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Accounting

THE EFFECT OF FAMILY OWNERSHIP ON FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM NORWAY

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Lappeenranta 27 April 2007

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ABSTRACT

Author:	Kortelainen, Päivi
Title:	The Effect of Family Ownership on Firm Performance: Empirical Evidence from Norway
Faculty:	Lappeenranta School of Business
Major:	Accounting
Year:	2007
Master's Thesis:	Lappeenranta University of Technology 98 pages, 8 tables, and 2 appendixes
Examiners:	Prof. Minna Martikainen Prof. Jaana Sandström
Keywords:	family ownership, institutional ownership, firm performance, return on assets

This study investigates, whether family ownership, i.e. individual ownership, is more profitable ownership form than institutional ownership. It is also investigated, whether firm age and size affect the performance of family firms. In addition, based on the prior literature, the special features of family ownership and the performance of family firms relative to non-family firms are first reviewed.

The empirical analysis on the effects of family ownership on firm profitability as well as on the effects of firm age and size on the performance of family firms is conducted with two samples of non-listed Norwegian small and medium-sized enterprises (*SME*s). Hence, the random sample and the sample consisting of randomly selected non-listed SMEs operating in Norwegian most important industries are analyzed separately. Empirical analysis is conducted using the linear regression analysis method.

While results from the random sample do not indicate that family firms would be more profitable than non-family firms, the empirical results from the main industry sample present that, on average, among non-listed SMEs family ownership, i.e. individual ownership, is outstandingly more profitable ownership form than institutional ownership. Also, it appears that the better performance of family firms relative to institutionally owned SMEs is primarily attributable to young as well as small firms.

TIIVISTELMÄ

Tekijä:	Kortelainen, Päivi
Tutkielman nimi:	Perheomistajuuden vaikutus yrityksen menestymiseen: empiiristä evidenssiä Norjasta
Tiedekunta:	Kauppatieteellinen tiedekunta
Pääaine:	Laskentatoimi
Vuosi:	2007
Pro gradu-tutkielma:	Lappeenrannan teknillinen yliopisto 98 sivua, 8 taulukkoa ja 2 liitettä
Tarkastajat:	Prof. Minna Martikainen Prof. Jaana Sandström
Hakusanat:	perheomistajuus, institutionaalinen omistajuus, yrityksen menestyminen, kokonaispääoman tuotto
Keywords:	family ownership, institutional ownership, firm performance, return on assets

Tutkimuksen tavoitteena on selvittää, onko perheomistajuus, eli yksityisomistus, kannattavampi omistusmuoto kuin institutionaalinen omistajuus ja, onko yrityksen iällä ja koolla vaikutusta perheyritysten menestymiseen. Aikaisempaan tutkimustietoon tukeutuen, tutkimuksen aluksi käydään myös läpi perheomistajuuteen yleisesti liitettyjä ominaispiirteitä sekä perheyritysten menestymistä verrattuna ei-perheyrityksiin.

Empiirinen analyysi perheomistajuuden vaikutuksista yrityksen kannattavuuteen sekä yrityksen iän ja koon vaikutuksista perheyritysten menestymiseen toteutetaan kahden otoksen avulla, jotka koostuvat listaamattomista norjalaisista pienistä ja keskisuurista yrityksistä (*pk-yrityksistä*). Näin ollen satunnaisotos ja päätoimialaotos, johon listaamattomat pk-yritykset on valittu satunnaisesti Norjan tärkeimmiltä toimialoilta, analysoidaan erikseen. Analyysi toteutetaan käyttäen lineaarista regressioanalyysia.

Vaikka satunnaisotoksen perusteella perheyritykset eivät näytä olevan ei-perheyrityksiä kannattavampia, päätoimialaotos osoittaa, että listaamattomissa pk-yrityksissä perhe- eli yksityisomistajuus on merkittävästi institutionaalista omistajuutta kannattavampi omistusmuoto. Eritoten nuoret ja pienet yritykset vastaavat perheyritysten paremmasta kannattavuudesta.

ACKNOWLEDGEMENTS

Doing this thesis has taken numerous hours of work but, at the same time, the whole studying process has been very didactic and rewarding. I would like to express gratitude to my advisors, Professors Minna Martikainen and Jaana Sandström for insights concerning the research problem. Also, I would like to thank doctoral student Hanna Kuittinen for valuable discussions regarding the research focus and methodological issues. At last but not least, I want to express special thank to my husband Kai for valuable supporting and understanding during my whole studies. Also, I'm grateful to my parents for the support and encouragement.

Lappeenranta 27 April 2007
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1 INTRODUCTION

1.1 Background

The firm performance may be a result of carefully considered strategic decisions or unexpected positive events - often both matters. However, there can be frequently observed several critical factors, which enable firm to perform better than their counterparts in the industry. For example, ownership structure can be seen as the one fundamental factor which affects the firm's possibilities to maintain and strengthen its viability in the future. Academic research has been interested in the effect of ownership structure on firm performance and value already from early 1970's. However, only recently family ownership has become in focus when the firm performance is analyzed by both accounting and market value basis.

The roots of the research of the ownership structure can be found in principal-agent theory, which was primarily introduced in 1976 by Jensen & Meckling. In addition, the principal-agent theory can be seen to base on Ross' (1973) thoughts of the separation of ownership and active management. Both Ross and Jensen & Meckling and later for example Fama & Jensen (1983 & 1985) considered the advantages of separated ownership-management structure but also the possible problems due to such structure were discussed. In these earlier studies it was found out that the separation of ownership and operational management creates agency costs.

Because financial theory, such as Fama (1970) presented in efficient market hypothesis, assumes that individuals are rational decision makers maximizing their own wealth and, because there always exists information asymmetry between owners and active management, thus there also intrinsically exists the conflict of interests between the principal (owner) and the agent (manager). Although both theory and empirical evidence suggest that the separated ownership-management structure creates agency costs and in that way harm firm performance, such structure naturally

bears several advantages – otherwise separated ownership-management structures would not exist. Thus, Jensen & Meckling (1976) also emphasized that only by building up the principal-agent relationship it might be possible to carry out economic activities, which benefit both the owners and managers.

In addition, Jensen & Meckling (1976) and Fama & Jensen (1983) presented that concentrated ownership and more precisely family ownership may reduce agency costs due to more efficient monitoring. On the other hand, there have been also discussion on the typical disadvantages of family ownership and thus, for example, the problem of favoring family members at the expense of more talented outsiders has been brought out by several researchers (e.g. James (1999), Schulze et al. (2001) etc.).

Although already in early 1970's family ownership was touched in academic research and despite of the prevalence and importance of such ownership structure in economies around the world, only in late 1990's and 2000's family ownership has attained increasing interest. Yet in 1980's and 1990's family ownership was left on the shadow of other aspects of ownership structure. At that time, as a result of worldwide internationalization the effects of foreign ownership attained substantial interest among academicians. However, by investigating the relationship between internationalization and firm performance also the interest towards the effects of family ownership on firm performance was brought to the focus of interest of academics.

Due to the prevalence of family firms among both small and medium sized enterprises (hereafter referred to as SMEs) and large, publicly traded corporations around the world, the growing interest in special features of family firms and in the relationship between family ownership and firm performance is highly justified. For example, Faccio & Lang (2002) presented that as much as 44 % of the sample of 5,232 corporations from 13 Western European countries consisted of family controlled firms.

Also, the empirical evidence from emerging markets suggests on the importance of family firms. For example, Claessens et al. (2000) argued that family or individually controlled firms have unquestionably great prevalence in nine East Asian countries, i.e. family or individually controlled firms constituted over two-thirds of the 2,980 sample firms. Gürsoy & Aydogan (2002) reported that between years 1992–1998 over one-third of Turkish publicly traded corporations were family firms indicating that family ownership was the most prevalent ownership structure among the largest firms. On the other hand, Anderson & Reeb (2003) provided evidence from U.S. corporations presenting that during 1992–1999 as much as one-third of S&P 500 firms could be identified as family firms.

Results of recent literature presents that, overall, family firms perform at least as well as non-family firms or even better. For example, Anderson & Reeb (2003) argued that family firms are better performers than non-family firms measured by both accounting and market value basis. Furthermore, it was found out that the active involvement of family members is related to better accounting based performance, i.e. both founder and descendant CEOs have a positive effect on firm accounting based performance, while hired CEOs do not significantly affect firm profitability. Thus, results indicate that CEO status in family firms affects firm performance. Also results concerning the firm market based performance suggested that founder CEOs are related to the greatest firm values. However, also hired CEOs proved to have a significantly positive effect on Tobin's q, while there was no significant relationship between descendant CEOs and firm market value.

Also, Villalonga & Amit (2006) found out that the active involvement of family firm founders and descendants has a different effect on firm value. Thus, it was found out that family management creates value for all shareholders only when founder of the firm act either as a CEO and Chairman or as a Chairman with a hired CEO. On the other hand, results indicated that firm value is suffering detrimentally when descendants act as a CEO

or Chairman of the Board. Actually, firm value was still destroyed, even if founder acted as a Chairman with descendant CEO. Thus, Villalonga & Amit suggested that the active involvement of founders creates value, while descendants have a negative effect on firm value.

By studying control enhancing mechanisms and management arrangements together Villalonga & Amit (2006) also found out that firm value is highest when the founder acts as a CEO and there are no control enhancing mechanisms, i.e. there exist neither agency problems between owners and managers nor between majority and minority owners. Hence, findings of both Anderson & Reeb (2003) and Villalonga & Amit (2006) suggest that there are different features in family firms which affect differently on firm performance.

The fact that, on average, the proportion of family ownership is greater in SMEs than in larger firms increases the importance of SMEs in a research sense, i.e. it is important to investigate the effects of the family ownership on SMEs. Moreover, the turbulent and constantly changing present situation in many industries creates the most efficient ownership structures among SMEs, which is an important focus area to be investigated.

1.2 Research Problem and Objectives

The purpose of this study is to examine, whether family ownership has an effect on firm performance. Among others Anderson & Reeb (2003) highlighted different aspects related to family firms which support but also argue against family firms' better performance compared to non-family firms. For example, the potential non-pecuniary benefits, family shareholders' financial preferences and the restricted tradability of their claims can be seen suggesting that family ownership do not contribute firm performance. On the other hand, the extended time horizon, i.e. family owners are willing to pass their firm for later generations, family loyalty and family mem-

bers' concerns over their reputation suggest that family members have significant incentives to ensure the firm profitability.

Consequently, the effect of family ownership on firm profitability is an empirical issue, which is investigated in this study. While Anderson & Reeb (2003) presented empirical evidence on listed U.S. firms, this study concentrates to examine the effects of family ownership among non-listed Norwegian SMEs. Thus, this study contributes previous literature by providing empirical evidence on the effects of individual, i.e. family, ownership on the performance of SMEs. Also, by examining Norwegian SMEs this study presents additional evidence on the performance of family firms from highly developed Nordic countries. Hence, this study provides evidence on the effects of family ownership on the financial performance of Nordic non-listed SMEs.

Thus, especially the focus of this study is to examine, whether family firms are more or less profitable than non-family firms. Also, the one objective of this study is to clarify, whether the relation between family ownership and firm profitability differs between young and old family firms. Anderson & Reeb (2003) presented that as firm becomes older, family members have less to contribute to firm profitability. In addition, the firm size is taking into account and, thus, it is investigated, whether family firm performance differs between small and large firms. Also, to clarify, whether the effect of family ownership varies between different industries, two samples of unlisted SMEs are examined separately.

The research is investigating the effects of family ownership on firm performance as well as the effects of both firm age and size on the performance of family firms by using Norwegian SMEs data. This is because Norway is one of the world's wealthiest economies and, as well as in other Scandinavian economies, the role of non-listed SMEs is highly important for the whole Norwegian economic activity. Hence, Norway offers a special data environment for studying the importance of SMEs and family owner-

ship. For example, in 2005 European Commission reported that SMEs [1] represent 99 % of all companies in the European Union region and their contribution to employment was estimated to be even 80 % in certain industries, e.g. in textile, construction, and furniture industries. Also, the proportion of family ownership is, in general, greater in SMEs than in publicly listed large firms, for which it is reasonable to assume that the effects of the family ownership are more evident in SMEs.

First, the effect of family ownership is studied among randomly selected SMEs and, second, the sample consisting of firms operating in the five most important Norwegian industries is taken under study. The main industry sample comprises gas and oil, shipping, metal, fishing, and pulp & paper/forest industries. It is also worth noting that, these five most important industries are highly turbulent and competed ones, which have and are still going through remarkable changes. For example, Sande (2001) presents that pulp & paper/forest industry has struggled already from 1990's with several challenges, e.g. globalization, restructuring of business activities, and the growth of general environmental awareness. Thus, it is interesting to investigate, whether the relation between family ownership and firm performance differs between the sample of randomly selected firms and the main industry sample. In other words, the objective of this study is to examine, whether family firms are better or worse performers, analyzed by accounting based measures (i.e. ROA defined in two alternative ways), than non-family firms.

Consequently, this study contributes the previous literature on the family firm performance by focusing to examine the effect of family ownership in SMEs (see for instance, Anderson & Reeb (2003), Villalonga & Amit (2006), Martikainen & Nikkinen (2006)). This is especially important in that sense that SMEs have a crucial role in economies around the world ad-

[1] European Commission had given the following recommendation in 6th May 2003 concerning the definition of SMEs. "*The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million*."

justing different countries to the global changes in different industries. For example, Acs (1992) emphasized that by their entrepreneurial and innovative activities SMEs are serving as agents of the economic change and stimulating the evolution of the industries. In addition, Acs pointed out the important role of SMEs in creating new employment. Also, Audretch et al. (2002) proposed that entrepreneurship is one of the key determinants of the economic growth. Moreover, the role of entrepreneurship and SMEs is suggested to be even stronger in economically challenging times (for more detail see for instance, Acs (1996), Thurik (1996) and Wennekers & Thurik (1999)). In addition, Carree & Thurik (1998) presented that for example in many OECD countries in the1970's and 1980's economic activity moved away from large companies to SMEs.

This study has important implications both for financial theory and practice. From academic point of view, this study presents additional evidence concerning the performance of family firms compared to non-family firms. In addition, by examining the sample of Norwegian main industries, it is possible to investigate the effect of family ownership in the changing and extremely competitive industry environment. Also, it is worth noting that the ownership research can be seen important not only because it might help family firms themselves and in that way the whole economy, but because it may be helpful also for non-family firms to understand which practices might help them to perform better. For example, to spur firm performance several practices (e.g. different compensation schemes) are employed to built up loyalty, which e.g. James (1999) suggested to be particularly typical feature in family firms.

1.3 Definitions

Following Anderson & Reeb (2003) this study investigates, whether family firms are less or more profitable than non-family firms. In addition, it is studied, whether the relation between family ownership and firm performance differs between young and old, as well as between small and large

family firms. Anderson & Reeb studied large publicly traded S & P 500-firms between years 1993-1999. Overall, results suggested that regardless of the firm age, on average, family firms perform better than non-family firms. Also, Martikainen & Nikkinen (2006) presented similar results from Finnish SMEs. In addition, results from Finnish SMEs indicated that both small and large family firms return significantly more than non-family firms. In this study the family firm, i.e. family ownership, non-family firm, i.e. institutional ownership, young and old family firms, and small and large family firms are defined as follows:

- **Family Firm**: The firm is defined as a family firm if one individual or family owns at least 50.00 percent of shares.[2]
- **Non-Family Firm**: The firm is defined as a non-family firm if bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research Institute, publicly listed company or private equity firm owns at least 50.00 percent of shares (excluded owners: public authorities, states, and governments).
- **Young (Old) Family Firm**: Family firm, which age is below (above) the sample median.
- **Small (large) Family Firm**: Family firm, which size is below (above) the sample median. The firm size is measured by both total assets and the number of employees.

Following Anderson & Reeb (2003), Anderson et al. (2003) and also Martikainen & Nikkinen (2006) a binary variable approach is used to indicate family firms. Thus, the *Family Firm* dummy variable takes the value of one when one individual or a family owns at least 50 percent of shares. Also, following Anderson & Reeb (2003) and Martikainen & Nikkinen (2006) young and old family firms are defined by the dummy variables. *Young Family Firm* dummy variable equals one when firm's age is less than the sample median. Similarly *Old Family Firm* is a dummy variable taking the value of one if the firm's age is above the sample median. *Small Family Firm* dummy variable equals one when the value of the natural logarithm

[2] Due to restrictions on data availability, in practice, this family firm definition refers firms, where an individual owns at least 50 percent. Hence, the family ownership (the ownership of more than one individual who represent the same family) is automatically over 50 percent of firm's shares.

of total assets is below the sample median. Similarly *Large Family Firm* is a dummy variable taking the value of one if the value of the natural logarithm of total assets is above the sample median. In addition, similar binary variable approach is used when the firm size is measured by the number of employees. The effect of family ownership on the profitability of SMEs is investigated both among randomly selected firms from different industries and in the Norwegian main industry sample.

1.4 Methodology and Data

The effect of family ownership on firm profitability, i.e. ROA using both EBITDA and net income approaches, is investigated by the linear regression analysis method. Several control variables are introduced to the multivariate analysis to control for industry and firm characteristics. The firm size variable is defined as the natural logarithm of the book value of total assets. Also the number of employees is used as another measure of firm size. The firm age is measured as the natural logarithm of the number of years since the firm's founding. Also leverage is controlled by both long- and short-term debt measures. The long-term debt is measured by the ratio of long-term debt to book value of total assets and, similarly, the ratio of short-term debt to the book value of total assets is used as another control variable of leverage. Dummy variable approach is used to control for industry effect in both random and main industry samples.

To investigate the effect of family ownership in Nordic unlisted SMEs, the random sample of 416 Norwegian firms from the fiscal year 2005 is examined. The analysis is focused on incorporated enterprises. In addition, the sample of five most important Norwegian industries is investigated separately. Thus, the effect of family ownership is studied in gas and oil, shipping, metal, fishing, and pulp & paper/ forest industries. Main industry sample consist of totally 1,842 firms. The firm-level ownership and financial data is obtained from Amadeus database provided by Bureau Van Dijk. Firms which major owners are public authorities, states or govern-

ments are excluded from the sample due to the possibility that different government regulations affect on firm performance. Because this study aims to investigate, whether family ownership contributes firm performance in SMEs, holding companies are also excluded from the final sample due to their different operating logic.

1.5 Structure

The remainder of this thesis is organized as follows. Chapter 2 provides the literature review and empirical findings concerning the principal-agent theory, family firm characteristics and the performance of different kinds of family firms. The data and methodology as well as the variables used in the regression analysis are presented more detailed in chapter 3. Results of the empirical analysis are provided in 4th chapter. Finally, chapter 5 presents summary of the study and concludes the thesis.

2 THEORETICAL BACKGROUND

2.1 Principal-Agent Theory

The theoretical background concerning agency problems and ownership structure can be found in principal-agent theory, which was first introduced by Ross (1973) and later Jensen & Meckling (1976) carried out a study on the problem. Because the main task of the firm is to maximize the wealth experienced by its owners, problems may arise due to separated ownership-management structure. When the management is separated from the ownership, management's role is to be an agent, whereas by delegating authority owners act as a principal.

In the modern days businesses it is more like a rule than an exception that instead of running the day-to-day business by themselves, owners have authorized the professional management to do decisions on behalf of them. Especially, this is the case in larger firms while, for example, in SMEs it is very common that ownership and management are in the hands of the same person, i.e. founder of the firm or his/her descendant. When ownership and management are separated, there always exist information asymmetry between the principal and the agent, i.e. management has more information related to the future prospects of the firm than the owners of the company.

For example, Ross (1973) considered how agents act in the circumstances of uncertainty. It was supposed that according to traditional theory of finance investors and individuals, on the whole, make rational decisions based on the information available in order to maximize their wealth, which combined with the information asymmetry and the differences of interests between the owners and managers leads to the center of the principal-agent problem. Thus, both managers and owners are trying to maximize their welfare but, unfortunately, their interests and goals don't usually fit together. Like Ross (1973), Jensen & Meckling (1976), Holmström (1979), and later Fama & Jensen (1983) stated, the separation of ownership and

control combined with information asymmetry and conflict of interests is known as a moral hazard problem, which leads to different kinds of agency costs.

Jensen & Meckling (1976) considered the firm as a combination of contracts, which purpose is to find a balance between the contradictory aims of owners and managers. In addition, four specifications concerning agency costs were presented, i.e. costs of structuring the contracts, monitoring and bonding costs, and residual loss. Primarily, Jensen & Meckling considered agency costs consisting of monitoring and bonding costs and also of residual loss. However, according to their set-of-contracts theory the first one of the agency costs can be seen as a primary.

Because contracts itself won't guarantee the management's integrity, in order to ensure that managers follow the contracts as they should, monitoring costs are faced by the principal. The bonding expenditures by the agent are regarded as costs, which occur when agent is trying to prove that he or she works for the principal's wealth. The costs which occur despite tailored contracts and monitoring are considered as residual loss. Also, Jensen & Meckling (1976) noted that total agency costs are positively related to firm-size because it is justified to assume that effective monitoring is more difficult and expensive when firm becomes larger.

Overall, Jensen & Meckling (1976) pointed out that agency problems can be brought under better control when ownership and management are combined, because the interests of managers align better with those of shareholders. In addition, by combining the principal-agent theory and the theory of the capital structure of the firm Jensen & Meckling proposed that different capital structure arrangements can be seen as a way to decrease agency costs.[3] Besides, by employing different kinds of incentive mecha-

[3] In addition, Jensen & Meckling (1976) concluded that due to information asymmetry, principal-agent problems exist also between the owners and creditors of the firm. It was found out that when ownership and control are combined and capital structure consist

nisms owners can motivate the managers to make an effort for their best. For example, in recent years different kinds of managerial compensation schemes have been widely employed all over the world.[4]

However, despite contracts and monitoring there is always possibility that managers may resort to perquisites which practically are, at least partly, financed by owners. For example, too fanciful offices, cars and other utilities might have a more important role among non-owner managers than investment decisions, which would benefit the firm performance on the long run. Hence, it is worth noting that the growth and wealth of the firm is not necessarily the same thing as the wealth experienced by its owners.

The decisions and objectives of the active management may lead to the growing of the firm size, which benefits more managers themselves than the group of owners. Thus, it is essential that, for example, incentive mechanisms are carefully planned, because badly structured compensation schemes may give the management the incentive to implement self-seeking decisions. For example, managers might be eager to grow the firm size, although the shareholder value may suffer from the decisions based on the interests of the active management. Like for example Coles et al. (2006) presented, there is possibility that executive compensation mechanisms might encourage the management to take more risk than acceptable, or on the other hand, lead to all too risk averse behavior, i.e. particularly relating to investment and debt policies.

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both equity and debt, owner-managers are making less risk averse decisions concerning company's future than in the situation when company is non-levered.

[4] A vast literature concerning executive compensation schemes is available. To mention few of the latest studies, e.g. Carlin & Ford (2006) provided empirical evidence from Australia, Firth et al. (2006) studied the relationship between firm performance and CEO compensation schemes in China, Coles et al. (2006) presented empirical evidence from U.S. firms concerning the relation between managerial incentives and risk-taking. In addition, for example Brookfiel's & Ormrod's (2000) and Jones' et al. (2004) studies concerned managerial incentive schemes employed in UK and Finland, respectively. Also, for example Gomez-Mejia et al. (2003) presented that the compensation schemes are significantly different between family and non-family CEOs.

Also Fama & Jensen (1983) considered firm as a nexus of both written and unwritten contracts and their conclusions were consistent with views proposed by Jensen & Meckling (1976). Fama & Jensen stated that there exist both advantages and disadvantages in separated ownership-management structure. For example, it was pointed out that advantages are mainly gained in complex organizations by more competent professional management, when costs caused by agency problems can be seen only as a marginal. However, it was also emphasized the importance of monitoring because it assures that the agency costs do not increase over the acceptable level. In addition, Fama & Jensen (1983) pointed out the importance of carefully planned incentive structures.

As it can be seen on the basis of the principal-agent theory, separation of ownership and control causes costs which can not be avoided because of the information asymmetry, conflict of interests and the assumption of the rational welfare maximization behavior of both the principal and agent. But there are, naturally, also advantages in such a structure. Like Jensen & Meckling (1976) pointed out, building up the principal-agent relationship might be the only way to carry out economic activities, which benefit both the owners and managers. Hence, this fact should be taking into account when considering the severity of agency problems and costs.

2.2 Characteristics of Family Firms

On the basis of financial theory and empirical evidence, it has been presented some characteristics which can be considered to be especially typical for family ownership. For example, the earlier literature suggests that the extended time horizon is inherently typical for family firms. Several studies have also pointed out that family firms are generally more conservative in using debt financing than non-family firms. In addition, concentrated ownership combined with control enhancing mechanisms, e.g. multiple share classes, is often mentioned as the one special feature of family firms. Thus, these characteristics are discussed next in more detail.

2.2.1 Extended Time Horizon of Business Decisions

For example, based on previous literature James (1999) pointed out that combined ownership-management structure may reduce firm value due to non-pecuniary consumption and self-seeking behavior of owner-managers, i.e. immediate consumption is preferred to implementing profitable investment decisions. Although non-owner managers would choose investment projects on the basis of positive NPV (net present value), separated ownership-management structure creates, on the other hand, agency problems between owners and managers, i.e. the classical agency problem I presented by Jensen & Meckling (1976). Thus, there exists trade-off between combined and separated ownership-management structures. However, James suggested that it would be possible to eliminate such trade-off specifically in family firms.

James (1999) presented that the extended time horizon of family members enables family firms to perform better than their non-family counterparts in the industry. It was suggested that it is inherently typical for family firms that owners consider their firm as a heritage for later generations, which in turn naturally extends the time horizon of business decisions. Hence, James (1999) assumed that there are incentives for family member managers to base investment decisions on the market investment rule and, in that way, the extended time horizon would create better performance. In addition, James proposed that also family ties, loyalty, stability and insurance provide incentives for family managers to ensure the viability and competitiveness of the firm in the future. In other words, family welfare acts as an incentive for owner-managers to make an effort for the firm's success.

Explicitly, James (1999) suggested that family firms with family-managers have longer time horizon than family firms with non-family managers. In addition, based on earlier literature on agency costs, the combined ownership-management structure reduces agency costs and, in that way, it

could be considered that owner-manager structure would also contribute to performance in family firms.

Among others, also Casson (1999) and Anderson et al. (2003) endorsed the conclusions of James (1999) concerning the extended time horizon of family firms. They suggested that family owners can be characterized as long-term owners, who find it important to pass their firm as a heritage to succeeding generations. Thus, results presented previously are in line with views provided, for example, by Stein (1988) who suggested that there is less myopic managerial behavior in firms which have shareholders with longer investment horizons. Consequently, also Stein stated that longer time horizon effects positively on employing profitable investment decisions.

Besides, Fama & Jensen (1983) stated that, in general, due to family firm owners' close co-operation, family member owners have advantages in monitoring the initiations and implementations of the hired management. Consequently, due to family owners' more efficient monitoring agency costs would be smaller in family firms which have non-family managers than in non-family firms. Thus, based on the previously presented literature it can be considered that because the family wealth is more or less tied together with firm profitability also incentives for making an effort for firm's success are greater in family than in non-family firms. However, later Fama & Jensen (1985) stated that decision making rules concerning investments vary between different organizational forms and, moreover, it was proposed that investment decisions made in family firms do not necessarily follow the value maximizing rule. Thus, the statement presented by Fama & Jensen (1985) can be seen to be in conflict with views presented for example by James (1999).

However, also James (1999) admitted that family firms with family member as a manager may face severe problems which might decrease or even destroy the advantages achieved by family-manager control structure. For

example nepotism, i.e. favoring family members at the expense of more talented non-family workers, conflicts between family members, instability, tax issues relating to the transferring the firm to later generations, and the unwillingness of family heirs to run the business were listed as factors which may lead to sub-optimal decision making and poorly planned investments.

In addition, efforts of maintaining family harmony and stability may also damage the firm performance due to fall of new ideas, which are required if firm is going to respond to the changes of the operational environment. Nonetheless, James (1999) concluded that, on average, family firms with combined ownership-management structure perform better than non-family firms and family firms with outsider managers. Also, Fama & Jensen (1983) proposed that family controlled firms are more efficient than firms managed by outsider professionals.

2.2.2 Risk Averse Behavior

When considering the financial ratios, several studies have presented evidence that family firms have more conservative capital structure than non-family firms. For example, McConaughy et al. (2001) provided empirical evidence on U.S. founding family controlled firms (FFCFs)[5] from years 1986–1988. Thus, it was investigated, whether the value of FFCFs is greater than non-founding family controlled firms (NFFCFs) and, whether FFCFs perform more efficiently than NFFCFs. In addition, McConaughy et al. (2001) examined the debt financing in FFCFs as well as in NFFCFs, i.e. whether FFCFs are more conservative in using debt finance than NFFCFs.

In other words, McConaughy et al. (2001) hypothesized that ownership structure has an effect on both firm's capital structure and efficiency which, in consequence, affect firm value. In addition, it was assumed that partly relating to the history of family firm, founding family owner-managers have

[5] The founding family controlled firm was defined as a publicly traded firm, which CEO is either the founder of the firm or founder's family member.

more incentives than non-family managers to increase firm value. On the other hand, McConaughy et al (2001) brought out also several problems concerning family firms, e.g. complex relationships between family members and the lack of well organized authority and responsibility structures.

McConaughy et al. (2001) hypothesized that FFCFs' capital structure involves less risk than the capital structure of NFFCFs. Capital structures were compared between FFCFs and NFFCFs using total debt-to-total assets and the cash dividend payout ratios. Overall, results revealed that there do exist differences between founding family and non-founding family controlled firms. Thus, it was found out that FFCFs have more conservative capital structure than similar firms in which managers are family outsiders. Especially, the study revealed that FFCFs use considerably less short-term debt than firms in control group. In addition, McConaughy et al. (2001) pointed out that it is more likely that the family ownership affects capital structure differences between FFCFs and NFFCFs than the management control of the family members. Also, Mishra et al. (2001) presented similar results from Norway, i.e. FFCFs use less debt than NFFCFs. Thus, empirical evidence from both U.S. and Norway suggests that family firms use considerably less debt financing than non-family firms.

In addition, Martikainen & Nikkinen (2006) found that family firms have more long-term debt but correspondingly less short-term debt than their non-family counterparts. The sample contained 1,137 randomly selected unquoted Finnish SMEs from the year 2000.[6] Hence, particularly the result relating to short-term debt is in line with results presented by McConaughy et al. (2001). Since non-listed SMEs are greatly dependent on bank financing, it could be assumed that results presented by Martikainen & Nikkinen are related to family firms longer time horizon and better relationships with financing banks. This can be seen supported, for example, by

[6] See also studies presented, for example, by Michaelas et al. (1999), Cassar & Holmes (2003) and Hall et al. (2004) concerning the financing and determinants of the capital structure of SMEs for a review.

Anderson et al. (2003). Namely, they proposed that family ownership reduces agency costs between owners and creditors. In that way, family firms could lower the costs of debt financing and, moreover, obtain financing with lower costs than non-family firms.

Also, Mishra & McConaughy (1999) suggested that FFCFs are more averse to control risk, i.e. the risk of losing control, than similar NFFCFs. Consequently, it was assumed that FFCFs are less levered than NFFCFs because control risk increases with the leverage due to the higher bankruptcy risk. In addition, it was hypothesized that because of more restricted covenants, refinancing risk and uncertainty of possibilities to roll over short-term debt, FFCFs use particularly less short-term debt than non-family firms.

Based on the sample of listed U.S. firms Mishra & McConaughy (1999) found out that, FFCFs use less debt, i.e. both short- and long-term, than NFFCFs. In addition, results revealed that, particularly, there is more aversion to short-term debt among FFCFs than among similar NFFCFs. Hence, several studies have presented empirical evidence on family firms' aversion to debt financing and, more precisely, to short-term debt (e.g. Mishra & McConaughy (1999), McConaughy et al. (2001) and Martikainen & Nikkinen (2006) etc.). In addition, Mishra & McConaughy (1999) suggested that the aversion to debt financing among FFCFs could lead to giving up profitable investments and, in turn, cause conflicts of interests between family and outsider shareholders.

Also Villalonga & Amit (2006) provided evidence that in United States family firms have lower leverage ratios than non-family firms. In addition, results suggested that family firms have lower dividend rates, which combined with the conservative capital structure could suggests on controlling family's attempts to expropriate minority shareholders.[7] However, Chen et

[7] Jensen (1986) introduced the free cash flow theory, which presented that wasteful activity of managers can be reduced by dividend payments and debt, i.e. by reducing the free

al. (2005) presented evidence on publicly listed Hong Kong firms between years 1995–1998 which suggested that there is no statistically significant relationship between firm's dividend payouts and family ownership. However, when the sub-sample of small firms was analysed it appeared that there is a negative relationship between family ownership and dividend yield when a family owns 10 percent of the firm's equity. On the other hand, the relationship was found out to be positive when family ownership varied in the 10 to 35 percent range. Chen et al. (2005) interpreted these results by two ways. First, it was suggested that the risk of expropriation of minority shareholders increases with the increased ownership concentration and, thus, larger dividends are demanded as compensation by minority shareholders. On the other hand, it was pointed out that larger dividend yields could also indicate the extraction of firm resources by majority family shareholders.

As presented above, several studies suggest that, on average, family firms are more averse to risk taking than non-family firms. In addition to debt financing, also investment policies concerning tangible and intangible assets reveals something about the owners' general attitude towards risk and uncertainty. It is well known that firm's success relies strongly on the ability to innovate and revise firm's activities. However, at the same time, innovations and R&D projects contains also substantial amount of risk. Hence, when investigating the risk aversion of family firms, it is also worth examining, whether there are differences in employing R&D projects between family and non-family firms.

For example, Villalonga & Amit (2006) provided evidence that R&D investments differ between family and non-family firms when measured by R&D-to-sales ratio. Results revealed that R&D expenditures in family firms were significantly lower than in non-family firms. Also Martikainen & Nikkinen (2006) presented that although the ratio of total net investments to

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cash flow of the firm. See also later studies of Lang et al. (1989), Faccio et al. (2001) and Maury & Pajuste (2006) for a review.

total assets was higher in family firms than in non-family firms, R&D expenditures measured following Villalonga & Amit were, however, highly significantly lower in family than in non-family firms. However, Malinen & Stenholm (2004) suggested that growth orientations of Finnish small and medium sized family firms do not significantly differ from non-family firms. Consequently, it was proposed that family ownership and its special characteristics will not prevent the growth opportunities of the family firms. In addition, Anderson & Reeb (2003) found that R&D-to-sales ratio is lower in large S&P 500 family firms than in non-family firms, although result was not statistically significant at conventional levels. Also Mishra et al. (2001) found similar kind of result from Norwegian listed firms, albeit differences were not significant.

Furthermore, Gudmundson et al. (2003) were interested in the innovations in small firms. The empirical study concentrated on the relationship between firm's ownership structure (i.e. family or non-family), customer type (consumer or corporations), several organization culture factors and innovations. Thus, it was hypothesized that the level of initiation and implementation of innovations in small non-family firms is greater than in family firms, which on behalf implicates that also the organizational culture differs between non-family and family firms. However, results rejected the assumption of greater innovation atmosphere of non-family firms. Gudmundson et al. (2003) found out that family firms initiate and implement more innovations than non-family firms. Hence, this result can be considered to be contradictory to the traditional assumption of family firms' risk aversion.

On the other hand, for example, Donckels & Fröhling (1991) presented empirical evidence concerning family firms' conservatism which, in turn, may lead them to poorer performance than non-family firms. The study concentrated on examining differences in objectives and strategic behaviour between family and non-family firms. Based on results from the sample of European SMEs, Donckels & Fröhling proposed that family firms should be considered as stable, i.e. conservative, businesses rather than

progressive or dynamic ones. However, the fact that the study of Donckels & Fröhling (1991) is far older than the one of Gudmundson et al. (2003), should keep in mind when considering the differences in results.[8]

2.2.3 Ownership Concentration

For example, La Porta et al. (1999) studied the ownership and control structures. They examined the identities of the controlling shareholders measured by both capital and voting rights. Research consisted of 27 wealthiest economies around the world. Results revealed that when controlling shareholders were measured as ones whose voting rights exceed 20 percent, families held the control in 30 percent of the large firms. In addition, when 10 percent restriction of control was used, amount of family control increased to 35 percent.

La Porta et al. (1999) also provided evidence that when analyzing smaller companies with 20 and 10 percent control restrictions, the fraction of family-controlled firms increased to 45 and 53 percent, respectively. Furthermore, it was found out that the family ownership is dominant ownership pattern among large firms with more lenient control definitions and among medium sized firms with both 20 and 10 percent control restrictions. On the other hand, widely held corporations with 20 percent control definition had a dominant role only in the sample of large firms. Also, Mishra et al. (2001) argued that in Norway a substantial amount of listed corporations can be considered as family firms but, on the other hand, only very few of them are held by families with holdings of 50 percent or more.

Generally, ownership is highly dispersed in large and publicly traded corporations. For example, Demsetz & Lehn (1985) presented based on the sample of 511 large U.S. corporations that there are remarkable variations in ownership concentration. The research period consisted of years 1976–1980, and the important finding was that the riskiness of the company due

[8] See also study of Jones & Danbolt (2003) for a review. The study examined how stock markets' reaction to R&D announcements depends on ownership structure.

to the instability of the company's operational environment was related to more concentrated ownership structure. Results confirmed also the pre-assumption concerning the negative correlation between firm size and ownership concentration.

In addition, Demsetz & Lehn (1985) expected that factors affecting ownership structure and, in consequence, ownership concentration varies between industries. The hypothesis was supported by the finding that ownership is less concentrated in regulated industries than in non-regulated ones. On the other hand, it was found out that in some industries ownership is highly concentrated, which is attributed to individual share holdings instead of institutional ownership. More precisely, there was relationship between family ownership and ownership concentration. Furthermore, it was suggested that in certain industries there exists greater amenity potential which may lead to the more concentrated ownership structure, and also to family ownership.

Demsetz & Lehn (1985) suggested also that there is a positive correlation between ownership concentration and company's profit rate. Thus, it was assumed that the better performance is attributable to effective controlling and monitoring mechanisms employed by major owners. In addition, Shleifer & Vishny (1997) presented that in firms with separated ownership-management structure, it is reasonable to assume that concentrated ownership affects positively to firm performance, because large shareholders have substantial incentives to monitor the management, albeit conflicts between large shareholders and minority shareholders may thus exist.

Also, Ang et al. (2000) supposed that ownership concentration decreases agency costs because of effective monitoring. Moreover, it was suggested that ownership concentration decreases the free-rider problem in monitoring among non-manager owners. On the other hand, it was also assumed

that owners in small firms, i.e. usually in family firms[9], might have less financial sophistication which, in turn, could reduce possibilities of efficient monitoring and lead to increased agency costs.

On the other hand, for example, Lloyd et al. (1986) presented evidence from U.S firms that ownership concentration, which is particularly typical for small firms, is not related to small firm's higher market value. Results suggested that the expropriation due to the separation of ownership and management has more detrimental consequences in small firms than in large firms. Thus, the widely reported firm size anomaly[10], i.e. small firms outperform large firms, could be at least partly explained also by the risk related to ownership-management structure in small firms, i.e. ownership concentration can not explain abnormal returns in small firms. Consequently, higher risk must be compensated simply with higher returns. Thus, it was concluded that the firm performance is not attributable by the more effective monitoring due to concentrated ownership.

Also Burkart et al. (1997) proposed that concentrated ownership structure do not necessarily benefit the firm by the extensive monitoring. Consequently, the study argued against, for example, earlier study of Demsetz & Lehn (1985). Burkart et al. (1997) hypothesized that it is likely that concentrated ownership reduces management's initiatives to grow firm value, i.e. there is trade-off between advantages gained by the extensive monitoring and those from management's initiative behavior. Burkart et al. were convinced that dispersed ownership structure and, thus, the greater managerial discretion causes costs but, on the other hand, bears several advantages for firm performance.

[9] Ang et al.(2000) described family firm as a firm where the single family owns over 50 percent of all shares. The same ownership definition of the single family is used also in this study.

[10] The firm size anomaly was first studied, for example, by Banz (1981) and Reinganum (1981).

Moreover, Burkart et al. (1997) pointed out that the delegation of optimal degree of control to firm's management is an important commitment device. Thus, terms control right and effective control were introduced. Burkart et al. explained that control right describes the control used by shareholders and, on the other hand, effective control refers control actions used by the active management. On the whole, Burkart et al. (1997) pointed out that certain amount of effective control is needed to ensure the initiative behavior of the management.[11]

Relating to voting rights concentration and employment of control mechanisms Smith & Amoako-Adu (1999) presented evidence based on the sample of Canadian family controlled firms. It was found that when family member is appointed as a successor the higher amount of votes is held by the family than in case when a non-family insider or both family and firm outsider is appointed. Also, dual class shares were used more often in firms which appointed family members. On the other hand, by the sample of German family firms, Ehrhardt & Nowak (2003) examined the effect of IPOs on ownership structure, corporate governance and on the firm performance. It was hypothesized that the strategic decision of going public has a significant impact on ownership structure and the corporate governance. It was also hypothesized that, if the ownership of the firm plays significantly important role to family members but for funding reasons listing is required, initial family owners may implement a dual-class shareholder structure by using non-voting shares. Thus, by employing dual-class shares, family owners can hold on to their control authority.

[11] On the other hand, for example Lins (2003) reported emerging markets that there is a negative relation between the firm value and management's voting rights in excess of cash flow rights. Results suggested also that non-managerial blockholdings of control rights are positively connected to firm value, i.e. the presence of non-managerial blockholder prevented the negative effect of managerial control on firm value. Because results were mainly driven by poor shareholder protection countries, Lins (2003) explained results by the lack of external shareholder protection mechanisms and the managerial agency costs. See also for a review, for example, Morck et al. (1988), McConnell & Servaes (1990), Toyne et al. (2000), and Morck et al. (2000).

By examining 105 IPOs between years 1970–1990 Ehrhardt & Nowak (2003) found out that family shareholders have a significant role yet 10 years following the IPO and also in some cases dual-class share structures were established. Thus, the results are consistent with, e.g. results presented by De Angelo & De Angelo (1985) and Mishra et al. (2001). For example, De Angelo & De Angelo (1985) stated that dual-class shares are typically used in family controlled firms, because by issuing non-voting stocks firm can raise needed capital, but initial family owners do not have to give up their voting control. Based on the sample of S&P 500-firms, also Anderson & Reeb (2003) presented that ownership is more concentrated in family firms than in non-family firms.

On the other hand, Martikainen & Nikkinen (2006) suggested based on the sample of Finnish SMEs that proportion of employees owning firm's stocks is significantly higher in family firms than in non-family firms. However, Maury & Pajuste (2005) presented evidence from Finnish publicly traded firms that there is connection between family ownership, ownership concentration and excess voting rights.[12] In addition, Maury (2006) suggested based on the sample of Western European countries that ownership is more concentrated among family firms than in non-family firms.

Consistent with results of Anderson & Reeb (2003), also Villalonga & Amit (2006) presented evidence that, on the average, the equity ownership by non-family blockholders is considerably lower among family than among non-family firms. Results also suggested that family owners employ significantly more different control enhancing mechanisms, i.e. dual-share classes with different voting rights, pyramids, cross-holdings and special voting agreements, than other substantial shareholders in non-family firms.[13]

[12] For example, Faccio et al. (2001), La Porta et al. (2002), and Anderson & Reeb (2003) have discussed also on legal shareholder protection, agency conflicts and ownership concentration. See also, for example, Burkart & Panunzi (2006) for a review.

[13] Pyramidal ownership as a control mechanism has also been studied by several researchers. See, for instance, studies presented by Claessens et al. (2000), Faccio & Lang (2002) and Almeida & Wolfenzon (2005) for a review.

Thus, the results from both U.S. and European samples suggests that dual share- classes are used to maintain ownership in the family (e.g. Villalonga & Amit (2006), Mishra et al. (2001), Ehrhardt & Nowak (2003) etc.). On the whole, it seems that very concentrated ownership structure is typical for family firms. In addition, in order to maintain the majority of the ownership, different control structures are also commonly employed by the initial family owners.

2.3 Empirical Evidence on the Performance of Family Firms

There are growing literature concerning the relation of family ownership and firm performance. However, to examine whether family firms are better performers than non-family firms, and to understand why there may exists differences in the performance between family and non-family firms, three fundamental elements relating to the definition of family firm should be distinguished. For example, Villalonga & Amit (2006) pointed out that in order to examine differences between family and non-family firms, ownership, control, and management must be examined separately. Thus, it is possible to outline in detail which aspects of family firms create or destroy firm performance.

Also, analyzing ownership, control and management both separately and combined with one another it is possible to consider the empirical findings in the light of financial theory, i.e. principal-agent theory I and II between owners and managers and majority and minority shareholders, respectively. Hence, by this way it is possible to get more comprehensive insight into the relationship between family ownership and firm performance. Subsequently, some empirical evidence concerning the relation between different aspects of family firms and firm performance is presented.

2.3.1 Family Ownership, Control, and Firm Performance

As earlier presented, ownership is commonly concentrated to the hands of the founding family members in family firms. In addition, to maintain their

majority of ownership, family owners are also willing to employ different control structures which, in turn, may lead to agency problems between majority, i.e. family, and minority owners, i.e. agency problem II. Among others, Morck et al. (1988) and McConnell & Servaes (1990) presented that corporate value can be considered as a function of the ownership structure, i.e. ownership structure is thus considered as an exogenous outcome.[14] Hence, it is worth clarifying, whether the extensive family control benefits or hurts firm performance.

For example, Ehrhardt & Nowak (2003) found out that during three following years of IPO there is a nonlinear relationship between voting rights concentration to family stockholders and corresponding stock returns. Results indicated significantly negative abnormal returns when voting rights concentration was above 75 percent, and the result was particularly evident in cases when non-voting stocks were issued. On the other hand, Ehrhardt & Nowak observed positive excess returns when voting right concentrations were between 25 and 75 percent. Moreover, when voting rights held by the family decreased to the range of 25 and 50 percent, firm value was even higher. In addition, it was found out that when family owners' voting rights were under 25 percent, the long-term stock returns were negative. However, only the results of negative abnormal returns when voting rights concentration was above 75 percent, was statistically significant at conventional levels.

Also Anderson & Reeb (2003) presented empirical evidence that the relationship between family holdings and firm performance is non-linear over the different levels of family ownership. It was suggested that the firm performance measured by both accounting and market based measures, i.e. ROA and Tobin's q, increases until family ownership is about one-third of the outstanding equity, after which the performance begins to suffer from concentrated family ownership. However, Anderson & Reeb pointed out

[14] Morck et al. (1988) and McConnell & Servaes (1990) focused particularly on the effects of managerial ownership on firm performance. Results indicated that there exists non-linear relationship between managerial ownership and firm value.

that, family firms still, on average, performed better than non-family firms. Also, Chen et al. (2005) suggested that there exists evidence on the non-linear relationship between family ownership and firm performance in Hong Kong publicly listed firms. Chen et al. also noted that ownership concentration has differential effect on firm performance in small and large firms. The result was explained by stating that small and large firms are under different scrutiny of financial markets.

In addition, Maury (2006) presented that family-controlled Western European corporations perform better than non-family controlled firms. However, results also revealed that family control has a different effect on firm value than on accounting based performance. Namely, when family vote-holdings were at the moderate levels of 10–20 percent and 30-40 percent, firm value measured by Tobin's q increased significantly. In addition, it was found out that the firm profitability measured by ROA increased when family control was above 30 percent of votes. However, the deeper analysis revealed that the family control contributed statistically better performance measured by both Tobin's q and ROA in non-majority controlled firms than in majority controlled firms, where family control, albeit not statistically significantly, affected negatively both firm value and profitability. Hence, results could be considered to be in line with previous studies, e.g. Ehrhardt & Nowak (2003), which suggested that there is a non-linear relationship between firm performance and family control. Hence, empirical evidence suggests that family opportunism and extraction of private benefits might increase with increased control and, thus, impair the firm performance.

Maury (2006) also presented that due to different regulation schemes family control have differential effect on firm value in different countries, i.e. differences in legal shareholder protection and transparency between different countries have an influence on results. Hence, in countries where investor protection was at the high level, family firms' value was significantly higher than the value of family firms in poor shareholder protection

countries. However, also in countries with poorer legal system, family ownership had positive effect on the firm value, although not statistically significantly. In both sub-samples concerning the shareholder protection, family controlled and, especially, family managed firms outperformed non-family firms when firm performance was measured by ROA. Thus, results suggest that legal shareholder protection affects differently firm value and firm accounting based performance. Consequently, Mayry (2006a) suggested that in transparent and well-regulated markets active family control won't harm minority shareholders due to the reduced agency costs between controlling family and the minority shareholders. If anything, family ownership and control would thus benefit all shareholders.

Also Anderson & Reeb (2003) suggested that in well-regulated environments family ownership bears advantages. Thus, results from both Western European and U.S. corporations presented by Maury (2006) and Anderson & Reeb (2003), respectively, can be considered to reinforce the results presented by Faccio et al. (2001). Namely, Faccio et al. reported that due to conflicts between family owners and other equity claimants, family ownership impedes the firm performance in East Asian corporations. However, it is worth noting that the political-regulatory environment and transparency differs greatly between Asia and both Europe and United States, which naturally should keep in mind when considering differences in results.

However, for example Demsetz (1983) and Demsetz & Lehn (1985) presented that profit-maximizing decisions made by owners determine endogenously the level of ownership concentration. Hence, it was argued that due to this optimally determined way, ownership structure should not affect firm performance. The argument of the independency between ownership concentration and firm performance is supported, among others, by Cho (1998), Himmelberg et al. (1999), Demsetz & Villalonga (2001), and Welch (2003).

For example, Cho (1998) examined the relationship between ownership structure, investments and corporate value. Ownership structure was studied from the perspective of insider ownership which was defined as the proportion of stocks held by both officers and directors of the board. Particularly, it was examined whether ownership structure affects investments which, in turn, have an effect on corporate value. However, it was found out that, in fact, investments affect corporate value, which in turn has an effect on ownership structure, but not vice versa.

Also, Himmelberg et al. (1999) concluded that there is no statistically significant relationship between managerial ownership and firm performance. Hence, it was argued that regressions explaining Tobin's q by the ownership concentration may be misspecified because of common determinants behind both dependent and independent variables. Thus, studies which suggest that ownership structure should be considered as an endogenous outcome are trying to argue against studies which implicitly assume that ownership structure is an exogenous outcome. (e.g. Morck et al. (1988), McConnell & Servaes (1990), Toyne et al. (2000) and Ehrhardt & Nowak (2003) etc.).

However, for example Anderson & Reeb (2003) and Maury (2006) took into account the possibility that the ownership structure and, especially, family ownership is in some extent depended on firm performance. Consequently, if analysis suffers from an endogeneity problem, it is not known how strongly family ownership affects firm performance or, on the other hand, what is the effect of strong firm performance on ownership structure.

Both studies of Anderson & Reeb (2003) and Maury (2006) confirmed results concerning the better performance of family firms compared to non-family firms. However, for example Anderson & Reeb (2003) pointed out that the results related to endogeneity of family ownership cannot distinguish, whether the better performance of family firms is due to reduced managerial agency costs or the possibility that family owners are more

likely to exit firms which have poor future prospects. Hence, it was assumed that because families often own large equity stakes, employ control mechanisms, and have controlling senior management positions, they evidently have more information concerning the firm's future prospects than other shareholders. Thus, the superior performance of family firms could potentially be a result of family's foresight and deeper understanding of the family business as well as decreased agency costs.

By studying the effects of family ownership, control and management on firm performance both separately and combined with one another, Villalonga & Amit (2006) found that each of these elements is likely to be an endogenous outcome, i.e. family ownership, control and management are thus each interpreted to be a function of firm former performance. Although, there is possibility that family ownership, control and also management are all results of endogenous decisions, the extended time horizon, which is often considered to be a typical feature of family controlled firms, supports the argument of exogeneity, i.e. extended time horizon enables better investment decisions which, in turn, boost firm performance. Also, the whole family reputation can often be seen to be bound up in the firm success which thus may increase the devotion of the family to improve the firm performance.

There is also some evidence concerning the relationship between the voteholdings in excess of equity ownership and firm performance. for example, La Porta et al. (1999) presented that family control around the world can be considered to be very prevalent, and the control rights of family members often exceed their cash flow rights. For example, evidence on Western European corporations provided by Maury (2006) suggested that excess control, i.e. control minus ownership, is negatively related to firm value.

Maury (2006) found out that ownership is more concentrated in family than in non-family firms. In addition, analysis revealed that the employing of the

excess control is more pronounced in family firms than in widely held firms. However, there was no significant relationship between excess control and firm profitability. It is also worth noting, that results concerning both firm value and profitability, i.e. Tobin's q and ROA, were driven by countries where the shareholder protection was at the lower level. Hence, results indicated that due to the different shareholder protection, also excess control affected differentially on firm performance. In addition, excess control had also different effect on firm value than on firm profitability. Consequently, results could be explained by the conflicts of interests between the controlling and minority shareholders.

Maury's (2006a) results concerning the relationship between excess control and firm value are in line with ones provided by Claessens et al. (2002), who reported that excess control affects negatively firm value in East Asian firms. However, it was found out that there is a positive correlation between firm value and cash-flow ownership of the largest shareholder. The relationship was also non-linear. In addition, Claessens et al pointed out that results are driven by family firms. Thus, it was suggested that results reflect the incentive and also entrenchment effects of large shareholders, i.e. large cash-flow rights of a single or few stockholders generates a positive incentive effect, while the excess control could be related to negative entrenchment effect. On the other hand, Maury (2006) provided evidence that in Western European countries cash flow rights are not significantly related to firm value or profitability. Hence, it was suggested that cash flow incentives have more important role in economies where shareholder protection is at the lower level than in Western European economies.

Although in United States shareholder protection is at the substantially higher level than, for example in Asian countries (e.g. Claessens et al. (2002)) and overall in emerging markets (e.g. Lins (2003)), also Villalonga & Amit (2006) provided evidence, which indicated that family excess voteholdings are negatively related to firm value. Moreover, it was presented

that in dual-class firms, firm value increases with the family ownership stake, but decreases due to excess family voting rights. Thus, results from U.S. markets were consisted with the findings from East Asian markets presented by Claessens et al. (2002) but differed partly from results concerning Western European corporations reported by Maury (2006). However, also Villalonga & Amit pointed out that despite the negative effect of family member's excess control on firm performance, family ownership contributes benefits which make the group of minority shareholders better off than their stake would be in non-family firms.

2.3.2 Family Ownership, Management and Firm Performance

Also the effect of an active involvement of family owners on firm performance has been in focus of several studies. For example, in addition to existence of non-linear relationship between managerial ownership and firm value, Morck et al. (1988) presented evidence on the negative effect of founding family management on firm value. It was found that firm value is lower when the firm is run by a member of the founding family than when it is run by a non-founding family officer. Especially, this was the case in older firms. Also, it is worth noting, that the result appeared to be driven by founders' descendants rather than founders. Morck et al. (1988) explained the results by suggesting that the members of the founding family may have better possibilities to extract their firms than outsider non-family executives.

However, Villalonga & Amit (2006) suggested that on the basis of agency theory I, family management could bear advantages compared to hired non-family management. Hence, it is concluded that the positive effect of family management would be achieved by reducing or even eliminating the conflicts between family owners and active management. On the other hand, it was also pointed out that family management might not necessarily benefit the company if hired professionals would be more talented managers than founders or their descendants. Hence, the assumption of

costs of family management is in line with, for example, views presented by Burkart et al. (2003) and also James (1999), who suggested that favoring family members at the expense of more talented non-family managers could lead to poor firm performance.

Villalonga & Amit (2006) noted also that, for example, there are significantly fewer independent directors on the board in family firms than in non-family firms, albeit results revealed that the proportion of independent directors has no significant effect on firm value. Similarly, also Anderson & Reeb (2004) presented that the majority of board in non-family firms S&P 500-firms consists of independent directors, while in family firms the proportion of independent directors is under one-half of the seats. In addition, it was found out that in founding-family firms the greater proportion of independent directors leads to the better firm performance. Also, Mishra et al. (2001) presented that both the board size and the number of family outsiders is smaller in Norwegian founding family controlled firms than in non-family firms.[15]

As Morck et al. (1988) had presented earlier, also Villalonga & Amit (2006) suggested that the active involvement of family firm founders and descendants affects differently on firm value. Villalonga & Amit found out that family management creates value for all shareholders only, if founder act either as a CEO and Chairman or as a Chairman with a hired outsider CEO. However, firm value suffered detrimentally when descendants acted as a CEO or Chairman. Also, even if the founder was still acting as a Chairman with descendant CEO, firm value was destroyed. Consequently, Villalonga & Amit (2006) suggested that founders' active involvement creates value, while descendants bear negative effects on firm value.

[15] On the other hand, for example Wu (2006) found that the frequency of board meetings in Canadian SMEs, i.e. monitoring role of the board, has no significant impact on the family firm performance.

Villalonga & Amit (2006) also found out that descendants' generation affects differently on firm value. Thus, it was found that the negative effect of descendant-CEO is entirely attributable to second-generation descendant-CEO firms, which were also significantly less valuably than non-family firms. There was also a non-linear relationship between generations and firm value, i.e. second-generation firms had the negative incremental contribution to firm value, while third-generation firms showed significantly positive marginal contribution to Tobin's q. Also, the incremental contribution of the fourth-generation was positive, albeit not significant at the conventional levels.

In addition, Villalonga & Amit (2006) found out that firm value is highest when the founder acts as a CEO and there was no control enhancing mechanisms, i.e. both agency problems I and II are eliminated. Thus, results indicated that minority shareholders are better off in founder-CEO family firms which had control enhancing mechanism than in non-family firms. Consequently, it could be concluded that in founder-CEO firms benefits achieved by founder management offsets the disadvantages of family excess control, i.e. it was found that agency problem I alone have more negative effect on firm value than agency problem II. However, descendant-CEO firms traded at the discount relatively to non-family firms whether or not control enhancing mechanisms were employed.

On the other hand, Anderson & Reeb (2003) suggested that, there is a positive relationship between family member CEOs, i.e. both founder and descendant CEOs, and firm accounting based performance, while hired CEO has no significant effect on firm profitability. Results were explained by stating that family members have benefits in understanding the family business and that actively involved family members are acting as a stewards of the company. However, results concerning firm market based performance proved that founder CEOs are related to the greatest firm values such as also hired CEOs have significantly positive effect on Tobin's q.

Instead, it was not found out any significant relationship between descendant CEOs and firm market value.

Overall, results presented by Villalonga & Amit (2006) are consistent, for example, with Pérez-González (2006), who argued that inherited control affects negatively both accounting and market based firm performance. Consequently, it was assumed that the negative effects of the favoring family members at the expense of more talented outsiders would be concretized in firm performance. Similarly, also Andres (2006) provided evidence on the positive relation between founder CEO and firm performance. Based on the sample of publicly traded German companies, Andres found out that firms with founder CEOs perform significantly better than firms managed by founders' descendants or professionals. Results also indicated that descendant and professional are about equally successful CEOs and, their contribution to firm profitability seemed to be better than CEOs in non-family firms. However, the impact of descendant and professional CEOs on firm value did not differ significantly from the one of CEOs in non-family firms, i.e. it seemed that investors asses descendant and professional CEOs in family firms similar to CEOs in non-family firms.

Also, Bennedsen et al. (2006) presented that family succession affects negatively firm profitability. In addition, results revealed that family-CEOs underperformance is especially substantial in relatively large firms as well as in fast growing industries, and in firms which need highly skilled labor. Furthermore, it was found that the gender of a firstborn child of the departing CEO has an impact on the decision, whether family or outsider CEO is chosen. Thus, results suggested that it is more likely that the CEO position is inherited in the family when the first-child is male than when the CEO's firstborn child is female. However, the first child's gender was unlikely to have an effect on firm's outcomes. Overall, Bennedsen et al. (2006) concluded that professional and non-family related CEOs contributes better firm performance than family CEOs.

On the contrary to earlier presented studies, e.g. Morck et al. (1988), Villalonga & Amit (2006), Anderson & Reeb (2003), Pérez-González (2006), Andres (2006), and Bennedsen et al. (2006), McConaughy et al. (1998) suggested that descendant-controlled firms appear to be more efficient than firms with founder CEOs. The result could be interpreted in the light of results provided by Adams et al. (2005), who presented that founder CEOs are more willing to step aside due to good past firm performance. Such negative relationship between firm performance and the likelihood that founders will retain their CEO position was explained by controlled succession hypothesis. Thus, it was concluded that after good firm performance CEOs have better possibilities to choose their successors, and it was assumed that especially founder-CEOs would take an advantage of this possibility. Hence, founder CEOs would transfer the control to their descendants.

Consequently, the positive relationship between descendant control and firm performance would not necessarily be a result of descendants' superior ability to run the firm but succession decisions driven by firm's successful performance. On the other hand, Hillier & McColgan (2004) argued that the possibility of replacement the firm's CEO following the poor firm performance is lower in firms which are managed by family than non-family CEOs. Thus, result indicates on the existence of managerial entrenchment effect in family managed firms.

On the other hand, Smith & Amoako-Adu (1999) assumed that an appointment of family member may cause conflicts between family and outside shareholders, which in turn would harm firm performance. It was also suggested that, if owners of the family firm want to turn around the firm performance they should first consider an appointment of an outsider, after that a non-family insider and only as a last option a family member. Hence, it could be assumed that professional managers would be appointed in challenging times and family owners would be eager to hold control in good times or in successful firms.

In addition, Ang et al. (2000) presented evidence concerning the conflicts between owners and managers, i.e. the classical agency problem I. Agency costs were measured by both operational expenses-to-sales ratio and annual sales-to-assets ratio. Using the sample of 1,708 U.S. SMEs Ang et al. found out that, family firms with family member as a manager perform better than family firms with outside manager. Furthermore, results revealed that family firms with combined ownership and management structure outperformed all other firms with different types of ownership-management structures. Moreover, results suggested that agency costs increase when ownership and management are separated. Thus, results indicated that the number of non-owner managers correlates positively and, on the other hand, managerial ownership stake correlates negatively with agency costs.

On the other hand, Schulze et al. (2001) argued that agency costs of managerial discretion may exist also in family firms where ownership and management are combined. Thus, it was suggested that due to increased self-control, also unquoted family SMEs with combined ownership-management structure may expose to agency problems. It was also stated that the absence of stock market pressures for firm performance could affect agency problems. Based on the sample of 1,376 U.S. family firms, Schulze et al. (2001) concluded that combined ownership and management structure, in general, and more particularly family ownership may not prevent agency problems like earlier studies had suggested. Hence, Schulze et al. pointed out, that different kinds of control systems are greatly required also in family managed firms to reduce self-seeking behaviour of owner-managers.[16]

Also, based on the sample from Norwegian firms Barth et al. (2005) presented that family firms are less productive than non-family firms. Espe-

[16] Concerning the differences between agency costs in family and in non-family firms, see also, for example, Chrisman et al. (2004) for a review.

cially, the productivity cap between family and non-family firms was attributable to management function. Results indicated that family firms managed by family outsiders are equally productive as non-family firms, while family firms managed by family members appeared to be significantly less productive than non-family firms. When the sample of family-owned firms were analyzed separately, Barth et al. (2005) found out that family firms with family manager are about 16 percent less productive than family firms with family outsider managers. Results were sustained also after controlling for endogeneity of management status.

Hence, Barth et al. (2005) interpreted these results by stating that it is more likely to find the best qualified manager who benefits the firm performance and ensures its productivity from the large pool of manager candidates than from family members, i.e. nepotism affects negatively firm performance (e.g. James (1999)). On the other hand, based on the sample of Finnish SMEs Martikainen & Nikkinen (2006) presented that there is no significant difference in firm profitability between family and outsider managed family firms. However, it was found that there is a negative relation between the number of family owners who are actively involved in firm's day-to-day business and firm performance. Interestingly, owners' active involvement in non-family firms proved to affect positively firm performance.

For example, Burkart et al. (2003) noted that due to differences in prevailing legal environment, different kinds of management arrangements vary between countries. By the constructed model Burkart et al. (2003) showed that in countries where dominates strong legal protection of minority shareholders, founder is more willing to hire professional manager and disperse the ownership in stock markets. Thus, such phenomenon can be interpreted to be a result of the superior corporate governance environment.

Burkart et al. (2003) presented that, for example, in United States founders are willing to hire professional management, and after founder's retirement family sustains, in general, only a marginal ownership. Correspondingly, in Western Europe after the death or retirement of the founder ownership is typically retained in the family. However, it was pointed out that the hiring of a professional manager is quite common also in European firms. On the other hand, in emerging markets family members tend to retain both ownership and control after founder retires. In addition, Burkart et al. (2003) hypothesized that professionals are better managers than founders' heirs. Also, it was presented that ownership concentration increases founders' wealth due to better possibilities of monitoring the professional management, but as Burkart et al. (1997) earlier stated, tight and extensive monitoring may also cause problems by reducing management's initiative behaviour.

In addition, McConaughy et al. (2001) suggested that family ownership has a more clearly effect on firm value than the managerial ownership. Also, for example, Mishra et al. (2001) concluded that it is rather the family ownership which affects shareholders' wealth than the founding family management. On the other hand, for example Barth et al. (2005) presented that managerial arrangements do primarily affect firm performance.

3 DATA AND METHODOLOGY

3.1 Data

The effect of family ownership is investigated in Scandinavian context using a data of Norwegian unlisted SMEs. As a definition of SMEs, the European Commission recommendation is used which states that:[17]

> "*The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million*."

The firm-level data is obtained from Amadeus-database, which is provided by Bureau van Dijk. For the purpose of studying family ownership in SMEs, Amadeus-database is especially useful because it contains financial and other firm-level information of a large fraction of SMEs across different industries. The analysis is focused on incorporated enterprises and the data is from a financial year 2005.

The effect of family ownership on firm performance is first investigated with the sample of randomly selected firms from different industries. Thus, first a random sample of 416 non-listed Norwegian SMEs is used in the analysis. Second, the sample of Norwegian main industries is used in studying, whether family firms perform better than non-family firms. In this approach the sample contains totally 1,842 unlisted SMEs from five Norwegian main industries. Thus, industries under study are:[18]

- Gas and oil industry
- Shipping industry
- Metal industry
- Fishing industry
- Pulp and paper/ forest industry

[17] Although Norway is not a member of European Union, the recommendation for the definition of SMEs given by the European Commission is used in this study. The reasoning for this is that European Commission's definition of SMEs is widely used enabling the possible comparisons between different countries.

[18] For example, in year 2000 these five industries contributed a great majority of Norwegian export of goods. More detailed information available, for example, from Statistics Norway (2007).

The firm is defined as a family firm if one individual or family owns at least 50 percent of shares. It is worth noting, that due to this family firm definition the family ownership, i.e. the ownership of more than one individual from the same family, is automatically over 50 percent. Similarly, contrast to family ownership, i.e. individual ownership, the firm is defined as non-family firm if the majority of shares is owned by institutional owner. More precisely, if bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research Institute, publicly listed company or private equity firm owns at least 50.00 percent of shares, firm is defined as non-family firm. Hence, public authorities, states, and governments as owners are excluded from the analysis due to the possibility that different government regulations have an effect on firm performance. Also, holding companies are excluded from both random and main industry samples, i.e. firms from SIC code K .74.15 category are excluded from the analysis.

3.2 Methodology

The effect of family ownership on firm profitability is investigated by the linear regression analysis method. Following Anderson & Reeb (2003) and Martikainen & Nikkinen (2006), firm profitability is measured by return on assets (ROA), which is computed in two alternative ways. First, net income is divided by the average book value of total assets. As the second performance measure earnings before interest, tax, depreciation, and amortization (EBITDA) is divided by the average book value of total assets. The value of average total assets is calculated by averaging beginning and end of the fiscal year 2005 total assets balances.

Following Anderson & Reeb (2003), Anderson et al. (2003), and also Martikainen & Nikkinen (2006) a binary variable approach is used to indicate family firms. Thus, the *Family Firm* dummy variable takes the value of one when one individual or family owns at least 50 percent of firm shares. Because the one purpose of this study is to investigate, whether family firm

performance differs between young and old family firms as well as between small and large family firms, following Anderson & Reeb (2003) and Martikainen & Nikkinen (2006), both young and old family firms and small and large family firms are defined by the dummy variable.

Cross term *Young Family Firm* dummy variable equals one when the firm age is less than the sample median and, similarly, *Old Family Firm* is a dummy variable taking the value of one if the firm's age is greater than or equal to the sample median. In addition, interaction term *Small Family Firm* dummy variable equals one when the value of the natural logarithm of total assets is below the sample median. Similarly *large Family Firm* is a dummy variable taking the value of one if the value of the natural logarithm of total assets is greater than or equal to the sample median. Also, as a robustness check of regression results, similar binary variable approach is used to measure the firm size, i.e. small/ large, by the number of employees.

To control for industry and firm characteristics, several control variables are introduced to the multivariate analysis. The firm size variable is defined as the natural logarithm of the book value of total assets and, also, the number of employees is used as the another measure of the firm size. The firm age is measured as the natural logarithm of the number of years since the firm's founding. The ratio of long-term debt to book value of total assets is used as the control variable of leverage. Also, the ratio of short-term debt to total assets is included in the analysis as another leverage measure. The number of employees and all financial ratios used as control variables are 2005 year-end values. In addition, dummy variables are used to control for industry effect both in the analysis of randomly selected firms and the sample of five Norwegian main industries.

4 RESULTS

4.1 Random Sample

The effect of family ownership is first investigated among randomly selected SMEs from different industries. Sample firms are categorized into different industries by the standard industry classification code (SIC). Table 1 presents that in the random sample of 416 Norwegian unlisted SMEs, family firms appear to be a prevalent organizational form, for example, in healt and social work (N), agriculture, hunting and forestry (A) and fishing (B) industries. Totally family firms construct 55.8 percent of all sample firms. On the whole, it is important to control for industry effect in empirical analysis and, thus, in multivariate analysis dummy variables are included to denote each four-digit SIC code.

Table 1. Number and Percent of Family and Non-family Firms by Industry Classification Code (n = 416 firms)

Table presents the number and percent of firms by the standard industry classification code (SIC), which is based on NACE Rev.11. Family firms refer those firms where one individual or a family owns at least 50.00 percent of shares. Similarly, firm is defined as non-family firm if bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50.00 percent of firm shares. Firms which are owned by definition by public authorities, states, and governments are excluded from the sample as well as holding companies (SIC K .74.15).

SIC	Industry Description	Number of Firms	Family Firms	Non-Family Firms	Family Firms (%)
A	Agriculture, hunting and forestry	4	3	1	75.0
B	Fishing	4	3	1	75.0
D	Manufacturing	37	14	23	37.8
F	Construction	66	47	19	71.2
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	134	70	64	52.2
H	Hotels and restaurants	21	11	10	52.4
I	Transport, storage and communication	18	10	8	55.6
J	Financial intermediation	3	0	3	0.0
K	Real estate, renting and business activities	91	45	46	49.5
M	Education	3	2	1	66.7
N	Health and social work	16	13	3	81.3
O	Other community, social and personal service activities	19	14	5	73.7
	All Firms	416	232	184	55.8

Table 2 consist of three panels which present summary statistics and preliminary data analysis on the randomly selected sample firms. First, panel A provides means, medians, standard deviations as well as maximum and minimum values for the key variables of the sample firms. Second, panel B presents means or proportions separately for family and non-family firms and results of difference of means tests between family and non-family firms. Finally, panel C provides the Pearson correlation coefficients for variables used in multivariate analysis.

Table 2. Descriptive Statistics and Preliminary Data Analysis for Family and Non-Family Firms (*n* = 416 firms)

Panel A, B and C present summary statistics for the random sample employed in the regression analysis. The data set is comprised of 416 Norwegian unlisted SMEs from the fiscal year 2005. Family firms refer those firms where one individual or a family owns at least 50.00 percent of shares. Non-family firms are firms where bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50.00 percent of shares. Public authorities, states, and governments as owners are excluded from the sample as well as holding companies (SIC K .74.15). Leverage is presented by both long- and short term basis. *LT Debt/Total Assets* is measured as the book value of long-term debt divided by the book value of total assets. *ST Debt/Total Assets* is measured as the book value of short-term debt divided by the book value of total assets. Firm size is *Ln(Total Assets),* which is measured as the natural log of the book value of total assets. Also the *Number of Employees and Turnover (€ 1,000)* indicate the firm size. *Firm Age (Years)* refers the number of years since the firm's inception. The ownership features of the sample firms are presented by the *Number of Shareholders* and the *Ownership (%),* which indicates the direct percentage of ownership of the main shareholder. Firm performance is measured by *Return on Assets*, which is computed in two ways. First, earnings before interests, tax, depreciation, and amortization (EBITDA) is divided by the average total assets. Second, net income is divided by the average total assets. Panel B provides a univariate comparison of family and non-family firms. Panel C presents the Pearson correlation coefficients for variables used in the multivariate analysis. In panels B and C the significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

Panel A: Summary Statistics for the Full Random Sample

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
LT Debt/Total Assets (%)	15.76	4.92	20.44	0.00	90.16
ST Debt/Total Assets (%)	55.60	56.28	22.17	0.64	98.38
Ln(Total Assets)	6.05	5.95	1.41	2.73	10.14
Number of Employees	10.06	5.00	14.49	1.00	118.00
Turnover (€ 1,000)	2,278.23	782.50	5,060.09	1.00	49,929.00
Firm Age (Years)	10.31	9.00	5.51	1.00	18.00
Number of Shareholders	1.72	2.00	0.86	1.00	5.00
Ownership (%)	79.75	91.00	21.58	50.00	100.00
Return on Assets (EBITDA) (%)	21.12	17.40	21.41	-56.28	148.48
Return on Assets (Net Income) (%)	11.63	8.84	17.24	-69.55	109.74

Table 2- *continued*

Panel B: Difference of Means Test

Variable	Family Firms Mean/ Proportion	Non-Family Firms Mean/ Proportion	Test Statistics	p-value
Number of Firms	232	184		
Proportion (%)	55.77	44.23		
LT Debt/Total Assets (%)	17.94	13.02	2.53	0.012**
ST Debt/Total Assets (%)	53.05	58.82	-2.66	0.008***
Ln(Total Assets)	5.52	6.72	-9.63	<0.001***
Number of Employees	5.91	15.31	-6.40	<0.001***
Turnover (€ 1,000)	1016.59	3868.99	-5.36	<0.001***
Firm Age (Years)	9.81	10.94	-2.08	0.038**
Number of Shareholders	1.82	1.59	2.80	0.005***
Ownership (%)	74.70	86.12	-5.61	<0.001***
Return on Assets (EBITDA) (%)	21.89	20.14	0.83	0.409
Return on Assets (Net Income) (%)	11.64	11.62	0.01	0.990

Panel C: Pearson Correlation Coefficients

Variable	Family Firm	LT Debt/ TA	ST Debt/ TA	Ln(TA)	Ln (Firm Age)	No. of Empl.
LT Debt/ TA	0.120 (0.015)**					
ST Debt/ TA	-0.129 (0.008)***	-0.629 (<0.001)***				
Ln(TA)	-0.428 (<0.001)***	0.176 (<0.001)***	-0.108 (0.027)**			
Ln(Firm Age)	-0.096 (0.050)**	-0.072 (0.145)	0.033 (0.507)	0.265 (<0.001)***		
No of Empl.	-0.323 (<0.001)***	-0.014 (0.778)	0.062 (0.205)	0.490 (<0.001)***	0.175 (<0.001)***	
ROA (EBITDA)	0.041 (0.409)	-0.131 (0.008)***	-0.081 (0.101)	-0.091 (0.064)*	-0.110 (0.025)**	-0.061 (0.211)

According to panel A in table 2, sample firms use, on average, considerably more short-term financing than long-term debt. Sample statistics concerning long-term debt to total assets presents that the mean value of the ratio is 15.76 percent, while the corresponding mean value for the short-term debt to total assets is 55.60 percent. The results regarding the debt usage of the sample firms correspond well with earlier studies. For example, Hall et al. (2004) presented empirical evidence on the capital structure of European SMEs and results suggested that, on average, SMEs use considerably more short-term debt than long-term financing. Also, Cassar & Holmes (2003) and Martikainen & Nikkinen (2006) found similar results with the data of Australian SMEs and Finnish SMEs, respectively.

In addition, the average firm in the sample has ten employees, while the minimum and the maximum values of the variable take values of one and 118, respectively. Thus, results regarding the number of employees and the annual turnover suggest that the majority of the sample firms can be categorized into small firms.[19] Sample firms can be considered also rather young, because the mean value of firm age is only about ten years. Sample contains also firms which have operated only one year, whereas the oldest firm in the sample is 18 years old. Based on the information of sample firms' age, it could be concluded that the founder of the firm is still running the business.

In this study family firm is defined as a firm, where one individual or a family owns at least 50 percent of firm shares. Similarly, non-family firms refers firms, where bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50.00 percent of shares.[20] Results of panel A suggest that in an average

[19] Following the European Commission's recommendation for the definition of SMEs, small enterprises can be defined as firms, which have between 10 and 49 occupied persons, and which turnover will not exceed 10 million euros.

[20] To be more precisely with the family firm definition used in this study, due to the data availability, family firms are, in practice, firms where one individual owns at least 50 per-

sample firm one individual or institutional owner, i.e. main owner, owns nearly 80 percent of all shares. Overall, based on results concerning the number of shareholders and the ownership percentage of the main shareholder, it can be concluded that ownership is highly centred in sample firms. For example, sample statistics show that there are at maximum five shareholders in the sample firm.

Thus, sample statistics indicate that sample firms are rather small and young firms, in which one individual or an institutional owner has a substantial majority of the ownership. In addition, results regarding leverage suggest that firms use considerably more short-term financing than long-term debt. In terms of performance, the average sample firm has a return on assets (EBITDA) of 21.12 percent, while the minimum and maximum values of the variable are -56.28 and 148.48 percent, respectively. When return on assets is measured using net income as the numerator, the mean value is 11.63 percent with a minimum and maximum value of -69.55 and 109.74 percent, respectively.

Panel B of the table 2 presents means of the variables for family and non-family firms, and difference of means test between these two groups. As can be seen from the table, family firms represent 55.77 percent of the sample. The univariate comparison of debt usage between family and non-family firms reveals that family firms have more long-term debt and less short-term debt than non-family firms. Thus, the results regarding both short- and long-term leverage measures correspond well, for example, with the Finnish SME sample used by Martikainen & Nikkinen (2006). Moreover, results in panel B suggest that family firms are both smaller and younger than non-family firms.

In addition, the univariate results present that the number of shareholders and the percentage of direct ownership of the main owner differ between

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cent of shares. Thus, the ownership of a single family, i.e. more than one individuals, is automatically over 50 percent.

family and non-family firms. For example, in non-family firms main institutional owner owns, on average, around 86 percent of shares, whereas the corresponding value of individual or a family ownership is about 75 percent. Hence, rather interestingly it seems that ownership is even more concentrated in non-family firms than in family firms. When considering the firm performance, results in the panel B of the table 2 suggest that family firms do not perform better than non-family firms. Although results indicate that the average sample family firm has slightly higher return on assets (EBITDA/ net income) than non-family firm, this difference, however, is not statistically significant at conventional levels.

Panel C of the table 2 provides a correlation matrix for the key variables used in the analysis. Consistent with the previous analysis correlation results suggest that family ownership is positively significantly correlated to the ratio of long-term debt to the book value of total assets, while there is statistically significant negative correlation between family ownership and the ratio of short-term debt to total assets. In addition, there are negative relation between family ownership and both firm size and age. Also, panel C proves the earlier presented results regarding the firm performance. Thus, family ownership is positively correlated with return on assets, i.e. using EBITDA approach, but this relation is not statistically significant. In addition, leverage, and both firm size and age seem to be negatively related to return on assets (EBITDA). However, the relation between return on assets and the ratio of short-term debt to total assets, and the number of employees is not statistically significant at conventional levels.

Because the main interest of this study is to investigate, whether family firms are better or worse performers than non-family firms, the multivariate analysis is used next to examine the relation between family ownership and firm performance. The regression equation which is employed in examining the effect of family ownership on firm performance takes the form:

$$ROA = \alpha_0 + \sum_{i=1}^{N=11} \alpha_i \mathrm{SIC_i} + \beta_1 \mathrm{Family\,Firm} + \delta_1 \mathrm{LT\,Debt/TA} + \delta_2 \mathrm{ST\,Debt/TA} + \delta_3 \mathrm{Ln(TA)} + \delta_4 \mathrm{Ln(Firm\,Age)} + \varepsilon \quad (1)$$

Where,

ROA = Return on assets

SIC = Standard industry classification code

Family Firm = one individual or a family owns at least 50 percent of firm shares

LT Debt/TA= Book value of long-term debt divided by the book value of total assets

ST Debt/TA = Book value of short-term debt divided by the book value of total assets

Ln(TA) = Natural logarithm of total assets

Ln(Firm Age) = Natural logarithm of the number of years since the firm's inception

The firm performance is measured by return on assets (*ROA*), which is computed in two ways. First, earnings before interests, tax, depreciation, and amortization (EBITDA) is divided by the average total assets. Second, net income is divided by the average total assets. The equation of the return on assets (EBITDA/ net income) is as follows:

$$\mathrm{Return\,on\,Assets\,(ROA)\,(\%)} = \frac{\mathrm{EBITDA/\,Net\,Income}}{\mathrm{Average\,Total\,Assets}} \mathrm{x100} \quad (2)$$

In the random sample there are firms from 12 different four-digit SIC code industries. Because it is important to control for industry affiliation in the empirical analysis, in the regression equation SIC_i is a dummy variable according to used four-digit SIC industry classification. *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares, and zero otherwise.

In addition to family ownership, it is also investigated whether there are differences in firm performance between young and old family firms as well as between small and big family firms. Thus, binary variable approach is

used to denote young and old as well as small and big family firms. Cross term *Young Family Firm* indicates those firms, which age is below the sample median and, where one individual or a family owns at least 50 percent of firm shares, i.e. firm fits to the definition of family firm. Similarly, *Old Family Firm* dummy variable takes value of one, when family firm's age is greater than or equal to the value of the sample median. Hence, following regression equation with interaction terms *Young Family Firm* and *Old Family Firm* is employed in examining the effect of the firm age on family firm performance.

$$ROA = \alpha_0 + \sum_{i=1}^{N=11} \alpha_i \mathrm{SIC_i} + \beta_1 \mathrm{Young\ Family\ Firm} + \beta_2 \mathrm{Old\ Family\ Firm} + \delta_1 \mathrm{LT\ Debt/TA} + \delta_2 \mathrm{ST\ Debt/TA} + \delta_3 \mathrm{Ln(TA)} + \delta_4 \mathrm{Ln(Firm\ Age)} + \varepsilon \quad (3)$$

When the difference in firm performance between small and big family firms is investigated, firm size is measured as the natural logarithm of total assets. Hence, *Small Family Firm* interaction dummy variable equals one when the value of *Ln(TA*) is less than the sample median, and firm fulfills the family firm definition of 50 percent individual or a family ownership. On the other hand, cross term *Big Family Firm* denotes firms, which *Ln(TA*) is greater than or equal to the sample median. Thus, regression equation with both *Small* and *Big Family Firm* interaction dummy variables is as follows:

$$ROA = \alpha_0 + \sum_{i=1}^{N=11} \alpha_i \mathrm{SIC_i} + \beta_1 \mathrm{Small\ Family\ Firm} + \beta_2 \mathrm{Big\ Family\ Firm} + \delta_1 \mathrm{LT\ Debt/TA} + \delta_2 \mathrm{ST\ Debt/TA} + \delta_3 \mathrm{Ln(TA)} + \delta_4 \mathrm{Ln(Firm\ Age)} + \varepsilon \quad (4)$$

In the following multivariate analysis there are totally three different regression equations for both ways, i.e. EBITDA/ net income, computed return on assets. Thus, the analysis of the random sample consists of totally six different regression models. In the first regression model the effect of family ownership, i.e. the main effect, is investigated, whereas the second and third models examine the effects of the firm age and size on family

firm profitability, respectively. In all three different regression models measures of leverage, firm size, and age are used as control variables. Leverage is taking into account both in short- and long-term basis. Thus, long-term debt is divided by the book value of total assets. Similarly, short-term debt is scaled by the book value of total assets. *Ln(TA)* is the natural logarithm of the book value of total assets and, *Ln(Firm Age)* is the natural logarithm of the number of years since the firm's inception.

In the model estimation, both multicollinearity and heteroscedasticity are detected. It is found out that multicollinearity is not a problem in the estimated regression models. According to Brooks (2005) the possible heteroscedasticity can be detected using White's (1980) general test for heteroscedasticity. Based on the heteroscedasticity test results, it is found out that the variance of the errors is not constant, i.e. errors are heteroscedastic. Thus, in the analysis heteroscedasticity-consistent standard error estimates are employed, i.e. standard error estimates which have been modified to account for the heteroscedasticity following White (1980) are used. As Brooks (2005) states, the effect of this correction for heteroscedasticity is that the standard errors for the regression coefficients increase which, in turn, makes hypothesis testing more conservative. In other words, in order to reject the null hypothesis more evidence would be required against it.

Table 3: Family Ownership and Firm Performance (Random Sample, *n* = 416)

This table reports results of regressing firm performance on family ownership. The firm performance is measured by *Return on assets* (*ROA*), which is earnings before interest, tax, depreciation, and amortization (EBITDA) or net income divided by the average book value of total assets. *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares. *Young FF* interaction dummy variable equals one when the age of the family firm is less than the sample median, i.e. 9.00 years. *Old FF* dummy equals one when the age of the family firm is greater than or equal to the sample median. Interaction term *Small FF* takes value of one when the value of *Ln(Total Assets*) is less than the sample median, i.e. 5.95, and firm is defined as family firm. *Big FF* dummy variable equals one when the value of *Ln(Total Assets*) of the family firm is greater than or equal to the sample median. *LT Debt/TA* is the book value of long-term debt divided by the book value of total assets. Similarly, *ST Debt/TA* is the book value of short-term debt divided by the book value of total assets. Both firm size and the firm age are measured using natural logarithms, i.e. *Ln(TA)* and *Ln(Firm Age)*, respectively. All regressions include dummy variables for four-digit SIC codes. Table presents the values of regression coefficients and their p-values in brackets. P-values are calculated based on the White (1980) heteroscedasticity consistent covariance matrix. The significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

	Return on Assets (EBITDA)			Return on Assets (Net Income)		
Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Intercept	43.638	41.262	41.584	21.249	20.792	20.519
	(<0.001)***	(<0.001)***	(<0.001)***	(0.010)***	(0.012)**	(0.022)**
Family Firm	0.669			0.269		
	(0.784)			(0.890)		
Young FF		2.638			0.648	
		(0.415)			(0.799)	
Old FF		-0.811			-0.016	
		(0.766)			(0.994)	
Small FF			1.725			0.644
			(0.573)			(0.796)
Big FF			-0.386			-0.106
			(0.887)			(0.960)
LT Debt/TA	-0.322	-0.322	-0.319	-0.307	-0.307	-0.306
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
ST Debt/TA	-0.244	-0.241	-0.244	-0.213	-0.212	-0.213
	(0.004)***	(0.004)***	(0.004)***	(0.001)***	(0.001)***	(0.001)***
Ln(TA)	0.064	0.026	0.374	0.668	0.661	0.778
	(0.942)	(0.977)	(0.717)	(0.336)	(0.343)	(0.349)
Ln(Firm Age)	-2.900	-1.774	-2.956	-0.973	-0.756	-0.993
	(0.061)*	(0.379)	(0.056)*	(0.416)	(0.623)	(0.410)
F-value	3.144	3.015	2.975	3.515	3.304	3.305
p-value	<0.001***	<0.001***	<0.001***	<0.001***	<0.001***	<0.001***
Adj. R square	0.076	0.076	0.075	0.088	0.086	0.086

Table 3 provides results of regressing firm performance on family ownership. First, in columns (1), (2), and (3) return on assets *(*ROA) is calculated dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average book value of total assets. Second, in columns (4), (5), and (6) ROA is presented as the ratio of net income to the average book value of total assets. Results in all six columns suggest that family firms do not perform better than non-family firms. However, the signs of the regression coefficients for *Family Firm, Young FF* and *Old FF* follow the prior literature. For example, Anderson & Reeb (2003) suggested that family firms, on the whole, perform better than non-family firms and, on the other hand, the performance of young family firms is even better than older family firms. However, coefficient estimates are not statistically significantly different from zero for these different family firm binary variables. Thus, results based on the random sample of Norwegian unlisted SMEs suggest that family ownership do not appear to contribute better firm performance.

In terms of control variables, the coefficient estimates for both long- and short-term leverage variables, i.e. *LT Debt/TA* and *ST Debt/TA*, are negative and statistically highly significant across all regressions presented in columns (1)–(6) in the table 3. Thus, results indicate that, whether EBITDA or net income approach is used, return on assets is negatively related to leverage. Consistently across all regressions (1)–(6) regression estimates for the firm size are positive, although insignificant at conventional levels. In addition, firm age seems to be negatively related to firm profitability in each of these estimated regression models but, however, the coefficient estimates are statistically significant only in models (1) and (2), i.e. where the impact of the main effect and family firm size on profitability are investigated.

Due to statistically significant regression coefficient estimates in table 3, *F*-test statistics rejects very strongly the null hypothesis that all of the coefficient estimates of explanatory variables, except the intercept coefficient,

are zero. In the end of the table 3, also the value of adjusted R^2 is reported indicating that in the first three regression models independent variables are able to explain about eight percent of the total variability of the dependent variable, i.e. firm profitability measured by ROA. In regressions (4)–(6) the power of explanation of the regressions is about nine percent. The fact that in each regression models (1)–(6) the value of the adjusted R^2 remains rather low, i.e. independent variables explain only a relatively small proportion of the variability of the dependent variable, is relatively typical of economic research. Thus, the values of adjusted R^2 around eight and nine percent can be considered to be acceptable in this case.

4.2 Sample of Main Industries

Because there is a vast prior literature which suggests that family firms are better performers than non-family firms, examination of the effect of family ownership is focused also on Norwegian main industries. Thus, it is hypothesized that by studying the most important industries, it is possible to get some insight, whether certain type of firms can be seen as boosters of the industries. In other words, it can be clarified, whether ownership structure, i.e. individual or institutional ownership, affects firm performance. Norwegian economy has always relied strongly on natural resources and, thus, the following analysis contains industries of oil and gas, shipping, metal, fishing, and also pulp and paper/forest. Next, descriptive statistics as well as preliminary data analysis on Norwegian main industries are presented. After that the effect of family ownership on the performance of SMEs is examined by regression models introduced in the previous chapter.

Table 4. Number and Percent of Family and Non-family Firms in the Sample of Norwegian Main Industries (*n*=1,842)

Table presents the number and percent of firms in five chosen Norwegian main industries. The classification of the firms is not based on SIC codes, i.e. firms with different SIC codes can be present in each of these five main industries. Family firms refer those firms where one individual or a family owns at least 50.00 % of shares. Firm is defined as non-family firm if bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50.00 % of firm shares. Firms which are owned by definition by public authorities, states, and governments are excluded from the sample as well as holding companies (SIC K .74.15).

Industry description	Number of Firms	Family Firms	Non-Family Firms	Family Firms (%)
Gas and Oil	141	36	105	25.5
Shipping	598	250	348	41.8
Metal	732	379	353	51.8
Fishing	256	101	155	39.5
Pulp & Paper / Forest	115	46	69	40.0
All Firms	1,842	812	1,030	44.1

The numbers of family and non-family firms as well as the percentage of family firms in different industries, and in the whole sample are presented in the table 4. Sample consists of totally 1,842 non-listed family and non-family SMEs, which are operating in the Norwegian main industries. Metal and shipping industries are most strongly represented in the sample constituting together over 70 percent of all sample firms. In addition, in the sample from metal industry 51.8 percent of firms fulfill the definition of family firm used in this study. On the other hand, the proportion of family firms is lowest in the gas and oil industry. Totally family firms construct 44.1 percent of all sample firms.

It can be noted that the data corresponds well with general expectations on family, i.e. individual, and institutional ownership. For example, the definition of metal industry is rather broad and thus a significant amount of, for example, small smitheries and workshops are included in this industry sample. The deeper examination reveals that, for instance, the average family firm in the metal industry employs only seven employees, and a little bit over 60 percent of family firms operating in metal industry have at maximum five employees. In non-family metal firms average number of employees is over three times larger, i.e. 23 employees, and only one-fourth

of the firms have not more than five employees. On the other hand, in capital-intensive sample industries family firms are in minority. As in the regression analysis of the random sample in chapter 4.1, industry effects are controlled by dummy variables in the multivariate analysis.

Descriptive information on the sample of Norwegian main industries is presented in the table 5 by three panels. Means, medians, standard deviations as well as maximum and minimum values for the key variables in the sample are provided in panel A. Panel B presents difference of means tests between family and non-family firms and, finally, panel C provides the Pearson's correlation matrix for the variables used in the multivariate analysis.

Table 5. Descriptive Statistics and Preliminary Data Analysis on the Sample of Norwegian Main Industries (*n* = 1,842 firms)

Panel A, B and C present summary statistics for the sample of Norwegian main industries employed in the regression analysis. The data set is comprised of 1,842 unlisted SMEs, which operate in Norwegian main industries. Data is obtained from the fiscal year 2005. Family firms refer those firms where one individual or a family owns at least 50.00 percent of shares. Non-family firms are firms where bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50.00 percent of shares. Public authorities, states, and governments as owners are excluded from the sample as well as holding companies (SIC K .74.15). Leverage is presented by both long- and short term basis. *LT Debt/Total Assets* is measured as the book value of long-term debt divided by the book value of total assets. *ST Debt/Total Assets* is measured as the book value of short-term debt divided by the book value of total assets. Firm size is *Ln(Total Assets),* which is measured as the natural log of the book value of total assets. Also the *Number of Employees and Turnover (€ 1,000)* indicate the firm size. *Firm Age (Years)* refers the number of years since the firm's inception. The ownership features of the sample firms are presented by the *Number of Shareholders* and the *Ownership (%),* which indicates the direct percentage of ownership of the main shareholder. Firm performance is measured by *Return on Assets*, which is computed in two ways. First, earnings before interests, tax, depreciation, and amortization (EBITDA) is divided by the average total assets. Second, net income is divided by the average total assets. Panel B provides a univariate comparison of family and non-family firms. Panel C presents the Pearson correlation coefficients for variables used in the multivariate analysis. In panels B and C the significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

Panel A: Summary Statistics for the Sample of Norwegian Main Industries

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
LT Debt/Total Assets (%)	21.04	12.81	23.22	0.00	99.72
ST Debt/Total Assets (%)	52.25	53.74	24.09	0.00	99.59
Ln(Total Assets)	6.72	6.65	1.62	1.97	10.65
Number of Employees	17.08	6.00	28.96	1.00	247.00
Turnover (€ 1,000)	3,879.12	1,295.00	6,743.72	1.00	46,662.00
Firm Age (Years)	11.75	13.00	5.49	1.00	19.00
Number of Shareholders	1.70	1.00	0.90	1.00	5.00
Ownership (%)	81.97	100.00	21.20	50.00	100.00
Return on Assets (EBITDA) (%)	17.43	15.45	21.01	-127.33	140.74
Return on Assets (Net Income) (%)	9.04	8.00	17.48	-145.00	103.00

Table 5- *continued*

Panel B: Difference of Means Test

Variable	Family Firms Mean/ Proportion	Non-Family Firms Mean/ Proportion	Test Statistics	p-value
Number of Firms	812	1030		
Proportion (%)	44.1	55.9		
LT Debt/Total Assets (%)	21.95	20.32	1.48	0.138
ST Debt/Total Assets (%)	51.41	52.91	-1.33	0.185
Ln(Total Assets)	5.67	7.55	-30.44	<0.001***
Number of Employees	6.29	25.58	-16.67	<0.001***
Turnover (€ 1,000)	1,048.37	6,110.73	-19.14	<0.001***
Firm Age (Years)	11.07	12.28	-4.73	<0.001***
Number of Shareholders	1.83	1.59	5.91	<0.001***
Ownership (%)	75.29	87.24	-12.34	<0.001***
Return on Assets (EBITDA)(%)	19.73	15.62	4.12	<0.001***
Return on Assets (Net Income) (%)	10.17	8.16	2.42	0.015**

Panel C: Pearson Correlation Coefficients

Variable	Family Firm	LT Debt/ TA	ST Debt/ TA	Ln(TA)	Ln (Firm Age)	No.of Empl.
LT Debt/ TA	0.035					
	(0.133)					
ST Debt/ TA	-0.031	-0.643				
	(0.185)	(<0.001)***				
Ln(TA)	-0.576	0.154	-0.172			
	(<0.001)***	(<0.001)***	(<0.001)***			
Ln(Firm Age)	-0.097	-0.008	-0.108	0.239		
	(<0.001)***	(0.746)	(<0.001)***	(<0.001)***		
No. of Empl.	-0.331	-0.036	0.051	0.532	0.091	
	(<0.001)***	(0.119)	(0.028)**	(<0.001)***	(<0.001)***	
ROA (EBITDA)	0.097	-0.186	-0.031	-0.054	0.033	-0.083
	(<0.001)***	(<0.001)***	(0.178)	(0.020)**	(0.161)	(<0.001)***

Panel A of table 5 presents that average sample firm use significantly more short-term financing than long-term debt. Thus, results regarding the leverage of unlisted SMEs, which operate in Norwegian main industries, are similar with results from the random sample presented in table 2. The mean value of the ratio of long-term debt to total assets is 21.04 percent, while the corresponding mean value for the short-term debt to total assets is 52.25 percent. Comparing mean values of both leverage measures with ones from the random sample, it can be seen that the average firm from one of the Norwegian main industry use more long-term debt than randomly selected firm. On the other hand, average firm from one of the main industries use a little bit less short-term debt than randomly selected firm. However, on the whole panel A of table 5 presents that non-listed SMEs operating in Norwegian main industries use considerable more short-term debt than long-term financing, which is in line with earlier studies (e.g. Hall et al. (2004), Cassar & Holmes (2003) and Martikainen & Nikkinen (2006)).

Sample statistics concerning the number of employees presents that in an average sample firm there are 17 employees, while minimum and maximum values take a value of one and 247, respectively. On the other hand, panel A in table 2 presented that corresponding values of the number of employees in the random sample are ten, one and 118, respectively. Thus, when considering the number of employees, results present that the sample of 1,842 Norwegian main industry firms consists, on average, of larger firms than the random sample. Also values *of Ln(Total Assets*) and *Turnover (€ 1,000)* indicate that the sample firms operating in main industries are larger than randomly selected firms. In addition, panel A in table 5 presents that the mean value of the firm age is 11.75 years, while minimum and maximum values are one and 19, respectively. Hence, when considering the firm age there is only a modest difference between two samples of randomly selected firms and firms operating in main industries.

Results of panel A in table 5 presents that in an average sample firm one individual or an institutional owner owns a little bit over 80 percent of all

shares. Hence, results suggest that as in the random sample analyzed earlier, ownership is highly centred to the hands of one owner. Performance measures of two ways computed return on assets presents that, the average sample firm has a return on assets (EBITDA) of 17.43 percent, while the minimum and maximum values of the variable are -127.33 and 140.74 percent, respectively. The net income approach shows that the mean value of return on assets is 9.04 percent with a minimum and maximum value of -145.00 and 103.00, respectively. On the whole, results in panels A of both tables 2 and 5 suggest that firms operating in main industries have somewhat lower profitability in terms of return on assets (EBITDA/net income) than randomly selected firms. Thus, it could be concluded that this result concerning firm profitability between two samples reflects the highly competed industry environment of analyzed main industries.

Panel B of the table 5 presents the means of the variables for family and non-family firms and a univariate comparison of these two groups. Consistent with the results from the random sample examined in chapter 4.1., the univariate comparison of both short- and long-term leverage measures between family and non-family firms suggests that family firms have more long-term debt and less short-term debt than non-family firms. However, in this case differences of means are not statistically significant at conventional levels.

For example, also Martikainen & Nikkinen (2006) presented based on Finnish SMEs data that family firms have more long-term debt but correspondingly less short-term debt than non-family firms. Also, McConaughy et al. (2001) found out with U.S. data that founding family controlled firms use considerably less short-term debt than non-founding family controlled firms. Thus, McConaughy et al. (2001) pointed out that it is more likely the family ownership than the management control of the family members, which affects the differences in capital structure between FFCFs and NFFCFs In addition, Mishra & McConaughy (1999) found out that listed

U.S. FFCFs are less leveraged, i.e. both short- and long-term basis, than NFFCFs. Moreover, results revealed that FFCFs are more averse to short-term debt than similar NFFCFs. Also, Mishra et al. (2001) presented similar results from Norway, i.e. FFCFs use less debt financing than NFFCFs.

The differences in leverage between family and non-family firms are explained in many different ways. For example, Mishra & McConaughy (1999) suggested that FFCFs are more averse to the risk of losing control, than similar NFFCFs. Since the control risk increases with the leverage due to the higher bankruptcy risk, FFCFs were assumed to use less debt financing than NFFCFs. In addition, Mishra & McConaughy suggested that because of more restricted covenants, refinancing risk and uncertainty of possibilities to roll over short-term debt, FFCFs use particularly less short-term debt than non-family firms. Also, for example, Anderson et al. (2003) proposed that family ownership reduces agency costs between owners and creditors which, in turn, lower the costs of debt financing in family firms.

Thus, it could be assumed that, since family firms could obtain debt financing with lower costs than non-family firms, the amount of long-term debt is also greater among family than among non-family firms. Also, because small non-listed SMEs are greatly dependent on bank financing, the greater long-term debt usage of family firms could also be explained by the close and good relationship between family firm and financing bank. In addition, the extended time horizon of family firms could affect the differences in debt usage between family and non-family firms.

In addition, as in the case of the random sample, results in panel B of the table 5 indicate that family firms are both smaller and younger than non-family firms. Also, it seems that ownership is even more concentrated in non-family firms than in family firms. Regarding firm performance, results present that firm profitability measured by return on assets (EBITDA) is significantly higher among family firms than in non-family firms. Also, when

net income approach is used in calculating return on assets, family firms appear to perform significantly better than non-family firms. Thus, results of the preliminary data analysis on the main industry sample suggest that, in terms of profitability, family firms perform significantly better than non-family firms. Consequently, results are in line with the vast earlier research, which reports on the positive effect of family ownership on firm performance.

Correlation matrix in panel C of table 5 strengthens the results of the difference of means test presented in panel B. Thus, correlation coefficients indicate that the use of long-term debt is positively related to family ownership, while there is a negative relation between short-term leverage and family ownership. However, neither of these results does reach the statistical significance. On the other hand, family ownership is negatively significantly correlated with firm size and the firm age variables. As can be seen from the panel C of table 5, return on assets (EBITDA) is positively significantly related to the binary variable of family firm. In addition, return on assets is negatively significantly correlated with long-term debt to total assets. The relation between firm profitability and short-term debt is also negative, but not statistically significantly. Also, return on assets is negatively significantly correlated with firm size, while the relation between firm profitability and the firm age appears to be positive, although result is not statistically significant.

Next, the regression analysis is employed to investigate, whether family firms perform better than non-family firms in the most important Norwegian industries. The only exception in the regression equations used in this main industry analysis to equations (1), (3), and (4) used in the random sample analysis is that the number of industries is five instead of 12 different SIC codes analyzed in the random sample analysis. Thus, when the sample of five Norwegian most important industries is investigated, for example, the regression equation (1) presented earlier in chapter 4.1 takes the following form:

$$ROA = \alpha_0 + \sum_{i=1}^{N=4} \alpha_i \text{Main Industry}_i + \beta_1 \text{Family Firm} + \delta_1 \text{LT Debt/TA} + \delta_2 \text{ST Debt/TA} + \delta_3 \text{Ln(TA)} + \delta_4 \text{Ln(Firm Age)} + \varepsilon \quad (5)$$

Thus, the regression equations (3) and (4) presented in previous chapter are re-estimated similarly as equation (5) to take into account the number of industries under study, i.e. except for the number of industries included in the analysis, equations include same variables in both random and main industry examinations. As can be seen from the regression equation (5), also in main industry analysis the industry effect is controlled by a binary variable approach. Hence, *Main industry*$_i$ is a dummy variable according to each main industry included in the analysis.

In addition to investigating the effect of family ownership on firm performance, it is also investigated, whether there are differences in firm performance between young and old as well as between small and big family firms. Also, since firm profitability is measured by two ways computed return on assets, i.e. EBITDA/ net income, also main industry analysis constitutes of totally six different regressions. As earlier, *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares and zero otherwise.

When the possible differences in firm performance between young and old as well as between small and big family firms are investigated interaction terms *Young Family Firm, Old Family Firm* as well as *Small Family Firm* and *Big Family Firm* are employed. Cross term *Young Family Firm* indicate a family firm, which age is below the sample median, i.e. 13.00 years. Similarly, *Old Family Firm* interaction dummy variable equals one when firm age is greater than or equal to the sample median. Similarly, if the value of *Ln(Total Assets)* is below the sample median value of 6.65, interaction dummy variable *Small Family Firm* is used to refer small family firms in the sample. On the other hand, if *Ln(Total Assets)* takes greater than or equal value than the value of sample median, family firm is classi-

fied as *Big Family Firm*. Leverage, firm size and the firm age are used as control variables in the same way as earlier in the random sample analysis. In addition, White (1980) heteroscedasticity-consistent standard error estimates are applied in all estimated regression models presented in the following table 6.

Table 6: Family Ownership and Firm Performance
(Main Industry Sample, *n* = 1,842)

This table reports results of regressing firm performance on family ownership. The firm performance is measured by *Return on assets* (*ROA*), which is earnings before interest, tax, depreciation, and amortization (EBITDA) or net income divided by the average book value of total assets. *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares. *Young FF* interaction dummy variable equals one when the age of the family firm is less than the sample median, i.e. 13.00 years. *Old FF* dummy equals one when the age of the family firm is greater than or equal to the sample median. Interaction term *Small FF* takes value of one when the value of *Ln(Total Assets*) is less than the sample median, i.e. 6.65, and firm is defined as family firm. *Big FF* dummy variable equals one when the value of *Ln(Total Assets)* of the family firm is greater than or equal to the sample median. *LT Debt/TA* is the book value of long-term debt divided by the book value of total assets. Similarly, *ST Debt/TA* is the book value of short-term debt divided by the book value of total assets. Both firm size and the firm age are measured using natural logarithms, i.e. *Ln(TA)* and *Ln(Firm Age)*, respectively. All regressions include dummy variables for five Norwegian main industries used in the analysis. Table presents the values of regression coefficients and their p-values in brackets. P-values are calculated based on the White (1980) heteroscedasticity consistent covariance matrix. The significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

	Return on Assets (EBITDA)			Return on Assets (Net Income)		
Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Intercept	30.531	26.671	29.766	18.088	15.969	17.734
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Family Firm	4.852			4.379		
	(<0.001)***			(<0.001)***		
Young FF		8.120			6.174	
		(<0.001)***			(<0.001)***	
Old FF		1.812			2.711	
		(0.175)			(0.015)**	
Small FF			5.240			4.559
			(<0.001)***			(<0.001)***
Big FF			4.203			4.079
			(0.011)**			(0.001)***
LT Debt/TA	-0.319	-0.319	-0.319	-0.355	-0.355	-0.355
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
ST Debt/TA	-0.207	-0.205	-0.207	-0.220	-0.219	-0.220
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Ln(TA)	0.203	0.235	0.298	1.061	1.078	1.104
	(0.639)	(0.584)	(0.524)	(0.006)***	(0.005)***	(0.010)**
Ln(Firm Age)	0.802	2.326	0.817	0.599	1.436	0.606
	(0.303)	(0.011)**	(0.296)	(0.344)	(0.058)*	(0.340)
F-value	21.160	20.661	19.063	34.519	31.843	31.060
p-value	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Adj. R square	0.090	0.096	0.089	0.141	0.143	0.140

Table 6 presents results of regressing return on assets on family ownership. First, in columns (1), (2), and (3) return on assets *(*ROA) is calculated dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average book value of total assets. Second, results in columns (4), (5), and (6) present ROA as the ratio of net income to the average book value of total assets. In columns (1) and (4) firm performance is regressed against family ownership, while results in columns (2) and (5) present, whether there is difference in firm performance between young and old family firms. In addition, results in columns (3) and (6) present, whether there is differences in profitability between small and big family firms. Overall, as can be seen from the table 6, in Norwegian five most important industries family firms do perform significantly better than non-family firms.

Thus, it appears that in SMEs which operate in highly competed industries, to which, for example, Norwegian main industries can justifiably to be described, individual ownership appears to be significantly more profitable ownership form than institutional ownership. Based on the average return on assets computed with EBITDA in the sample, family firms appear to return 27.84 percent more relative to non-family firms. Similarly, when net income approach is used in calculating return on assets, family firms return even 48.44 percent more relative to non-family firms.[21] Thus, results from Norwegian main industry sample suggest that non-listed family SMEs perform outstandingly better than non-family SMEs. As earlier presented, family firms are much smaller than non-family firms which, in turn, would indicate that the profitability in small firms is, on average, higher than in larger firms. Also regression results in columns (3) and (6) in the table 6 are consistent with this assumption. On the other hand, the sample used in the analysis could, at least in some extent, have an effect on the results

[21] Following the interpretation of Anderson & Reeb (2003), family firms' profitability relative to non-family firms is calculated as follows: Return = coefficient estimate/average return on assets. Thus, return on assets (EBITDA) = 4.852/17.43 = 0.2784. Similarly, when return on assets is computed with net income, return is: 4.379/9.04 = 0.4844.

on family firms' outstandingly better profitability relative to non-family firms.[22]

Thus, regression results in columns (1) and (4) in the table 6 are in line with a vast prior literature, which suggests that family firms are, in general, better performers than non-family firms. In addition, regression coefficients for interaction dummy variables *Young FF* and *Old FF* in column (2) suggest that young family firms are even more profitable than older family firms. More precisely, it seems that when return on assets is computed using EBITDA approach, the better performance of family firms is primarily driven by young family firms.

Also, for example, Anderson & Reeb (2003) found out that young family firms appear to be more profitable than older family owned firms. Thus, it was suggested that as firms become older, family members have less to contribute to firm's productivity and efficiency. Consequently, it was presented that the better performance of family firms would be attributable primarily to young family firms. However, Anderson & Reeb (2003) also pointed out that, although younger family firms have greater impact on firm profitability than older ones, both young and old family firms are significantly better performers than non-family firms. In other words, regardless of the firm age, family firms, on average, perform better than non-family firms. Also, results in the table 6 present that, when return on assets is computed with net income, coefficient estimates for cross terms *Young FF*

[22] For example, Anderson & Reeb (2003) presented evidence on S&P 500 firms, which suggested that when return on assets is computed with EBITDA, family firms return 6.65 percent more relative to non-family firms. In addition, they found out that when return on assets is computed using net income as the numerator, family firms appear to return 13.57 percent more relative to non-family firms. On the other hand, Martikainen & Nikkinen (2006) suggested based on Finnish SMEs data that when return on assets is computed with EBITDA, family firms return 15.05 percent more relative to non-family firms. Similarly, when net income approach was used in calculating return on assets, Martikainen & Nikkinen (2006) found out that family firms return 23.38 percent more relative to non-family firms. Thus, when comparing the results from the sample of large S&P 500 firms and unlisted SMEs presented by Anderson & Reeb (2003) and Martikainen & Nikkinen (2006), respectively, it could be assumed that the used sample affects results on family firms' better profitability relative to non-family firms. In other words, it seems that the smaller the sample firms are, the higher is the profitability of family firms relative to non-family firms.

and *Old FF* in column (5) suggest that both young and old family firms are more profitability than non-family firms, even though also in this approach younger family firms appear to perform even better than older ones. Thus, results regarding the profitability of family firms correspond well with ones presented, for example, by Anderson & Reeb (2003).

When analyzing columns (3) and (6) in the table 6, it seems that, whether return on assets is computed with EBITDA or net income, both small and big family firms return significantly more than non-family firms. However, there are slightly differences in firm performance between small and big family firms, which suggest that smaller firms would be even more profitable than larger family firms. Results regarding the firm size can be considered to be consistent with results concerning family firm age. Since young firms are generally also smaller than older firms and, because results indicated younger family firms to be more profitable than older ones, it is thus understandable that the results in columns (3) and (6) indicate smaller family firms to be more profitable than bigger family firms. The positive relation between firm age and size can be verified also from the regression panel C in the table 5.

On the whole, regression results indicate that, at least in some extent, the better performance of family firms appears to be driven by young family firms, i.e. firms which age is less 13.00 years. Thus, it would be quite justifiable to assume that in family firms which are defined here as young family firms, the founder of the firm is still actively involved in the business. Also, the fact that non-listed SMEs are here under study increases the possibility that, instead of professional outside manager, the founder is running the firm. Thus, when the founder of the family firm would still be in charge, agency problem I would not exist between family owners and management. In addition, results could also suggest on the positive effect of the founder on firm profitability.

For example, Villalonga & Amit (2006) presented evidence which indicated strongly that the founder of the firm in leading positions benefits the firm performance, while descendants appear to destroy it. More precisely, Villalonga & Amit (2006) found out that when founder still has an active role in the firm, i.e. as a CEO or a chairman with the hired CEO, firm performance is significantly better than if founder's descendant would run the firm. It could be assumed, that the negative descendant effect might be a result of the possible unwillingness of the descendants to run the firm, i.e. firm may come automatically as a heritage, although descendants would not be entrepreneurs as their parents. Thus, descendants may not have insights to develop the family business which, in turn, could lead the firm to poorer performance.

In addition, descendants might lead the firm to completely wrong direction. For example, descendants could also try to show their competence by conducting too radical actions, which could be detrimental to family business. After all, the positive founder effect on firm profitability could be the one possible explanation for the regression results presented in the table 6. However, the deeper analysis on the founder/descendants effects on firm profitability is left for later studies. In addition, it could be assumed that young firms are more innovative than older ones which, in turn, could have an effect on results.

Regression coefficients of both long- and short-term debt variables, i.e. *LT Debt/TA* and *ST Debt/TA*, have negative and statistically highly significant values across all regressions presented in columns (1)–(6). Consequently, it can be concluded that there is a negative relation between firm leverage and profitability. Thus, also in this respect results are similar to ones from random sample analyzed earlier in chapter 4.1. Also, for example, Maury (2006) and Martikainen & Nikkinen (2006) presented that leverage has a negative effect on firm profitability.

In addition, consistently across all regressions (1)–(6) coefficient estimates for both control variables of the firm size and age, i.e. *Ln(TA)* and *Ln(Firm Age*), take positive values. However, coefficients of *Ln(TA)* have statistically significant values only in columns (4)–(6), i.e. when return on assets is computed using net income as the numerator. On the other hand, *Ln(Firm Age)* takes statistically significant values only in columns (2) and (5). Consequently, due to regression coefficient values of interaction dummy variables and control variables of the firm size and age, it is appropriate to consider more deeply the values of coefficient estimates presented in the table 6.

Thus, regression results in table 6 present that the better performance of family firms relative to non-family firms is primarily attributable to young as well as small family firms. However, in columns (2) and (5) coefficient estimates for the control variable of firm age, i.e. *Ln(Firm Age*), suggest that the older the firm is, the higher is its profitability. Hence, it is rather confusing that the regression coefficients of *Ln(Firm Age)* in column (2) and (5) are positively significantly related with return on assets, although *Young FF* and *Old FF* interaction dummy variables indicate that young family firms perform even better than older family firms. In addition, it was already earlier found out, i.e. from the panel C of the table 5, that the firm size is positively related to firm age.

Hence, it can be found out that coefficient estimates in columns (5)–(6) for interaction dummy variables, i.e. *Young FF* and *Old FF* as well as *Small FF* and *Big FF*, and for control variable of firm size, i.e*. Ln(TA)* are contradictory with one another. Results indicate that younger family firms are even better performers than old family firms as well as small family firms appear to perform slightly better than big family firms, while firm size control variable indicates that the bigger the firm, the better is the firm profitability.

When considering these rather contradictory values of coefficient estimates of interaction family firm dummy variables and control variables of firm size and age, it could be concluded that there is a negative relationship between the firm age and return on assets among family firms, i.e. the younger the family firm, the better the profitability. On the other hand, it could be assumed that coefficient estimates for the control variable of firm age would indicate on positive relation between firm age and profitability among non-family firms. In order to confirm these assumptions on the relation between firm age and firm profitability among family as well as among non-family firms, the effect of firm age on firm performance among both family and non-family firms is examined by further regression analysis. In addition, the relation between firm age and profitability is investigated visually. The graphical analysis also reveals, whether the relation between firm age and profitability is linear or not. Both regression results and correlation graphs are presented in appendixes 1 and 2, respectively.

The regression results in appendix 1 present that, the relation between firm age and profitability is negative and statistically significant among sample family firms, whereas it appears that among non-family firms firm age is positively related to return on assets. Thus, the complementary regression analysis confirms the earlier presented assumption on the relation between firm age and profitability among family and non-family firms. In other words, results indicate that when firm is a family firm, young firms, on average, perform better than older family owned firms, whereas older firms appear to be more profitable than younger ones among non-family firms.

When analyzing the correlation graphs presented in appendix 2, it can be seen that neither among family nor non-family firms the relation between firm age and profitability is linear. For example, figures 1 and 2 in appendix 2 presents that among both family and non-family firms, firm profitability increases and declines rather randomly. Nevertheless, among family firms profitability starts to improve again when firm age is greater than 16 years,

while among non-family firms profitability starts to taper off when firm age is greater than 18 years. However, as sample statistics in panel A of the table 5 presents, the oldest firms in the sample are only 19 years old and, thus, too far going conclusions on the relationship between firm age and profitability can not be made based on this sample and presented correlation results.

In addition, although the complementary regression models presented in appendix 1 were estimated by using only EBITDA approach in calculating return on assets, also results presented in columns (5)-(6) in the table 6 can be interpreted justifiably by noting that, it appear that young family firms perform slightly better than older ones, while among non-family firms firm age affects positively firm profitability. Altogether, it can be stated that regression results presented in table 6 are confirmed by analysis presented in appendixes.

When going through to the end of the table 6, it can be seen that due to statistically significant regression coefficient estimates, *F*-test statistics rejects very strongly the null hypothesis that all of the coefficient estimates of explanatory variables, except the intercept coefficient, are zero. In addition, the values of adjusted R^2 are reported at the end of the table 6. Thus, it appears that in the first three regression models, independent variables are able to explain about nine percent of the total variability of the dependent variable. On the other hand, in regressions (4)–(6) the power of explanation of the regression is about 14 percent. Consequently, the values of adjusted R^2 for regressions (1)–(6) in the table 6 are somewhat higher than ones presented in the table 3 for the random sample.

4.3 Robustness Tests

Regression results in the table 6 indicated that, on the whole, in the sample of Norwegian main industries family ownership, i.e. individual ownership, contributes better firm performance than institutional ownership. In other words, when return on assets (EBITDA/net income) was used as a performance measure, family firms appeared to perform outstandingly better than institutionally owned non-family firms. In addition, the deeper analysis revealed that young as well as small family firms outperform non-family firms but also older and bigger family firms. However, also old and big family firms appeared to be better performers than non-family firms, except for old family firms when return on assets was computed using EBITDA approach. Thus, results suggested that family firms' better performance is mainly attributable to young and small family firms. Overall, based on results from Norwegian five most important industries, it could be concluded that family ownership in non-listed SMEs is more profitable ownership form than institutional ownership.

In order to ensure the robustness of earlier presented regression results to various alternative specifications, first, outliers of return on assets are removed from the sample of Norwegian main industry firms. Thus, observations are put in order by the values of return on assets, after which high (positive) and low (negative) return on assets outlier observations are deleted from the sample. Sample outliers are detected also graphically.

When return on assets is computed using EBITDA approach, observations which return on assets value is less than -60 percent or greater than 100 percent were deleted from the sample. Thus, totally eight outlier observations were deleted from the original sample. More precisely, deleted negative outliers consisted of two non-family and two family firms, while all deleted positive outlier observations were family firms. On the other hand, when net income was used as the numerator in calculating return on assets ratio, observations which return on assets value was less than -100

percent or greater than 80 percent were deleted from the sample. Also in this case totally eight observations were deleted from the sample, i.e. six positive outlier observations and two negative outliers. Only one of the deleted positive outliers was non-family firm, whereas both two negative outliers were non-family firms.

Thus, regression results from this way reconstructed data set would be independent from outlier observations. In other words, by investigating the sample which is cleaned from outliers, it is possible to find out, whether earlier regression results in table 6 were driven by positive return on assets outliers of family firms as well as negative return on assets outliers of non-family firms.

Regression results on the reconstructed sample are presented in the following table 7. Otherwise, regression analysis is conducted similarly as one presented in the table 6. Thus, in columns (1), (2), and (3) return on assets is calculated dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average book value of total assets. Second, in columns (4), (5), and (6) return on assets is presented as the ratio of net income to the average book value of total assets. Hence, the effect of family ownership as well as the effect of age and size of the family firm on firm profitability is investigated by both ways computed return on assets.

Table 7: Robustness Test on the Relation between Family Ownership and Firm Performance (Main Industry Sample, *n* = 1,834)

This table reports results of regressing firm performance on family ownership. The sample is reconstructed by deleting return on assets (EBITDA/net income) outliers. When return on assets is calculated using either EBITDA or net income approach, totally eight observations are removed from the original sample in both cases. *Return on assets* (*ROA*) is earnings before interest, tax, depreciation, and amortization (EBITDA) or net income divided by the average book value of total assets. *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares. *Young FF* interaction dummy variable equals one when the age of the family firm is less than the sample median, i.e. 13.00 years. *Old FF* dummy equals one when the age of the family firm is greater than or equal to the sample median. Interaction term *Small FF* takes value of one when the value of *Ln(Total Assets*) is less than the sample median, i.e. 6.65, and firm is defined as family firm. *Big FF* dummy variable equals one when the value of *Ln(Total Assets)* of the family firm is greater than or equal to the sample median. *LT Debt/TA* is the book value of long-term debt divided by the book value of total assets. Similarly, *ST Debt/TA* is the book value of short-term debt divided by the book value of total assets. Both firm size and the firm age are measured using natural logarithms, i.e. *Ln(TA)* and *Ln(Firm Age)*, respectively. All regressions include dummy variables for five Norwegian main industries used in the analysis. Table presents the values of regression coefficients and their p-values in brackets. P-values are calculated based on the White (1980) heteroscedasticity consistent covariance matrix. The significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

	Return on Assets (EBITDA)			Return on Assets (Net Income)		
Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Intercept	32.301	29.142	31.637	17.739	15.903	17.777
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Family Firm	3.920			3.533		
	(0.001)***			(<0.001)***		
Young FF		6.550			5.069	
		(<0.001)***			(<0.001)***	
Old FF		1.498			2.113	
		(0.244)			(0.039)**	
Small FF			4.257			3.514
			(0.002)***			(0.002)***
Big FF			3.358			3.566
			(0.028)**			(0.001)***
LT Debt/TA	-0.305	-0.305	-0.305	-0.332	-0.332	-0.332
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
ST Debt/TA	-0.206	-0.204	-0.206	-0.200	-0.199	-0.200
	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Ln(TA)	-0.017	0.015	0.065	0.926	0.941	0.921
	(0.968)	(0.971)	(0.885)	(0.010)**	(0.008)***	(0.020)**
Ln(Firm Age)	0.704	1.933	0.717	0.550	1.271	0.550
	(0.316)	(0.019)**	(0.308)	(0.317)	(0.047)**	(0.319)
F-value	21.106	20.137	19.010	34.807	31.979	31.309
p-value	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***	(<0.001)***
Adj. R square	0.090	0.095	0.089	0.142	0.145	0.142

Overall, results in table 7 confirm regression results on Norwegian main industry sample presented earlier in the table 6. Hence, results from re-constructed data suggest that family ownership contributes better firm performance in non-listed SMEs than institutional ownership. In addition, results regarding the performance of young and old as well as small and big family firms are virtually identical to ones presented in table 6. In other words, also results in the table 7 indicate that the better profitability of family firms is primarily attributable to young as well as small family firms. In addition, regression results concerning control variables can be interpreted similarly as ones presented earlier in the table 6.

In addition to removing return on assets outliers, the sensitivity of main regression results presented in the table 6 is tested by employing different set of control variables. As in earlier presented regression analysis, the control variables of both short-and long-term leverage as well as firm size and age variables are included in the re-estimated regression equation. However, while same leverage and firm age control variables are employed in the following robustness test, the firm size is measured differently than in earlier regressions. Next, instead of *Ln(TA),* the number of employees is used as a control variable of firm size. Thus, when the effect of family ownership on firm profitability is investigated, the modified regression equation takes the following form:

$$ROA = \alpha_0 + \sum_{i=1}^{N=4} \alpha_i \text{Main Industry}_i + \beta_1 \text{Family Firm} + \delta_1 \text{LT Debt/TA} + \delta_2 \text{ST Debt/TA} + \delta_3 \text{No of Employees} + \delta_4 \text{Ln(Firm Age)} + \varepsilon \quad (6)$$

Thus, when the effect of firm age on family firm's profitability is investigated, family firm dummy variable in the equation (6) is replaced by interaction dummy variables of *Young FF* and *Old FF*. Similarly, when the impact of firm size on the profitability of family firms is examined, family firm dummy variable is replaced by *Small FF* and *Big FF* interaction dummy variables. Hence, regression results from these modified regression models are presented in the following table 8.

Table 8: Robustness Test on the Relation between Family Ownership and Firm Performance (Main Industry Sample, *n* = 1,834)

This table reports results of regressing firm performance on family ownership. The sample is reconstructed by deleting return on assets (EBITDA/net income) outliers. When return on assets is calculated using either EBITDA or net income approach, totally eight observations are removed from the original sample in both cases. *Return on assets* (*ROA*) is earnings before interest, tax, depreciation, and amortization (EBITDA) or net income divided by the average book value of total assets. *Family Firm* is a binary variable that equals one when one individual or a family owns at least 50 percent of firm shares. *Young FF* interaction dummy variable equals one when the age of the family firm is less than the sample median, i.e. 13.00 years. *Old FF* dummy equals one when the age of the family firm is greater than or equal to the sample median. Interaction term *Small FF* takes value of one when the value of *Ln(Total Assets*) is less than the sample median, i.e. 6.65, and firm is defined as family firm. *Big FF* dummy variable equals one when the value of *Ln(Total Assets)* of the family firm is greater than or equal to the sample median. *LT Debt/TA* is the book value of long-term debt divided by the book value of total assets. Similarly, *ST Debt/TA* is the book value of short-term debt divided by the book value of total assets. Control variable of firm size is *No of Employees,* while the firm age is measured by *Ln(Firm Age)*. All regressions include dummy variables for five Norwegian main industries used in the analysis. Table presents the values of regression coefficients and their p-values in brackets. P-values are calculated based on the White (1980) heteroscedasticity consistent covariance matrix. The significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively

	Return on Assets (EBITDA)			Return on Assets (Net Income)		
Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Intercept	32,885	29,888	32,825	24,063	22,348	24,475
	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***
Family Firm	3,189			1,351		
	(0,001)***			(0,082)*		
Young FF		5,791			2,835	
		(<0,001)***			(0,009)***	
Old FF		0,631			-0,108	
		(0,581)			(0,907)	
Small FF			3,266			0,824
			(0,003)***			(0,342)
Big FF			2,938			3,088
			(0,054)*			(0,006)***
LT Debt/TA	-0,303	-0,303	-0,303	-0,323	-0,323	-0,325
	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***
ST Debt/TA	-0,205	-0,203	-0,205	-0,203	-0,202	-0,203
	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***
No of Employees	-0,041	-0,042	-0,040	-0,029	-0,030	-0,031
	(0,008)***	(0,006)***	(0,009)***	(0,012)**	(0,010)**	(0,007)***
Ln(Firm Age)	0,795	2,069	0,813	1,018	1,743	0,900
	(0,247)	(0,011)**	(0,243)	(0,059)*	(0,006)***	(0,100)
F-value	21,856	20,871	19,664	34,077	31,312	30,977
p-value	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***	(<0,001)***
Adj. R square	0,093	0,098	0,092	0,140	0,142	0,141

Regression results also in the table 8 confirm the results of main industry analysis presented in the table 6. Thus, it can be concluded that in non-listed SMEs which are operating in most important Norwegian industries, family ownership, i.e. individual ownership, is a significantly more profitable ownership form than institutional ownership. More precisely, table 8 presents that whether return on assets is calculated using either EBITDA or net income approach, family firms appears to be significantly better performers than non-family firms. Also consistent with earlier results, it seems that the better performance of family firms is primarily attributable to young family firms. Moreover, this effect of firm age on the profitability of family firms is even more evident when return on assets is calculated using net income as the numerator. Thus, it seems that old family firms are less profitable than non-family firm but this result, however, is not statistically significant.

In addition, when EBITDA is used in calculating return on assets, results in column (3) are consistent with earlier regression results which suggest that small family firms are significantly better performers than non-family firms and also are slightly more profitable than big-family firms. However, as can be seen from the column (6) in the table 8, when return on assets is calculated with net income, big family firms seems to perform better than non-family firms as well as small family firms. Thus, it can be seen that this result is in contrast to corresponding results presented in the table 6. However, although there is some differences between results presented in tables 6 and 8, results in the table 8 are however virtually unaffected by the modification of regression models. Hence, it can be noted that overall results in the table 8 are virtually identical with ones from the original analysis presented in the table 6, i.e. family SMEs are significantly more profitable than institutionally owned SMEs.

On the whole, it can be concluded that regression results presented in this study are robust to heteroscedasticity, multicollinearity, outliers and alternative sets of control variables. In sum, results from the Norwegian main

industry sample are indicating strongly that among unlisted SMEs family ownership is significantly more profitable ownership form than institutional ownership.

Due to the sample used, it could be concluded that relative to institutional ownership, family ownership appears to bear substantial advantages on firm performance in highly competed industries, which main industries of the economy generally are. Also, it appears that among family firms but also relative to non-family firms, the small size of the family firm appears to affect positively firm profitability. Thus, it can be noted that results on the superior performance of family firms presented in this study are also consistent with earlier literature (e.g. Anderson & Reeb (2003), Villalonga & Amit (2006), Martikainen & Nikkinen (2006), etc.).

5 SUMMARY AND CONCLUSIONS

This study examined the effect of family ownership on firm performance. Numerous prior studies have investigated the effect of family ownership on firm performance in non-listed small and medium-sized enterprises, i.e. SMEs, as well as in quoted large firms. Hence, the evidence on the differences in firm performance between family and non-family firms is carried out by accounting as well as by market based measures. There is a vast prior literature, which suggests that family firms appear to be better performers than non-family firms. However, also contradictory results have been presented.

Because the effect of family ownership on firm performance is an empirical issue, it is investigated in this study, whether non-listed family SMEs are better or worse performers than institutionally owned SMEs. Thus, in this study the firm performance is measured by profitability measures of return on assets, which is computed in two alternative ways, i.e. EBITDA/net income divided by the average total assets. In addition, this study concentrates on SMEs, since the proportion of family ownership is, in general, greater and more prevalent in non-listed SMEs than in publicly listed large firms. Thus, it is also reasonable to assume that the effects of the family ownership on firm performance are more evident in SMEs than in larger, publicly listed firms.

Academic research has been interested in the effects of ownership structure on firm performance already from 1970's. For example, Ross (1973) investigated the effects of the separated ownership-management structure on firm performance. Later, Jensen & Meckling (1976) developed these thoughts to the principal-agent theory, which can be said to be one of the most well-known theories in finance. However, family ownership attained increasing interest only in late 1990's and 2000's. Since then, numerous studies have investigated, whether family ownership, i.e. individual ownership, bears advantages compared to institutional ownership.

For example, James (1999) suggested that family owners consider their firm as a heritage for later generations which, in turn, naturally extends the time horizon of business decisions and enables family firms to perform better than their non-family counterparts in the industry. Hence, it was assumed that the extended time horizon is inherently typical feature of family firms. James (1999) also proposed that family ties, loyalty, stability and insurance may provide incentives for family managers to ensure the viability and competitiveness of the firm in the future. Also, Casson (1999) and Anderson et al. (2003) suggested that family owners find it important to pass their firm as a heritage to succeeding generations and, thus, family members can be characterized as long-term owners.

However, James (1999) also admitted that the combined ownership-management structure in family firms may cause severe problems, which might decrease or even destroy the advantages achieved by family-manager control structure. For example, favoring family members at the expense of more talented non-family workers, conflicts between family members, tax issues relating to the transferring of the firm to descendants, and the unwillingness of family heirs to run the business were brought out as possible factors which may lead the family firm to poor performance. However, several researches have assumed that, on the whole, the positive features of family ownership affect more on firm performance than, for instance, the negative ones presented above.

Recently, among others, Anderson & Reeb (2003), Villalonga & Amit (2006), Maury (2006) and Martikainen & Nikkinen (2006) have suggested that, overall, family firms are better performers than non-family firms. In addition, for example, Villalonga & Amit (2006) investigated the effects of family ownership on firm performance in great detail. They presented evidence that the founder and founder's descendants in leading positions have a different effect on firm performance. More precisely, it was suggested that the active involvement of founders benefits firm performance, while descendants have a negative effect on firm performance. Thus, it

was found out that family management creates value for all shareholders only when founder of the firm act either as a CEO and Chairman or as a Chairman with a hired CEO. On the other hand, results indicated that firm value suffers detrimentally when descendants act as a CEO or Chairman of the Board. Actually, even if founder acted as a Chairman with descendant CEO, firm value was still suffering from the descendant manager.

In addition, Villalonga & Amit (2006) found out that firm value is highest when the founder acts as a CEO and there are no control enhancing mechanisms, i.e. there exist neither agency problems between owners and managers nor between majority and minority owners. Also, Anderson & Reeb (2003) presented that the CEO status in family firms affects firm performance. Thus, findings of both Anderson & Reeb (2003) and Villalonga & Amit (2006) suggest that not only the family ownership but also the management and control arrangements in family owned firms affect firm performance.

In this study it was investigated, whether individual, i.e. family ownership, contributes better firm performance than institutional ownership. In addition, it was examined, whether there are differences in firm performance between young and old as well as between small and big family firms. The empirical analysis was carried out with Norwegian SMEs data. Norway offers a special data environment for a couple of reasons. First, as in other Nordic countries as well as practically all over the world, the importance of SMEs is substantial for the whole Norwegian economy. In addition, Norway can be defined as one of the wealthiest countries in the world. Thus, this study contributes previous literature by providing empirical evidence on the importance of SMEs and family ownership in an economy, which leans on both natural resources and technological development, and which has high standards of living.

The empirical analysis was conducted by a univariate as well as multivariate approaches. However, the effect of family ownership as well as the

effects of both firm age and size on the profitability of family firms was investigated by employing the linear regression analysis. Two samples of SMEs were employed in the analysis, i.e. the random sample and the sample of SMEs operating in five most important Norwegian industries.

Results from the random sample indicated that there is no statistically significant difference in firm performance between family and non-family firms. However, results from the main industry sample suggested that family ownership is a significantly more profitable ownership form than institutional ownership. Thus, results could be interpreted by stating that in highly competed industries family ownership appears to bear significant advantages compared to institutional ownership. In addition, results suggested that the better performance of family firms is primarily attributable to young, i.e. generally rather small, family firms.

In the light of the prior literature on the performance of family firms, it could be concluded that positive family firm characteristics, for example the extended time horizon of family members, could have an impact on results presented also in this study. In addition, since the significantly better profitability of non-listed family SMEs relative to institutionally owned SMEs was primarily driven by young family firms, it could be concluded that, at least in some extent, results may indicate on the positive founder effect on firm performance. After all, it is rather justifiably to assume that in young family SMEs, founder is still running the business. However, due to the information available in this study, too far going conclusions on the relation between the founder or descendant manager and firm performance should not be made.

Also, results suggested that small family firms perform somewhat better than larger family firms. However, since young firms appeared to be also smaller than older ones, this result can be seen to be related to the positive effect of young firm age on the profitability of family firms. On the whole, the empirical evidence indicated that among SMEs operating in

highly competed industries, family ownership appears to be outstandingly more profitable ownership form than institutional ownership.

In order to investigate more carefully the relation between different aspects of family firms and firm performance, the examination of the founder and descendants' effects as well as the impact of different control enhancing mechanisms on firm performance is left for later studies. Thus, it is also worth studying, whether there exist possible nonlinearities between family ownership and firm performance.

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APPENDIX 1: Complementary Regression Models for Main Industry Analysis in Table 6

Table 1: The Effect of Firm Age on Firm Performance among Family and Non-Family Firms (*n* = 1,842)

This table reports complementary results for the table 6 of regressing firm performance on firm age. Column (1) presents regression results for family firms in the main industry sample, whereas results for non-family firms are presented in the column (2). *Return on asset* (*ROA*) is used as a measure of firm performance and it is computed by dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average book value of total assets. *Family Firm* refers firms where one individual or a family owns at least 50 percent of firm shares. Non-family firms are firms where bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50 percent of shares. Firms which are owned by definition by public authorities, states, and governments are excluded from the sample as well as holding companies (SIC K .74.15). *Age(Family Firm)* and *Age(Non-Family Firm)* are continuous variables of firm age in years for both family and non-family firms, respectively. *LT Debt/TA* is measured as the book value of long-term debt divided by the book value of total assets. Similarly, *ST Debt/TA* is measured as the book value of short-term debt divided by the book value of total assets. Firm size is measured by taking natural logarithm on total assets. Regarding control variables, regression models presented in this table 1 differ from the main regression analysis provided in tables 3 and 6, because the control variable *Ln(Firm Age)* is dropped from regression models due to multicollinearity. Table presents the values of regression coefficients and their p-values in brackets. P-values are calculated based on the White (1980) heteroscedasticity consistent covariance matrix. The significance of the variables is examined at ten, five, and one percent levels (*/**/***), respectively.

	Return on Assets (EBITDA)	
Variable	Model (1)	Model (2)
Intercept	34.541	25.592
	(<0.001)***	(<0.001)***
Age (Family Firm)	-2.139	
	(<0.001)***	
Age (Non-Family Firm)		0.244
		(0.061)*
LT Debt/TA	-0.495	-0.183
	(<0.001)***	(<0.001)***
ST Debt/TA	-0.416	-0.058
	(<0.001)***	(0.200)
Ln(TA)	2.208	-0.660
	(0.005)***	(0.185)
F-value	23.372	6.706
p-value	(<0.001)***	(<0.001)***
Adj. R square	0.199	0.042
Observations	812	1030

APPENDIX 2: Correlation Graphs on the Relation between Firm Age and Firm Profitability in Table 6

Figure 1: Relation between Return on Assets (EBITDA) and Firm Age among sample Family Firms (*n* = 812)

The figure 1 presents the relationship between return on assets and firm age (years) among sample family firms. Return on assets is computed by dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average total assets. Family firms refer firms, where one individual or a family owns at least 50 percent of firm shares. Holding companies (SIC K .74.15) are excluded from the sample.

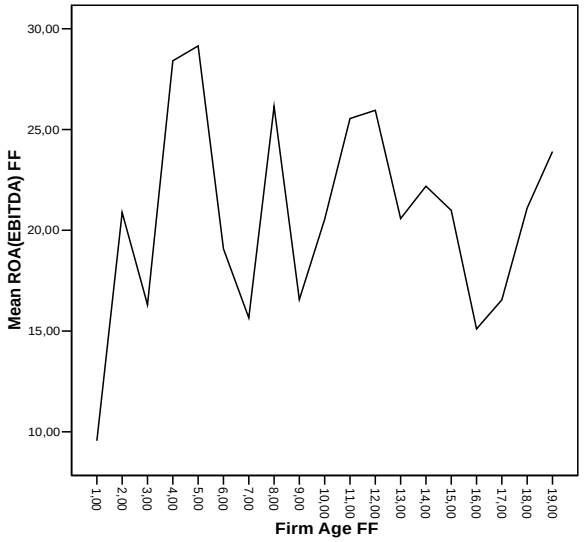

Figure 2: Relation between Return on Assets (EBITDA) and Firm Age among sample Non-Family Firms (*n* = 1030)

The figure 2 presents the relationship between return on assets and firm age (years) among sample non-family firms. Return on assets is computed by dividing earnings before interest, tax, depreciation, and amortization (EBITDA) by the average total assets. Non-family firms are firms where bank or financial company, insurance company, industrial company, mutual or pension fund/ nominee/ trust/ trustee, foundation/ research institute, publicly listed company or private equity firm owns at least 50 percent of firm shares. Firms which are owned by definition by public authorities, states, and governments are excluded from the sample as well as holding companies (SIC K .74.15).