BI Norwegian Business School - Thesis

- The effect on firm performance when a dilution of family control occurs in family firms-

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Abstract

This paper investigates how Norwegian family firm's performance is affected by a dilution of family ownership control. Family firms hold unique firm characteristics and we explore if these characteristics change together with ownership dilution, and can be possible reasons for a change in firm performance for the firms that go through a family ownership dilution. Lastly we study how family ownership affect the firm's survival. We have used data from 2000-2013 gathered from the Centre of Corporate Governance Research. Our findings show that the family firms that go through a family ownership dilution have lower firm performance than the family firms that remain family control over the firm during the whole time period. The typical characteristics of having a family member CEO, small size of the firm, few owners and higher asset turnover (ATO) are found to have positive impact on firm performance. No support was found for that an increased debt-to-equity was associated with lower firm performance, and there is not enough evidence to say whether the difference in long-term debt ratio had an impact on return on assets (ROA). However, the firms that dilute family control are found to have higher probability to survive longer. Our results are considered overall robust to alternative definitions and measurements.

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1.0 Introduction

Family firms account for a large proportion of all business entities world wide; in most countries around 70% - 95% of all businesses are family firms (Family Firm Institute 2016). Obviously, these firms play an essential role for world economy, society and social responsibilities. According to Berzins and Bøhren (2013) in Norway alone, these type of firms account for around two third of all private limited liabilities (AS) and public (ASA) business entities in the Norwegian economy. In their study they found that Norwegian family firms outperform nonfamily firms, measured by return on assets (ROA).

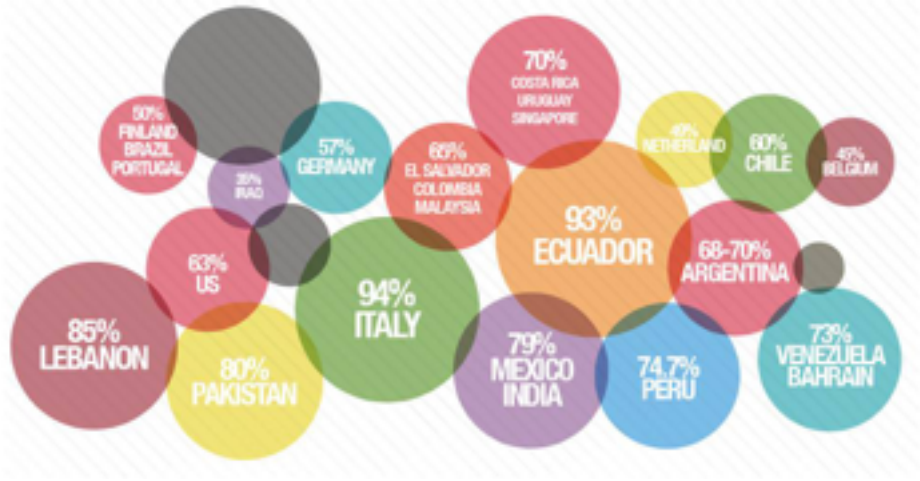

Figure 1: Percentage of family business contribution to National GDP (Family Firm Institute 2016)

Their findings are in line with prior international family business research (e.g. Anderson and Reeb (2003) and Maury (2006)). Family firms have been a widely explored topic internationally in recent years in the business literature in order to address the characteristics of why family firm performance is greater than nonfamily firms (Garcia-Castro and Aguilera 2014). Some of the characteristics that contributes to greater performance is that corporate governance and business management is cohered, in contrast to nonfamily firms. This leads to better alignment of interests, meaning that family firms are able to avoid agency conflicts (Berzins and Bøhren 2013). In addition, family firms are more risk-averse compared to nonfamily firms, indicating thinking and planning in a long-term perspective and avoiding risky investments in order to pass the firm to the

next generation (e.g. Breton-Miller, Miller, and Steier 2004; and Bouzgarrou and Navatte 2013).

However, previous studies show that research of family firms' performance is sensitive to different methods of performance measurements (e.g. ROA, ROE and Tobin's q (e.g. Anderson and Reeb (2003), Miller et al. (2007) and Maury (2006)), which definition of family firms used in the study (Miller et.al 2007, 832) and which sample that is analysed. In this regards, ambiguous results are found about family firms' performance and a universal conclusion cannot be drawn. To further explore family firms' performance, we will use definitions in accordance with Berzins and Bøhren's (2013) definitions; firms are classified as *family firms* when the ultimate share ownership by the largest family is above 50%. In order to be considered as a *family*, the individuals need to be connected through marriage or through kinship in a straight-line included great-grandparents or in side-line even with cousins. To conduct our research, we have used unique data from the database Centre of Corporate Governance Research (CCGR) controlled by BI Norwegian Business School.

1.1 Motivation

To our knowledge, most previous studies within this field primarily focused on family firms' performance compared to nonfamily firms' performance. Norwegian family firms do not seem to have obtained considerable amount of attention, taken into account the importance of these organisations in the Norwegian economy. Therefore, our motivation is to contribute with a new aspect to the Norwegian family firm literature, by exploring how the firms' performance is affected for the family firms that go through a family ownership dilution. To investigate this, we will analyse the firms that initially were family firms, but later dilute family control when the ultimate share ownership drops to below our defined threshold of 50%, and per definition then is no longer a family firm.

The purpose of this research is to find out whether family firms' performance changes for the firms that transfer from being a family firm to a nonfamily firm, per definition. Furthermore, if there is a change in performance, we will identify which of the unique family firm characteristics from the literature that are present

in our family firm sample compared to nonfamily firm sample. Then we will investigate if these characteristics change together with an ownership dilution, and can be possible reasons for a change in firm performance. The typical characteristics of family firms will be elaborated in the literature review section. As family firm characteristics differ from nonfamily firms, and these are stated to be a significant factor for firm performance (Miller, Le Breton-Miller and Scholnick 2008), we will enhance the understanding of whether these characteristics are important features that affect firm performance. Based on previous studies, we assume that the performance will be lower for firms that go through a family ownership dilution, rather than remaining family control, and then we can say that family ownership *do* have a positive impact on firm performance. Therefore, we have developed the research questions as the following,

What is the effect on the firm's performance when a dilution of family control occurs, and what characteristics could be a reason for the plausible change in performance? In addition, how will this affect the firms' survival?

More specifically, we question whether having family ownership control determine greater firm performance. We will extend the research by analysing whether the unique characteristics that have been identified in family firms also changes in line with family control. Then we will explore whether these characteristics can affect firm performance and firm survival for the firms that go through a family ownership control dilution.

1.2 Outline

The paper is organized in the following way; section 2 outlines previous studies and theories about family firms and typical characteristics found in family firms relevant for our study, followed by relevant historical events. Section 3 elaborate the descriptive statistics of our sample, and here we identify whether the typical characteristics of family firms are present in our sample in order to develop our hypotheses. In section 4 we present our hypotheses. We describe the data sample we have used in section 5. In section 6 we introduce the variables we use in our regression models. We describe the method we have used in section 7. Section 8

presents the regression models for each hypothesis. In section 9 we present our findings and results. In section 10 the robustness testing is found. Lastly, in section 11 we conclude the study and present some limitations.

2.0 Literature Review

In the following section we will present existing literature that is relevant for our study of Norwegian family firms.

2.1 Agency theories

There are four common types of agency conflicts; I) between the owners and the management; II) between the major and minor shareholders; III) between the owners and the creditors; and IV) between the owners and the rest of the stakeholders (Bøhren 2011). The ownership mechanism carries unique characteristics in family firms, and one of the purposes of the ownership mechanism is to reduce the conflict of interests to a reasonable level (Bøhren 2011). Therefore, agency theories in family firm context have received profound attention in family firm business literature (e.g. Chrisman et al. 2007; Anderson, Mansi and Reeb 2003; Villalong and Amit 2006)

2.1.1 Agency conflict I - The conflict between owners and managers

The conflict between the owners and the management can be one of corporates' costliest conflicts. Agency theory assumes that a) owners and managers have conflicting goals; b) managers may pursue their own goals even to the disadvantage of owners; c) parts of the manager's behaviour is difficult for the owners to observe; and d) owners have bounded rationality (Jensen and Meckling 1976; and Williamson 1981). Therefore, little is required for this conflict to possible arise, causing unnecessary use of resources and is difficult to completely avoid or reduce.

According to Berzins and Bøhren (2013), 69% of family's ownership represents on average both the management and the owners in Norwegian family firms. In 98% of the family firms, the largest ultimate shareholder (the family) is represented in the board, and in 74% of the cases the CEO is from the largest family. By this, agency conflict I is most likely reduced in most family firms as the owners, the board and management are cohered. The board therefore hold more of an advisory role than a monitoring role of the management.

Reducing this conflict to a reasonable level enhances efficient decision-making, leading to enhance firm performance. This is supported by Maury (2006) who found that family firms perform better than nonfamily firms when the family has active control, while passive family control does not affect firm performance, which is in line with Anderson and Reeb's (2003) findings.

2.1.2 Agency conflict II - The conflict between major and minor shareholders

Villalonga and Amit (2006) argue that agency conflict II is the dominating conflict in family firms. The conflict arises if "the large shareholder may use their controlling position to extract private benefits at the expense of the minority shareholders" (Villalonga and Amit 2006, 387), resulting in a destructive relationship. Hence, if the large shareholder is a large coperation or an institution with many owners, the private benefits are dispersed widely among all their owners. Therefore, the incentives are low for these large shareholders to expropriate the minority shareholders. Hence the large shareholders might have larger incentives to monitor the manager instead, leading us back to agency conflict I. However, there is a presence of greater incentives for both expropriation and monitoring if the major shareholder is an individual or a family, which then can lead to agency conflict II dominating agency conflict I (Villalonga and Amit 2006, 387). Therefore, the absence of agency conflict I suggests greater performance, but might rise the conflicts between the family and minority shareholder when shareholder protection is low (Maury 2006).

Agency conflict II will increase in line with the increase of ownership concentration, but would be eliminated for firms with families holding 100 percent ultimate ownership. However, in that situation agency conflict II can still be present for internal family conflicts, as one cannot equate family ownership and interest alignment. In Norwegian family firms, the largest shareholder holds on average 79% of the shares and the whole family holds on average 93%. Thereby, misalignment of interests and a need for monitoring the controlling family might occur, causing agency conflicts and creating a destructive relationship (Berzins and Bøhren 2013).

2.1.3 Agency conflict III - The conflict between owners and creditors

This conflict typically arises when firms have significantly higher level of debt than equity. The owners want high return, which is linked to more risk, while the creditors do not have the same incentives for risk and are more concerned about the repayment of debt (Bøhren 2011). Even though family firms are found risk averse and avoid debt (McConaughy and Mishra 1999), family's low willingness to raise new capital leads them to be more dependent on a strong relationship to banks and other mortgage credit institutions (Ampenberger, Bennedsen and Zhou 2012), and thus aligned interests with their creditors.

2.1.4 Agency conflict IV - The conflict between owners and the stakeholders

The last conflict is related to the conflict between the rest of the stakeholders who are not involved in the three aforementioned conflicts. These are then the rest of the parties whom are affected by what the firm do or do not do; they are among other employees, suppliers and customers (Bøhren 2011). In that sense, when firms are small – as the majority of family firms in Norway are (Berzins and Bøhren 2013) and if the environmental impact is low -, these conflicts could be reduced. On the other side, an increase in these agency costs are worth bearing when the benefits of increased production and sales volume dominate the cost of this agency conflict.

2.2 Stewardship Perspective versus Stagnation Perspective

The stewardship perspective has obtained increased attention in recent organisational research (e.g. Donaldson 1990; Fox and Hamilton 1994; and Chrisman et al. 2007), and has further been applied to research about family firms. According to Miller, Le Breton-Miller ad Scholnick (2008), there are two major perspectives concerning the nature of family firms; the characteristics of *stewardship* and that family firms are subjected to *stagnation.* "The stewardship perspective concerns that families are set to care deeply about the long-term prospect of the firm as the family's fortune and reputation is at stake. While the latter perspective evolved on the basis that families face resource restrictions, practise nepotism and pursue conservative strategies, leading to slow growth and short lives" (Miller, Le Breton-Miller ad Scholnick 2008, 51).

The family's particular interest for the continuity of the firm is supported by several scholars (e.g. Casson 1999; Zellweger 2007; and Chami 2001). According to James (1999), the founder perceives their firm as an asset to pass on to the next generation instead of consuming it during his/her lifetime (Ben-Amar and Andre 2006, 521). In that sense, family firms pursue strategies that benefit the long-term. Miller, Le Bretton-Miller and Scholnick (2008) found support for family firms' practises of long-term-oriented investments in reputation - and market share development, and customer relationship to ensure the longevity of the firm. In addition, they found that families invest in building a motivated team of employees, and especially managers, with common goals and values, to prolong the durability of the firm's existence.

Even though Miller, Le Breton-Miller and Scholnick (2008) did not find support for the stagnation perspective in their sample of small family firms, several other authors find support for the stagnation perspective of family firms. Some families behave altruistically towards their descendants and provide employment opportunities in the firm (Lubatkin, Ling and Schulze 2007; and Schulze, Lubatkin and Dino 2003). Hence, family firms could over time suffer due to managers being selected from a limited competence pool (Wennberg et al. 2011). The resource restriction is also supported by Villalonga and Amit (2006) who found that descendants serving as CEO will harm firm value. Sharma et al. (2001) argue with their "conceptual model of succession process," that if the serving CEO is not willing to "let go" of the firm and have a need to monitor the descendant agency conflicts could be enhanced. This could harm the succession, which eventually can have negative effects on firm performance. In addition, these effects will be even more accelerated if the descendant has lack of motivation and commitment to the firm that the founder has put major efforts in creating.

Taking these characteristics of the stagnation perspective of family firms together, Miller, Le-Bretton Miller and Scholnick (2008) assumed that family firms are slow-growing and short-living, but did not find any support for this.

Furthermore, Granata and Chirico (2010) found that external investors value the stagnation perspective higher than the stewardship perspective of family firms resulting in a lower valuation, as they view family firms as unprofessional and inefficient.

On the other hand, McConaughy et al. (1998) found that family firms are more efficient than nonfamily firms, and further observe that descendant-controlled firms are even more efficient than founder-controlled family firms. This could be argued by the pressure on the descendant to strive for great achievements to ensure longevity of what the founder has built. Chami (2001) further explored what unique features of family firms that leads to increased efficiency. He found that it could be explained by the presence of high level of mutual trust, loyalty and symmetric altruism in family firms. In addition, if the descendant is aware of that he/she will inherit the firm, agency interests could be more aligned and provide increased incentives to work hard, leading to higher productivity.

2.3 Capital structure

The capital structure refers to how firms finance its assets with different sources of funding, thereof debt and equity (Baker and Martin 2011). Even though capital structure is a widely explored topic, there is no collectively theory stating the optimal capital structure for firms (Ampenberger, Bennedsen and Zhou 2012). Many of the theories developed about capital markets build upon Modigliani and Miller's (1958) argument that in a perfect market, it does not matter what capital structure the firm uses to finance its operations, and thereby does not affect firm value.

Two of the most known theories that have been raised from the debate of Modigliani and Miller's irrelevance theorem, are the *trade-off theory* and *pecking-order* theory (Ampenberger, Bennedsen and Zhou 2012). The former theory is based on the concept that capital structure is determined by benefits and cost of debt, more specifically the balance between tax benefits and the cost of going bankrupt (Frank and Goyal 2009). The latter theory states that firms prefer to use internal capital rather than external capital, favouring retained earnings when available, and debt over new equity when external sources are needed (Myers

1984). The underlying assumption in this theory, however, is the presence of information asymmetries in the market, and thus can lead to adverse selection behaviour (Ampenberger, Bennedsen and Zhou 2012).

Capital structure can provide insight of the risk in the firm (Baker and Martin 2011, 59). An important aspect of the capital structure in family firms is that the families are a form of non-diversified investors holding most of their wealth in their firm (Ampenberger, Bennedsen and Zhou 2012). By this, families in family firms are in some way risky investors. But as mentioned, family firms tend to have a long-term perspective and pursue more risk averse strategies than nonfamily firms in order to pass the firm to the next generation (e.g. Vaknin 2010; Casson 1999; and Bouzgarrou and Navatte 2013). They therefore organise their capital structure in a more conservative way that mitigates the risk in the firm (Ampenberger, Bennedsen and Zhou 2012).

Risk averse behaviour is associated with low debt level. In line with the pecking order theory, family firms tend to finance their investments either with their own wealth or with retained earnings. As a consequence, the funding is therefore limited and may be a reason why family firms are smaller than nonfamily firms. Funding firm activities with retained earnings leads to a decrease in the debt ratio, and potentially less risk in the firm (Bøhren 2011). The pecking order theory supports a negative relationship between profitability and leverage (Frank and Goyal 2005), indicating that family firms will have a lower debt ratio compared to nonfamily firms. Viera's (2013) study shows that family firms avoid debt as financing in economic crisis periods since the cost of debt is higher, which is in line with the pecking order theory (Myers 1984). However, greater firm profitability is associated with having more debt. Thus indicating more risk in the firm, and therefore higher cost of capital to compensate for the risk. This could indicate that family firms have more debt; as previous studies have found that family firms are more profitable (Baker and Martin 2011, 66).

Hence, the fear of loosing control of the firm makes families favour debt compared to new equity in order to finance firm growth. In this matter family firms with high debt ratio are prone to increased probability of financial distress (McConaughy and Mishra 1999). Furthermore, they found that family firms avoid

short-term debt due to stricter covenants and that it increases the risk of refinancing. In addition, family firms avoid short-term debt due to families' risk aversion to maintain family control, which is in line with Yalin's (1998) findings of American family firms. Anderson, Mansi and Reeb (2003) found that since founding families are especially concerned with the long-term commitment of the firm and its reputation, bondholders perceive the structure of family firms as a structure that protects their interests better. This can result in reducing the cost of debt which might even give family firms incentives to increase leverage. In that case, aligned interests between the owners and the debt claimant could reduce agency conflict III.

Lastly, it is not only the ownership concentration that determines capital structure. Romano, Tanewski and Smyrnios' (2000) analysis of small and medium sized family enterprises found that there are several factors that influence family firms' capital structure, such as business goals, age, size, culture, entrepreneurial characteristics and prior experience in capital structure and attitudes. With this in mind, family firms' capital structures will vary in countries due to cultural - and business behavioural differences.

2.4 Historical Events

During the time frame in our analysis, 2000-2013, we have identified two historical events that need to be drawn attention to, as these might have affected the data as external shocks.

2.4.1 The tax reform

The first event was the Norwegian tax reform that was announced in 2004 and implemented in 2006. The new regulation introduced a 28% tax on dividend income and capital gains tax on return above the normal return of the capital invested. The main purpose with the new reform was for the government to be able to reduce the differences between the marginal tax on labour and capital income (Nymoen and Mathisen 2015). In addition, the goal was to increase the tax rate without harming business investments and to reduce the frequency of business owners to pay out dividend instead of labour income to pay a lower tax

rate (Thoresen et al. 2010). Studies indicate that the amount of dividend paid out increased significantly just before the tax reform was implemented and dropped significantly after the implementation (Thoresen et al. 2011), as shown in figure 2.

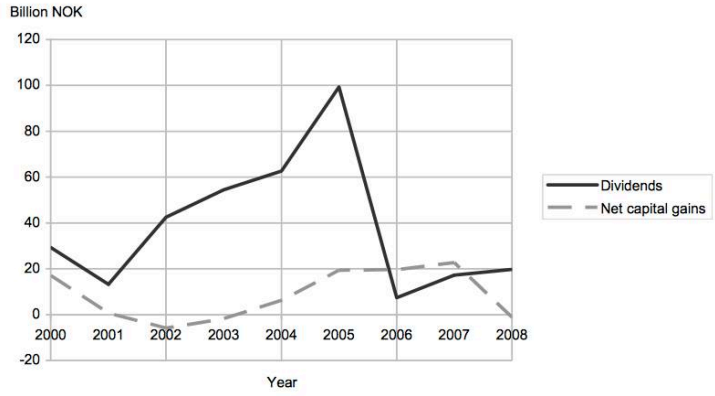

Figure 2: Development in dividends and net capital gains in Norwegian business sector (Thoresen et al. 2011)

As a result of this reform, there was a large increase in establishment of holding companies in 2005 (460% increase). In addition, operating companies having holding companies as owners increased from 6% before the reform to 26% after the reform (Berzins, Bøhren and Stacescu 2013). A consequence for our sample, is that there will be many firms having holding companies as 100% owners, and will therefore per definition be a family firm.

2.4.2 The financial crisis

Figure 3: Yearly number of bankruptcies for Norwegian firms (OECD 2016)

In 2007-2008 the world experienced a financial crisis, which affected companies worldwide into the largest post-World War II recession (IMF 2009). The

recession led to an increasing bankruptcy ratio for banks and firms. Norway experienced the same trend and the bankruptcy rate increased 49.9% in 2008 and 44.4% in 2009, before the bankruptcy ratio declined the following years (OECD 2016). Even though Norwegian firms experienced lower profitability during the crisis, the impact of the recession in Norway was relatively minor due to the government spending of oil reserves to stimulate the Norwegian economy (Finansdepartementet 2009).

According to Family Firm Institute Inc. (2016) family firms are more likely to hire and less likely to lay people off despite the possibility of an economic downturn. A study from PWC in 2010 concludes that members of family firms had the impression of being a family firm was an advantage during the financial crisis. The reason was that family firms tend to be more stable and have more secure financing which increases the ability to stay focused on the core business despite a recession. Family firms often have less bureaucracy, which enables companies to adapt so they can more easily meet new challenges and opportunities (PWC 2010). Kaanen's (2013) study of Dutch family firms concludes that during the financial crisis family firms had a ROA 3.29% higher than nonfamily firms. On the other hand, Zhou's (2011) study from 2006-2010 found that family firms do not outperform nonfamily firms during recessions.

3.0 Descriptive Statistics

3.1 General descriptive statistics

In this section we have used our findings from the family firm literature of typical family firm characteristics, in order to identify whether these characteristics are present in our sample. This is in order to develop hypotheses of whether there is a relationship between the characteristics and firm performance when family firms go through a family ownership dilution. Firstly, we outline statistic information of family firms and nonfamily firms, followed by firm characteristics.

Ownership structure

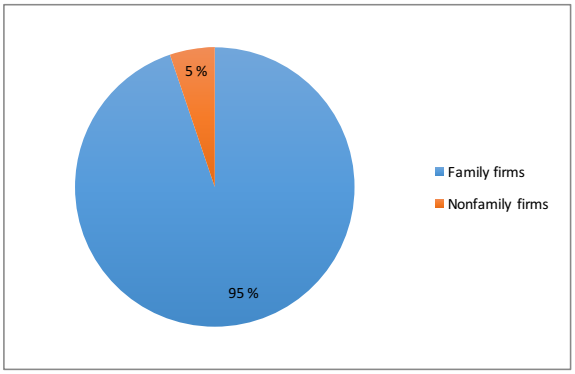

Figure 4: Percentage of family firms and nonfamily firms

The figure above reports the overall proportions of family firms and nonfamily firms in our sample. The observations in our data set consists of 94.8% family firms, when using the definition of family firms as the ultimate share ownership held by the largest family is above 50% (Berzins and Bøhren 2013). Only 5.2% is considered to be nonfamily firms.

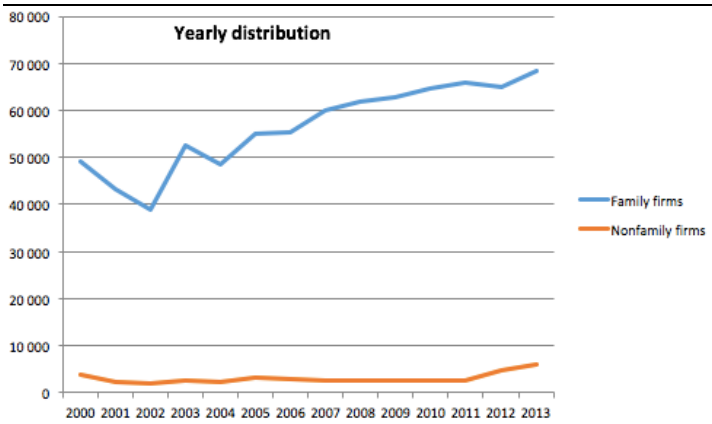

Figure 5: Yearly distribution of family firms and nonfamily firms

The yearly distribution of Norwegian firms during our time frame is shown in the graph above. As we can see, the amount of nonfamily firms is relatively stable compared to family firms. Interestingly, the amount of family firms increased in the following years after the financial crisis.

D1	Firms that initially were family firms and later dilute family ownership control
D2	Firms that initially were nonfamily firms and later transfer to family firms
D3	Firms that always are family firms
D4	Firms that always are nonfamily firms

Table 1: Subgroup definitions

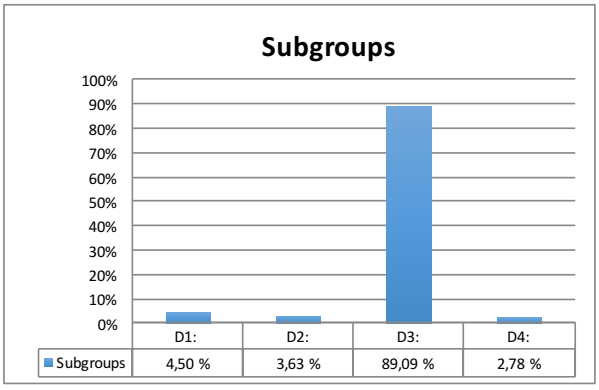

Figure 6: Percentage of firms in the subgroups

Furthermore, we divide our sample into four subgroups, D1, D2, D3 and D4, separated by family ownership structure. As shown in figure 6, 89.09% of the observations belong to firms that remain always as family firms during the entire time frame, D3. Those firms that initially were family firms and later dilute family control, D1, accounts for 4.50%. Those firms that transfer from being a nonfamily

firm to a family firm, D2, accounts for 3.63% of the sample. Only 2.78% of our observations are nonfamily firms during the whole period, D4. The distribution shown in the graph above highlights how important family firms are for the Norwegian economy.

3.2 Descriptive statistics of the firm characteristics

We will examine whether the identified characteristics from prior literature about family firms is present in our data, and if these characteristics change together with a dilution of family control. If so, we will examine whether these changes have a positive or negative impact on firm performance for those firms that dilute family ownership control and *could* be a reason for why firm performance changes for the firms that dilute family control.

CEO

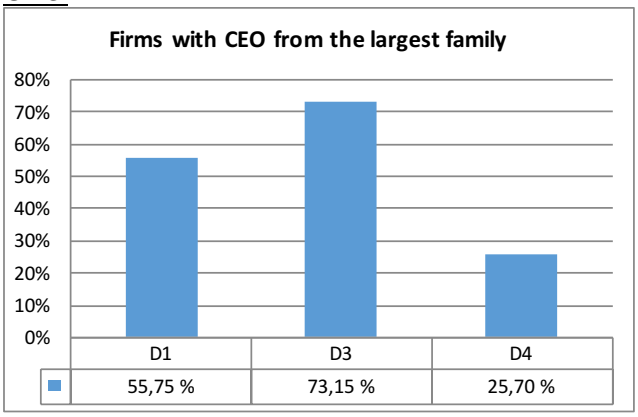

Figure 7: Percentage of firms having a family member CEO in each subgroup

Berzins and Bøhren (2013) found that the majority of family firms in Norway have a family member as CEO, and some previous studies find support for greater performance with a family member as CEO (e.g. Anderson and Reeb 2003; and Maury 2006). Figure 7 shows the distribution of firms with a CEO from the family with the largest ultimate ownership in our sample, indicating the same pattern as Berzins and Bøhren (2013). We compare firms that always are family firms, D3, always nonfamily firms, D4, and those firms that transfers from family firms to nonfamily firms during our time frame, D1. Family firms have a significantly higher distribution of CEOs from the family with the largest ultimate ownership.

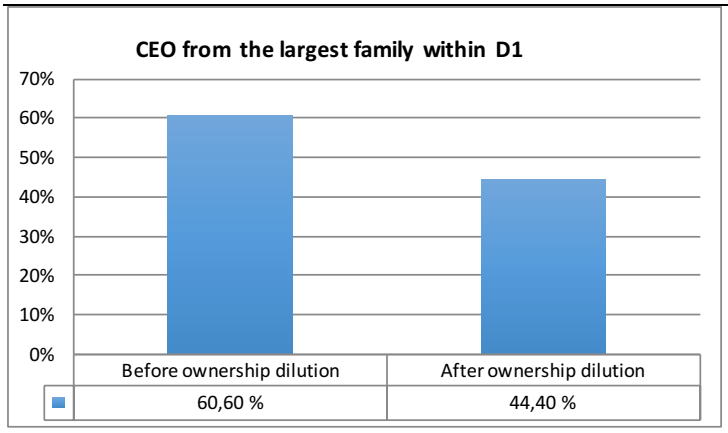

Figure 8: Family CEO in the firm before and after family ownership dilution

When we analyse the firms that go through a family ownership dilution we observe the trend that the family member CEO leaves the firm together with the ownership dilution, which might be a reason for a change in firm performance. 55.75% of the whole subgroup D1, have a CEO from the family with the largest ultimate ownership. In the beginning of the time frame, when the firms still are family firms, the rate is 60.60%, but after the family ownership dilution it decreases to 44.40%.

Firm size

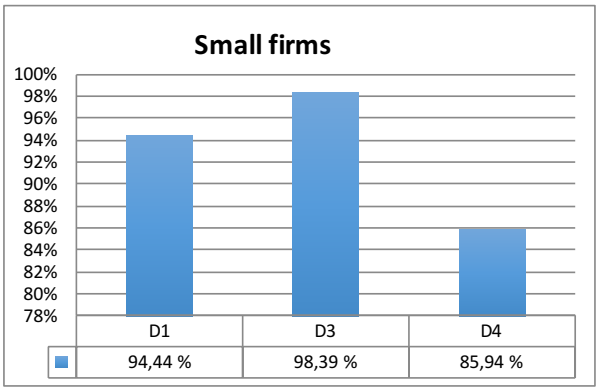

Figure 9: Percentage of small firms in each subgroup

Norwegian family firms are typically smaller than nonfamily firms (Berzins and Bøhren 2013), and as stated in the literature review might be a reason for greater ROA within family firms. According to figure 9, 98.39% of the firms in our data set that always are family firms are small by the definition used by Berzins and Bøhren (2013), see section 6.3. For nonfamily firms we find 85.94% small firms and 94.44% for those firms that dilute family ownership during the time frame. This indicates that there is a difference in size between family firms and

nonfamily firms, and we further analyse whether this trend occurs in the subgroup of the firms that go through a family ownership dilution, D3.

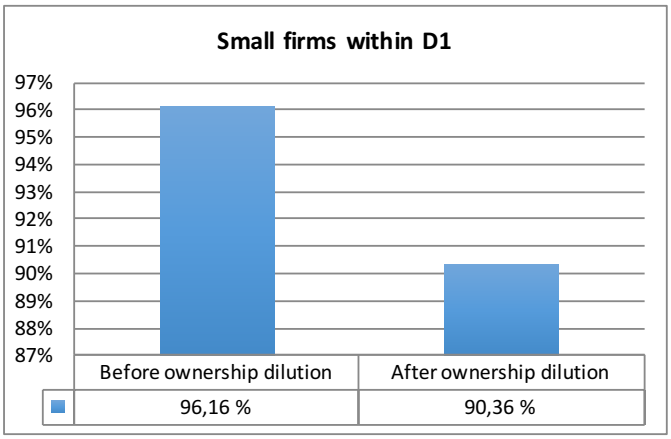

Figure 10: Firm size before and after family ownership dilution

In figure 10 we see the same pattern; 96.16% are initially small prior to family ownership dilution, and 90.36% after the dilution. We question whether the size of the firm has an impact on firm performance.

The number of owners

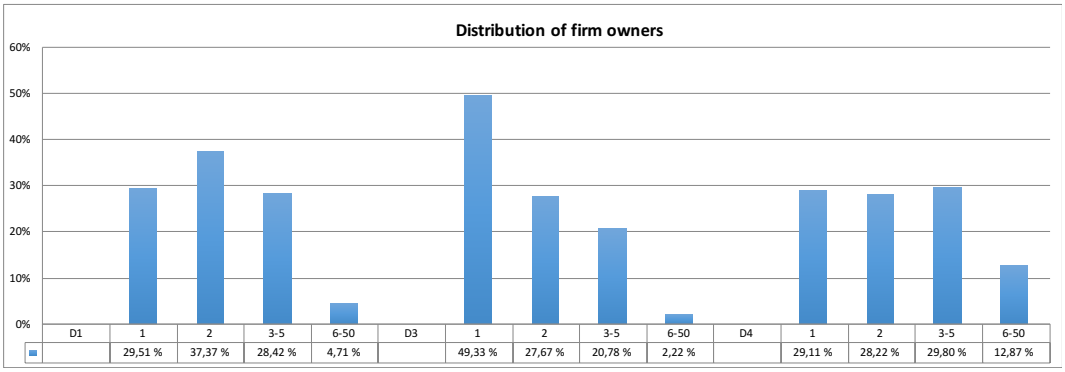

Figure 11: Distribution of number of firm owners in each subgroup

As mentioned, family firms have high frequency of few owners (Berzins and Bøhren 2013). Figure 11 shows that D3 have the highest share of firms with only one owner and the lowest share of firms with more than five owners. D4, firms that always are nonfamily firms during the time frame, have on the other hand a significant larger share of firms with more than five owners compared to the two other subgroups.

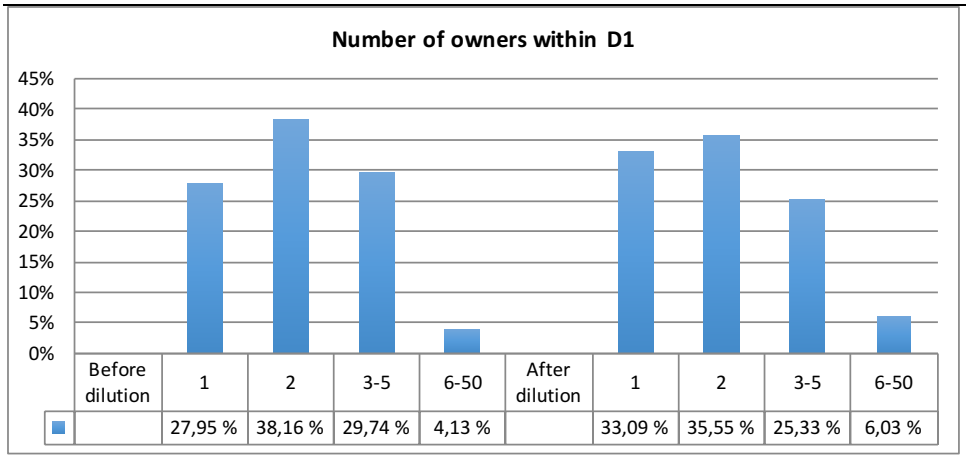

Figure 12: Distribution of firm owners before and after family ownership dilution

The same trend occurs within the subgroup of the firms that go through a family ownership dilution. Interestingly, there is an increase in the frequency of having only one owner. This can be a consequence of the implementation of the tax reform and establishment of holding companies. Hence, by this the firms can still be nonfamily firms with only one owner. We can see in figure 12 that there is a slightly increase of the firms having between 6 and 50 owners after a dilution of family control. How this owner distribution affects ROA will be interesting to analyse.

Capital structure and risk

Regarding the capital structure in family firms, the literature agree upon that family firms prefer long-term debt compared to short-term debt. Family firms' resoruce restriction and their risk aversion argues for having less debt. Hence, family firms' desire to remain control indicates more debt than equity. We want to analyse the trend in the capital structure of our sample, to see if we can find support for any of the aforementioned arguments.

Debt-to-equity ratio

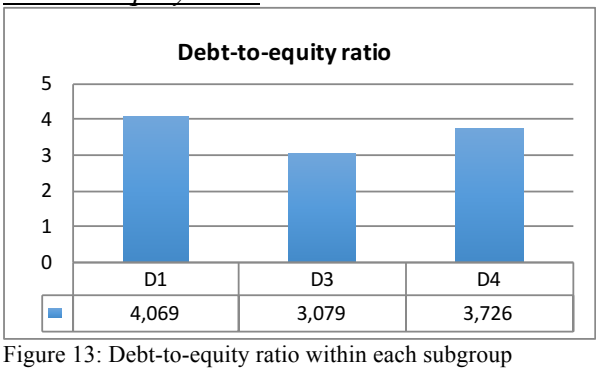

Figure 13: Debt-to-equity ratio within each subgroup

Regarding the debt-to-equity ratio, figure 13 shows that D4, always nonfamily firm, have higher debt-to-equity compared to family firms. This can illustrate family firms' risk aversion towards debt.

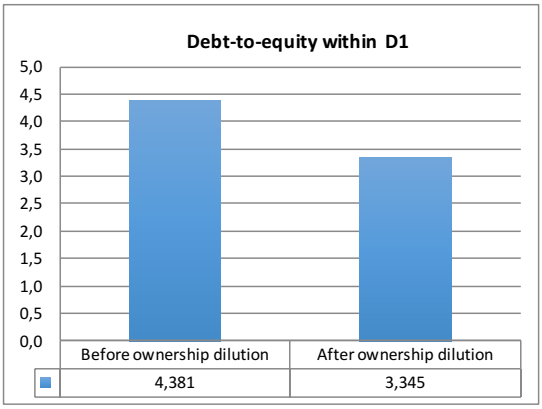

Figure 14: Debt-to-equity ratio before and after family ownership dilution

We can also see that those firms that go through a family ownership dilution, D1, have the highest debt-to-equity ratio. By analysing only these firms, D1, we see that the pattern is opposite. According to figure 14, the firms have higher debt-to-equity prior to ownership dilution. This however, could be an indication of a shift in capital structure when the family ownership structure changes and might affect ROA.

Long-term debt ratio

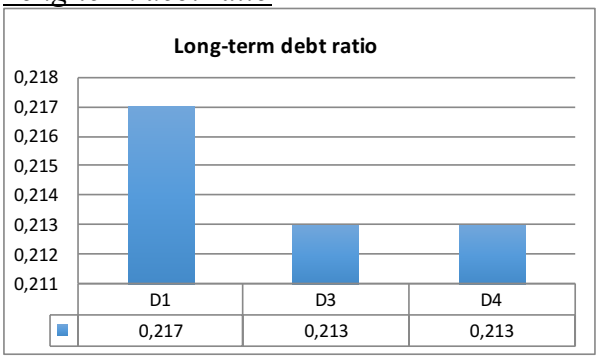

Figure 15: Long-term debt ratio within each subgroup

By looking at the long-term debt ratio in our sample we find similar ratios for the firms that always are nonfamily firms and always family firm, shown in figure 15.

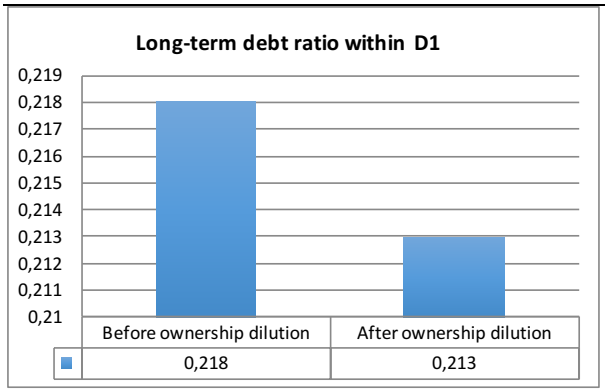

Figure 16: Long-term debt ratio before and after family ownership dilution

However, the ratio is higher for the firms that go through a family ownership dilution. Furthermore, it is higher before the family control dilution and lower after the dilution. The difference is only 0.05, so a clear trend is not identified. Hence this pattern of long-term debt ratio is a reason to investigate how the economic impact is on ROA for the family firms that go through an ownership dilution.

Asset turnover

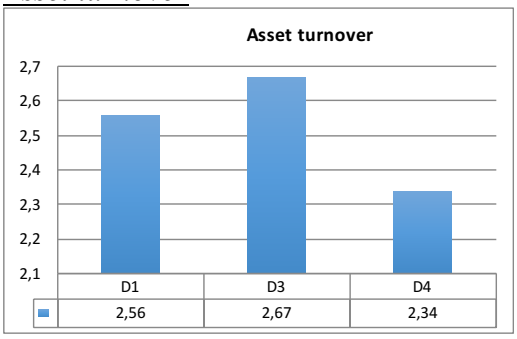

Figure 17: Asset turnover within each subgroup

Previous studies are ambiguous whether family firms are more efficient. We will investigate how the efficiency trends are in the different subgroup by using asset turnover as a measure of firm efficiency. As presented in figure 17, D3, always family firms, have the highest asset turnover, indicating greater efficiency. Those firms that go through a family ownership dilution, D1, are slightly less efficient, but more efficient than those firms that are nonfamily firms during the whole time frame.

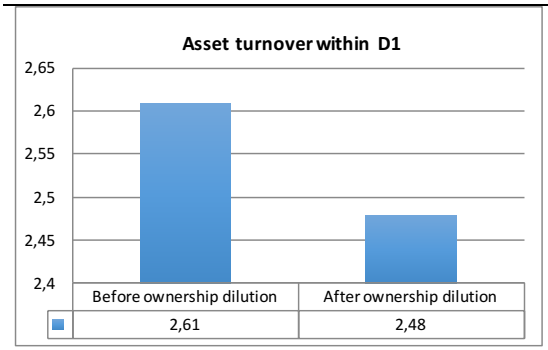

Figure 18: ATO before and after family ownership dilution

The same pattern is clearly present when we only look within D1, in figure 18. The same firms generate higher asset turnover before the family control dilution, indicating that family ownership has a positive effect on firm efficiency, and therefore also can affect ROA.

Firm survival

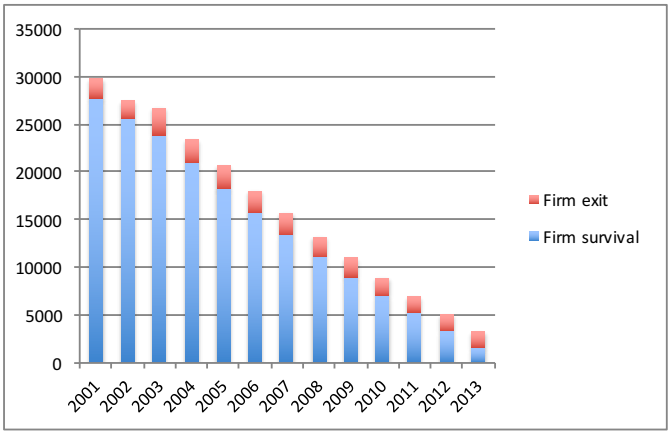

Figure 19: Survival of firms

Figure 19 indicates the yearly trend of firms within D1, D2, D3 and D4 that were established in year 2000 and survive or exit during each year. The pattern indicates that 27 753 firms survived the first year, and over approximately 94% of these firms exit within this time frame. This rate seems high, however it is both due to firm death and violation of our filter restrictions which will be presented in section 5.

4.0 Research Question and Hypothesis Development

In this section, we will present our hypotheses. The overall hypothesis is *What is the effect on the firm's performance with a dilution of family ownership control?* We will further investigate which of the characteristics identified in the literature and in our sample that can be an explanation for a change in firm performance with a dilution of family control. In addition, we will look into how the affect of a dilution of family control leads to shorter or longer survival of these firms. Therefore, our hypotheses are categorized into the following questions:

1. What is the effect on the firm's performance when a dilution of family ownership control occurs?
2. Can typical family firm characteristics be a reason for the impact on firm performance?
3. Does ownership structure affect firm survival?

4.1 Main Research Question

H1: Family Ownership Dilution

In line with stewardship theories and decreased agency conflicts, several scholars have found that family firms *do* perform better than nonfamily firms (e.g. Anderson and Reeb 2003; Maury 2006; and Berzins and Bøhren 2013). Aligned interests between owners and managers provide more efficient decision-making.

Family's particular care for the longevity of the firm makes them put more effort into keeping resources in the firm and develop good relationships among stakeholders (Miller, Le Bretton-Miller and Scholnick 2008), which could reduce agency costs and providing long-term benefits. Family firms' long-term perspective alignment enhances mutual values and trust among the involved family members, and incentives to strive for great performance to ensure employment for future generations (Chami 1999).

On the other side, a CEO recruited internally from the family can have disadvantages over time for the firm as many other candidates could be a better fit

for the position (Wennberg et al. 2011). In addition, inbreeded board and management not challenged by outsiders, might lead to family firms not extracting their fully potential (Berzins and Bøhren 2013). Family firms' risk averse strategies and limited access to capital causes families to highly rationing their investment strategies towards fewer investments and less value creation and growth, but thus gives higher return in percentage (Berzins and Bøhren 2013).

However, the effect of "window-dressing" of the firm should be taken into consideration; Some firms might exhibit unnatural high performance right before the share sales in order to be perceived as attractive targets for outside share purchasers. Consequently, a decrease in firm performance right after the purchase can occur, framing the picture of the effect of family ownership dilution (Wennberg et al. 2011).

Taking all the positive characteristics that family ownership brings into firm business, we are anticipated to argue for the stewardship perspective rather than the stagnation perspective. Therefore, the family firms that always remain having family control have the highest firm performance.

H1: Firm performance is highest for family firms that always remain having family control of the firm.

4.2 Sub Hypotheses

As we believe that hypothesis 1 will result in family firms that always have family control will have greatest firm performance, we believe that the family firms that dilute family ownership will have lower firm performance. Therefore, we will argue for the sub-hypotheses to be plausible reasons for *lower firm performance,* and not higher firm performance nor performance at the same level.

H2: The CEO's impact on firm performance

As mentioned, several scholars agree upon that greater performance can be a result of the alignment of interests between the owners and managers; a special characteristic of family firms. Anderson and Reeb (2003) found that performance is higher when family members serve as CEO. On the other side, Barth,

Gulbrandsen and Schøne (2005) studied Norwegian family firms, and found that the performance was significantly lower for family firms with a family member serving as the CEO, and had equally performance as nonfamily firms when having an external hired CEO. Villalong and Amit (2006) found that having a descendant in the CEO position will harm firm value. Contrary, McConaughy et al. (1998) found higher profitability in descendant CEO firms. These findings are ambiguous. For the hypothesis, we support agency theories, and descendant CEO's ability to extract the advantages passed on to them from their predecessor. As we have identified the pattern of family-member CEOs leaving the firm when the firms go through a family ownership dilution, we expect that this is related to why firm performance is lower when family control dilutes.

H2: The CEO from the family with the largest ultimate ownership leaving the firm is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

H3: The impact of firm size on firm performance

According to Berzins and Bøhren (2013), around 98% of family firms are considered small firms. We believe that firm size potentially could increase with an ownership change, although not immediately after the family control dilution. Family firms are resistant to issue new equity or making the equity more liquid by selling of parts. This restricts family firms' ability to finance growth with limited capital (retained earnings), and can therefore be a reason why family firms are on average smaller. Thus, these restrictions make the firm's investments more selective by not investing in all projects with positive net present value, leading to higher return on their projects, compared to firms without these restrictions (Berzins and Bøhren 2013). We also believe that smaller firms are less exposed to agency conflicts and therefore argue that the identified increase in firm size in section 3.2 is related to why performance is lower for firms that dilute family control.

H3: The increase in firm size is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

H4: The number of owners' impact on firm performance

85% of Norwegian family firms have one or two owners (Berzins and Bøhren 2013). Few owners with high ownership concentration can trigger agency conflict II. One can neither conclude that family ownership is linked to alignment of interests; conflicts can arise even between owners themselves, assuming the more owners, the higher probability for conflicts. As mentioned, due to the initiation of the tax reform in Norway 2006 (Berzins, Bøhren and Stacescu 2013) we anticipate that some of the family firm observations in our sample are holding companies with a lone owner. With dispersed ownership in nonfamily firms, it is reasonable to assume higher amount of owners. In addition, as all the agency conflicts are between owners contra other involved parts, we predict that the identified increase in number of firm owners having more than five owners for the firms that dilute family control can be an explanation for why ROA is lower for these firms.

H4: The increase in number of firm owners is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

H5: The impact of capital structure and risk on firm performance

Family firms have a more long-term perspective than nonfamily firms, and therefore pursue more risk averse strategies as their family's fortune and future are of concern (Miller, Le Breton-Miller ad Scholnick 2008). This risk aversion can push towards lower level of debt in family firms. On the other hand, in order for family firms to finance growth without loosing control provides incentives for higher debt levels (González et al. 2013). However, firm risk normally increases in line with increased debt, but should on the other side compensate with a higher return and thus a more profitable firm (Baker and Martin 2011). These findings are ambiguous, but we support the pecking order theory and anticipate that the debt-to-equity findings in section 3.2 have a negative impact on firm performance.

In the case were debt is needed, family firms prefer long-term debt as financing as they are less risky (McConaughy and Mishra 1999). In addition, it relates to family firms' long-term perspective. However, we found the long-term debt ratio to be at the same level for family firms and nonfamily firms, but higher for firms

that dilute family control. Therefore, we argue for that the ratio will affect the performance positively.

H5a: Increased debt-to-equity is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

H5b: Decreased long-term debt ratio is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

H6: Efficiency impact on firm performance

Previous studies support the positive relationship between family firms and efficiency (McConaughy et al. 1998; and Chami 1999). Even higher efficiency in family firms with a descendant serving as CEO is found. A plausible explanation for this is that the founder has established a competitive position in the market for the descendants to exploit (McCounaughy et al. 1998), or descendants bringing new energy and synergies into the management. Furthermore, the presence of trust among family members leaves no need for monitoring, leading family members to fully focus on their work tasks, resulting in higher efficiency (Chami 1999). On the other side, the restricted pool of talent amongst internal CEO descendants might lead to inefficient decision-making and can be detrimental for firm efficiency. In addition, greater efficiency can be used as a proxy for lower agency costs (McConaughy et al. 1998). Higher efficiency contributes to higher net operating profit, and hence can result in a higher ROA. We suggest that the identified lower firm efficiency for the firms that go through a family ownership dilution is associated with why these firms have lower firm performance than the firms that always are family firms.

H6: A decrease in the asset turnover ratio is a plausible reason for why firm performance is lower for the family firms that dilutes family ownership control.

4.3 Survival hypothesis

H7: The ownership impact on firm survival

As mentioned, family firms prioritise strategies with long-term benefits to ensure employment for their future generations. However, these strategies do not necessarily result in the preferred outcome. Based on studies of American family firms, fewer than 30% of family firms survived into the second generation, 10% to the third generation and only 4% operate at the fourth generation and above (Gleason, Pennathur and Wiggenhorn 2011).

Since family firms often prioritise more non-financial goals compared to nonfamily firms (Zellweger et al. 2011), might lead to early death. Even though an internal transfer is preferred if a successor is available, a decision of an external transfer may be tempting if the external party is considered to be more appealing (De Massis, Chua and Chrisman 2008). Hence, the outside party can have other strategies in mind for the firm, that does not cohere with the long-term perspective the family firm once had.

In a study conducted about Swedish private family firms, the authors investigated the survival rate of the sample firms that went through an ownership transfer. The survival rates for internally transferred firms were clearly higher than externally transferred firms. Noteworthy, they found that the risk of firms not surviving was reduced by 56% when the firm was transferred within the family, argued by the risk-averse – and increased long-term focus family firms pursue (Wennberg et al. 2011). They also found that firms transferred to outsiders performed better than firms transferred within the family in every year after the transfer, both regarding growth in EBITA and sales. This indicates that what is better for family wealth (continuity of the family firm), is not necessarily what has the best impact on the firm. However, in the sample of Canadian small - and medium sized firms that Miller, Breton-Miller and Scholnick (2008) analysed, the results indicated that survival did not differ from family firms and nonfamily.

By this we believe that family firms' long-term perspective will drive family firms to live longer than both nonfamily firms and those firms that go through a family ownership dilution.

H7: The family firms that always remain having family control survive the longest.

5.0 Data sample

Our data set is obtained from the Centre for Corporate Governance Research (CCGR) at BI Norwegian Business School. This data set covers information and data of almost the whole population of Norwegian firms with accounting data from the time period 1994 to 2013 and corporate governance data from 2000 to 2013. Therefore, the relevant data to our sample is collected from the time frame 2000 to 2013. Because the data is based on accounting information, all values are book values. We have applied several filters on the data set we gathered, such that we can obtain a sample that is representative for the companies that is in our interest. The following restrictions are applied:

1) All industries are included
2) Only firms with positive debt are included
3) Only firms with positive total assets are included
4) Only firms with positive revenue are included
5) Only firms with foundation year/age are included
6) All firms with no or missing information about employees are removed
7) All firms with no ownership data are excluded
8) All firms with ultimate and direct ownership exceeding 100% are excluded.
9) All firms listed on Oslo Børs and Oslo Axcess are excluded
10) Consolidated data is not analysed
11) Firms that change family ownership structure more than once are excluded

The data obtained initially 2.875 million observations during our time frame. By applying the restrictions removing extreme outliers, we ended up excluding approximately 71% of our observations, resulting in 835 291 observations. When we conduct our sub-hypotheses we are only interested in the firms that go through a family ownership dilution. Therefore, we exclude all the other firms in addition to our abovementioned filters and are left with 37 622 observations.

Filter 1 is set to make sure we have all firms in Norway during our time frame. Filter 2, 3 and 4 are included in order to have only active firms, hence we exclude firms with negative debt, total assets and revenue. Filter 5 and 6 are important to make sure that we do not have missing values in our data set. Filter 7 and 8 are set to have consistency in our data and to be able to measure how family control affects ROA. Filter 9 is set to only focus on private firms, since there are few listed family firms. Filter 10 is set due to many missing values. Filter 11 is set as it is not part of our analysis.

6.0 Variables

This section will include description and information about variables included in our regression models. We have included variables that provide information about the company's ownership structure and accounting numbers. The description of the summary statistics of the variables used in our analysis are found in appendix 13.1. For the variables with a wide scale, we have removed extreme outliers, winsorized 1% in each tail or taken the natural logarithm to control for size.

Variable	Definition of variables
Dependent variable	
ROA	=Net income divided by the the average book value of total assets
Control variables	
DirectOwnershipFamily	=Sum of the shares directly held by the largest family
lnAge	=The natural logarithm of firm age
DebtRatio	=Total debt divided by total assets
FixedAssetsRatio	=Total fixed assets divided by total assets
CurrentAssetsRatio	= Total current assets divided by total assets
lnRevenue	= The natural logarithm of revenue
Explanatory variables	
D1	=1 if the firm initially is family firm and later dilutes family ownership control, 0 otherwise
D2	=1 if the firm initially is a nonfamily firm and later transfers to a family firm, 0 otherwise
D3	=1 if the firm always is a family firm during the whole time frame, 0 otherwise
D4	=1 if D1, D2 and D3 are all zero, 0 otherwise
LargestFamilyCEO	=1 if the CEO in the firm is from the family with the largest ultimate ownership, 0 otherwise
SmallFirm	=1 if the firm has less than 50 employees, and revenue and total assets are less than 80 MNOK, 0 otherwise
N1	=1 if the firm has 1 owner, 0 otherwise
N2	=1 if the firm has 2 owners, 0 otherwise
N3-5	=1 if the firm has 3-5 owners, 0 otherwise
N6-50	=1 if N1, N2 and N3-5 are all zero, 0 otherwise
Debt-to-Equity-Ratio	=Total debt divided by total equity
LongTermDebtRatio	= Total long-term debt divided by total assets
ATO	=Revenue divided by the average book value of total assets

Table 2: Variable definitions

6.1 Dependent variables

Return on assets:

In order to state how firm performance is related to family firm ownership and the different family firm characteristics, we use the accounting measure return on assets (ROA). This is measured by dividing net income in year *t*, by the book value of total assets in year *t* and year *t-1*. ROA indicates how efficient the firm is generating the company's total assets to create profit. However, by using net income as the numerator the effects of tax positions and the cost of debt financing affects ROA. To control for size have we winsorized ROA at the 1^{th} and 99^{th} percentiles.

6.2 Control variables

We have used a combination of the variables as Langli and Che (2015) and Villalonga and Amit (2006), combined with prior literature, to decide the control variables. Langli and Che (2015) measured firm performance among private family firms, while Villalonga and Amit (2006) studied how family control influenced the value of the company. We have chosen control variables that explain the ownership structure of the firms, and used numbers from the income statement and balance sheet.

Direct-Ownership family:

Direct ownership visualises the percentage of shares directly owned by the largest family. Direct ownership is closely linked to ultimate ownership that we use to define whether a company is a family firm or a nonfamily firm. The significant difference is that direct ownership does not include indirect shareholding through intermediaries (Berzins and Bøhren 2013). Direct ownership held by families might not discover the true owners of the firm, but will give an indication of the influence family control has on profitability. The variable is in percentage. We have removed observations that have more than 100% direct ownership. Since family firms on average have higher performance than nonfamily firms, we expect direct ownership to have a positive impact on ROA.

Age:

The variable lnAge is included to give interesting information about the impact age has on firm performance. We have taken the natural logarithm of age to control for the large range. Performance tend to be positive correlated with firm age, so we expect that the firms' age has a positive influence on ROA.

Debt-ratio:

Debt-ratio is defined as total debt divided by total assets. To control for size, we have winsorized at the 1^{th} and 99^{th} percentiles. Ilyukhin (2015) suggests an increase in performance with higher amount of debt, while several studies show that family firms normally should be less dependent on debt since they are more risk-averse (McConaughy and Mishra 1999). By this, the debt-ratio can have both positive and negative impact on ROA.

Fixed-asset-ratio & current-asset-ratio:

Both fixed assets and current assets have been divided by total assets to control for large values, and are included as balance sheet measures. These ratios are not the main interest to describe firm performance, hence have a purpose of "together providing a good prediction of the response variable" (Bartholomew et al. 2008, 161). Since family firms mostly are small, we expect these firms to have less values in fixed and current assets, and have a slightly positive impact on ROA.

Revenue:

In line with Langli and Che (2015) and Villalonga and Amit (2006), we have included the natural logarithm of revenue to control for the large range. We have dropped the observations that do not have positive revenue each year to only have active firms in our data. We expect revenue to have significant positive impact on ROA.

6.3 Explanatory variables

We have defined a family firm as a firm where the largest family holds at least 50% of the outstanding shares (Berzins and Bøhren 2013). This is measured by the variable ultimate share ownership to the largest family.

D1 D2 D3 and D4:

D1 is a dummy variable that is one if the firm initially is a family firm and later dilutes family control to under the 50% shareholder threshold, zero otherwise. This means that by our definitions that these firms transform from family firms to nonfamily firms.

D2 is a dummy variable that is one if the family with the largest ultimate ownership has below 50% share ownership in the beginning of the time frame, and later increases to above 50% ownership, zero otherwise. This indicates that these firms transform from a nonfamily firm to a family firm.

D3 is a dummy variable that is one if the family with the largest ultimate share ownership is above 50% for the entire time period, zero otherwise. This means that the firm is a family firm during all observed years.

D4 is a dummy variable that is one if the family with the largest ultimate ownership is below 50% for the entire time period, zero otherwise. This means that they are nonfamily firm during the whole time frame.

Largest Family CEO:

LargestFamilyCEO is a dummy variable that is one if the firm's CEO is a member from the family that has the largest ultimate ownership in the firm. If the CEO is not from the family with the largest ownership, the dummy variable has a value of zero.

Small firm:

We have used the same definition as Berzins and Bøhren (2013) to define whether a company is large or small. Their definition indicates that the company is small if:

1. the company has less than 50 employees, and
2. the company has revenue less than 80 MNOK and total assets less than 80 MNOK

We have created a dummy variable equal to one if the firm is small, indicating that both of these two criteria are met, zero otherwise.

Number of owners of the firm:

We have created a set of dummy variables for the amount of owners in a firm. The data consists of owners within the range from 1-50 owners. We observe that the mean of the number of owners is 2,03 and median is 2. Therefore, we have created the following dummy variables to capture the spread:

N1= 1 if number of owners =1, 0 otherwise
N2= 1 if number of owners =2, 0 otherwise
N3-5= 1 if number of owners is between 3-5, 0 otherwise
N6-50= 1 if number of owners is between 6-50, 0 otherwise.

Debt-to-equity and long-term debt ratio:

We have created two variables to provide information about the capital structure and risk in the observed firms. The first is Debt-to-Equity-Ratio which enables us to say something about the capital structure and risk in the firm. Debt-to-equity is winsorized at the 1^{th} and 99^{th} percentiles to control for size. The second is LongTermDebtRatio which is long-term debt divided by total debt, which provides information about differences between family firms and nonfamily firms with regards to the long-term and short-term perspective in respect to debt financing.

Asset turnover:

The asset turnover ratio (ATO) measures how efficiently each company's assets generate revenue (Investopedia 2016). Asset turnover is defined as revenue divided by the average book value of total assets. To control for a large scale, we have winsorized assets turnover at the 1^{th} and 99^{th} percentiles and dropped observations with missing values.

7.0 Methodology

The method for this research will be based on quantitative statistical models. In line with similar research we will use panel data to test our hypothesis. Our data set is unbalanced, meaning that the observations of time periods are fewer or observed at different times for all individuals. In this section we will describe our methodology and variables used in our regressions.

7.1 Panel data

Our data set is panel data since our data observe multiple firms at two or more years. Panel data have the dimensions of both time series and cross-sectional data. This makes it possible to discover relationships between firms and how it changes over time. We have an unbalanced panel data indicating that we either have some cross-sectional elements with fewer observations than time periods or observations at different time periods (Wooldridge 2002).

An advantage with panel data is that it increases the number of observations significantly. By using panel data, we can examine the possible change in performance in our data set for the firms that transform from family firms to nonfamily firms during our time frame. Since panel data includes more observations, "the regression will have an increase in the degrees of freedom and reducing the collinearity among explanatory variables" (Hurlin 2010). More data might not necessarily imply more information because it can obtain heterogeneity bias. Panel data also allows to control for variables that are unobserved/omitted (Hsiao 2007).

7.1.2 Fixed effects, random effects and pooled OLS

There are two main approaches when using panel data: fixed effects and random effects. The fixed effects method normally uses ordinary least square (OLS) to obtain efficient estimation (Stock and Watson 2014, 405). "The simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectional but not over time, while all of the slope estimates are fixed both cross-sectional and over time" (Brooks 2014, 528). Generally, fixed effects will be

favoured if the interest is to analyse the impact of variables that vary over time. With fixed effects each firm has their own characteristics that may have an impact on the predictor variable. Those time-invariant characteristics are special to each firm and should not be correlated with other individual characteristics. Fixed effects may be appropriate if firm-specific effect is correlated to the independent variable (Torres-Reyna 2007), and the cross-section specific error component term and X-regressor is correlated (Gujarati, 2011, 289).

Random effects allows to include time invariant variables (i.e gender or always being family firm) (Torres-Reyna 2007). The random effects model is appropriate, unlike fixed effects, if the variation across firms is assumed to be random and uncorrelated with the predictor or independent variables included in the model (Uchenna et al. 2016, 178). The random effects model is also appropriate if the cross-section specific error component term and X-regressor is uncorrelated (Gujarati, 2011, 289). This cross-section specific error term, ε_j, and the individual-specific error component u_{it}, are the combined time-series and cross-section error component ($w_{it} = \varepsilon_j + u_{it}$). If autocorrelation within these error components occurs, OLS estimates will be inefficient (Gujarati 2011, 289). Thus, generalized least squares (GLS) estimation in the random effects model handle the problem of autocorrelation in the error components and heteroscedasticity (Stock and Watson 2014). Therefore, random effects method normally uses GLS to estimate efficient parameters (Brooks 2014, 536)

We use the Hausman-test to test which approach is suitable for our regressions. The Hausman-test of our regressions indicates that fixed effects is the optimal approach in all the regressions that include explanatory variables that are allowed to change over time. In our main hypothesis where the explanatory variables are constant over time, we test whether to use random effects or pooled OLS. Pooled OLS ignores the serial correlation in the error term, leading to underestimated standard errors and t-statistics (Camerion and Trivedi 2005). The Breusch-Pagan Lagrange multiplier (LM) test indicates that the random effects method is a better fit for this regression compared to pooled OLS. For our sub-hypotheses the Hausman-test show that the fixed effects method is the proper method, because time-invariant variables are not present. This is found in appendix 13.2.

7.1.3 Random-effects parametric survival model

In hypothesis 7 we are investigating the time to an event occurs, in our case, the death of the firm. We apply the random-effects parametric survival model with an exponential distribution to model survival, as this model fits to panel data. In this analysis we analyse the survival of the firms established in year 2000. This is due to our obtained data set only providing ownership information from year 2000. Hence, we cannot separate survival rate between family firms and nonfamily firms before year 2000. Furthermore, we do not have information of the firms that died before year 2000. This will result in a biased sample because it will look like 100% of the firms established before year 2000 have survived till year 2000. We censor at the last year of the data set's time span, 2013. We start the survival analysis of the observations from year 2001. This is to reduce biased estimation, due to D1 requiring at least two years of observations for each firm, to be able to extract the information of the ownership dilution that occurs between two periods, which is not the case for the other subgroups.

"The hazard function h(t) of survival T, gives the conditional failure rate. This is defined as the probability of failure during a very small time interval, assuming that the individual has survived to the beginning of the interval" (Lee and Wang 2013, 11). By analysing the hazard rate of a time interval, we are enabled to compare the rate of the event occurring in one group with another group (Duerden 2009, 5). A high hazard rate indicates high risk and short survival, and a low hazard rate indicates low risk and long survival, with an exponential distribution (Lee and Wang 2013, 133). The survival model report Hazard ratios, which is a ratio that expresses the "hazard or the chance of events occurring in one group (treatment group) as a ratio of the hazard of the events occurring in the another group (control group)" (Duerden 2009, 2). Thus, the hazard ratio is the ratio of the hazard rates; that is a ratio of the rate at which individuals in the two groups are experiencing events. A hazard ratio of one is interpreted as the two groups experiencing equal impact, and a hazard ratio of two is interpreted that at any time twice as many individuals in the active group experience an event proportionately as the comparator group. In addition, a hazard ratio of for example two, can be interpreted as the active group affecting occurrence of the survival twice the more than the other comparable group (Duerden 2009, 5-6).

We use an exponential distribution as it is the simplest and most important distribution in survival studies. "It assumes constant hazard rates and therefore using this distribution to describe time to death, means that the death is assumed to be a random event independent of time" (Lee and Wang 2013, 133). Unlike the Weibull distribution, which is a generalization of the exponential distribution, does not assume constant hazard rates, and therefore have a broader application. However, this distribution is more often used in populations with increasing, decreasing or constant risk (Lee and Wang 2013, 139).

7.2 Heteroscedasticity

Heteroscedasticity in the data sample can cause serious problems for the OLS estimator. Heteroscedasticity means that the standard deviations of a variable, monitored over a specific amount of time, are non-constant. If the data have heteroscedasticity, we may face problems that leads to loss in efficiency and misleading statistical inference (Wentao, Xiong and Tian 2016). To check whether our data sample face problems with heteroscedasticity, we perform a Breusch-Pagan test, found in appendix 13.2. The results indicate the rejection of the hypothesis of homoscedasticity which is often assumed. This means that heteroscedasticity is present in our data.

To deal with the problem, we perform vce (cluster ID) in all our hypotheses. This allows to relax the independent-errors assumption in a limited way when errors are correlated within subgroups or clusters of the data. Clustering the IDs ensures that Stata obtains robust standard errors across clusters defined by the ID (Hamilton 2013). By applying vce (cluster ID), the standard errors are computed so that the assumption of homoscedasticity of the error terms can be relaxed (Kohler and Kreuter 2012).

7.3 Normality

To test the normality of our sample from the population in our data set, we apply the sktest – Skewness and kurtosis test for normality. It tests the hypothesis of normality. The results show that we obtain values lower than the alpha level, and indicates that we have to reject the hypothesis of normality. The assumption of

independent normally distributed residuals (Løvås 2013) have been checked through graphing and scatter plots, and thus we find non-normality for both the variables and the residuals in all our models. The fact that our sample size seems to suffer from non-normality is not of major concern due to the large size of our sample (Stock and Watson 2014, 177), but one need to be cautious when drawing inferences. The results and graphs are found in appendix 13.3 and 13.4.

7.4 Correlation

Correlation:

"Correlation is used to measure the association between variables" (Tabachnick and Fidell 2013, 56). Presence of high correlation between explanatory variables, indicates a relatively strong relationship between the variables (Løvås 2013, 389). In our analysis we find the highest correlation between FixedAssetsRatio and CurrentAssetsRatio with a correlation of around -0.68. Therefore, we find that the correlation is of minor concern in this analysis. The correlation matrices are found in appendix 13.5.

Multicollinearity:

High correlation might indicate the presence of multicollinearity -that the variables are perfect combinations of each other. When variables are multicollinear, they can contain redundant information such that not all variables are needed to include – and they can inflate the size of the error term if included (Tabachnick and Fidell 2013, 89). To check for the presence of multicollinearity in our analysis a Variance-Inflating Factor (VIF) is the most common test to conduct for multicollinearity. Hence a VIF-test is not possible to obtain for panel data, but our correlation matrix does not indicate high correlations. According to Costea (2005), standard errors above two can be an indication of problems with multicollinearity. The standard errors from our variables are all below 2, except for Debt-to-Equity-Ratio and ATO, therefore we find the problem of multicollinearity as a minor concern for our analysis, see appendix 13.1.

Autocorrelation:

In addition to multicollinearity, the issue of autocorrelation is likely to occur in time-series analysis, as in our analysis. Autocorrelation means that the errors

terms are correlated between each other and/or periods. (Gujarti 2011). Therefore, we perform the xtserial-test to check for autocorrelation. The obtained p-values are significant, seen in appendix 13.2, which indicates that the data suffer from autocorrelation. We use the cluster function as we did with heteroscadisity to correct the standard errors and the test statistics (Hoechle 2007).

8.0 Empirical Models

In this section the models for each hypothesis will be described. We have used a multiple linear regression model with the random effects method in our main hypothesis, and with the fixed effects method in our sub hypotheses. In hypothesis 7 we used the random-effects parametric survival model. In our main hypothesis the whole sample size is included in order to identify which of the subgroups that has the greatest impact on ROA. While for the sub-hypotheses, we use our findings of the typical characteristics of family firms presented in section 3.2. Furthermore, we conduct a stratified analysis of the subgroup D1 to find whether these characteristics can be a plausible reason for a lower ROA for the firms that go through a dilution of family ownership. Lastly, we analyse how family ownership impacts the firms' survival.

8.1 Main hypothesis

Model (1) – Dilution of family control and firm performance

Regression model (1) tests which of the defined subgroups that has the greatest impact on firm performance. The variable D4 – always nonfamily firm – is used as the reference variable. Based on our main hypothesis, H1, we expect that all the coefficients β_7, β_8 and β_9 will be positive and statistically significant, with the D3-coefficent to be most positive. Resulting regression output is found in table 3.

$$ROA = \alpha + \beta_1 \text{DirectOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 D1 + \beta_8 D2 + \beta_9 D3 + w_{it}$$

8.2 Sub-hypotheses

Model (2) – CEO

We have identified that a CEO from the family with the largest ultimate ownership is more present in family firms than nonfamily firms. Therefore, model (2) tests whether keeping the CEO from the controlling family through the ownership transfer has a positive or negative effect on firm performance for the

firms that go through a family ownership dilution. Findings from the literature are quite ambiguous regarding how the effect of having a descendant CEO is on firm performance, while having founder CEO or external CEO is more agreed upon. As we are testing whether having the CEO from the family with the largest ultimate ownership affect firm performance, we are not separating whether the CEO is a founder or a descendant. However, as argued in section 4.2, we expect coefficient β_7 to be positive and statistically significant, indicating a possible reason for why family firms have greater performance. Result output is found in table 4.

$$ROA = \alpha + \beta_1 \text{DirectOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 \text{LargestFamilyCEO} + \varepsilon$$

Model (3) – Firm size

From descriptive statistics we found that in our sample family firms are on average smaller than nonfamily firms. This model tests whether being a small firm has a positive or negative effect on firm performance for the firms that go through a family ownership dilution. Family firms are typically characterised as being small firms (Berzins and Bøhren 2013), and as argued might be a reason for greater firm performance. However, size changes will normally occur over a longer time frame, and it is not predicted that the size of a firm will immediately change with a dilution of family control. Hence we make an assumption that there is a negative relationship between ROA and firm size, such that the variable coefficient to SmallFirm is positive and statistically significant. Results are described in table 5.

$$ROA = \alpha + \beta_1 \text{DirectOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 \text{SmallFirm} + \varepsilon$$

Model (4) – Number of owners

Model (4) relates to how the number of owners affects firm performance for the firms that go through a family ownership dilution, since we identified that family firms have fewer owners than nonfamily firms. With a dilution of family control, the ownership transfer could naturally lead to a more dispersed ownership. Owners are involved in all agency theories described in section 2.1, and by having

more owners these conflicts could more likely arise. A reasonable logic is that a nonfamily firm cannot have one single owner. However, firms can still be nonfamily firms with a single owner since holding companies can be the single ultimate owner, but the holding company may have several owners or per definition be a nonfamily firm. Thus, based on the identified distribution of owners described in section 3.2, leads us to expect that all coefficients $\beta_{7,}$ β_8 and β_9 are positive and statistically significant compared to the reference variable of 6-50 owners. Results from the regression are listed in table 6.

$ROA = \alpha + \beta_1$DirectOwnershipFamily + $\beta_2$lnAge + $\beta_3$lnRevenue + β_4DebtRatio + β_5CurrentAssetsRatio + β_6FixedAssetsRatio + β_7N1 + β_8N2 + β_9 N3-5 + ε

Model (5a) and (5b) – Capital structure and risk

Model (5a) and (5b) describes how plausible changes in capital structure affects firm performance for the firms that go through a family ownership dilution. We have found that family firms tend to have lower debt-to-equity than nonfamily firms. This supports the pecking order theory, and therefore we predict a negative coefficient and statistically significant for the firms that go through a family ownership dilution. In addition, the characteristic of family firms pursuing long-term risk averse strategies found in the literature, would initially make us anticipate a higher long-term debt ratio for family firms, but we found the ratio at the same level for D3 and D4. Within D1 there is a trend of having higher long-term debt ratio prior to ownership dilution, shown in section 3.2. By this, we argue for a positive coefficient and statistically significance. Output results can be seen in table 7 and 8.

(5a) $ROA = \alpha + \beta_1$DirectOwnershipFamily + $\beta_2$lnAge + $\beta_3$lnRevenue + β_4DebtRatio + β_5CurrentAssetsRatio + β_6FixedAssetsRatio + β_7 Debt-to-Equity-Ratio + ε

(5b) $ROA = \alpha + \beta_1$DirectOwnershipFamily + $\beta_2$lnAge + $\beta_3$lnRevenue + β_4DebtRatio + β_5CurrentAssetsRatio + β_6FixedAssetsRatio + β_7LongTermDebtRatio + ε

Model (6) – Efficiency

Model (6) tests how the impact of having an efficient firm is on the performance for the family firms that go through a family ownership dilution. Obviously, being an efficient organisation is reflected in the firms' result and thereby in ROA, so a negative coefficient would be mostly unlikely. We found in descriptive statistics that family firms have higher asset turnover, and that it decreases along with family ownership dilution. Therefore we anticipate that the coefficient β_7 will be positive, and statistically significant. Regression results are found in table 9.

$$ROA = \alpha + \beta_1 \text{DirectOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 \text{ATO} + \varepsilon$$

8.3 Survival hypothesis

Model (7) – Survival rate

The last model refers to which of the subgroups that has the highest probability to survive during the time frame. To analyse this, we have used the random-effects parametric survival model. Previous studies agree upon the incentives for family firms to pursue long-term strategies in order to pass the firm to the next generation. However, these conservative strategies and risk aversion can also lead to early death. Together with a change in ownership, new strategies might be implemented that lead to - or are intended to lead to early death (e.g. merger or demerger). But, within the time frame we are analysing, we anticipate that family firms will have higher probability to survive longer than nonfamily firms and the firms that go through a family ownership dilution. Results are described in table 10.

$$h(t) = \alpha + \beta_1 \text{DirectOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 \text{D1} + \beta_8 \text{D2} + \beta_8 \text{D3} + \varepsilon$$

9.0 Empirical Findings and Results

In this section we will present the results from all our hypotheses. Additional details of the tests and regressions are found in the appendix.

9.1 Main hypothesis[1]

Model (1)	Ownership dilution
ROA	Random effects model
DirectOwnershipFamily	0.043***
	0.000
lnAge	0.02***
	0.000
lnRevenue	0.021***
	0.000
DebtRatio	-0.202***
	0.000
CurrentAssetsRatio	0.427***
	0.000
FixedAssetsRatio	0.275***
	0.000
D1	0.062***
	0.000
D2	0.061***
	0.000
D3	0.084***
	0.000
Constant	-0.834***
	0.000
No. of observations	835 291
R-squared	21.43%

Table 3: Reported results of the main hypothesis, model (1)

The results from the regression model with random effects in our main hypothesis are presented in the table above. We anticipated positive coefficients for all control variables, and were uncertain about debt-ratio. Hence the results show that all the control variables are statistically significant at a 1% level and all positive, except for debt-ratio which is negative. The coefficients for the explanatory variables are positive and statistically significant at a 1% level. The explanatory variable D4 – always a nonfamily firm – is used as the reference variable, and with all explanatory variables having positive coefficients indicates that all other ownership structures have a greater impact on firm performance compared to always being a nonfamily firm.

[1] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

Of our explanatory variables, the dummy variable D3 – always a family firm – has the most positive coefficient indicating that the firms that always are a family firm have the greatest positive impact on firm performance. The difference in the explanatory variables' coefficients are statistically significant, (see appendix 13.6), indicating that D3 has greater economic impact on firm performance compared to the other subgroups. This supports Berzins and Bøhren's (2013) findings of Norwegian family firms having greater performance than nonfamily firms.

Our main variable of interest is D1 – the firms that initially were family firms, while later the family ownership control dilutes to under the 50% shareholder threshold. As this coefficient is lower than D3, it suggests that firm performance is lower for family firms that dilutes the family ownership control and transforms to being a nonfamily firm. The variable D3, and the difference between the coefficients for D1 and D3 are statistically significant at a 1%-level, (see appendix 13.6). These results thus provided us the predicted incentives to analyse whether the identified changes in typical characteristics of family firms could be a reason for why the performance is lower when family control dilutes compared to remaining family control.

D2 – the firms that initially were nonfamily, while later family ownership crossed the threshold of 50% ownership control and then is a family firm – is as mentioned not a subgroup that is of major interest to our analysis. D1 is slightly more positive than D2, but the difference between the coefficients are not statistically significant (appendix 13.6). This indicates that we cannot state that the difference in economic impact on ROA differs between D1 and D2. Hence, the intuition would be that by changing ownership structure to family firm has a more positive impact on firm performance, compared to constantly being a nonfamily firm, and supports previous studies of having family control is better for firm performance than without having family control.

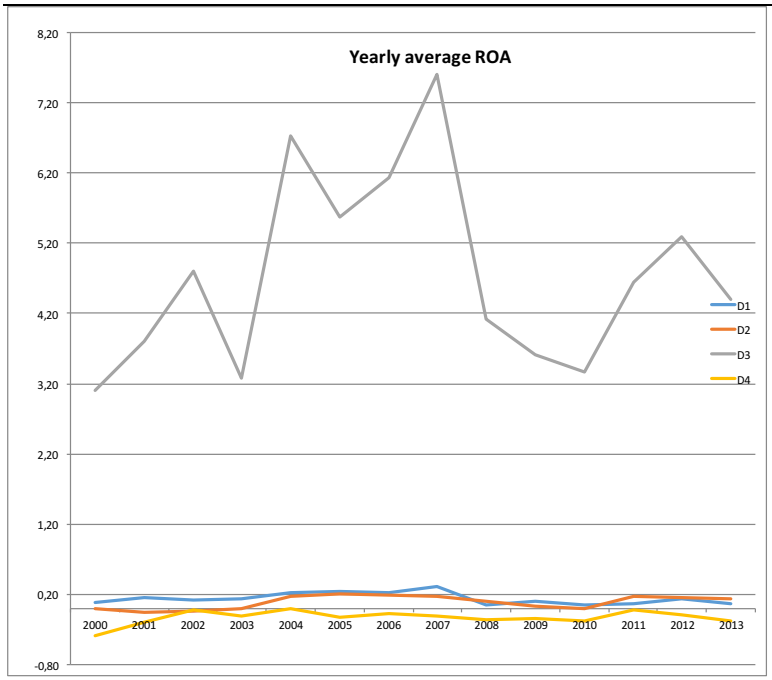

Figure 20: Percentage yearly average ROA for the different subgroups

The graph above shows the results of how the ROA is between our subgroups. It is also interesting to notice that the last financial crisis had the most negative impact on ROA for those firms that always are family firms.

The results indicate support for our hypothesis of that always remaining family control has the greatest positive impact on firm performance.

9.2 Sub-hypotheses

The results from our main hypothesis provided incentives to investigate how the identified changes in the typical characteristics of family firms impact firm performance. In the sub-hypotheses presented in section 4.2, we are analysing the subgroup D1 - the firms that initially were family firms and go through a family ownership dilution such that the firms are nonfamily firms per definition - to identify why the performance was found lower for D1 compared to D3 in our main hypothesis.

9.2.1 CEO[2]

Model (2)	CEO
ROA	Fixed effects model
DirectOwnershipFamily	0.027***
	0.000
lnAge	-0.018***
	0.000
lnRevenue	0.031***
	0.000
DebtRatio	-0.219***
	0.000
CurrentAssetsRatio	0.421***
	0.000
FixedAssetsRatio	0.235***
	0.000
LargestfamilyCEO	0.008**
	0.025
Constant	-0.413***
	0.000
No. of observations	37 622
R-squared	21.71%

Table 4: Reported results from model (2) - CEO

Our explanatory variable, the dummy variable LargestFamilyCEO, presented in table 4 is positive and statistically significant at a 5% level, indicating that having a family member as CEO has a positive economic impact on firm performance. This supports our hypothesis. We found that the percentage of firms having CEO from the family with largest ultimate ownership decreased together with ownership dilution, and could be an indication for why ROA is lower for the firms that dilute family ownership control. This is in line with Anderson and Reeb's (2003) findings that family firms with family members serving as CEO perform greater than those with an external hired CEO. Hence the results contradict the assumption that family firms might over time suffer from a limited competence pool and an inbreeded management (Wennberg et al. 2011; and Berzins and Bøhren 2013). All control variables are statistically significant at a 1% level. DebtRatio and lnAge are negative, while the other control variables are positive.

This supports hypothesis 2 that a family-member CEO leaving the firm might be a reason for lower firm performance.

[2] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

9.2.3 Firm size[3]

Model (3)	Firm size
ROA	Fixed effects model
DirectOwnershipFamily	0.034***
	0.000
lnAge	-0.016***
	0.000
lnRevenue	0.0345***
	0.000
DebtRatio	-0.273***
	0.000
CurrentAssetsRatio	0.482***
	0.000
FixedAssetsRatio	0.298***
	0.000
SmallFirm	0.0327***
	0.000
Constant	-0.501***
	0.000
No. of observations	37 622
R-squared	21.67%

Table 5: Reported results from model (3) - Firm size

The results in table 5 reports that the variable SmallFirm is positive and statistically significant at a 1% level. Even though firm size is an element that is highly time-dependent, and not changing immediately with a family ownership change. The intuition is that small firms will have a positive effect on ROA, compared to large firms. As we have identified that most firms are small, the trend indicates that after an ownership transfer the firms increase in size using the definition to Berzins and Bøhren (2013), which can contribute to a lower ROA. In this hypothesis the variables lnAge and DebtRatio also have negative coefficients, while the others are positive. All variables are statistically significant at a 1% level.

The results support hypothesis 3 of the increase in the size of the firms that go through a family ownership dilution has a lower positive impact on firm performance.

[3] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

9.2.4 The number of firm owners[4]

Model (4)	Nr. of Owners
ROA	Fixed effects model
DirectOwnershipFamily	0.036***
	0.000
lnAge	-0.158***
	0.000
lnRevenue	0.034***
	0.000
DebtRatio	-0.274***
	0.000
CurrentAssetsRatio	0.483***
	0.000
FixedAssetsRatio	0.299***
	0.000
N1	0.042***
	0.000
N2	0.035**
	0.015
N3-5	0.036***
	0.006
Constant	-0.500***
	0.000
No. of observations	37 622
R-squared	21.70%

Table 6: Reported results from model (4) - Number of owners

The results in the table above presents the results of the control - and explanatory variables with the different intervals of firms' amount of owners. As mentioned, approximately 95% of the observations have fewer than five owners, so the intervals are defined to capture a spread in the different categories. We used the dummy variable with more than five owners as a reference variable. All explanatory variables are positive, meaning that having few owners has a positive impact on firm performance. N1 and N3-5 are statistically significant at a 1% level and N2 at a 5% level. The results indicate that having one owner has the most positive impact on ROA. This is in line with Miller et al.'s (2007) findings, who found that family firms with only a lone founder, meaning that no other family members are involved as managers or owners, perform better than nonfamily firms. We also assume that the great establishments of holding companies followed by the tax reform is present in the firms with one owner

[4] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

which also influence the results. However, the Lincom-test indicates that the difference between the coefficients are statistically non-significant, (see appendix 13.6), so the interpretation of the results should be taken with caution. The control variables are statistically significant at a 1% with the same coefficient signs as the two previous hypotheses.

To some degree, we find support for hypothesis 4 that the increase in number of owners for the family firms that dilute family control, can be a plausible reason for why ROA is lower for these firms.

9.2.5 Capital structure and risk

Debt-to-equity-ratio[5]

Model (5a)	**Debt-to-equity**
ROA	**Fixed effects model**
DirectOwnershipFamily	0.028***
	0.000
lnAge	-0.017***
	0.000
lnRevenue	0.031***
	0.000
DebtRatio	-0.217***
	0.000
CurrentAssetsRatio	0.418***
	0.000
FixedAssetsRatio	0.231***
	0.000
Debt-to-Equity-Ratio	0.001***
	0.000
Constant	-0.406***
	0.000
No. of observations	37 603
R-squared	21.78%

Table 7: Reported results from model (5a) - Debt-to-Equity

Here we can see that the results of the control variables are the same as all previous sub-hypotheses. The result output of the Debt-to-Equity-ratio reported in the table above, reports that the coefficient is positive and statistically significant at a 1% level. However, the impact of having a high ratio does not have a very

[5] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

high economic impact on ROA as the coefficient is 0.001. However, prior research both found family firms' unwillingness to issue new equity in desire to maintain control and therefore prefer debt, and that family firms' risk aversion makes them avoid debt (thus depending on managerial or ownership control) (McConaughy and Mishra 1999; Gonzalez et al. 2013). By this, our results support these ambiguous findings with a low coefficient. Thus, the findings contradict our hypothesis of that an increased debt-to-equity ratio could be a plausible reason for why firm performance is lower for the family firms that dilute ownership control.

We do not find fully support for hypothesis 5a, even with statistically significant variables.

Long-term debt ratio[6]

Model (5b)	**Long-term debt ratio**
ROA	**Fixed effects model**
DirectOwnershipFamily	0.028***
	0.000
lnAge	-0.018***
	0.000
lnRevenue	0.031***
	0.000
DebtRatio	-0.219***
	0.000
CurrentAssetsRatio	0.421***
	0.000
FixedAssetsRatio	0.232***
	0.000
LongTermDebtRatio	0.011
	0.285
Constant	-0.411***
	0.000
No. of observations	37 601
R-squared	21.69%

Table 8: Reported results from model (5b) - Long-term debt ratio

The explanatory variable LongTermDebtRatio is positive, but not statistically significant with a p-value of 0.285, as reported in table 8. This means that we

[6] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

cannot say that we have enough evidence to state that the long-term debt ratio has an economic impact on ROA. The control variables are statistically significant at a 1% level and all coefficient signs are positive except DebtRatio and lnAge. As described in section 3.2, we found that the family firms and nonfamily firms had long-term debt ratio at the same level. However, the ratio decreased slightly when family control diluted, which supports what we predicted. This supports the argument of family firms' long-term perspective and family firms' risk aversion towards debt ((Miller, Le Breton-Miller and Scholnick 2008; and McConaughy and Mishra 1999).

We found support for hypothesis 5b that a decrease in long-term debt ratio can have affected ROA for the family firms that dilute control, but cannot draw conclusion of our hypothesis based on the significant level.

9.2.6 Firm efficiency[7]

Model (6)	**Asset turnover**
ROA	**Fixed effects model**
DirectOwnershipFamily	0.031***
	0.000
lnAge	-0.014**
	0.009
lnRevenue	0.029***
	0.000
DebtRatio	-0.244***
	0.000
CurrentAssetsRatio	0.475***
	0.000
FixedAssetsRatio	0.291***
	0.000
ATO	0.008***
	0.004
Constant	-0.465***
	0.000
No. of observations	37 622
R-squared	21.01%

Table 9: Reported results from model (6) - Efficiency

The results in table 9 indicate that the explanatory variable ATO has a positive effect on firm performance, and is statistically significant at a 1% level. The

[7] The result table reports the variables' coefficients with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

control variables are statistically significant at a 1% level, and lnAge and DebtRatio are the only variables with negative coefficients. As mentioned, firm efficiency clearly has a positive impact on ROA, and our findings support this. As we found in section 3.2, the ATO-ratio is lower for the firms that go through a family ownership dilution. We anticipate that this can be linked to hypothesis 2, that decision-making is more efficient when the management and owners are cohered such that when family control dilutes, inefficient decision-making might be reflected in side-effects in the asset turnover. In addition, we found clear differences in ATO in section 3.2 before and after a family control dilution, which might be linked to reduced agency conflicts within family firms.

We found support for hypothesis 6.

9.3 Survival hypothesis

9.3.1 Firm survival [8]

Random effects parametric survival		
Model (7)	**Firm Survival**	
ROA	**Hazard ratio**	**95% conf. interval**
DirectOwnershipFamily	0.827***	0.778 - 0.879
	0.000	
lnAge	0.726***	0.710 - 0.742
	0.000	
lnRevenue	0.923***	0.911 - 0.935
	0.000	
DebtRatio	1.148***	1.120 - 1.176
	0.000	
CurrentAssetsRatio	0.854***	0.827 - 0.882
	0.000	
FixedAssetsRatio	0.840***	0.796 - 0.887
	0.000	
D1	0.487***	0.356 - 0.667
	0.000	
D2	0.534***	0.379 - 0.752
	0.000	
D3	0.556***	0.472 - 0.655
	0.000	
Constant	0.001***	0.001 - 0.001
	0.000	
No. of observations	27 753	

Table 10: Reported results from model (7) - Firm survival

[8] The result table reports the hazard ratios with the significance level reported bellow. The marks indicate: *= statistically significant at a 10%-level, **=5%-level and ***=1%-level.

The results from the random-effects parametric survival model are shown in table 10. All the variables are statistically significant at a 1% level. We are only considering firms that are founded in year 2000 and analyse the probability of survival till year 2013. The firms that always are nonfamily firms, D4, is the reference variable. The output result reports Hazard-ratios, which is an indication of the probability of the event to occur, in our case firm death. The control variables have been analysed and considered such that the explanatory variables for the different subgroups, D1, D2, D3 and D4, are those that are the key variables of interest and for interpretation.

As we can see, the hazard ratio to D1 is 0.487 meaning that there is 51.30% (= 1-hazard ratio) higher chance for these firms to survive during the time frame, compared to those firms that always are nonfamily firms, D4. The hazard ratio for D2 is 0.534, while for the firms that always are family firms, D3, the hazard ratio is 0.556. This indicates that D3 have 44.40% higher probability for surviving the time period, compared to firms that always are nonfamily firms, D4. For D1, D2 and D3 the 95% confidence interval has values that do not cross one, meaning that we can say with 95% confidence that these firms have higher chance for surviving than D4.

The table reports that D1 has lower hazard ratio than D3. This means that in our sample in this analysis, the firms that experience a dilution of family control is associated with the highest probability of surviving during the whole time frame.

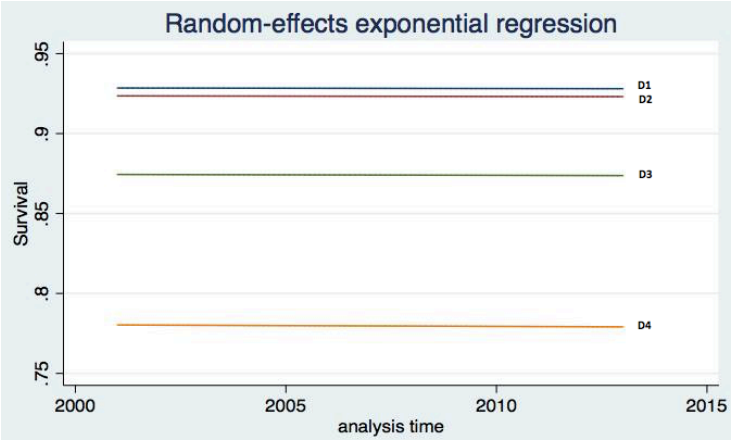

Figure 21: Survival rate

Figure 21 shows the percentage of firms that survive each year. As the regression function assume constant rates, the intuition from these findings is that D1 has higher proportions of firms that survive compared to D2, D3 and D4.

As we anticipated family firms have greater probability for survival than nonfamily firms. Surprisingly, those firms that initially were family firms and dilute family ownership, D1, are the firms that have the lowest risk of dying, compared to those firms that always are nonfamily firms and always family firms. This was not what we expected based on previous studies about family firms' focus on the long-term perspective (e.g. Breton-Miller, Miller, and Steier 2004; and Bouzgarrou and Navatte 2013). However, it can be explained by new owners entering the firms and bringing new positive synergies into the firm, and that family firms might suffer over time from a limited competence pool and an inbreeded management (Wennberg et al. 2011; and Berzins and Bøhren 2013).

We further see that all the control variables have a hazard ratio below one except DebtRatio. The interpretation of this is that the control variables included, except DebtRatio, decrease the probability of death. While DebtRatio is associated with higher probability of firm death, in line with our other regression models which indicate a reduction of ROA when firms increase the debt ratio, holding all other variables constant.

10.0 Robustness Testing

The robustness tests are performed to address the credibility of our findings, and to verify whether our models are sensitive to alternative methods and definitions. To test the robustness of model 1-7, we have used another measure for firm performance and alternative methods for both the main hypothesis and sub-hypotheses. For our main hypothesis we have explored alternative definitions of family firms. In addition, we have used different definitions for some explanatory variables for the relevant sub-hypotheses. The detailed results are elaborated in appendix 13.7.

10.1 Robust test for both main hypothesis and sub- hypotheses

Profit margin

Profit margin is used as alternative measurement for firm performance as the dependent variable. ROA is not considered a very good measurement for firms that rely on having large investments in assets, compared to those that do not. In addition, several implications can occur in valuation of firms' own assets. Profit margin is net income divided by revenue. Profit margin measures the firm's ability to control the costs incurred to generate revenue. The ratio indicates the operating efficiency for each firm (Fairfield and Yohn 2001). We have winsorized profit margin at the 1^{th} and 99^{th} percentiles to limit the value of extreme outliers. We expect profit margin to have the same pattern as ROA.

The output of these results are found in appendix 13.7.1. The R^2 clearly drops, from above 20% to around 4% in our main hypothesis and around 6% in our sub-hypotheses. The result output indicates that the explanatory variables in regression models (1), (3) and (6) are statistically significant at a 1% level, while the models (2), (4), (5a) and (5b) are not statistically significant at a 10% level. Thus, the explanatory variables indicate the same coefficient pattern as the results using ROA as dependent variables, except for model (5b) that report a negative coefficient for LongTermDebtRatio. By this, our results are not quite robust to alternative definition of performance.

Standardized variables

We have standardized the independent variables by "subtracting each variable with its mean and dividing the result by the standard deviation" (Bartholomew et al. 2008, 10). By this all variables have a variance of one and a mean of zero (Bartholomew et al 2008, 183). Then the standard deviation is used as a unit of measure, such that we interpret the coefficients as the expected change in standard deviation in the dependent variable, when there is a unit change in the standard deviation to the independent variable (Langli and Che 2015, 1236). By doing this, the variables are easier to interpret and more directly comparable because standardizing the variables makes them independent of its unit-measure (Bartholomew et al. 2008, 159), and enables us to analyse the relative importance of the standardized variables for ROA.

When standardizing the variables, we obtain statistically significant explanatory variables at a 1% level for model (1), (3), (4), (5a) and (6). The explanatory variable CEO in model (2) is statistically significant at a 5% level. The variable LongTermDebtRatio in model (5b) is statistically non-significant. Results are found in appendix 13.7.2.

Pooled OLS regression

As an alternative method we have used pooled OLS regression, a method used for panel data which pools together different individuals at different times, and assumes that the coefficients do not vary between cross-sections and time. By pooling the individuals, correlation between the error term and independent variables can occur and cause inconsistent and biased estimations (Gujarati 2011, 281-282).

The results in appendix 13.7.3 of our explanatory variables report statistically significant explanatory variables at a 1% level in all models, except model (5b) where the variable LongTermRebtRatio that is statistically insignificant and change to negative coefficient, which further express the weakness of this model. All coefficients to the explanatory variables have the same sign as the original models. By using pooled OLS the same pattern is obtained for our explanatory variables in our main hypothesis, model (1). The same pattern as the original

model is not found in model (4) - the number of owners – where N2 has the most positive coefficient followed by N1 and N3-5.

Time-fixed effects

Fixed effects for each firm can control for constant variables over time, but changes between firms. Fixed effects is therefore referred to as entity effect. Time fixed effects enable us to control for constant variables between firms, but develop over time (Stock and Watson 2014, 400). Time fixed effects allow the regression models to enable the intercept to vary over time, but at the same time be constant cross-sectional. Time fixed effects create *t-1* dummy variables that capture time variation rather than cross-sectional variation (Brooks 2014, 530-531). In our main hypothesis we include time fixed effects since it is a random effects regression. Our sub-hypotheses are fixed effects models and already consist of entity fixed effects. By including time fixed effects we are controlling for both time and entities within the same regression. To determine whether including time fixed effects is necessary for our models we perform a testparm-test to check whether the time related dummy variables for all years are equal to zero. The test shows that if all dummy variables are equal to zero, no time fixed effects are needed. All our testparm-tests are statistically significant at a 5% level, except for model (5b) (see appendix 13.2), indicating that time fixed effect is natural to include in a robust test (Torres-Reyna 2007).

The results in appendix 13.7.4 from both the main hypothesis and sub-hypotheses are robust by including time fixed effects. All the explanatory variables are robust at the same statistic significance level and have the same coefficient signs.

Bootstrap

We have used the bootstrap method on our regression models to validate our findings. One of the purposes with having a sample is to be able to draw inferences about the population parameters based on the sample statistics. So to validate that the sample measures are fair estimates of the population, e.g. that the estimates do not change when using another sample in the population, we can use the bootstrap as a validation. The bootstrap resamples the sample with replacements repeatedly from the data, and computes the estimates of interests. By

this, the bootstrap can be used to determine the accuracy of any estimator (Good 2011, 74-75).

The bootstrap estimates for our main hypothesis show similar predictions of the coefficients for the explanatory variables and they are also statistically significant at a 1% level. In our sub-hypotheses reliable estimators are found in all models. Hence the p-value increase for the explanatory variables in model (2), (4), (5a) and (6), but are all statistically significant at 10% level. The explanatory variable in regression model (5b) is not statistically significant. This is found in appendix 13.7.5.

10.2 Robust tests for the main hypothesis

Alternative definition of family firms

As mentioned, there are numerous definitions of family firms in the international family business literature (Miller et.al 2007, 832), and thus results are sensitive to different definitions (Miller et.al 2007). Whether the family has active or passive control can also differentiate family firm performance (Maury 2006). Thus, we have only applied different share threshold measures for our main hypothesis. The most relevant thresholds for our study is family holding at least one-third (33.33%) of the shares – then the family have negative majority – and holding two-thirds (66.67%) of the shares – then the family has controlling influence in most of the decisions in the firm (Nærings- og fiskeridepartementet, Aksjeloven 1997). When applying these definitions, the number of observations in the stratified samples changes within the two aforementioned definitions.

The results in appendix 13.7.6 show that applying a 33.33% threshold, the trend remains the same for the explanatory variables; with the dummy variable D3 having the most positive coefficient, followed by D1 and D2. The variables are all positive compared to D4 and statistically significant at a 1% level, in line with a 50% threshold. At a 66.67% threshold, all explanatory variables are positive compared to D4. The variable D3 is still the most positive, however D2 has a higher coefficient than D1. This indicates that the model is slightly sensitive to alternative definition of family firm, as two of the explanatory variables change

order. All the explanatory variables are positive and statistically significant at a 1% level.

Direct share ownership held by the largest family

In addition to using ultimate share ownership as measurement of family firms in our main hypothesis, we have used direct share ownership held by the largest family. Ultimate ownership includes both direct ownership, and indirect ownership through other firms. As a consequence of the tax reform in 2006 indirect ownership through holding companies became a prevalent ownership structure (Berzins and Bøhren 2013). Therefore, we find it interesting to investigate whether the results are robust to defining family firms as having direct ownership over 50% of the shares. As we have used DirectOwnershipFamily as a control variable in the original regressions, we have replaced this with UltimateOwnershipFamily in the robust test.

$$ROA = \alpha + \beta_1 \text{UltimateOwnershipFamily} + \beta_2 \text{lnAge} + \beta_3 \text{lnRevenue} + \beta_4 \text{DebtRatio} + \beta_5 \text{CurrentAssetsRatio} + \beta_6 \text{FixedAssetsRatio} + \beta_7 D1 + \beta_8 D2 + \beta_9 D3 + w_{it}$$

The results in appendix 13.7.6 indicate the same trend with D3 with the most positive coefficient, followed by D1 and D2. They are all positive and statistically significant at a 1% level.

10.3 Robust tests for the sub-hypotheses

Other definition of firm size - model (3)

We have used the definitions of small - and large firms presented by the Norwegian portal for dialogue between business/industry sector, citizens and government agencies, Altinn, as a robust-test to substantiate the results. These definitions are from the "Act relating to annual accounts" (Loven om årsregnskap), as there are stricter accounting requirements for larger firms (Altinn 2016). To be considered as a small firm at least two of the following criteria must be fulfilled:

1. Revenue less than 70 MNOK
2. Total assets less than 35 MNOK
3. Less than 50 employees on average during the financial year.

The results are robust to this definition, as the variable SmallFirm is positive and statistically significant at a 1% level, thus the definitions do not differ substantially. The findings are elaborated in appendix 13.7.7.

Other definition of number of owners - model (4)

In the hypothesis of number of owners, we have also conducted a test with some changes in the intervals to validate the results. Due to the skewed distribution in our sample of firms having few owners, we have only redefined one dummy variable, N3-5, and dropped the dummy variable N6-50. The new dummy variable is N3-50 which is having more than three owners. N1 is still defined as a firm having one owner, and N2 as the firm having two owners. These variables are not statistically significant, and the coefficients indicates that there is barely any impact whether having one or two owners. Hence, we rely on the first test and find support for the hypothesis that fewer owners have greater impact on firm performance. The results are elaborated in appendix 13.7.8.

Other definition of firm efficiency - model (6)

In this hypothesis we have also used an alternative measurement for efficiency; revenue generated per employee (= revenue divided by the number of employees in the firm). We have taken the natural logarithm and winsorized at 1^{th} and 99^{th} percentiles. By analysing this efficiency measure, we found that the firms that always are nonfamily firms generate higher revenue per employee than those that always are family firms. The firms that go through a family ownership dilution, generate more revenue per employee after the family control dilution. This is the opposite as expected since family firms had higher asset turnover ratio. The result output in appendix 13.7.9 show that the explanatory variable coefficient is positive, 0.394, and statistically significant at a 1% level, indicating the same pattern as the original model with ATO.

Regression with all explanatory variables included

Lastly, we have constructed a model that includes all explanatory variables we have used in our sub-hypotheses, in addition to the control variables. This is in order to verify that the combination of all variables in one model predicts the same trend in coefficients and significance level as it does in each of the separated models in the sub-hypotheses. Firstly, we conduct the Hausman test to check whether the model is best suited for random – or fixed effects. The test shows that this model is a fixed effects model. The model output indicates that Debt-Ratio and lnAge remain the control variables with negative coefficient sign. The explanatory variable LongTermDebtRatio, which is not statistically significant in the main model still remain statistically non-significant. All other explanatory variables are statistically significant at least at a 5% level. The model predicts the same coefficients signs for the explanatory variables. Overall, this imply that the models we have used are robust. See appendix 13.7.10.

10.4 Endogeneity

Endogeneity is a problem that occurs when a test variable is correlated with the error term (Wooldridge 2013). If this occurs in our observations and the necessarily precautions are not taken, there is a risk that the estimated coefficients are not valid and can not be interpreted. If endogeneity occurs, the true effect of the dependent variable on the independent variable or opposite might not have been taken into account (Antonakis et al. 2014). In our main hypothesis the endogeneity problem is: is firm performance for family firms greater because they are family firms, or are the firms family firms because they have greater firm performance?

Prior research indicates that endogeneity should be a concern when searching for the relationship between ownership and performance (Demsetz and Villalonga 2001). According to Palia and Lichtenberg (1999), an approach to minimize the endogeneity problem is to perform lagged independent variables as a robustness test. A lagged variable takes the identical value of a variable that the variable had for one of the earlier time periods (Brooks 2014). In accordance with Langli and Che (2015), we lagged all our control variables and dependent variable with one

year. Since the explanatory variables in our main hypothesis are dummy variables that always are constant, it is not necessarily to lag the dummy variables.

By lagging the variables, the explanatory variables D1, D2, D3 are statistically significant at a 1% level and have positive coefficients. D3 still had the highest coefficient. Hence, now D2 is more positive than D1, which was the opposite result for the random effects model without lagged variables. The results are found in appendix 13.7.6.

11.0 Conclusion and final remarks

11.1 Conclusion

Family firms are an important form of organisation in the Norwegian business sector, accounting for two thirds of all private and public firms in Norway, and are found more profitable than nonfamily firms (Berzins and Bøhren 2013). By this, these types of firms should obtain more attention. Therefore, we have contributed with research within the family firm literature; Firstly, analysing the effect on firm performance for the family firms that dilute family ownership control. We further explore if the identified family firm characteristics found in the literature and our sample, change together with ownership dilution, and can be possible reasons for a change in firm performance. Lastly, we analyse how family ownership affects firm survival. Few studies are available about this, and we found it interesting to explore whether family ownership is a profound feature for greater firm performance. To investigate this, we have analysed Norwegian firms in the time frame 2000-2013.

We found that the family firms that remain family control over the firm during the whole time period are the firms that are associated with having highest firm performance. This indicates that diluting family ownership control has an effect on firm performance as it is lower for these firms.

Furthermore, we found that the typical characteristics of having a family member CEO, small size of the firm and higher ATO is found to have positive impact on firm performance. Since these characteristics are less present or lower for the subgroup that go through a family ownership dilution, might be possible reasons for why remaining family control is better for firm performance. Few owners have a positive effect on firm performance, however the difference between the coefficients are not statistically significant and a conclusion cannot be stated.

Thus we did not find support for that an increased debt-to-equity was associated with lower firm performance. We did not find enough evidence to say whether the difference in long-term debt ratio had an impact on ROA. Previous studies do not agree upon how family firms' typical structure their capital, and neither do our results draw a final conclusion, implying that this should be closer examined.

The firms that dilute family ownership control is surprisingly found to have lower risk of dying during the time frame. As expected firms that remain as family firms survive longer than firms that are always nonfamily firms, but live shorter than those firms that dilute family control.

Our results are considered generally robust to alternative definitions and measurements. The overall results show that for family firms that dilute family ownership control have lower performance, but survive longer. This is an indication of that keeping the typical characteristics of family firms in the firm, even though a dilution of family ownership occurs, is better for firm performance.

11.2 Limitations

First of all, we do not know the reason behind why family control dilute. It might be because the firm is financially distressed or that it has obtained great success such that it is an attractive target for external parts. An additional reason might be that there are no available successors, or no interests from the successors to start or continue in the firm, forcing a sale to external partners. All theses cases have different impact on ROA, and we do not know how often these different types of ownership transfers occur.

Another limitation is that we do not separate or identify different industries. However, this was also with a purpose to get an overall picture of the performance, independent of which industry the firms operate in. We have not conducted an in-depth analysis of how the performance was affected of the tax reform and financial crisis, as mentioned in section 2.4. These events are only to take into consideration as the business behaviour and performance might be different in the time around these events.

When we analyse survival rate, we are only analysing the firms that establish in year 2000. A limitation can be the length of our time frame for firm existence, as prior literature states that less than 30% of family firms survive first generation (Gleason, Pennathur and Wiggenhorn, 2011). Therefore, the survival rate for

family firms compared to nonfamily firms could be different for a longer time frame, which we are unable to capture.

Furthermore, Berzins and Bøhren (2013) suggest that family firms tend to underreport their figures more than nonfamily firms, meaning that they undervalue their assets more than nonfamily firms. This is due to that these firms might wish to keep a lower social profile. In addition, we have an unbalanced data set. Since we have excluded different variables that have missing values, we might have dropped observations during the time frame that could have an impact of the findings in the analysis.

Lastly, we find that some of our models are sensitive to different definitions and measurements.

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13.0 Appendix

13.1 Summary of variable statistics

Summary statistics						
Variable name	**Min**	**Max**	**Mean**	**Standard deviation**	**Skewness**	**Kurtosis**
ROA						
DirectOwnershipFamily	0	1	0.721	0.413	-0.999	2.173
lnAge	0	5.835	2.093	0.923	-0.392	2.781
lnRevenue	0	17.311	8.244	1.651	-0.448	4.772
DebtRatio	0.011	4.347	0.818	0.541	3.084	18.620
CurrentAssetsRatio	-4.789	6.444	0.744	0.347	-0.028	3.384
FixedAssetsRatio	-5.667	10.143	0.279	0.293	1.424	6.908
D1	0	1	0.045	0.207	4.387	20.249
D2	0	1	0.036	0.187	4.958	25.578
D3	0	1	0.891	0.312	-2.508	7.288
D4	0	1	0.027	0.164	5.749	34.054
LargestFamilyCEO	0	1	0.706	0.455	-0.902	1.813
SmallFirm	0	1	0.981	0.137	-7.004	50.063
LargeFirm	0	1	0.192	0.137	7.004	50.063
N1	0	1	0.473	0.499	0.109	1.012
N2	0	1	0.282	0.450	0.969	1.938
N3-5	0	1	0.217	0.412	1.373	2.885
N6-50	0	1	0.282	0.165	5.704	33.537
Debt-to-Equity-Ratio	-43.766	56.729	2.911	10.141	0.797	16.655
LongTermDebtRatio	-26.500	13.250	0.213	0.285	0.132	104.355
ATO	0.011	12.220	2.504	2.071	2.085	9.096
UltimateOwnershipFamily	0.001	1	0.930	0.178	-3.048	12.280

13.2 Model tests

Test	Model (1)	Model (2)	Model (3)	Model (4)	Model (5a)	Model (5b)	Model (6)
Hausman specification test (hausman)	- (*)	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan Lagrangian multiplier (xttest0)	0.000	- (**)	- (**)	- (**)	- (**)	-(**)	-(**)
Lagram-Multiplier (xtserial)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Skewness-Kurtosis test for residual normality (sktest)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan test (xttest3)	- (***)	0.000	0.000	0.000	0.000	0.000	0.000
Fixed-effects test (testparm)	0.000	0.025	0.0003	0.0387	0.000	0.2851	0.0045

Formal test name (Stata test in parenthesis)
(*): due to time-invariant explanatory variables, fixed effects model does not work
(**): since the models are fixed effects model, the test is not relevant
(***): since the model is random effects model, the test is not relevant

Descriptions of the tests	
Hausman specification test (hausman)	H0: random effects model is the best fitted model, HA: fixed effects is the best fitted model
Breusch-Pagan Lagrangian multiplier (xttest0)	H0: pooled ols is the best fitted model, HA: random effects is the best fitted model
Lagram-Multiplier (xtserial)	H0: no first-order autocorrelation, HA: no first-order autocorrelation
Skewness-Kurtosis test for residual normality (sktest)	H0: the model indicates normality, HA: the model indicates non-normality
Breusch-Pagan test (xttest3)	H0: the model indicates homoscedasticity, HA: the model indicates heteroscedasticity
Fixed-effects test (testparm)	H0: no time-fixed effects are needed, HA: time-fixed effects are needed

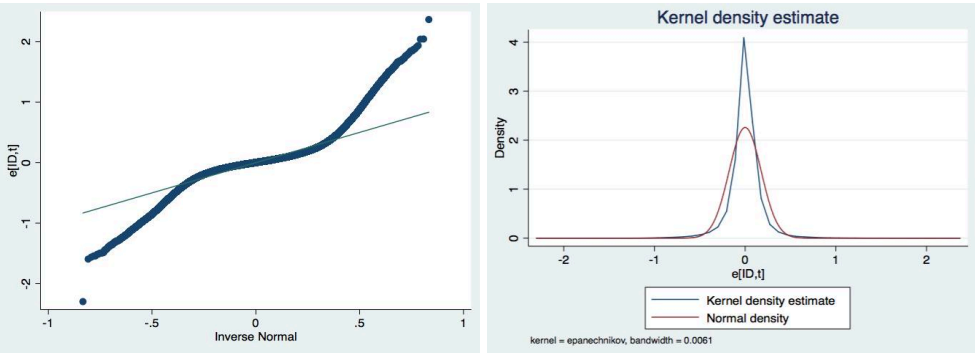
13.3 Skewness-Kurtosis test for normality

Skewness-Kurtosis test for normality				
	No. of observations	Pr(Skewness)	Pr(Kurtosis)	Prob>chi2
DirectOwnershipFamily	37 622	0.0197	-	-
lnAge	37 622	0.000	0.000	0.000
lnRevenue	37 622	0.000	0.000	0.000
DebtRatio	37 622	0.000	0.000	0.000
CurrentAssetsRatio	37 622	0.0473	0.000	0.000
FixedAssetsRatio	37 622	0.000	0.000	0.000
D1	835 291	0.000	0.000	0.000
D2	835 291	0.000	0.000	0.000
D3	835 291	0.000	0.000	0.000
D4	835 291	0.000	0.000	0.000
LargestFamilyCEO	37 622	0.000	-	-
SmallFirm	37 622	0.000	0.000	0.000
LargeFirm	37 622	0.000	0.000	0.000
N1	37 622	0.000	0.000	0.000
N2	37 622	0.000	-	-
N3	37 622	0.000	0.000	0.000
N3-5	37 622	0.000	0.000	0.000
N6-50	37 622	0.000	0.000	0.000
Debt-to-Equity-Ratio	37 603	0.000	0.000	0.000
LongTermDebtRatio	37 601	0.000	0.8681	0.000
ATO	37 622	0.000	0.000	0.000

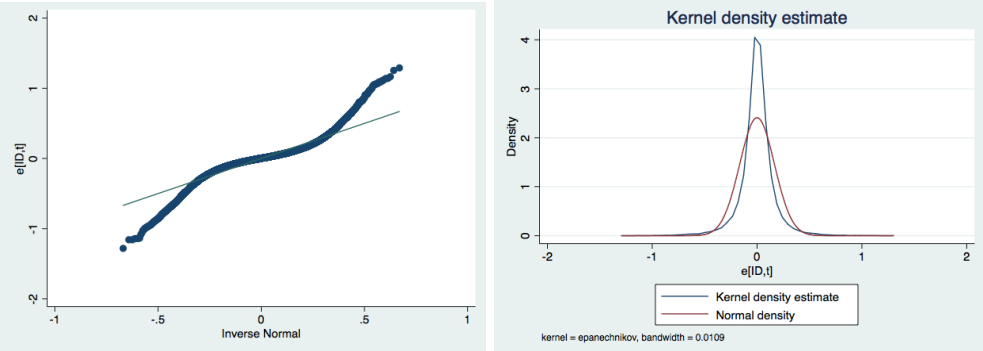
- : no results obtained

13.4 Normality of residuals

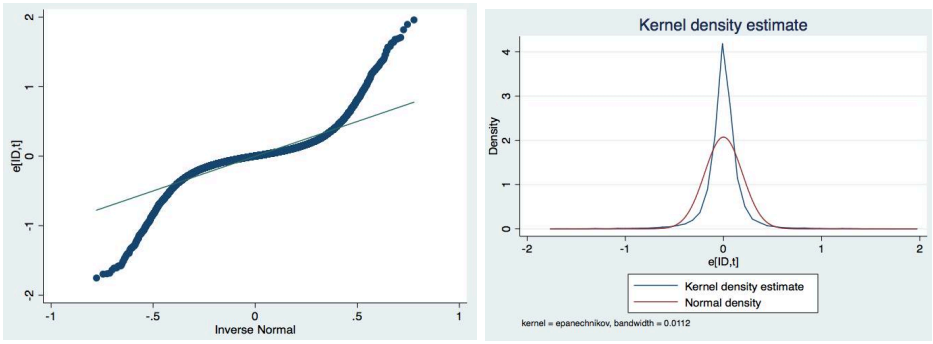
13.4.1 Normality of residuals in model (1)



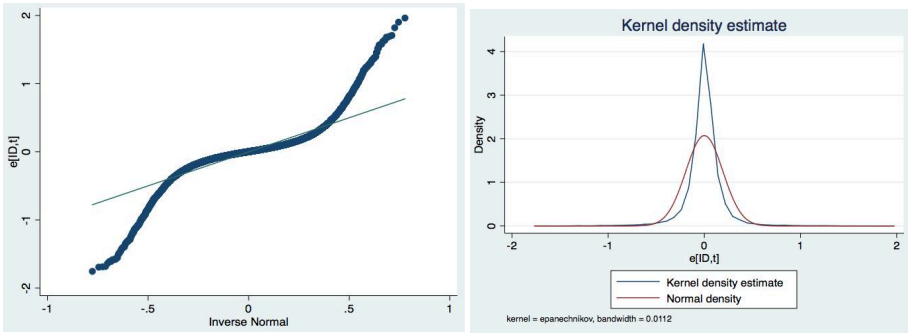
13.4.2 Normality of residuals in model (2)



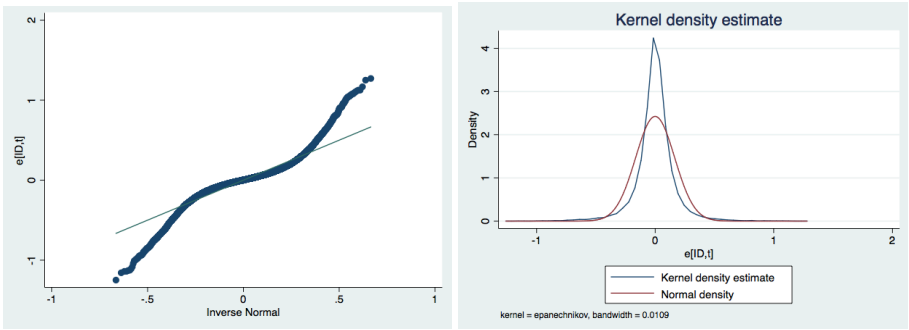
13.4.3 Normality of residuals in model (3)



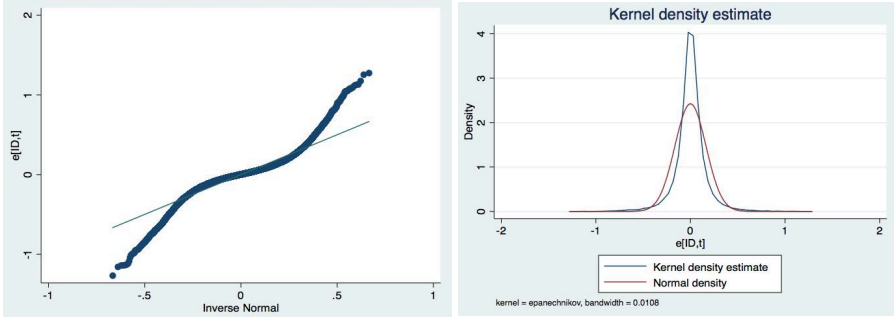
13.4.4 Normality of residuals in model (4)



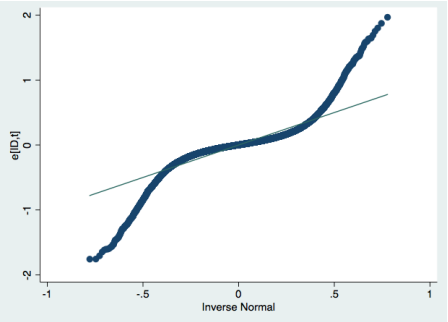
13.4.5 Normality of residuals in model (5a)

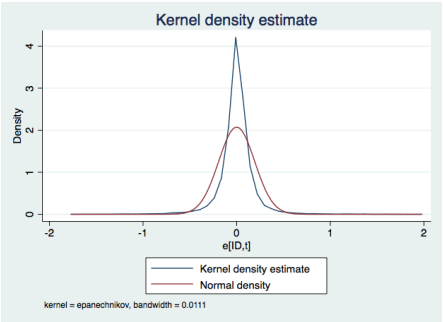


13.4.6 Normality of residuals in model (5b)



13.4.7 Normality of residuals in model (6)





13.5 Correlation matrices

13.5.1 Model (1) correlation matrix

Correlation matrix Model (1)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current AssetsRatio	Fixed Assets Ratio	D1	D2	D3	D4
ROA	1										
DirectOwnership Family	0.047	1									
lnAge	0.061	-0.017	1								
lnRevenue	0.151	-0.313	0.122	1							
DebtRatio	-0.288	-0.030	-0.135	-0.038	1						
CurrentAssetsRatio	0.276	-0.024	-0.056	0.176	0.154	1					
FixedAssetsRatio	-0.068	-0.004	0.004	-0.073	0.095	-0.658	1				
D1	-0.011	-0.110	0.017	0.064	0.007	0.003	0.007	1			
D2	-0.015	-0.159	0.016	0.064	0.003	-0.003	0.008	-0.042	1		
D3	0.042	0.299	-0.006	-0.123	-0.004	0.006	-0.028	-0.062	-0.555	1	
D4	-0.049	-0.248	-0.029	0.079	-0.005	-0.012	0.035	−0.037	-0.033	-0.483	1

13.5.2 Model (2) correlation matrix

Correlation matrix Model (2)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current Assets Ratio	Fixed Assets Ratio	Largest Family CEO
ROA	1							
DirectOwnership Family	0.072	1						
lnAge	0.082	-0.048	1					
lnRevenue	0.180	-0.314	0.166	1				
DebtRatio	-0.302	-0.017	-0.158	-0.063	1			
CurrentAssetsRatio	0.251	0.001	-0.078	0.139	0.169	1		
FixedAssetsRatio	-0.086	-0.018	0.025	-0.056	0.061	-0.685	1	
LargestFamilyCEO	0.057	0.291	0.039	-0.156	-0.013	-0.012	0.002	1

13.5.3 Model (3) correlation matrix

Correlation matrix Model (3)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current Assets Ratio	Fixed Assets Ratio	SmallFirm	LargeFirm
ROA	1								
DirectOwnership Family	0.072	1							
lnAge	0.082	-0.048	1						
lnRevenue	0.180	-0.314	0.166	1					
DebtRatio	-0.302	-0.017	-0.158	-0.063	1				
CurrentAssetsRatio	0.251	0.001	-0.078	0.139	0.169	1			
FixedAssetsRatio	-0.086	-0.018	0.025	-0.056	0.061	-0.685	1		
SmallFirm	-0.024	0.215	-0.136	-0.464	0.030	0.025	-0.065	1	
LargeFirm	0.024	-0.215	0.136	0.464	0.030	-0.025	0.065	-1	1

13.5.4 Model (4) correlation matrix

Correlation matrix Model (4)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current Assets Ratio	Fixed Assets Ratio	N1	N2	N3-5	N6-50
ROA	1										
DirectOwnership Family	0.072	1									
lnAge	0.082	-0.048	1								
lnRevenue	0.180	-0.314	0.166	1							
DebtRatio	-0.302	-0.017	-0.158	-0.063	1						
CurrentAssetsRatio	0.251	0.001	-0.078	0.139	0.169	1					
FixedAssetsRatio	-0.086	-0.018	0.025	-0.056	0.061	-0.685	1				
N1	-0.020	-0.405	0.029	0.205	0.036	-0.010	0.007	1			
N2	0.038	0.298	-0.041	-0.179	0.001	0.021	-0.046	-0.500	1		
N3-5	0.004	0.103	0.018	-0.015	-0.019	0.002	0.016	-0.408	-0.487	1	
N6-50	-0.052	-0.027	-0.008	-0.001	-0.038	-0.030	0.055	-0.144	-0.172	-0.140	1

13.5.5 Model (5a) and (5b) correlation matrix

Correlation matrix Model (5a) & (5b)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current Assets Ratio	Fixed Assets Ratio	Debt-to-Equity-Ratio	LongTerm Debt Ratio
ROA	1								
DirectOwnership Family	0.072	1							
lnAge	0.082	-0.048	1						
lnRevenue	0.180	-0.314	0.166	1					
DebtRatio	-0.302	-0.017	-0.158	-0.063	1				
CurrentAssetsRatio	0.251	0.001	-0.078	0.139	0.169	1			
FixedAssetsRatio	-0.086	-0.018	0.025	-0.056	0.061	-0.685	1		
Debt-to-Equity-Ratio	0.084	-0.013	-0.006	0.083	-0.009	0.035	0.010	1	
LongTermDebtRatio	-0.152	0.011	0.022	-0.084	0.160	-0.457	0.541	-	1

13.5.6 Model (6) correlation matrix

Correlation matrix Model (6)	ROA	Direct Ownership Family	lnAge	lnRevenue	DebtRatio	Current Assets Ratio	Fixed Assets Ratio	ATO
ROA	1							
DirectOwnership Family	0.072	1						
lnAge	0.082	-0.048	1					
lnRevenue	0.180	-0.314	0.166	1				
DebtRatio	-0.302	-0.017	-0.158	-0.063	1			
CurrentAssetsRatio	0.251	0.001	-0.078	0.139	0.169	1		
FixedAssetsRatio	-0.086	-0.018	0.025	-0.056	0.061	-0.685	1	
ATO	-0.047	0.070	-0.101	0.214	0.220	0.171	-0.342	1

13.6 Linear combinations of estimators-test

Linear combinations of estimators-test	
Model (1) - main regression	
D1-D2	0.962
D1-D3	0.000
D2-D3	0.000
D1-D2-D3	0.000
Model (4) - nr. owner	
N1-N2	0.300
N1-N3-5	0.408
N2-N3-5	0.944

13.7 Robustness testing

13.7.1 Robustness test using Profit Margin as dependent variable

Profit Margin	Model (1)	Model (2)	Model (3)	Model (4)	Model (5a)	Model (5b)	Model (6)
ROA							
DirectOwnershipFamily	0.080***	0.070***	0.072***	0.076***	0.073***	0.074***	0.069***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
lnAge	0.018***	-0.056***	-0.548***	-0.056***	-0.056***	-0.057***	-0.049***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
lnRevenue	0.047***	0.189***	0.194***	0.190***	0.189***	0.185***	0.179***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DebtRatio	-0.207***	-0.214***	-0.214***	-0.214***	-0.211***	-0.209***	-0.198***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CurrentAssetsRatio	0.401***	0.394***	0.392***	0.395***	0.392***	0.388***	0.407***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FixedAssetsRatio	0.296***	0.281***	0.280***	0.284***	0.280***	0.284***	0.304***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D1	0.118***						
	0.000						
D2	0.124***						
	0.000						
D3	0.187***						
	0.000						
LargestFamilyCEO		0.018					
		0.135					
SmallFirm			0.145***				
			0.000				
N1				0.076*			
				0.088			
N2				0.068			
				0.110			
N3-5				0.053			
				0.167			
Debt-to-Equity-Ratio					0.00009		
					0.766		
LongTermDebtRatio						-0.038	
						0.4	
ATO							0.021***
							0.000
Constant	-0.834***	-1.819***	-1.985***	-1.879***	-1.810***	-1.763***	-1.815***
	0.000	0.000	0.194***	0.000	0.000	0.000	0.000
No. of observations	835 245	37 622	37 622	37 622	37 603	37 601	37 622
R-squared	4.34%	6.36%	6.43%	6.38%	6.31%	6.22%	6.31%

13.7.2 Robustness test using standardized variables

Standardized variables	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5a)**	**Model (5b)**	**Model (6)**
ROA							
zDirectOwnershipFamily	0.018***	0.012***	0.016***	0.015***	0.012***	0.012***	0.013***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
zlnAge	0.002***	-0.016***	-0.14***	-0.14***	-0.015***	-0.016***	-0.010***
	0.000	0.000	0.000	0.000	0.000	0.000	0.009
zlnRevenue	0.034***	0.054***	0.060***	0.058***	0.053***	0.054***	0.050***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
zDebtRatio	-0.109***	-0.106***	-0.131***	-0.132***	-0.105***	-0.105***	-0.129***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
zCurrentAssetsRatio	0.148***	0.143***	0.164***	0.164***	0.142***	0.143***	0.162***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
zFixedAssetsRatio	0.080***	0.069***	0.087***	0.087***	0.067***	0.068***	0.084***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
zD1	0.013***						
	0.000						
zD2	0.012***						
	0.000						
zD3	0.026***						
	0.000						
zLargestFamilyCEO		0.004**					
		0.025					
zSmallFirm			0.008***				
			0.000				
zN1				0.019***			
				0.006			
zN2				0.017**			
				0.015			
zN3-N5				0.016***			
				0.006			
zDebt-to-Equity-Ratio					0.008***		
					0.000		
zLongTermDebtRatio						0.003	
						0.285	
zATO							0.016***
							0.004
Constant	0.046***	0.041***	0.038***	0.038***	0.042***	0.042***	0.038***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
No. of observations	835 245	37 622	37 622	37 622	37 603	37 601	37 622
R-squared	21.43%	21.71%	21.67%	21.70%	21.78%	21.68%	21.01%

13.7.3 Robustness test using Pooled OLS regression

Pooled OLS	Model (1)	Model (2)	Model (3)	Model (4)	Model (5a)	Model (5b)	Model (6)
ROA							
DirectOwnershipFamily	0.038***	0.060***	0.074***	0.076***	0.067***	0.067***	0.071***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
lnAge	0.008***	0.007***	0.010***	0.009***	0.008***	0.008***	0.124***
	0.000	0.001	0.000	0.000	0.000	0.000	0.000
lnRevenue	0.013***	0.021***	0.026***	0.022***	0.019***	0.020***	0.195***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DebtRatio	-0.189***	-0.202***	-0.243***	-0.246***	-0.199***	-0.199***	-0.226***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CurrentAssetsRatio	0.406***	0.379***	0.425***	0.430***	0.376***	0.376***	0.423***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FixedAssetsRatio	0.296***	0.257***	0.306***	0.311***	0.242***	0.259***	0.308***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D1	0.059***						
	0.000						
D2	0.057***						
	0.000						
D3	0.076***						
	0.000						
LargestFamilyCEO		0.025***					
		0.000					
SmallFirm			0.059***				
			0.000				
N1				0.094***			
				0.000			
N2				0.097***			
				0.000			
N3-5				0.075***			
				0.000			
Debt-to-Equity-Ratio					0.001***		
					0.000		
LongTermDebtRatio						-0.012	
						0.117	
ATO							0.006***
							0.001
Constant	-0.405***	-0.391***	-0.509***	-0.510***	-0.374***	-0.375***	-0.427***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
No. of observations	835 245	37 622	37 622	37 622	37 603	37 601	37 622
R-squared	26.13%	25.48%	25.19%	25.55%	25.55%	25.29%	25.05%

13.7.4 Robustness test using Time-fixed effects

Time-fixed effects	Model (1)	Model (2)	Model (3)	Model (4)	Model (5a)	Model (5b)	Model (6)
ROA							
DirectOwnershipFamily	0.030***	0.012**	0.017**	0.0191***	0.014**	0.013**	0.015**
	0.000	0.041	0.020	0.009	0.022	0.029	0.038
lnAge	0.012***	0.167***	0.0216***	0.022***	0.016***	0.017***	0.024***
	0.000	0.001	0.000	0.000	0.001	0.001	0.000
lnRevenue	0.021***	0.033***	0.036***	0.036***	0.032***	0.0329***	0.031***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DebtRatio	-0.206***	-0.224***	-0.279***	-0.280***	-0.222***	-0.224***	-0.249***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CurrentAssetsRatio	0.429***	0.424***	0.486***	0.487***	0.421***	0.424***	0.487***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FixedAssetsRatio	0.273***	0.240***	0,304***	0.305***	0.236***	0.236***	0.295***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D1	0.063***						
	0.000						
D2	0.060***						
	0.000						
D3	0.090***						
	0.000						
LargestFamilyCEO		0.008**					
		0.024					
SmallFirm			0.022**				
			0.014				
N1				0.042***			
				0.006			
N2				0.036**			
				0.014			
N3-5				0.034***			
				0.010			
Debt-to-Equity-Ratio					0.0006***	0.011	
					0.000	0.256	
LongTermDebtRatio							
ATO							0.008***
							0.006
Constant	-0.474***	-0.476***	-0.557***	-0.569***	-0.467***	-0.472***	-0.531***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
No. of observations	835 245	37 622	37 622	37 622	37 603	37 601	37 622
R-squared	22.34%	22.71%	22.55%	22.60%	22.74%	22.69%	21.83%

13.7.5 Robustness testing using Bootstrap

Bootstrap	Model (1)	Model (2)	Model (3)	Model (4)	Model (5a)	Model (5b)	Model (6)
ROA							
DirectOwnershipFamily	0.043***	0.027***	0.034***	0.036***	0.028***	0.028***	0.031***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
lnAge	0.002***	-0.018***	-0.016***	-0.016***	-0.017***	-0.177***	-0.114***
	0.000	0.000	0.000	0.000	0.000	0.000	0.004
lnRevenue	0.200***	0.031***	0.035***	0.034***	0.030***	0.031***	0.029***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DebtRatio	-0.202***	.0,219***	-0.273***	-0.274***	-0.217***	-0.219***	-0.244***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CurrentAssetsRatio	0.427***	0.421***	0.482***	0.483***	0.418***	0.421***	0.475***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FixedAssetsRatio	0.275***	0.235***	0.298***	0.230***	0.231***	0.232***	0.291***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D1	0.062***						
	0.000						
D2	0.061***						
	0.000						
D3	0.084***						
	0.000						
LargestFamilyCEO		0.008*					
		0.071					
SmallFirm			0.033***				
			0.001				
N1				0.042***			
				0.002			
N2				0.035**			
				0.043			
N3-N5				0.036**			
				0.015			
Debt-to-Equity-Ratio					0.0008***		
					0.000		
LongTermDebtRatio						0.011	
						0.254	
ATO							0.008**
							0.012
Constant	-0.470***	-0.413***	-0.501***	-0.500***	-0.406***	-0.411***	-0.465***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
No. of observations	835 245	37 622	37 622	37 622	37 603	37 601	37 622
R-squared	21.43%	21.71%	21.67%	21.70%	21.78%	21.69%	21.01%

13.7.6 Robustness test for the main hypothesis

Random effects model				
Model (1)	**33.33%**	**66.67%**	**Direct Shareownership**	**Lagged variables**
ROA				
DirectOwnershipFamily	0.044***	0.043***	0.0567*** (1)	0.041***
	0.000	0.000	0.000	0.000
lnAge	0.002***	0.003***	-0.001*	-0.002***
	0.000	0.000	0.071	0.000
lnRevenue	0.021***	0.021***	0.021***	0.024***
	0.000	0.000	0.000	0.000
DebtRatio	-0.201***	-0.202***	-0.202**	-0.200***
	0.000	0.000	0.000	0.000
CurrentAssetsRatio	0.426***	0.427***	0.427***	0.418***
	0.000	0.000	0.000	0.000
FixedAssetsRatio	0.273***	0.275***	0.276***	0.262***
	0.000	0.000	0.000	0.000
D1	0.056***	0.055***	0.057***	0.030***
	0.000	0.000	0.000	0.000
D2	0.051***	0.064***	0.0496***	0.337***
	0.000	0.000	0.000	0.000
D3	0.095***	0.072***	0.065***	0.072***
	0.000	0.000	0.000	0.000
Constant	-0.484***	-0.457***	-0.458***	-0.458***
	0.000	0.000	0.000	0.000
No. of observations	872 159	804 653	820 381	835 245
R-squared	21.38%	21.38%	21.44%	21.64%

(1): The variable is UltimateOwnershipFamily in this regression

13.7.7 Robustness test for Model (3) using other definition of firm size

Other definition of firm size, Model (3)	**Fixed effects model**
ROA	
DirectOwnershipFamily	0.034***
	0.000
lnAge	-0.016***
	0.000
lnRevenue	0.0348***
	0.000
DebtRatio	-0.273***
	0.000
CurrentAssetsRatio	0.482***
	0.000
FixedAssetsRatio	0.297***
	0.000
SmallFirm	0.030***
	0.003
Constant	-0.498***
	0.000
No. of observations	37 622
R-squared	21.65%

13.7.8 Robustness test for Model (4) using other definition of nr. owners

Other definition of number of owners	**Fixed effects model**
Model (4)	
ROA	
DirectOwnershipFamily	0.036***
	0.000
lnAge	-0.016***
	0.000
lnRevenue	0.034***
	0.000
DebtRatio	-0.273***
	0.000
CurrentAssetsRatio	0.483***
	0.000
FixedAssetsRatio	0.299***
	0.000
N1	0.010
	0.205
N2	0.002
	0.742
Constant	-0.467***
	0.000
No. of observations	37 622
R-squared	21.65%

13.7.9 Robustness test for Model (6) using other definition of firm efficiency

Other definition of firm efficiency	**Fixed effects model**
Model (6)	
ROA	
DirectOwnershipFamily	0.312***
	0.000
lnAge	-0.007
	0.135
lnRevenue	0.007
	0.118
DebtRatio	-0.237***
	0.000
CurrentAssetsRatio	0.455***
	0.000
FixedAssetsRatio	0.270***
	0.000
Sales/Employees	0.392***
	0.000
Constant	-0.518***
	0.000
No. of observations	37 622
R-squared	21.31%

13.7.10 Robustness test including all explanatory variables

All explanatory variables included	Fixed effects model
ROA	
DirectOwnershipFamily	0.027***
	0.000
lnAge	-0.012***
	0.003
lnRevenue	0.029***
	0.000
DebtRatio	-0.211***
	0.000
CurrentAssetsRatio	0.436***
	0.000
FixedAssetsRatio	0.245***
	0.000
LargestFamilyCEO	0.008**
	0.044
SmallFirm	0.0291***
	0.001
N1	0.035***
	0.007
N2	0.030**
	0.016
N3-5	0.030***
	0.006
Debt-to-Equity-Ratio	0.001***
	0.000
LongTermDebtRatio	0.015
	0.167
ATO	0.007***
	0.003
Constant	-0.508***
	0.000
No. of observations	37 622
R-squared	21.23%

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BI Norwegian Business School –

14.0 Preliminary Thesis Report

- An Analysis of how Norwegian Family Firm's Performance is affected by an External-Ownership Transfer compared to an Intra-Ownership Transfer -

Course code:
GRA 19003 – Thesis Preliminary Thesis Report

Supervisor:
Ignacio Garcia de Olalla Lopez

Hand-in date:
15.01.2016

Campus:
BI Oslo

Study Program:
MSc in Business
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1.0 Executive Summary

Family firms account for at least two thirds of all businesses around the world. In Norway, approximately 65% of private and listed firms are family firms. By this, there is no doubt that family firms are essential for the world economy. The main differences between family firms and nonfamily firms are that corporate governance and business management is cohered, meaning that family firms are able to avoid agency problems, they pursue more risk-averse strategies and have a long-term oriented perspective in order to pass the firm to the next generation.

Even though acquisitions have been a prominent strategy - and the amount of acquisitions has increased significantly since the 1970's, we find that family firms have lower propensity of involvement in acquisition activities. They do not grow less than nonfamily firms, but they prefer to grow internally to not dilute control.

Noteworthy, family firms have on average higher profitability than nonfamily firms, which we perceive will make these firms attractive acquisition targets for nonfamily firms. However, acquirers value family firms in different contexts: The acquiring firm tend to favour the stagnation perspective of family firms rather than the stewardship perspective. This leads the acquiring companies to underestimate the real value of the family firms and wanting to pay less for family firms. In contrast, family firms tend to argue for a premium in order to give up the company that the family have built.

There exists a lot of research of both family firms and acquisitions, however these two topics combined have received little attention in the family business literature. Since the ownership structure has a profound function for firm performance, we question whether an acquisition of family firms by external nonfamily firms affects firm performance? We want to fill this gap in the Norwegian family business literature; investigating how the performance changes when a private nonfamily firm acquires a private family firm. This is with the purpose to assign whether family ownership is the crucial determinant for greater performance.

To answer our question, we will conduct a statistical quantitative approach and gather information from the database Centre for Corporate Governance Research (CCGR) provided by BI to measure firm performance by return on assets (ROA).

2.0 Introduction

Family firms account for at least two thirds of all businesses around the world. In most countries around the world between 70%-95% of all business entities are family firms. By this, there is no doubt that family businesses are essential for the world economy. In fact, these firms contribute with an estimation of 70%-90% of annually global GDP (Family Firm Institute 2015).

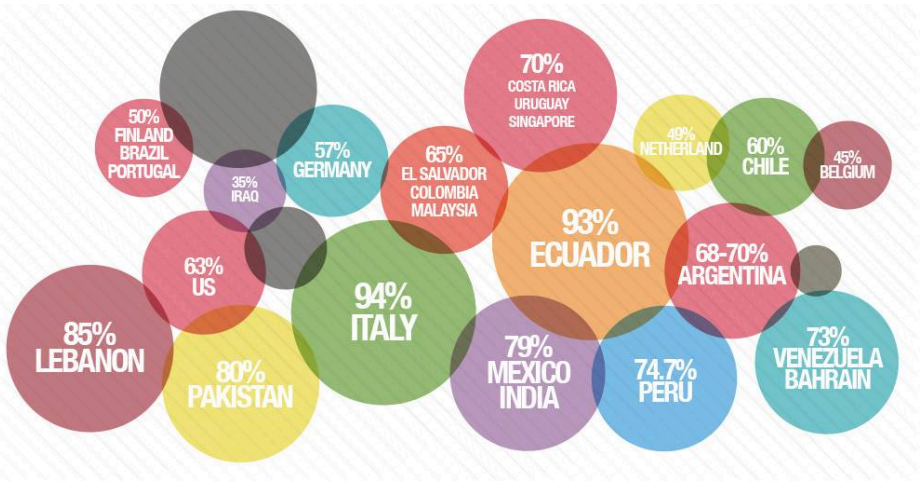

Figure 7: Percentage of family business contribution to National GDP (Family Firm Insitute 2015)

In Norway, approximately 65% of private and listed firms (aksjeselskap (AS) and allmennaksjeselskap (ASA)) are family firms. Norwegian family firms account for 36% of Norwegian employment, 19% of national revenue and 13% of Norwegian assets. In addition, these family firms have on average higher profitability than nonfamily firms (Berzins and Bøhren 2013).

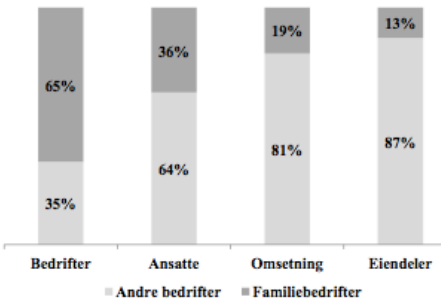

Figure 8: Business characteristics (Berzins and Bøhren 2013)

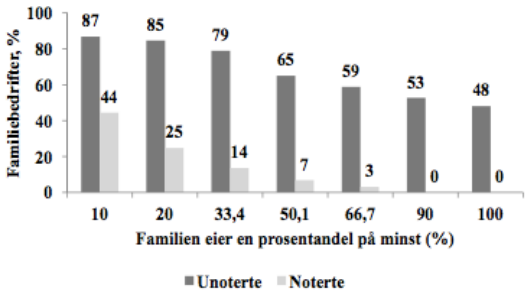

Figure 9: Family ownership of private vs public firms

Family firms, and its performance, have attained quite a lot attention in Norwegian - and international family business literature in the last decades (e.g. Miller et. al 2007, 2008, 2010; Bøhren 2011; and Berzins and Bøhren 2013). According to Berzins and Bøhren (2013), one of the main differences between family firms and nonfamily firms is that corporate governance and business management is cohered, meaning that family firms are able to avoid agency problems. It is argued that avoiding this agency/principal conflict enables the firm to achieve greater performance. In addition, family firms are more risk-averse compared to nonfamily firms, indicating thinking and planning in a long-term perspective and avoiding risky investments in order to pass the firm to the next generation (e.g. Breton-Miller, Miller, and Steier 2004; and Bouzgarrou and Navatte 2013).

Furthermore, the ownership concentration, governance and board members affect the performance. This is with regards to that by having larger ownership, the majority/minority relationship can be destructive, and by having a family member as a CEO enhances the family firms' performance, when there is a presence of a strong second owner (Langli and Che 2014). These features are some of the reasons why family firms perform better than nonfamily firms, and will further be elaborated later in the report.

According to Harrison et. al (1991), acquisitions - the activity of a company buying another company, have been a prominent strategy since the 1970's. The amount of acquisitions has increased significantly during this timeframe (Granata and Chirico 2010, 341). Acquisitions are one of the main ways for firm growth (Feito-Ruiz and Menéndez-Requejo 2010). Acquiring family firms can be viewed as a successful investment for external parties since family firms hold unique features. On the other hand, other acquirers view acquisitions of family firms as destructive for their growth (Granata and Chirico 2010).

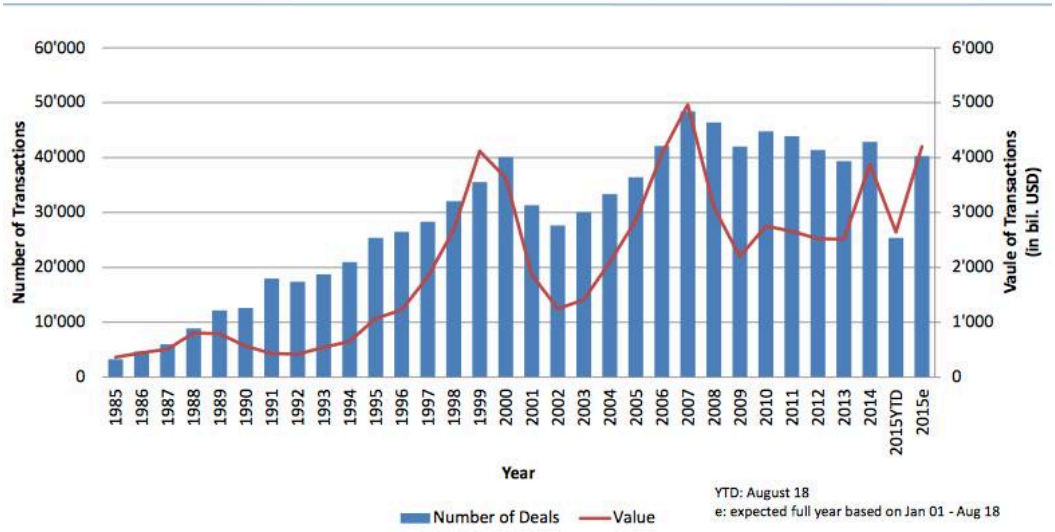

Figure 10: Announced Mergers & Acquisitions Worldwide 1985-2015e (Source: Institute for Mergers, Acquisitions and Alliances 2015)

3.0 Motivation and Research Question

3.1 Motivation

Several research cover topics of family firms in relation to performance, corporate governance and other relevant business matters (e.g. Maury 2006, Miller, Breton-Miller and Scholnic 2008). In addition, we find that there exists considerable research of acquisition of both private and public family firms internationally. According to Harrison et al. (1991), acquisition has received considerable research attention in the strategic management literature. Family firms are one of the most common forms of organizations throughout the world, accounting for almost 75 % of all registered companies in most economies (Granata and Chirico 2010). However, only few recent studies have focused on these two topics combined (Feito-Ruiz and Menéndez-Requejo 2010). For instance, Gonenc, Hermes and Sinderen (2013) conducted a study examining the announcement returns of bidders acquiring private family firms versus the return of acquiring nonfamily firms in seven continental European countries; and Gleason, Pennathur and Wiggenhorn (2014) conducted a study measuring returns of acquisitions of publicly traded family firms in the US.

Our main motivation was emphasized when we found a study conducted in Sweden. Wennberg et al. (2011) investigated a sample of all family firms in Sweden that went through an internal or external ownership transfer, and how the transfer affected the firms' performance. The authors also revealed that the few studies available of succession performance in family firms mainly focused on the short-term performance (Wennberg et. al. 2011).

Based on our literature findings, acquisitions have received little attention in the family business literature in Norway. As we have mentioned earlier, the ownership structure has a profound function for firm performance. Thus, if the family firm still run the same, even though acquired by an external party, will the ownership structure consequently affect the firms' performance? We want to fill this gap in the Norwegian family business literature; investigating how the performance changes in both the short-term and long-term when a private nonfamily firm acquires a private family firm. This is with the purpose to assign whether family ownership is the crucial determinant for greater performance compared to nonfamily firms. Due to few Norwegian public family firms (Berzins and Bøhren 2013), we will only investigate private firms.

3.1 Research topic

We want to investigate how Norwegian family firm's performance is affected by an external-ownership transfer compared to an intra-ownership transfer. This is to investigate whether family-ownership is the main driver for out-performing nonfamily firms.

4.0 Existing Literature

4.1 An overview of family firms

4.1.1 Definition of family firms

As there exists several research and theories about family firms implies numerous definitions of family firms. Caprio, Croci and Del Giudice (2011) analysed how ownership influenced acquisition decisions in Continental European companies. They considered firms as family firms if a family or an individual was the largest ultimate owner with voting rights at the 10% shareholder threshold. Gonec,

Hermes and Sinderen (2013); and Gleason, Pennathur and Wiggenhorn (2011) used 20% threshold. On the other hand, Wennberg et. al (2011) did not focus specifically on exact share ownership, but defined firms as family firms if more than two family members, either biologically related or lived together in the same house, owned and worked in the company.

However, in accordance with Berzins and Bøhren (2013) who have conducted studies of Norwegian family firms, we will define a *firm* as a family firm when the family controls over 50% of the shares. The reason why we use this threshold, is that with 50% ownership, the family have the majority of the votes at the general meeting. By this, they can themselves determine the composition of the board, the managing director, the amount of dividend and other important decisions that needs at least 50% of the votes. To be considered a *family*, the individuals need to be connected through marriage or through kinship in a straight-line included great-grandparents or in side-line even with cousins (Berzins and Bøhren 2013).

Nevertheless, in our comprehensive analysis, we will adjust our threshold if we do not get large enough sample size. In line with Caprio, Croci and Del Giudice (2011), there is another relevant issue that we will consider in our comprehensive analysis. This is whether it is proper to consider a firm as a family firm if it is controlled by an individual – founder or not – who is not a descendant and just a passive or active investor. If relevant, this can be taken into account in a robustness test. Concerning ownership transfer, we will initially define the takeover as an intra-family takeover if the majority of the successor(s) take over the majority of the ownership. We will define an external takeover as when a nonfamily firm acquires a considerable amount of the shares to dilute the family control to be below the 50% ownership threshold, such that the firm is no longer a family firm according to our definition. However, depending on the sample in the database, we might need to further consider the takeover threshold.

4.1.2 Family firms - worldwide and in Norway

As mentioned, around 2/3 of all business entities around the world are considered to be family firms. Despite the chance of an economic recession, family firms tend

to keep their employees in the firm rather than resigning them. In Europe alone, family firms over five million jobs are within family firms. In addition, these firms are more likely to contribute to charity and take part in charity-related activities in their local communities (Family Firm Institute, Inc. 2015).

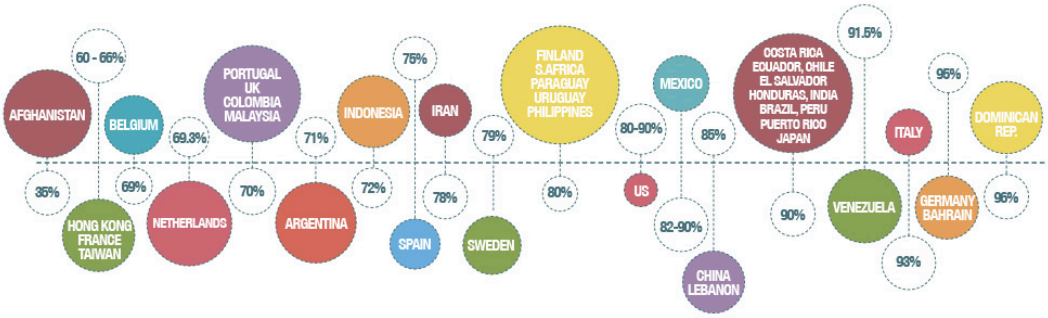

Figure 11: Percentage of family businesses in the private sector (2014) (Family Firm Institute, Inc. 2015)

Independent of family controlled firms or not, most firms in the Norwegian business sector are small enterprises when using the definition that the firm should have at least 50 employees or 80 million Norwegian kroner (NOK) in annual revenue and 80 million NOK in assets to be defined as a large enterprise (Berzins and Bøhren 2013). Most private family firms generate revenue between 0-15 million NOK annually. In 2011, only 1% of Norwegian family firms were large enterprises, compared to 6% of nonfamily firms, illustrating that there are relatively five times as many nonfamily firms than family firms. Nonfamily firms have on average eight times larger annual revenue than family firms (112 million NOK versus 14 million NOK). Taken into account that the largest nonfamily firms in Norway are listed, these firms are only twice as large as family firms measured in median annual revenue (6 million NOK versus 3 million NOK). Yet, in 2011 only nine family firms were listed on Oslo Stock Exchange (Berzins and Bøhren 2013). As mentioned, the limited pool of family firms on Norwegian stock exchange is why we only include *private* family firms in our analysis.

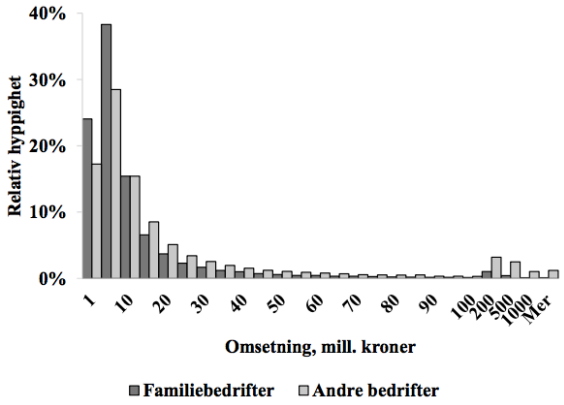

Figure 12: Annual revenue in family firms vs nonfamily firms (Berzins and Bøhren 2013)

Furthermore, even though the Norwegian family firms are on average smaller than nonfamily firms, previous studies found that Norwegian family firms are more profitable than nonfamily firms (e.g Berzins and Bøhren 2013; and Langli and Che 2014). By this, it is reasonable for us to assume that Norwegian family firms are attractive acquisition targets for Norwegian nonfamily firms. The study conducted by Berzins and Bøhren (2013) shows that the typical family firm was more profitable than the nonfamily firm measured by return on invested capital (ROA); 5.7% versus 4.5%. Keep in mind that this measurement of ROA should be taken with consciousness. These figures are from the financial statement and not from the tax accounting. In addition, family firms tend to underreport their figures more than nonfamily firms, meaning that they undervalue their assets more than nonfamily firms, due to that these firms might wish to keep a lower social profile (Berzins and Bøhren 2013).

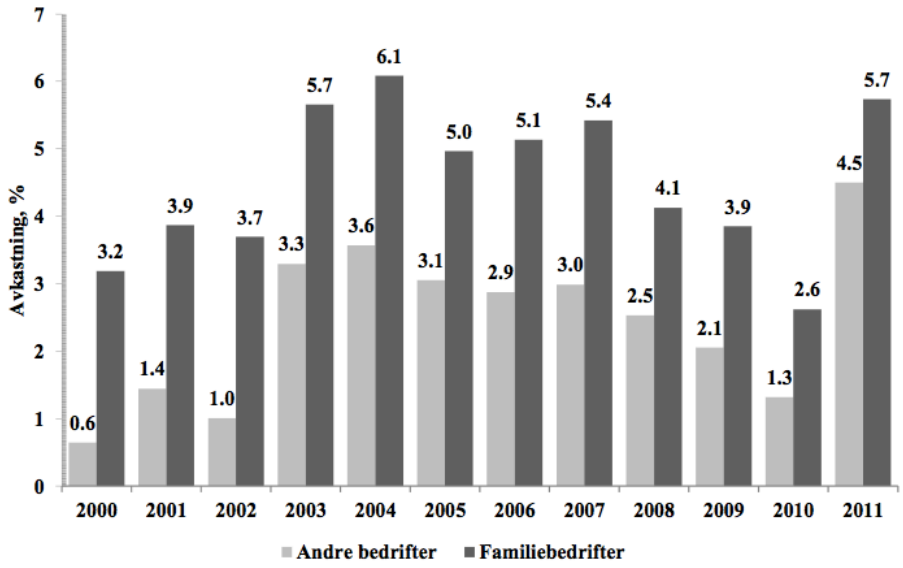

Figure 13: ROA in family firms vs. nonfamily firms (Berzins and Bøhren 2013)

4.2 Characteristics of family firms versus nonfamily firms

Family firms differ from nonfamily firms in several aspects. These differences affect family firms' behaviour in business decisions matters. We will now highlight some of the aspects that we consider have significant impact on the acquisition aspect of family firms.

	Family Side	Business Side
Decision Making	Emotionally Based	Rationally Based
Sharing	Based on need, fairness & equality	Based on performance & contribution
Change	Strive for stability	Thrive on growth & change

Figure 14: Values in family firms vs. nonfamily firms (Paradigm Associates LLC 2016)

4.2.1 Stewardship versus stagnation

First of all, according to Miller, Breton-Miller and Scholnick (2008) there are two important perspectives of family firms that can be created in the family firm

literature in order to explain features of family firms; the characteristics of *stewardship,* and that family firms are subjected to *stagnation*. The first perspective concerns that family firms are "said to care deeply about the long-term prospect of the business mainly because their family's fortune and reputation are at stake" (Miller, Breton-Miller and Scholnick 2008, 51). These firms commit to ensure a long-lived firm by developing a positive culture for their employees and pursue strong relationships with their customers. The latter perspective concerns the more negative aspect of family firms as it states that; "family firms face unique resource restrictions, embrace conservative strategies, eschew growth and be doomed to short lives" (Miller, Breton-Miller and Scholnick 2008, 51).

Taken these perspectives into account, acquirers value family firms in different contexts. Some might argue that the family being the steward of the firms enables them to perform better, while other acquirers tend to regard the family firm as an unprofessional and inefficient organization in which decision-making process are driven by emotions rather than by economic rationality (Granata and Chirico 2010).

4.2.2 Agency theory – alignment and entrenchment

There are four common types of agency problems; between 1) the owners and the management; 2) the major and minor shareholders; 3) the owners and the creditors; and 4) the owners and the rest of the stakeholders. The purpose of the ownership mechanism is to reduce the conflict of interest to a reasonable level. In family firms where the family normally is the manager, owner and finances large parts of the operations with equity, conflict 1, 2 and 3 are eliminated. If the family firm in addition is a small company, several conflicts are eliminated in conflict 4 as well (Bøhren 2011).

However, even though there can be absence of conflict 1, the other conflicts can cause underperformance in family firms affecting acquirers' valuation of these firms. Villalonga and Amit (2006) found that major family shareholders might use their large shareholdings in the firm to obtain private benefits to the disadvantage for minority shareholders. This could negatively affect the capacity of family firms to deliver high performance. In addition, based on previous studies Garcia-

Castro and Aguilera (2014) found that family firms are claimed to be exposed to entrenchment and nepotism, and thus managing the firm in an unprofessional way, negatively effecting the firm performance. Furthermore, in line with previous studies, Feito-Ruiz and Menéndez-Requejo (2010) found that the entrenchment effect, with large shareholders, negatively effects the family firms' valuation by acquiring firms.

As mentioned, the alignment between owners and the management reduces agency costs, and is one of the main advantages with family firms. Prior researches claim that the alignment argument indicates a positive relation between firm value and internal ownership concentration (Gleason, Pennathur and Wiggenhorn 2014). In addition, Basu, Dimitrova and Paeglis (2009) found that acquisitions of firms were families have low ownership is connected to provide more firm value.

4.2.3 Performance in family firms versus nonfamily firms

Taken into account that there are various definitions of family firms and performance measures (e.g. ROA and Tobin's q (e.g. Anderson and Reeb (2003), Miller et. al (2007) and Maury (2006)), several globally studies of family firms indicate that these special types of firms outperform nonfamily firms:
Credit Suisse stated that the firms in their family firm index had in 2007 a performance that was on average 8% higher within the sector the family firms operate in, following the same trend since the beginning of their research in 1996 (Granata and Chirico 2010). In addition, Anderson and Reeb (2003) study of S&P 500 firms; Maury's (2006) study of Western European firms; and Villalonga and Amit's (2006) study of Fortune 500 firms, found that family firms perform better or perform at least at the same level as nonfamily firms. Greater performance was found when family members have active control, meaning that family members serve in top positions in the firm, especially when the *founder* holds a CEO or a chairman position, known as the "founder-effect."

Contrary, Miller et. al's (2007) results from a study of public firms in the US shows that when firms with a lone founder, with an absence of any other family involvement, was defined as a family firm, these firms were the only types of

family firms that outperformed nonfamily firms. In previous studies, Villalonga and Amit (2006, 287), and Anderson and Reeb (2003, 1324) found that family ownership was value destroying in East Asia, mainly due to governmental regulations.

4.2.4 The management in family firms

A study from Zellweger et. al (2011) shows that family firms more often prioritize nonfinancial goals compared to nonfamily firms. When family members serve in the management, the family firm is considered to have more risk averse strategies than nonfamily firms (e.g. Vaknin 2010; and Bouzgarrou and Navatte 2013) and therefore have a more long-term oriented perspective to be able to pass the company to the next generation (Breton-Miller, Miller, and Steier 2004). According to James (1999) some founders of family firms perceive their firm as an asset to pass on to their family descendants instead of extracting the goods during his/her generation (Ben-Amar and Andre 2006, 521).

Since families tend to prefer to maintain control over the firm, they prefer to hire family members in management positions. However, the management in family firms may suffer from a selecting managers from a limited group – only family members - and may face the risk of that this can have negative effects for the firm if the family members are less qualified compared to outsiders (Wennberg et. al 2011). On the other hand, research indicates that if the CEO is a family member, the firm performance is higher than if he/she is a nonfamily member (Andre, Ben-Amar and Saadi 2014). The reason for this may be that a family member has more experience and knowledge about the firm compared to a nonfamily member. In addition, the study from Breton Miller, Miller and Steier (2004) reveals that the performance will be highest if the company's *founder* is the CEO compared to a successor or an externally hired (known as the founder-effect), consistent with Garcia-Castro and Aguilera's (2014) study. Nevertheless, other studies show that too many family members in the management can negatively affect firm performance (Craninckx and Huyghebaert 2015).

4.2.5 Succession

When a family firm is in the position to change its owner, there are two possibilities: The firm can either be transferred internally to the next generation, or an external party can acquire the firm. To take a decision between these two possibilities is a common issue for family firms (Wennberg et. al 2011).

Based on studies from American family firms, fewer than 30% of the family firms survived into the second generation, 10% to the third generation and only 4% operate at the fourth generation and above (Gleason, Pennathur and Wiggenhorn 2011). This can be, as mentioned, connected to that family firms that are passed on within the family can be exposed to selecting managers from a smaller competence pool, compared to transferring the firm to external parts. According to Grant (1996), this restriction could eventually have negative impacts on firms in the long-run (Wennberg et. al 2011, 356). Villalonga and Amit (2006) found that when descendants serve as CEOs, firm value is harmed. Consequently, acquiring firms may picture family firms as unprofessional and inefficient firms leading them to undervalue family firms and thus would buy these firms for a lower price, compared to nonfamily firms (Granata and Chirico 2010).

On the other hand, as part of Miller, Breton-Miller and Scholnick's (2008) stewardship perspective, one of the stewardships form is defined as *stewardship over employees.* It indicates that the special care for the continuity of the firm requires forming a team in the firm that is skilled, motivated and loyal. By this, more job responsibilities are given, and employee – technical - and managerial training are developed to be able to develop new products and acquire new knowledge in order to ensure common goals and values. In addition, it is arguable that successors might feel the pressure from the founder to strive for good achievement and to stay committed to what the founder(s) have built, which may be an additional reason for greater performance within the family firm.

According to DeTienne (2010) a transfer to external owners can consequently lead to a family firm exit, and harvesting of the efforts that the family have put in the firm, when leaving the firm to some external parts that are more qualified to proceed to create value in the firm (Wennberg et. al 2011, 352). Therefore, an external transfer can be viewed as a survival strategy, rather than the death of the

firm. However, even though a decision of an external transfer may be appealing if the external party seems to be a better fit for the firm, an internal transfer is favoured if a family successor is available (De Massis, Chua and Chrisman 2008).

In that sense, an external transfer does not necessary mean the endpoint for the family. The family members can still remain in the firm and bring with them advantages in the acquiring firm; e.g. tacit knowledge, the family's commitment and strong relationship to the firm, and internal resources and relationships that the family have created for during generations (Granata and Chirico 2010).

4.2.6 Strategic decision-making in acquisitions

Based on previous studies Feito-Ruiz and Menendez-Requejo (2010) also found that family firms might have different objectives when making strategic decisions, given that family firms might have additional nonfinancial goals. This is in accordance with Anderson and Reeb (2003) who found that there are two important features that influence the management's decision-making in family firms (Gonec, Hermes and van Sinderen 2013); Firstly, family firm owners do not have a spread portfolio with most of their holdings in their firm and therefore prefer firm strategies that have low risk. Secondly, family firms' long-term perspective makes them prefer investments that have long-term earnings, rather than short-term (Gonec, Hermes and van Sinderen 2013);

To highlight this even further, Caprio, Croci and Del Guidice's (2011) study shows that families overall controls larger shares in their firm compared to controlling shares in a nonfamily firm (36,34% versus 21,8%). If family firms value control more than nonfamily firms, they are more resistance of being acquired in fear of loosing control of the firm and give up private benefits. In this matter, to overcome the resistance of family firm owners against selling the firm to an external outsider, the bidding firm may need to pay a premium in order to convince the family shareholders to give up their shares. The family firm thus have a stronger negotiation power than the acquirer in the acquisition process. A nonfamily firm target lacks this negotiation power, meaning that the bidder can purchase the nonfamily firm at a lower price (Gonec, Hermes and van Sinderen 2013). However, a dilution of family control can though be a signal that the

family value the performance of the firm higher than the family wealth (Basu, Dimitrova and Paeglis 2009).

Based on previous studies, Caprio, Croci and Del Guidice's (2011) found that family firms have risk-averse management strategies resulting in less investmets than nonfamily firms and a resistance of selling their controlling shares to external parts. The incentive to retain control over the family firm is among one of the reasons why family firms are less involved in both acquiring and being acquired, especially when family members are involved in the management. However, this does not mean that family firms grow less than nonfamily firms, but they just favour to grow internally in order to not dilute family control.

4.2.7 Family firm performance after being acquired

Considering the family firms' performance in acquisition matters, previous research support different results. Caprio, Croci and Del Guidice (2011) identified that the probability of a takeover increases in line with the ownership level between zero to 20% and that the probability of a takeover decreases with an ownership level over 50%. The author's results were that acquisitions of listed family firms performed significantly better, than acquisitions of nonfamily firms. Furthermore, family ownership concentration affects acquirers' return in a curvilinear relationship; ownership over 76% threshold indicate positive returns, low ownership between 20% and 50% result in a negative return, while ownership between 51-75% provides the greatest excess return to the bidding firm (e.g. Gleason, Pennathur and Wiggenhorn 2014). A study from Basu, Dimitrova and Paeglis (2009) on the other hand, found greater value creation if the acquired family firm hold low level of ownership.

Furthermore, Gleason, Pennathur and Wiggenhorn (2014) found higher returns when buying from the founder of the firm. In addition, the authors also claimed that returns to purchasers of family firms that are public are lower than the return of privately held family firms. This lies in that public firms require to provide more information to the market, therefore information access is easier and there is more information symmetry in the market, compared to private firms. However,

regarding the long-term perspective, acquisitions of privately held firms give the purchaser a 15 % lower return.

It is reasonable to assume that payment method using cash would result in higher return than stock (considering that the family control continues with cash payment), only mixed payment influenced higher return (Gleason, Pennathur and Wiggenhorn 2014). This part is related to information asymmetry problem with regards to privately held small family firms. Based on previous literature, these firms are not required to provide detailed and formal documents and information visible to external parts at the same extent that public firms have to provide. Family firms that are private can use this low level of information symmetry in their own favour; Meaning that these firms can take advantage of the information asymmetry problem by "window-dressing" the firm as an attractive acquisition target. This can lead to an adverse selection for external takeovers but not for internal takeovers. By this, family firms can be expected to have significantly high firm performance right before a sale, but will most likely drop after the external transfer. which in contrast, such a performance fall would probably not occur in an internal ownership transfer (Wennberg et. al 2011).

Wennberg et. al (2011) analysed Swedish family firms' short – and long – term performance development in internal ownership transfer compared to an external ownership transfer. Their research found that the firms that were transferred to external parts performed better than the firms that went through an internal transfer, in the years after the ownership transfer, both regarding growth in EBITA and sales.

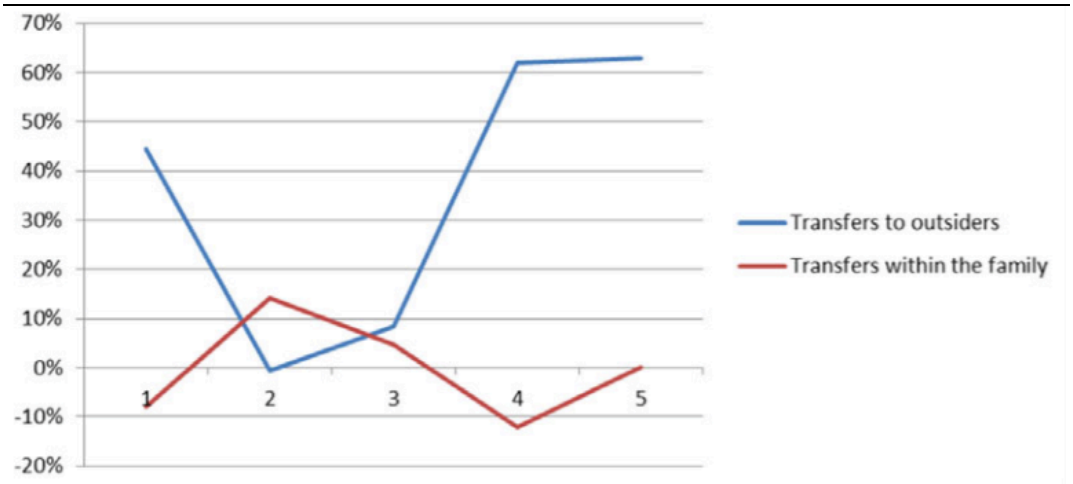

Figure 15: Growth in EBITA in the post-ownership transition years (Wennberg et al. 2011)

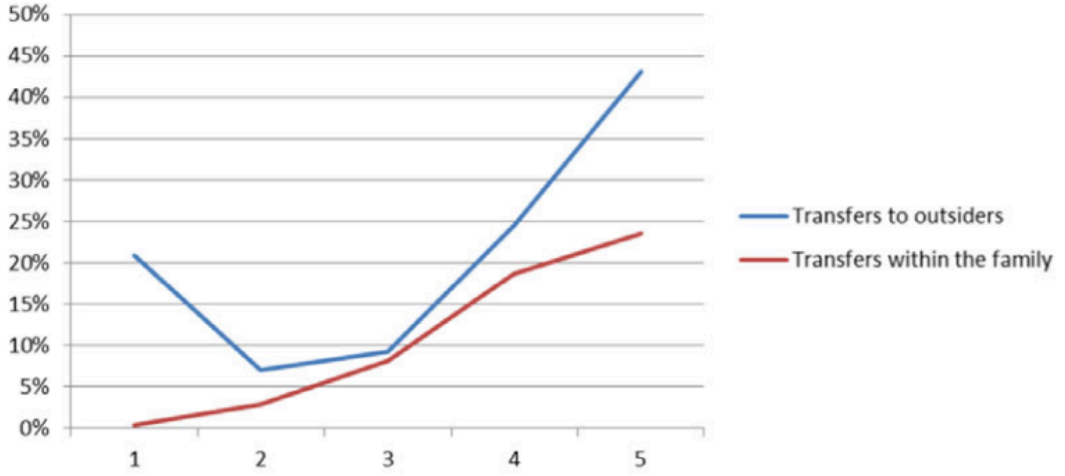

Figure 16: Sales growth in the post-ownership transition years (Wennberg et. al 2011)

Thus, the results indicate a "window-dressing" effect for firms that were transferred to outsiders, with both a high EBITA - and sales growth in the first year and then both fall, and further improve in the upcoming years. The results also imply that there is an increase in performance over time, indicating that transferring the firm to outsiders have positive impact on the firm in the long-run.

Furthermore, the authors investigated the survival rate of the sample firms that went through an ownership transfer. The survival rates for internally transferred firms were higher than externally transferred firms. Noteworthy, they found that the risk of firms not surviving was reduced by 56% when the firm was transferred internally, argued by the risk-averse – and increased long-term focus family firms pursue (Wennberg et. al 2011). These results imply continuity of the firm – what

family owners in family firms view as most important for them-, is not necessarily what maximizes firm value.

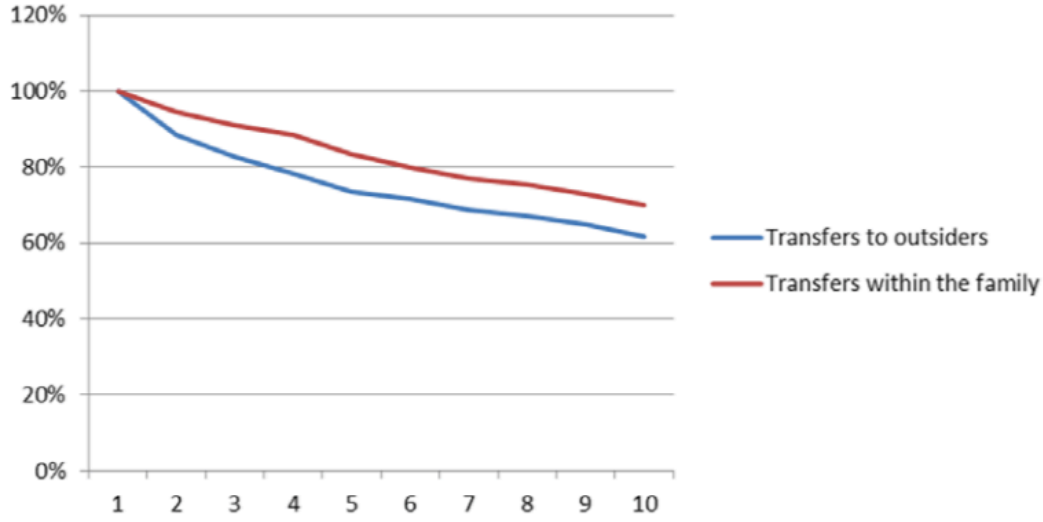

Figure 17: Survival rates by transition type (Wennberg et.al 2011)

Different results are found from similar studies. Meier and Schier (2014) found that there has been less than 50% chance of a positive outcome for family firms in an external transfer. Regarding the acquirers' return of a nonfamily firm versus a family firm, both higher return of acquiring family firms compared to nonfamily firms are found (with a 50% threshold) (Gleason, Pennathur and Wiggenhorn 2014); lower returns (e.g. Gonenc, Hermes and van Sinderen 2013); and return unaffected by the ownership level (Caprio, Croci and Del Guidice 2011). The findings are ambiguous, and by this we question how an internal – or an external ownership transfer will affect Norwegian family firms' performance.

4.2.8 The acquirers' considerations

The other side of an acquisition lies in the acquirers' point of view. When a nonfamily firm considers to acquire a family firm, previous literature has identified some considerations in the acquisition process. The acquiring firm may take into account the stewardship perspective and stagnation perspective when considering a family firm target. Granata and Chirico (2010) found that the acquiring firm value the stagnation perspective of family firms higher: The authors reveal that the acquiring firm draw notice on the negative features in family firms, and perceive these firms as inefficient and unprofessional. This leads

the acquiring firms to underestimate family firms' abilities and wanting to pay a lower price for family firms than nonfamily firms. In contrast, family firms tend to argue for a premium in order to give up the firm that the family have built (Gonenc, Hermes and van Sinderen 2013).

In addition, Meier and Schier (2014, 381) found that the external acquirer must take into account that they are not only purchasing a firm. "First and foremost the acquirer is taking over a history and a system of strong ties between individuals who have shared an experience that very often goes beyond the professional domain." In order to complete a successful acquisition, the acquirer must agree upon that the presence of a well-established culture and emotional ties to the firm has a profound function for family firms.

5.0 Data and Method

In our master thesis will we use a statistical quantitative approach to answer our research question. In our research will we collect secondary data from the Centre for Corporate Governance Research (CCGR) which is a database provided by BI Norwegian Business School. The database includes detailed information about ownership data for Norwegian listed firms and high quality accounting data for non-listed firms (BI Norwgian Business School 2015). With this database, will we be able to analyse family firms' performance when being acquired by a nonfamily firm. The data from CCGR provides information from 1994-2013, which should enable us to make sure that we have enough observations of family firms that have been acquired by nonfamily firms.

Consistent with Berzins and Bøhren (2013), we will restrict the number of companies by certain criteria in the dataset:

1) The firm is private (aksjeselskap)
2) Is not subsidiary
3) Have consistent accounting
4) Have positive sales
5) Have employees in the sample period
6) Is a family firm

As a starting point will we use the definition stated earlier that a family firm is a firm where the family controls over 50% of the firm's shares. If we consider the amount of observations to be insufficiently low, will we consider to lower the ownership threshold. The acquirer must be a nonfamily firm, in order to investigate whether the ownership has an effect on firm performance, which means by our definition that the largest shareholder cannot be a family holding over 50% of the shares. Accordingly, an external transfer will be defined as that the external acquirer needs to purchase a considerable amount of the shares to dilute the family ownership to be below the 50% threshold, such that the firm is no longer a family firm.

In line with previous studies, e.g. Wennberg et. al 2011; and Langli and Che 2014, our research will focus on private firms, and analysing return on assets (ROA) as the main variable to measure performance. Furthermore, ROE, EBIT-margin and profit-margin will be analysed if relevant to obtain the results.

In addition, we will take into account that there might be some limitations that is out of our knowledge. Some of the firms could have been sold because they are distressed or because the next generation did not want to continue in the firm. Lastly, the macro economy development and market changes could have influenced both firm performance and the acquisitions frequency (Accountingweb 2010).

6.0 Conclusion

In conclusion, we find ambiguous results of family firm's performance both before and after being acquired, and how external parties view family firms. Family firms are less involved in acquisitions since the family owners are more attached to their firm than nonfamily firm owners. The acquirer favours the stagnation perspective rather than the stewardship perspective, leading to that the family firm's greater performance does not compensate for the lack of economical rationality. We want to provide a clarification of how ownership transfers of family firms affect firm performance in the Norwegian business sector.

7.0 Implementation plan

February 1st	Feedback from advisor
March 1st	All variables clarified, and apply for data from CCGR
April 1st	Statistical analysis is done and first part of analysis starts
May 1st	Feedback on first draft
June 1st	First version of thesis ready
July 1st	Planned finished
September 1st	Deadline final thesis

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