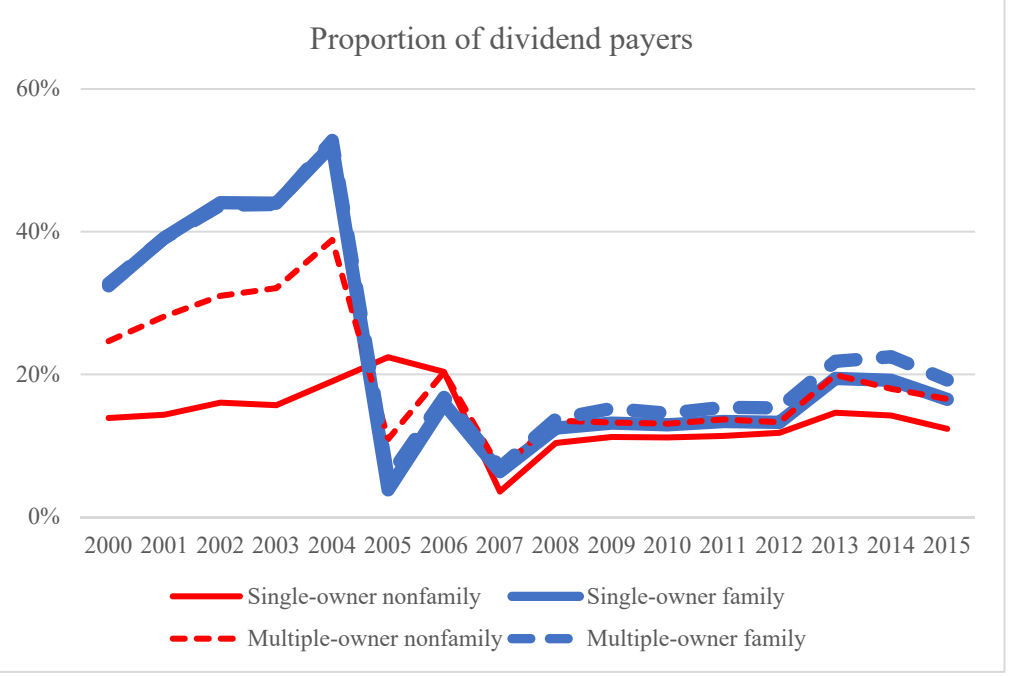


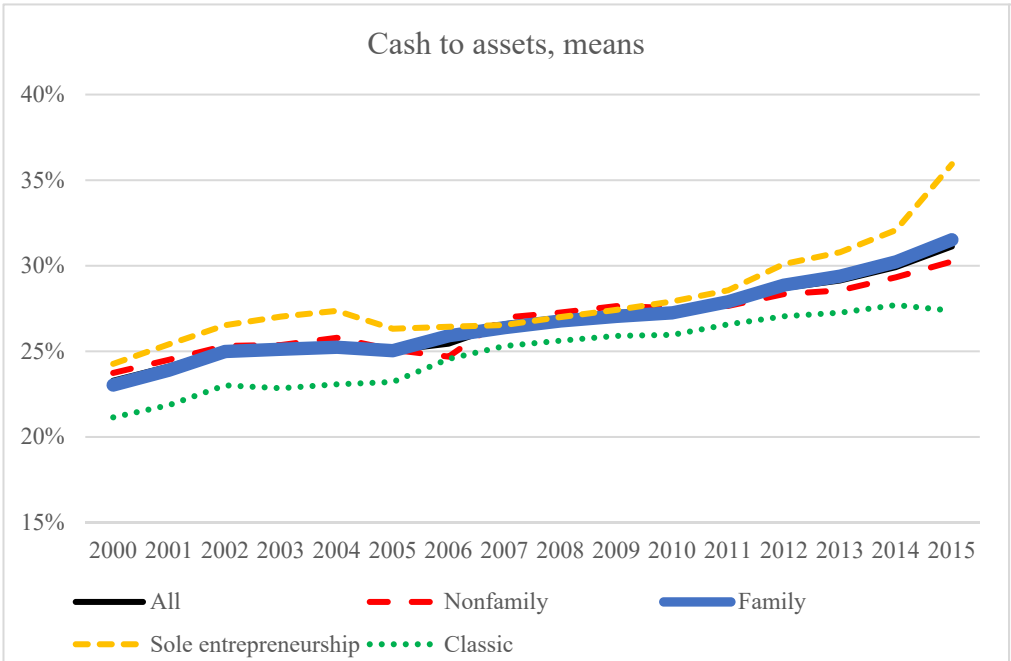


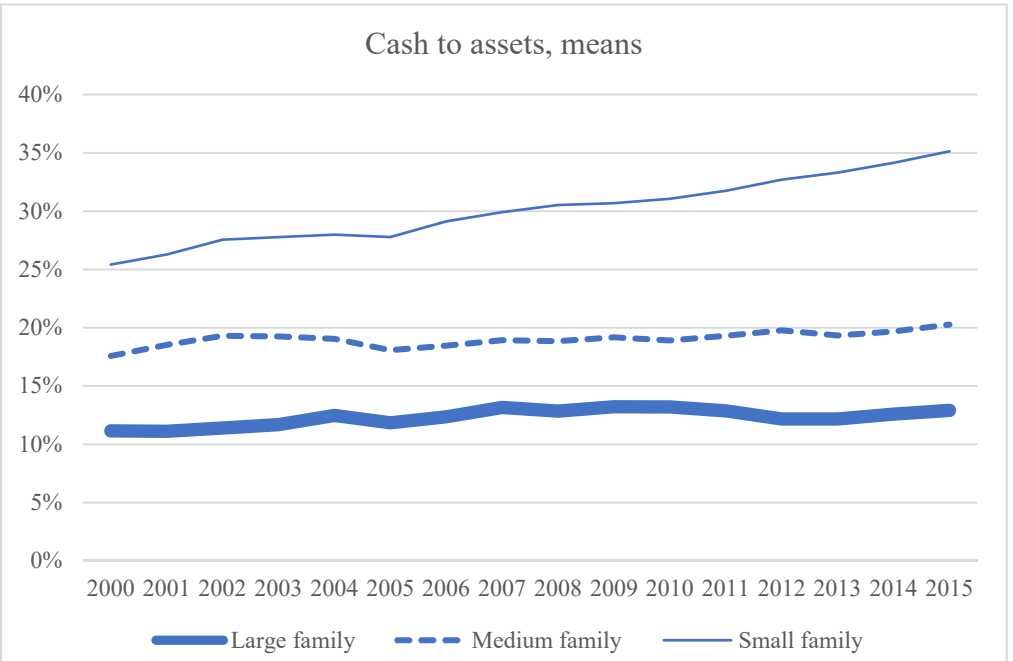

Proportion of dividend payers
60%
50%
40%
30%
20%
10%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
All
Nonfamily
Family
Sole entrepreneurship
Classic

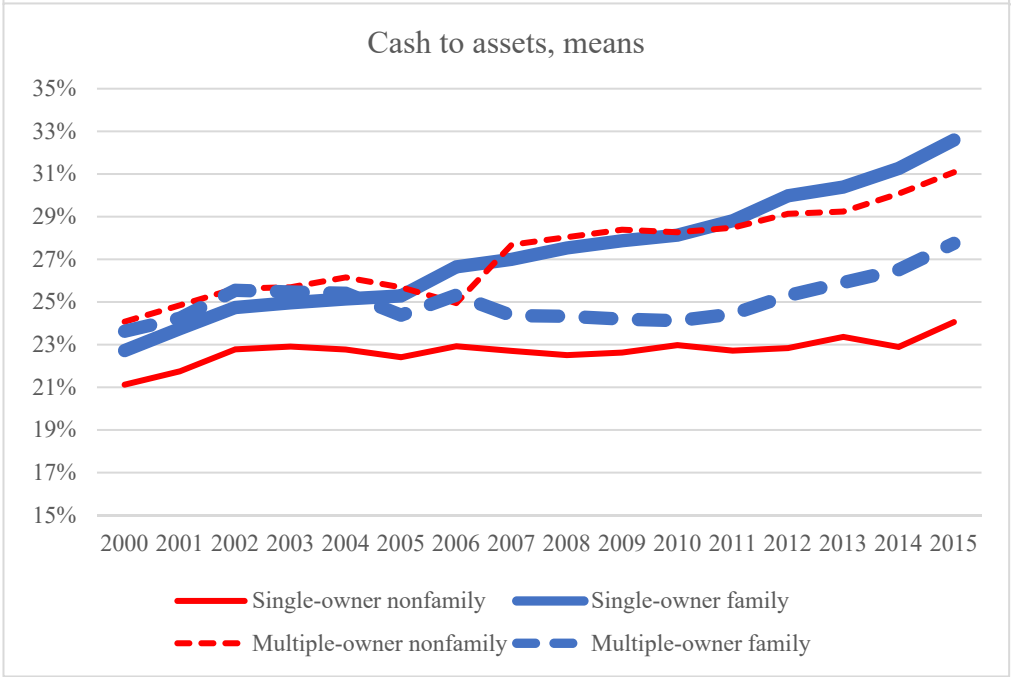

Proportion of dividend payers
80%
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large
Large nonfamily
Large family


Proportion of dividend payers
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Small
Small nonfamily
Small family


Proportion of dividend payers
60%
40%
20%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Single-owner nonfamily
Single-owner family
Multiple-owner nonfamily
Multiple-owner family

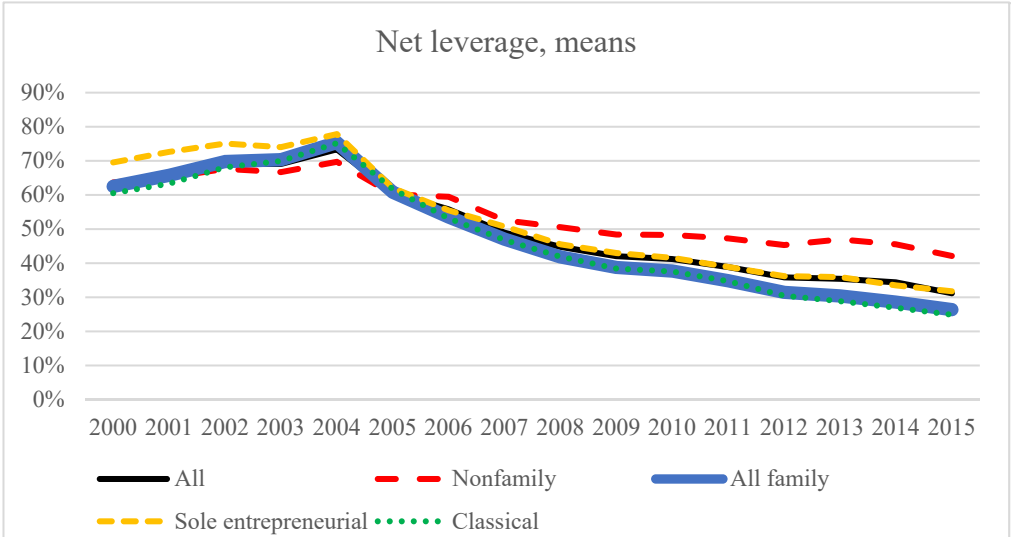

Cash to assets, means
40%
35%
30%
25%
20%
15%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
All
Nonfamily
Family
Sole entrepreneurship
Classic

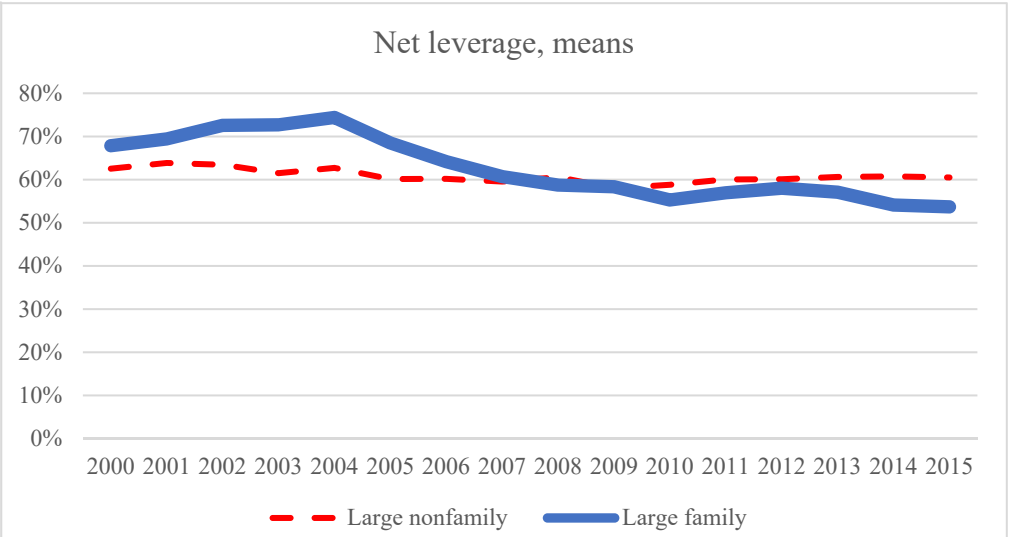

Cash to assets, means
40%
35%
30%
25%
20%
15%
10%
5%
0%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Large family
Medium family
Small family

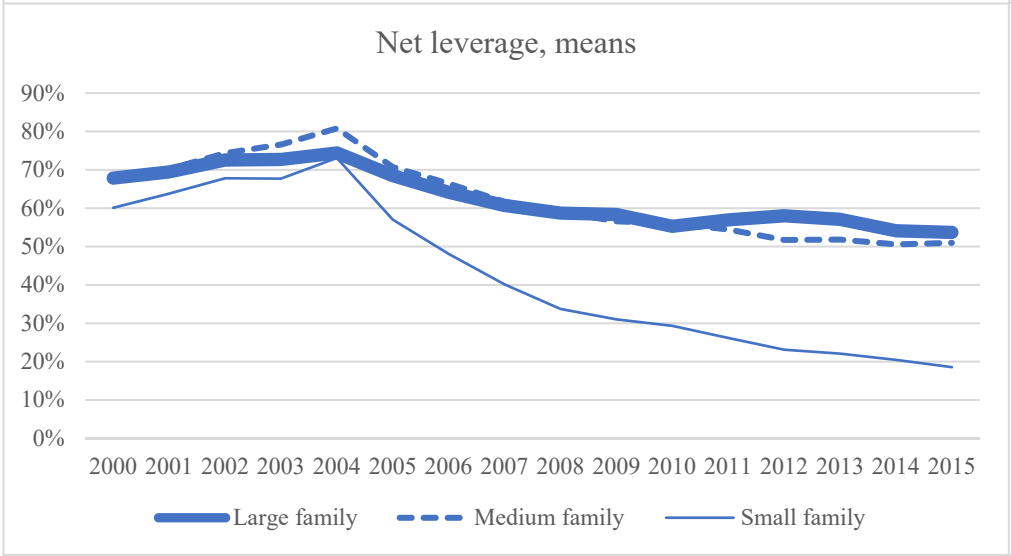

Cash to assets, means
35%
33%
31%
29%
27%
25%
23%
21%
19%
17%
15%
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Single-owner nonfamily
Single-owner family
Multiple-owner nonfamily
Multiple-owner family

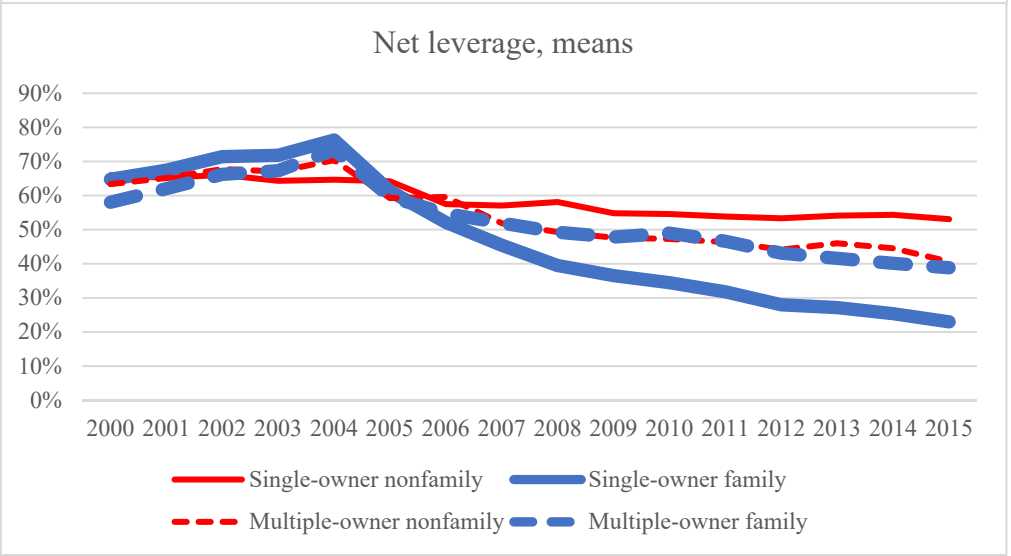
5. Financing over time

The graphs below show the mean net leverage ratio (total debt less cash divided by total assets less cash) for the 2000-2015 period. Large firms have sales above NOK 100 mill. and more than 100 employees, medium firms have sales between NOK 10 mill. and 100 mill. and employees between 10 and 100, while small firms have sales below NOK 10 mill. and less than 10 employees. Sole entrepreneurships are less than 10 years old and have only one owning family member who holds more than 50% of the equity. Classic family firms are the remaining firms. The leverage ratio is winsorized at 97.5%.



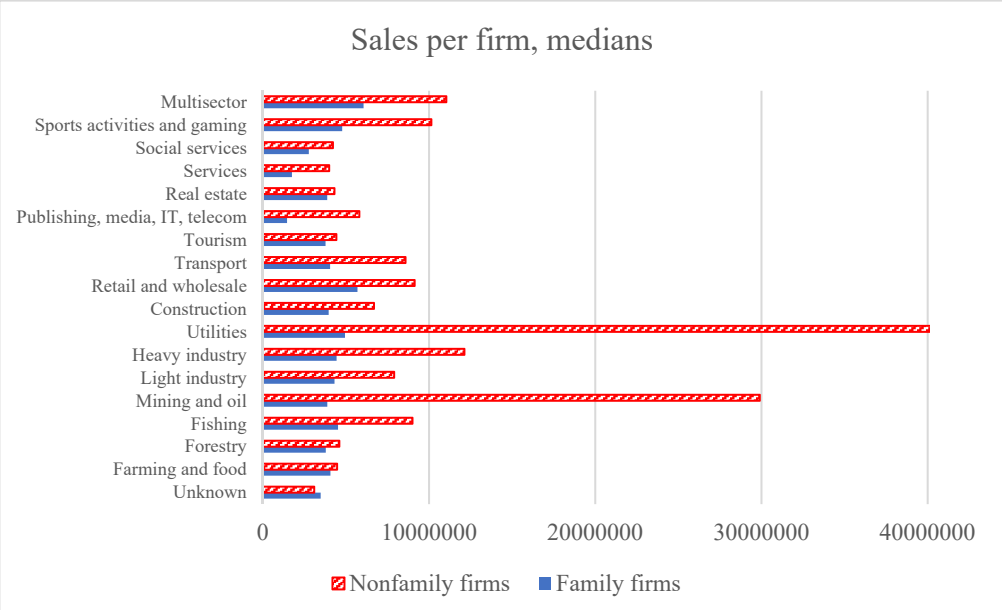


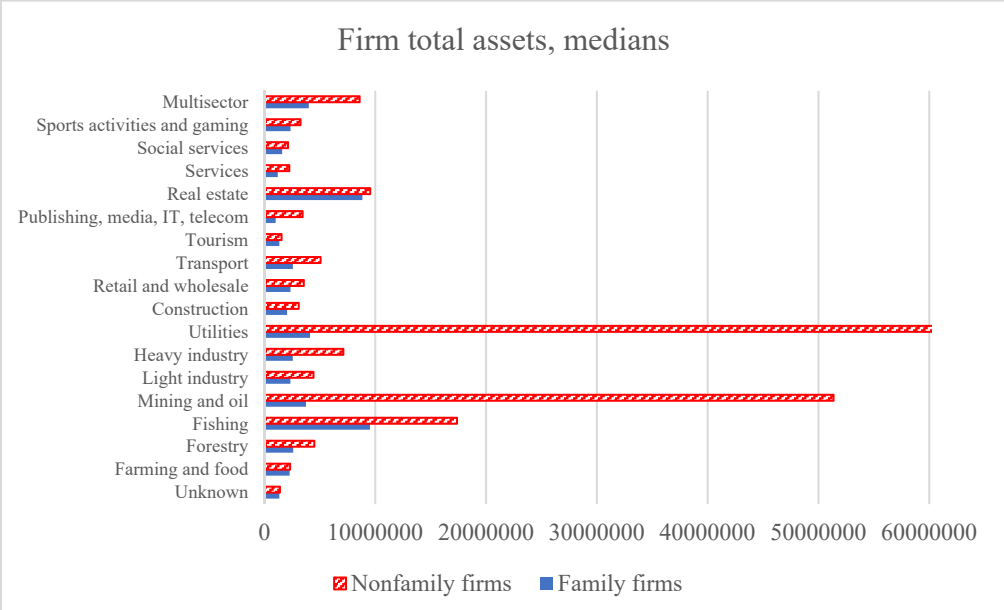


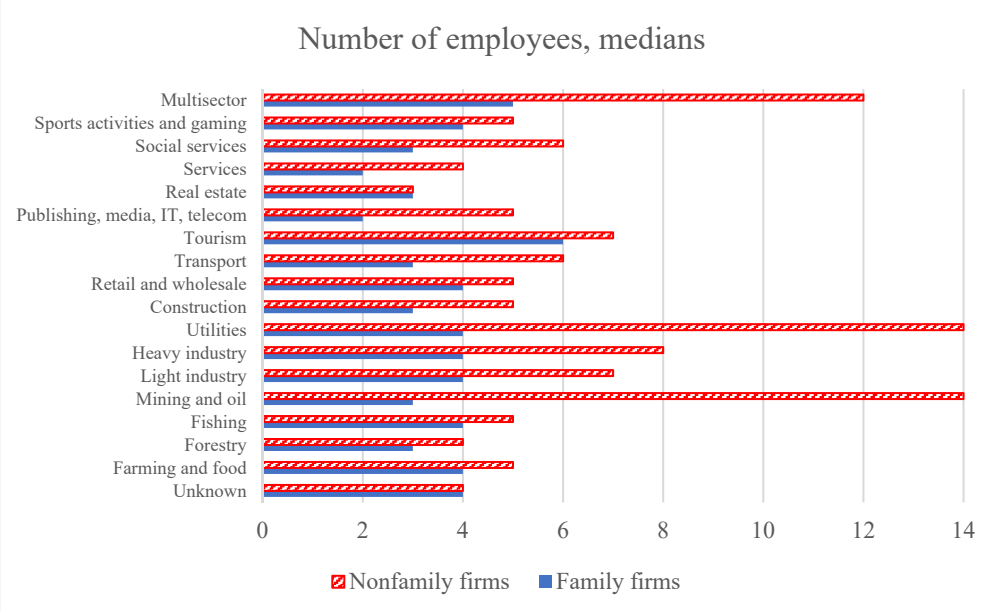


6. Firm size by industry

The following graphs present median firm sales, assets, and employment for all years by industry for family firms and non-family firms.

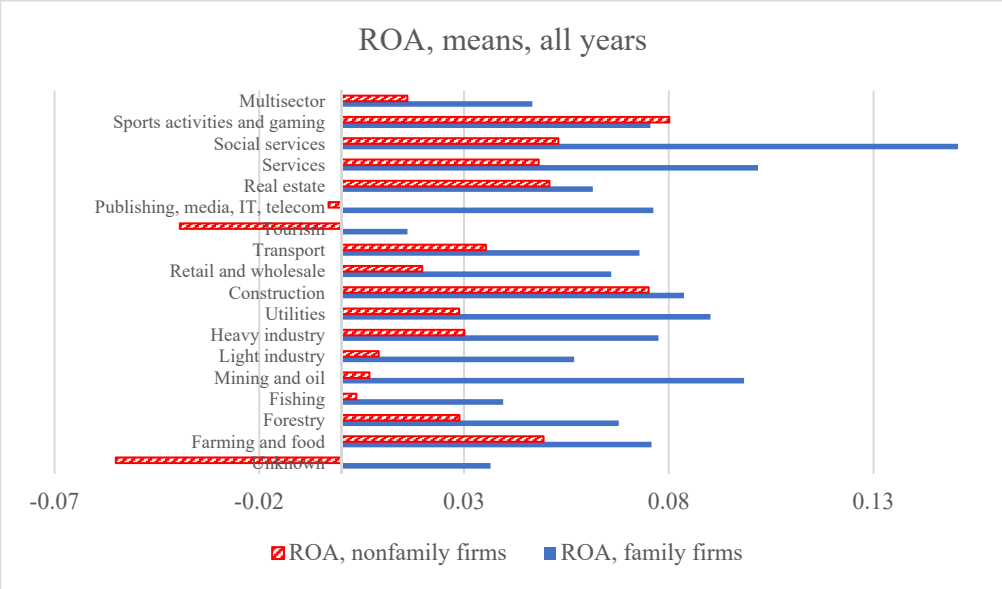


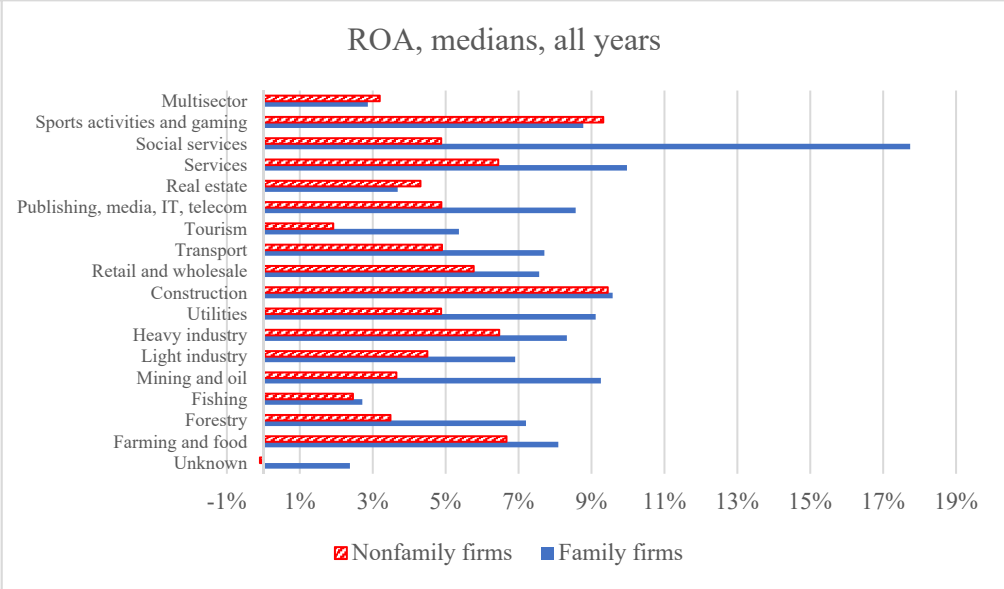


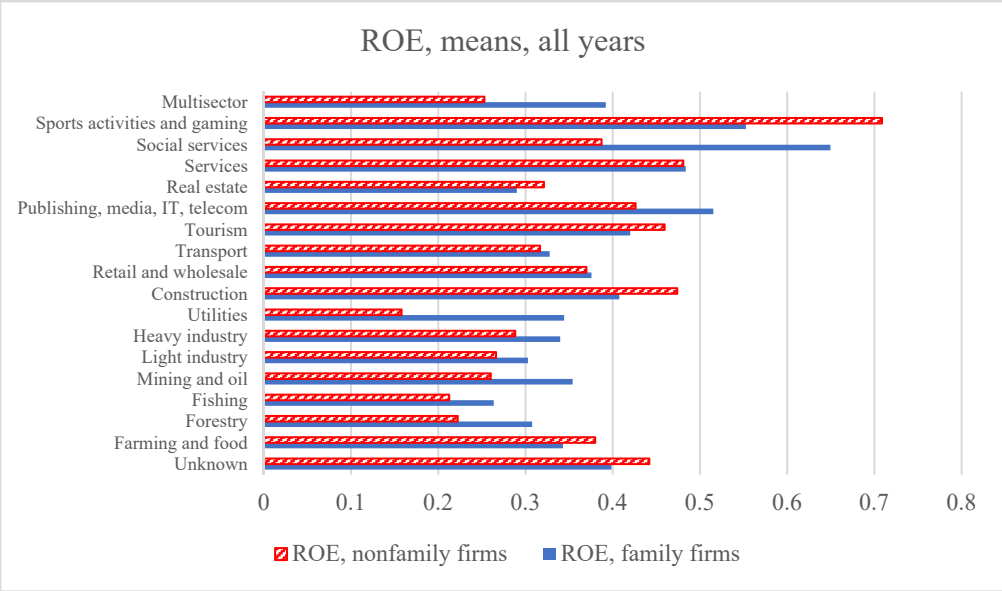


7. Firm profitability by industry

The graphs below show mean returns on assets, returns on equity and returns on invested capital by industry for family firms and nonfamily firms. ROA is operating earnings divided by assets, ROIC is operating earnings divided by assets net of cash and current debt, and ROE is net earnings divided by the book value of equity. ROA, ROE, and ROIC are winsorized at 2.5% and 97.5%.

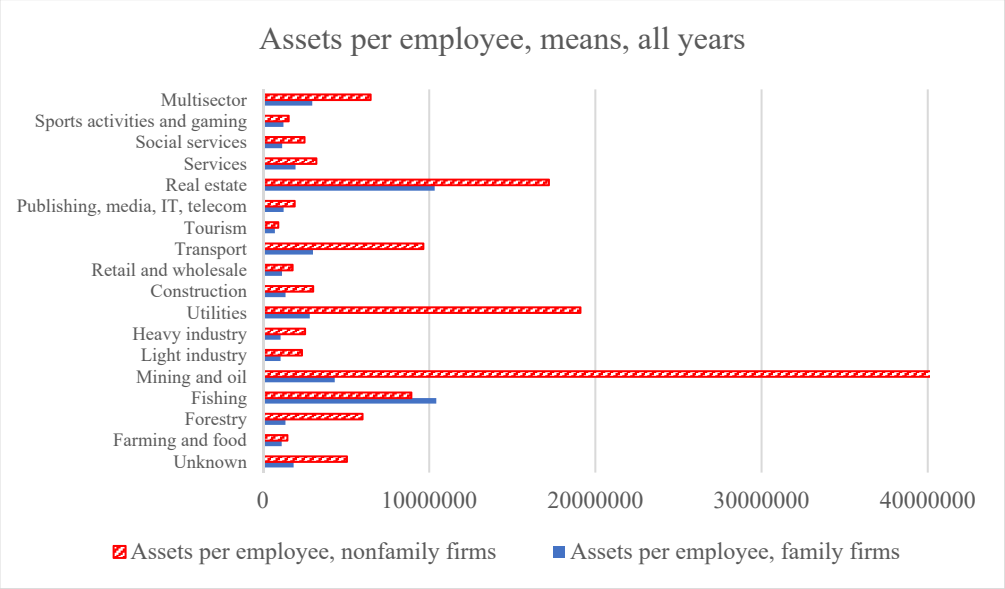


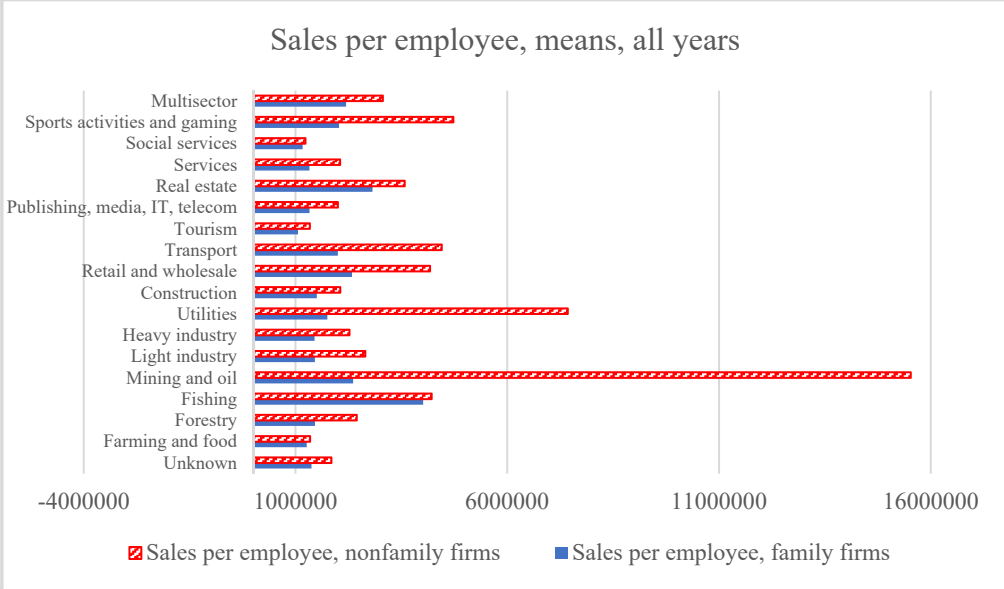


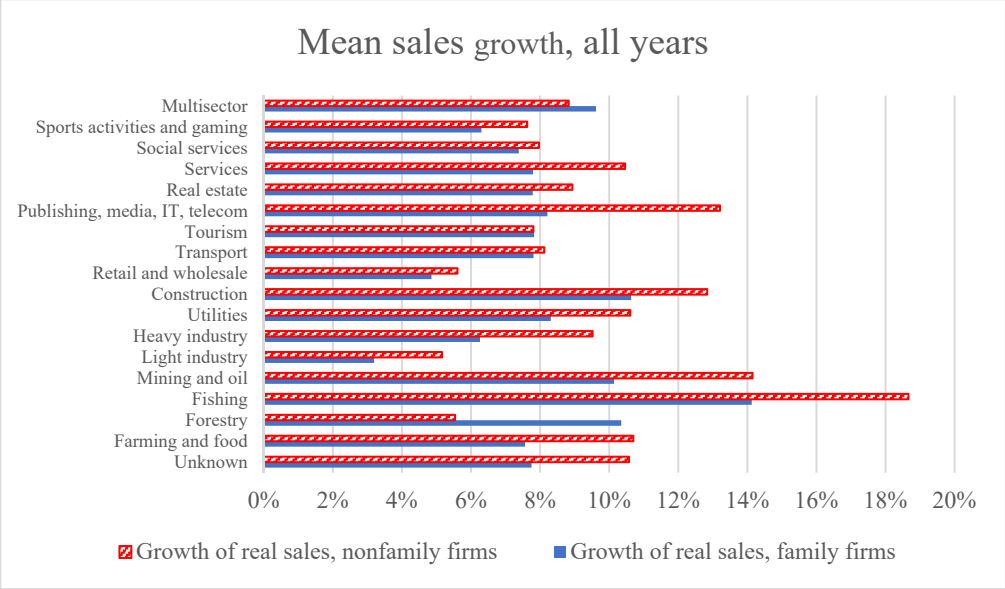


8. Capital intensity, sales per employee, and sales growth by industry

The graphs below show the mean ratio of total assets (capital) in NOK mill. to the number of employees (labor), sales in NOK mill. per employee, and sales growth for family firms and non-family firms. Sales growth is winsorized at 97.5%.

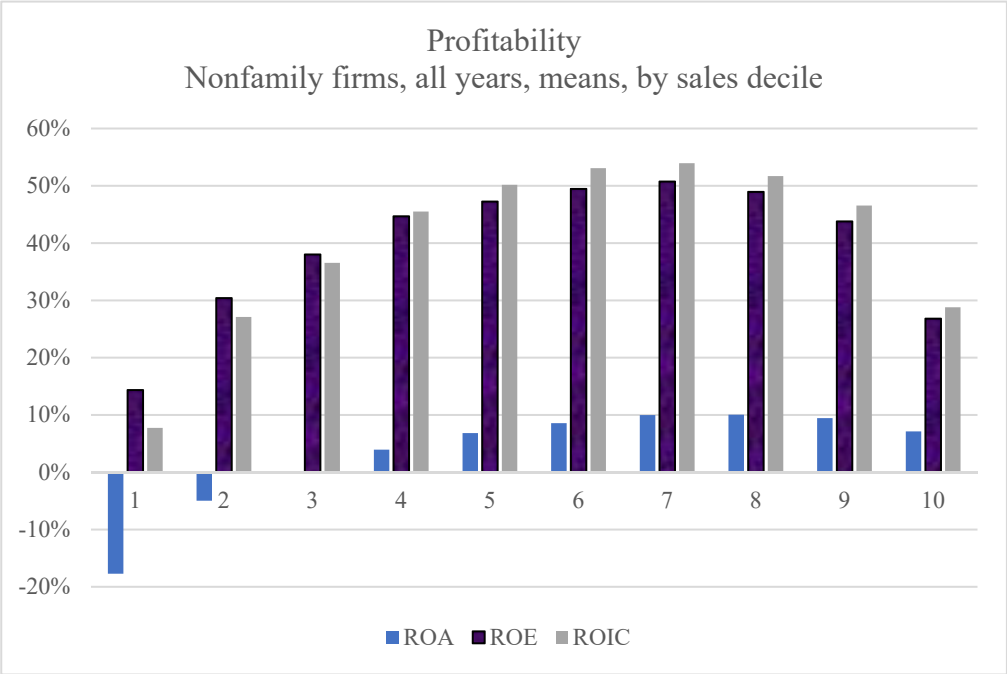


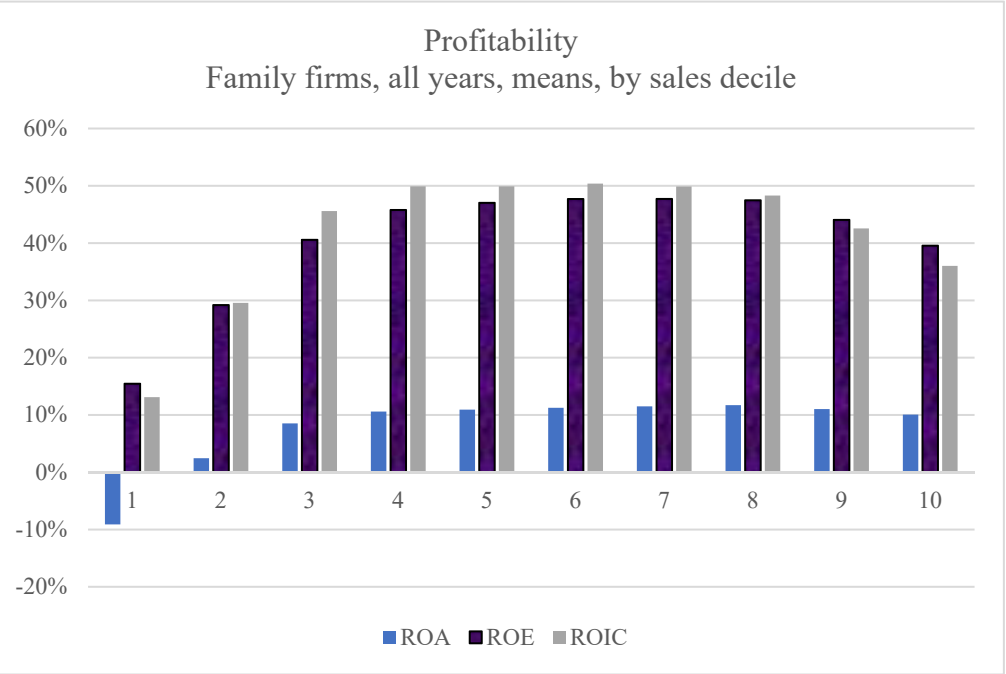




9. Profitability and firm size

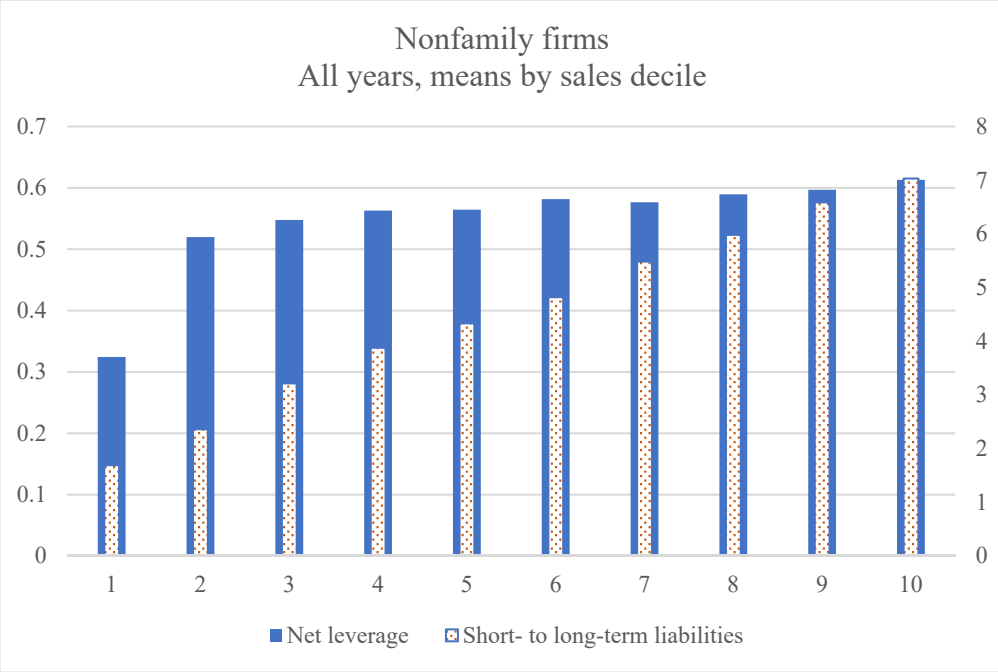
The graphs below show the mean returns on assets, equity and invested capital for family firm and nonfamily firms. The averages are presented by size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10. ROA is operating earnings divided by assets, ROIC is operating earnings divided by assets net of cash and current debt, and ROE is net earnings divided by the book value of equity. ROA, ROE and ROIC are winsorized at 2.5% and 97.5%.

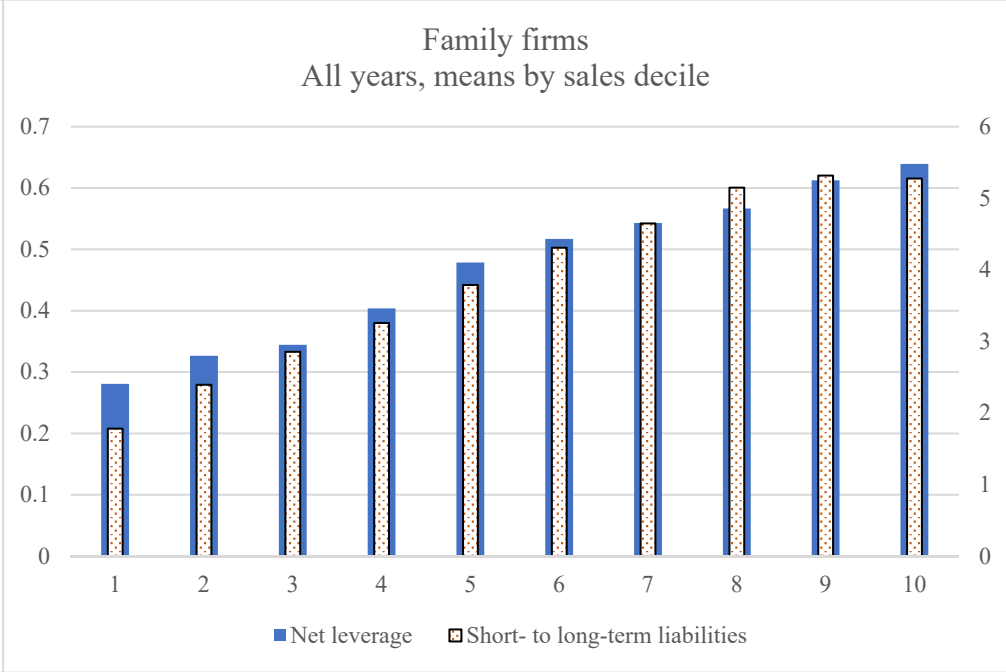




10. Financing and firm size

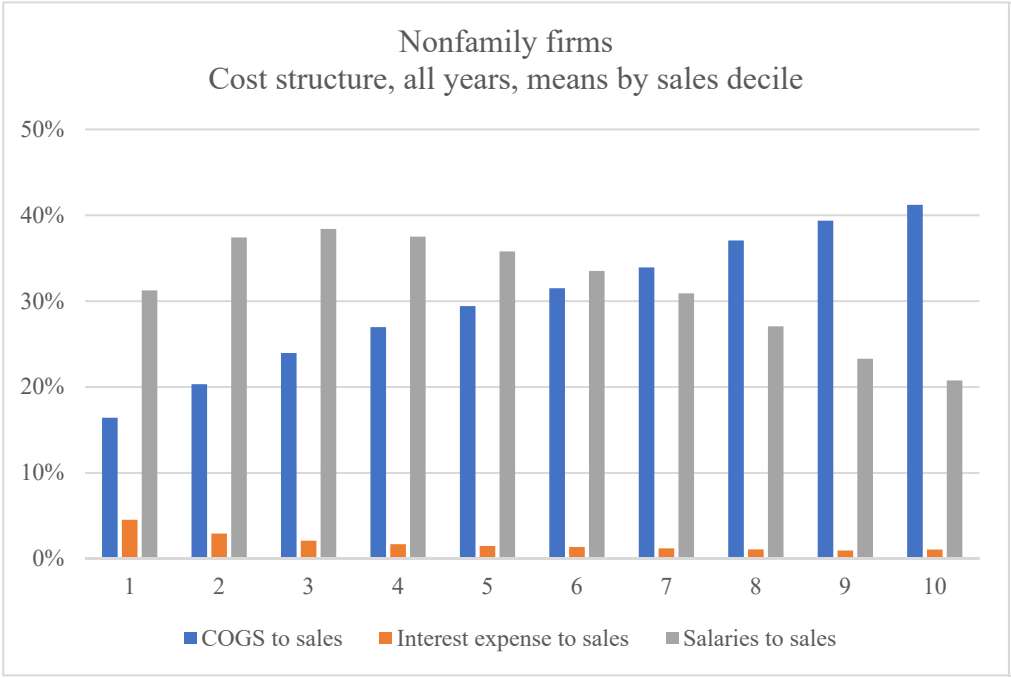
The graphs present the mean net leverage and short- to long-term liabilities for family firms and nonfamily firms. The averages are shown by size deciles size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10. Net leverage is debt less cash divided by total assets less cash. Short- to long-term liabilities is the ratio of current liabilities to long-term liabilities. Both measures are winsorized at 97.5%.

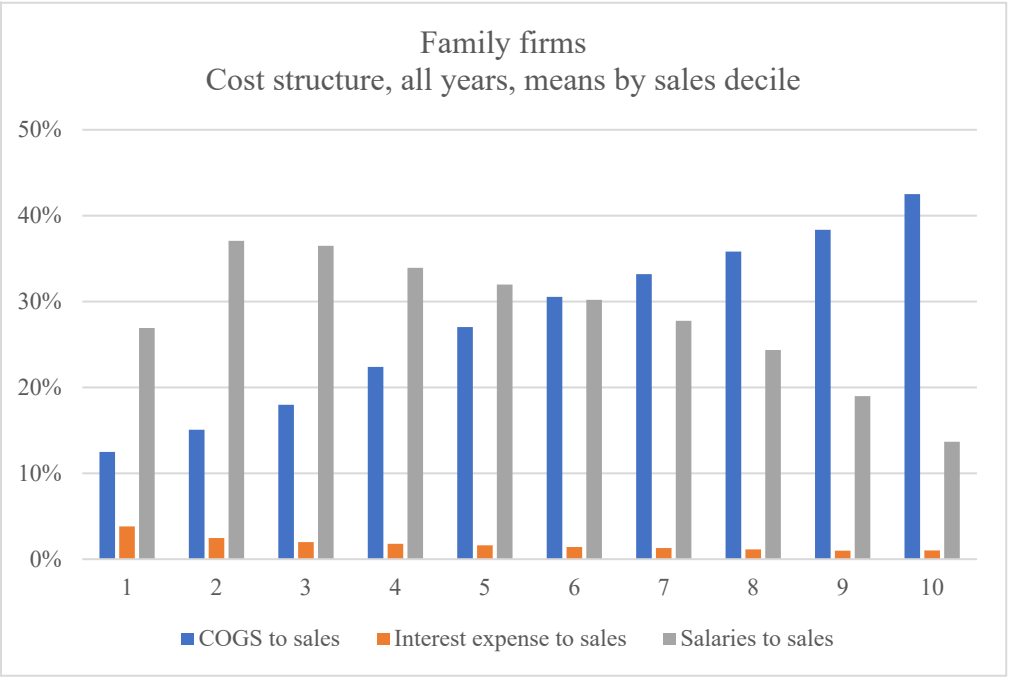




11. Cost structure and firm size

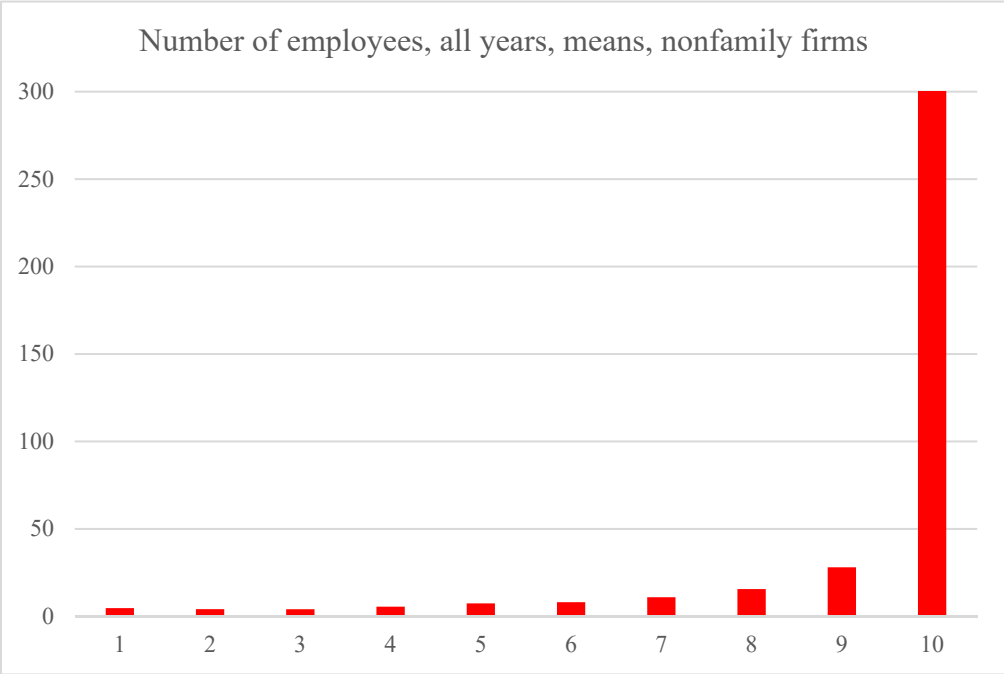
The graphs below show the mean ratio of costs of goods sold (COGS), interest expenses, and salary expenses to total sales for family firms and nonfamily firms. The means are presented by size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 10.

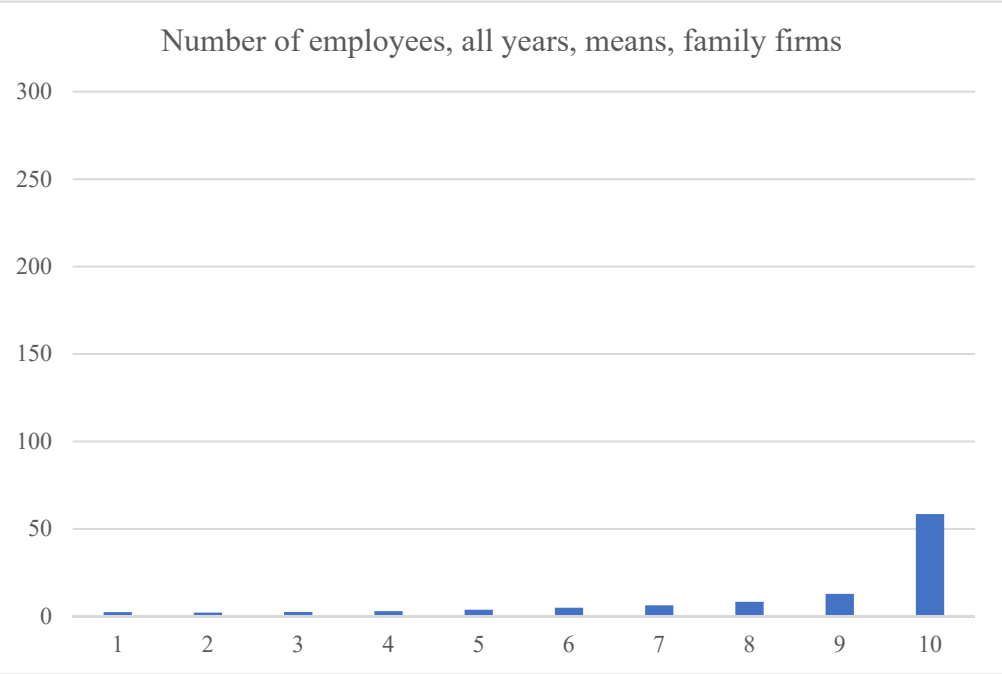




12. Employment by firm size

The graphs below show presents the mean number of employees for family firms and nonfamily firms. The means are presented by size groups (deciles). We rank a firm by its sales and place it into one of ten size groups that have an equal number of firms in each group. The group with the smallest firms is group 1, while the largest firms are in group 1.





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