GRA 19502

Master Thesis

Entrepreneurial risk taking, financial policy and the influence of outside CEO's: A study of Norwegian family firms

| Navn: | Jaran Sebastian Salvesen, Henrik Wilskow Jenssen |

Start: 02.03.2018 09.00

Finish: 03.09.2018 12.00

BI Norwegian Business School – Master thesis
Study program: MSc in Business with Major in Finance

Entrepreneurial risk taking, financial policy and the influence of outside CEO's: A study of Norwegian family firms

Name of supervisor: Siv J. Staubo
Exam code: GRA 19502
Date of submission: 09.07.2018
Jaran S. Salvesen & Henrik W. Jenssen

Abstract:

In this thesis we used a sample of Norwegian firms to investigate the effects on entrepreneurial risk taking from family ownership, as well as the effects on risk taking and leverage in family firms from employing an outside CEO. We initially test across firm variation in line with past research, followed by an analysis of within firm variation. Results are robustness checked through alternative ownership definitions and a difference in differences analysis of firms going through CEO transition. We find no conclusive evidence of outside CEOs causing different levels of risk or leverage in family firms. We do however find moderate evidence of family firms taking more entrepreneurial risk than their non-family counterparts, especially for higher concentrations of ultimate ownership.

Table of contents

Preliminary **xviii**

1.0 Introduction

The purpose of this thesis is to investigate ownership and managerial effects on operational and financial decisions in Norwegian firms. More specifically we investigate the relationship between entrepreneurial risk taking and family ownership, as well as the effects on entrepreneurial risk taking and leverage in family firms from employing an outside CEO. Existing literature suggests that owners of family firms are less diversified and thus less prone to risk taking through the company (Naldi et. al 2007). Furthermore, evidence indicates that family firms employing an outside CEO take more entrepreneurial risk early on and are less levered than firms operated by a family CEO (Lardon, Deloof & Jorissen, 2017; Huybrechts, Voordeckers & Lybaert, 2012).

Family firms are an important part of the world economy with research showing that the majority of firms are family controlled (La Porta, Lopez-De-Silanes & Shleifer, 1999). We believe the topic is particularly interesting in Norway as 66% of all limited liability firms can be categorized as family firms (Bøhren, 2011). This indicates that family firms contribute substantially to the Norwegian economy and an understanding of factors affecting their governance is therefore important.

We build on research by Lardon, Deloof & Jorissen, (2017) and Huybrechts, Voordeckers & Lybaert(2012) who studied entrepreneurial risk taking and use of debt in Belgian family firms. As with the majority of research in this field, these papers focus on single year across firm variation. We wish to extend on this and expand our analysis to also incorporate within firm variation. To this end we use a large sample of Norwegian firms spanning multiple years, obtained from BI's Centre for Corporate Governance Research (CCGR). We initially test across firm variation using a standard OLS framework on multiple years, followed by an analysis of within firm variation through fixed effects regressions. Results are robustness checked using alternative ownership definitions as well as a difference in difference analysis of family firms going through CEO transition.

We find moderate evidence of a negative relationship between ultimate ownership and entrepreneurial risk taking across firms, most pronounced for the highest

concentrations of ultimate ownership. We find little compelling evidence of outside CEO's significantly increasing entrepreneurial risk taking and leverage in family firms.

The rest of our thesis is organized in the following way: We start by going through existing literature and build the theoretical foundation for our analysis. Based on this literature review we outline the hypotheses to be tested. Next, we comment upon the methodology used in our paper, as well as the variables included in our regressions. Following this we present summary statistics describing our data, and the initial results from our tests. After initial results, we test robustness to different ownership definitions and present the results of our difference in differences analysis. These robustness checks are then compared to the initial results. In the last sections we discuss our findings and potential caveats with our approach before we conclude and comment upon avenues of future research.

2.0 Literature review

Family firms

The exact definition of family firms is an important consideration in empirical studies related to our topic as it might influence the final results. Through previous studies of family firms, various definitions have been proposed. Donckels & frohlich (1991) suggests equity ownership of more than 60%. La Porta, Lopez-de-Silanes & Schleifer (1999) proposes a threshold of 20% equity stake to determine if a family has control over the company. Anderson & Reeb(2003) suggests that the presence of a family member as CEO or in other management position might serve to align firm and family interest, magnifying financial implications of family ownership. Litz (1995) further backs this by defining family firms as businesses where ownership and control is concentrated within one family unit.

Bøhren (2011) argues that there are many ways to gain control, e.g. a family can have negative control if they own more than 1/3 of shares as they can block bylaw changes. 50% ownership gives control in the general assembly, while owning 2/3 of shares allows for total control as the family can change bylaws at their own discretion. Using the last definition of a family firm, approximately 68% of active private Norwegian firms can be defined as family firms (Bøhren, 2011) indicating

that family firms are of great importance in the Norwegian Economy. The various definitions of control may also have implications for how corporate governance mechanisms works, as such different ownership definitions will be used as robustness checks. For our initial results we will define family firms as firms where one family has above 50% ultimate ownership.

Agency Theory

When looking at ownership and CEO affiliation agency theory becomes an important consideration. Agency cost is the value loss related to the agent having better information and other preferences than the principal (Bøhren, 2011). The Principal-agent problem relates to managers allocating resources in a way which benefits themselves, often at the expense of shareholders (Jensen & Meckling 1976). Outside CEO's might become entrenched by making manager specific investments which makes it harder for shareholders to replace them (Shleifer & Vishny, 1989). Ozakan (2009) finds that tenure increases this behavior. Huybrecht, Voordeckers & Lybaert (2012) challenges this and finds evidence indicating that as tenure increase, the CEO develops psychological ownership of the firm, aligning their interests with those of the firm.

Several studies argue that firms run by family executives benefit from lower agency costs (Miller, Minichilli & Corbetta, 2012; Jensen & Meckling, 1976; Fama & Jensen, 1983) the principal-agent problem especially is believed to be a lesser concern in the case of a family CEO (Jenssen & Meckling, 1976; Ang, Cole & Lin, 2000). Chrisman, Chua & Litz (2004) finds evidence that family involvement decreases over all agency problems. Miller, Minichilli & Corbetta (2012) finds that family CEO's in small firms with concentrated ownership outperform their non-family counterparts in terms of return on assets.

Socioemotional wealth

Research indicates that family firms may differ somewhat in decision making from non-family owned firms (Gómez-Mejía, Cruz, Berrone, & De Castro, 2011). GómezMejía et al. (2007) explain these differences by proposing that the family owners draw utility from non-financial aspects of the business which they call socioemotional wealth. Socioemotional wealth is a collection of non-economic

utilities such as a sense of identity from the firm (Kepner, 1991), family image and reputation (Westhead, Crowling & howorth, 2001; Lee & Rogoff, 1996; Dyer & Whetten, 2006) and accumulation of social capital (Arregle et al; 2007). Family firms seek to preserve this socioemotional wealth and is therefore often less willing than non-family firms to take large risks (Kalm, Luis & Gomez-Mejia, 2016). This risk can be split up into performance hazard risk and entrepreneurial risk (Gomez-mejia et al, 2007; Huybrechts, Voordeckers & Lybaert, 2012). Family firms are risk averse to entrepreneurial risk, while accepting towards performance hazard risk (Gomez-Mejia et al; 2007).

Entrepreneurial risk taking and capital structure in family firms

Investment decisions in family firms have been thoroughly researched with various results. Astrachan (2003) suggests that family firms tend to be strategically positioned to take advantage of innovative opportunities and venture creation. Litz (1995) suggests that family businesses are often seen in the more general area of entrepreneurship. Zahra (2005) argues that owner-managed family firms pursue promising entrepreneurial opportunities, supporting radical innovations. On the other hand, as owners of family firms often have large parts of their wealth concentrated in the firm, they are less prone to risk taking due to diversification concerns (Gomez-Mejia, Makri & Kintana, 2010). Naldi et. al (2007) finds that family firms to a lesser extent are willing to take entrepreneurial risk. Schulze, Lubatkin & Dino (2002) finds that members of family firms might prefer status quo and thus oppose new entrepreneurial ventures and the accompanying risks.

An important connection to entrepreneurial risk taking is capital structure. Capital structure has been thoroughly researched in the corporate finance literature for the past decades, proposing theories like trade-off, pecking-order and market-timing theory. Frank & Goyal (2009) explores the determinants of capital structure general for all firms, which we will use when testing our hypothesis. The relationship between ownership and leverage is however less clear. Anderson, Mansi & Reeb (2003) find that family firms have fewer conflicts with bond holders and are generally seen as better protecting their interest. Short et al. (2009) found that family firms tended to use less leverage, consistent with (Mishra & Mcconaughy, 1999) who find that owner managed family firms tend to have lower debt levels. Research in this field however, is not conclusive. (Amore, Minichilli & Corbetta,

4

2011) found a significant increases in debt following appointment of outside CEO in Italian family firms, while Anderson & Reeb (2003) found no significant difference in leverage in firms with an outside CEO. Due to the lack of consensus on both entrepreneurial risk taking and leverage in family firms we believe that further research is needed. As such through our thesis we seek to contribute to this discussion by using a sample of Norwegian firms.

3.0 Theory

Entrepreneurial risk and family firms

As shown in the literature review there are deviating results as to whether family firms take more entrepreneurial risk than non-family firms. Zahra (2005) finds that family ownership promotes entrepreneurship, in line with research such as Rogoff & Heck (2003). On the other hand, Naldi et al. (2007) and Huybrechts, Voordeckers & Lybaert (2012) amongst others, finds that family firms take less entrepreneurial risk than their non-family counterparts.

A rationale behind the stance that family firms are more averse to entrepreneurial risk can be found in agency theory. According to agency theory restricting residual claims to the decision makers leads to less risky projects being undertaken (Fama & Jenssen, 1983). Ownership concentration in Norwegian family firms are higher than for non-family firms and the largest family tend to have a significant share, amounting to an average of 93% in 2008 (Bøhren, 2011). This indicates that we should see a weaker tendency towards entrepreneurial risk taking in these types of firms. Research also shows that utility from non-financial aspects of the business influence owner decisions in family firms. Dyer & Whetten (2006) highlights the wish to preserve the business for future generations might deter from investing in high risk projects, while Berrone, Cruz & Gomez-Mejia (2012) points to the wish to preserve socioemotional wealth. Family firms tend to avoid projects with high variance in outcomes, as this threatens their socioeconomic wealth (Gomez-Mejia et al., 2007). As such entrepreneurial risk in the form of high variance investments are often forgone by family firms (Gomez-Mejia et al. 2011).

The high owner concentration in Norwegian family firms coupled with the families' desire to preserve socioemotional wealth, leads us to propose the following hypothesis:

Hypothesis 1: Family firms take less entrepreneurial risk than their non-family counterparts.

Outside CEO and entrepreneurial risk taking

The risk-taking behavior of firms is influenced by both managers and owners (Fama & Jensen, 1983). Family CEO's are typically under diversified and heavily invested in the firm, both in terms of wealth and wages (Naldi et al., 2007). Outside CEO's on the other hand, typically have no ownership stake (Huybrechts, Voordeckers & Lyabert, 2012). Parallels can be drawn to the sole owner-manager vs outside manager (Jensen & Meckling, 1976) where the low diversification and high ownership stake causes family CEO to be less inclined towards taking up risky projects (Fama & Jenssen, 1983). Family members also tend to opt for low risk capital structures and little use of debt (McConaughy, Mattews & Fialko 2001), as they have a strong desire to retain control of the firm. The outside CEO on the other hand tend to be less averse to entrepreneurial risk taking (Tsai, Kuo & Hung, 2007).

In addition to the financial aspect of the ownership stake, the family CEO are likely to value the socioemotional wealth the family receives from the firm higher than the outside CEO (Huybrechts, Voordeckers & Lyabert, 2012). By securing the family's socioemotional wealth, the family CEO maintains the family's ability to exercise control and appoint family members to positions in the firm. This in turn increases the family CEO's job security (Gomez-Mejia, Cruz, Berrone & De Castro, 2011). The outside CEO must take other measures to increase job security, such as making manager specific investments that makes it hard for shareholders to replace them (Shelifer & Vishny, 1989). Due to these differences in incentives between outside and family CEOs we propose the following hypothesis:

Hypothesis 2: Family firms led by an outside CEO take more entrepreneurial risk than firms led by a family CEO.

Outside CEO and effects on financing policy

The relationship between outside CEO and a firm's financial policy is uncertain. There are several factors pointing both to increased and decreased leverage. The outside CEO might want to offset the higher entrepreneurial risk by reducing the financial risk and thus minimizing the risk of bankruptcy (Lardon, Deloof & Jorissen, 2017). This is in line with Gonzalez et al.(2013) who find evidence of lower debt levels in family firms managed by founders or family members. Entrepreneurial risk-taking leads to more volatile cash flows (Altman & Saunders, 1997). Banks prefer conservative firms as they are exposed to the downside from risk taking on the firm's part, increasing default risk. They do however not receive any upside potential from risk taking by the borrower in ordinary credit facilities. In addition, banks might also prefer firms where the family is more involved, as family involvement tend to prioritize long term survival of the firm reducing agency cost and aligning the interest of the firm with that of the lender (Ang, Cole & Lin, 2000). These factors point towards lower leverage amongst firms led by an outside CEO.

Mishra & McConaughy (1999) suggests that family-controlled firms may be averse to high levels of debt due to bankruptcy costs and risk of losing control. Amore, Minichilli & Corbetta (2011) finds that the appointment of an outside CEO led to an increase in the use of debt, supporting this stance. Furthermore, investments of growth-oriented family firms are likely to exceed retained earnings (Amore, Minichilli & Corbetta, 2011) and the increased growth pursuits under an outside CEO may increase the need for non-control diluting debt (Lardon, Deloof & Jorissen, 2017). Furthermore, outside CEOs could facilitate access to funding as their appointment might be viewed as a signal of quality by banks (Stijvers & Niskanen, 2013). An outside CEO might also reduce vulnerability to problems such as nepotism (Dekker et al, 2012). The need for non-control diluting funding and aversion to debt seen in family led firms lead us to believe the following hypothesis to hold:

Hypothesis 3: Firms led by an outside CEO have higher debt levels than firms led by a family CEO.

4.0 Methodology and variables

In this section we will discuss how we proceed to test the hypotheses developed in the preceding sections. We start out by examining the differences between family and non family firms in terms of risk taking. Following this we examine differences between family firms employing an outside CEO to those led by a member of the family with the largest ultimate ownership. This initial approach is largely based on (Lardon, Deloof & Jorissen, 2017) and (Huybrechts, Voordeckers and Lybaert, 2012) and will give us a baseline to which we can compare additional results. Further on we extend the analysis for hypothesis 2 & 3, taking advantage of our panel data to explore within firm variation, testing differences in operating and financial decisions between different CEO´s operating the same firm (Malmendier, Tate & Yan, 2011)

Cross sectional samples

For the initial part of our analysis, we employ a standard OLS framework with risk and leverage as the dependent variables, following the approach of (Lardon, Deloof & Jorissen, 2017). When testing the capital structure, a Tobit regression was considered. However, we see in our samples post-clean-up that we have few observations of total debt to assets at 0. Based on this finding we chose to employ a standard OLS framework for the capital structure tests as well. As our sample spans multiple years, we chose to run the regression for each of the last 5 years of our data set, rather than arbitrarily selecting one year for which to conduct our analysis. For all cross-sectional samples, we use heteroskedastic robust standard errors.

Panel used in fixed effects regressions

To take full advantage of our panel data we extend the analysis and employ a fixed effects OLS regression, with both entity (firm) and time (year) fixed effects. The exact specifications for each hypothesis will be presented in later sections. This allows us to look at the variation in risk and capital structure across firms over time, and effects such as impact on dependent variables from different CEO´s operating the same firm. Fixed effects regressions also remove potential bias arising from unobserved firm heterogeneity (Stock & Watson, 2015). We chose to only apply this within analysis to hypothesis 2 and 3, as the independent variable ownership

for hypothesis 1 is more or less constant across time, and as such the fixed effects would already incorporate the family status of the firm. Furthermore, we believe that interpreting the effect of change in ownership status on risk taking over a shorter period would be subject to too much omitted variable and reverse causality issues.

In our model selection we disregarded pooled OLS as we feel the assumption of the average values of the variables and the relationship between them to be constant across time and units, to be too strong in our data. Either a fixed or random effects model could be applied to overcome this assumption (Brooks, 2014). The fixed effects model allows each firm to have a different intercept, eliminating potential omitted variable bias arising from unobserved firm heterogeneity, at the expense of the number of degrees of freedom (Studenmund, 2011). The Random effects model uses a lot less degrees of freedom as it assumes a mean intercept from which each firm intercept is randomly drawn, it does however require the assumption that the time invariant omitted variables are uncorrelated with the independent variables in order to be unbiased (Brooks, 2008).

To aid in the selection of a fixed versus a random effects model, we conducted a Hausman test. We rejected H0 of no correlation between the intercepts and the independent variables at the 1% level, both for the capital structure and risk model (Appendix1), implying that random effects would not be an appropriate choice in this case (Brooks 2014). Based on these results and our belief that time invariant omitted variables are likely to be correlated with our independent variables, we chose the fixed effects model. We believe our large data set should still allow for sufficient degrees of freedom.

Furthermore, there could potentially be omitted variables constant across firms, but varying in time such as regulatory effects, limitations on borrowing etc. To account for this we test whether or not time fixed effects should be included in our models. This is done through an F test, testing whether the included yearly dummies are jointly equal to zero. For both the capital structure and risk model we find that time fixed effects should be included as we reject the hypothesis of coefficients being jointly equal to zero for both samples at the 1% level (Appendix 2). Lastly, we allow for heteroscedasticity and arbitrary correlation between errors within firms, but assume no such relationships across firms, by using standard errors clustered at the firm level.

Difference in differences estimation

Our fixed effects regressions does not take into account the potential effect of succession specific shocks (Bennedsen et al., 2007). As such we employ a difference in difference analysis to robustness check our results for potential succession effects and single out change in risk and capital structure caused by succession from a family CEO to an outside CEO.

In order to conduct our analysis, we identify all family firms which change CEO once during our sample period. This sample is then divided into two groups, those who change from a family to an outside CEO (treatment), and those who change from one family CEO to another (control). The difference in risk and leverage pre and post event is calculated for each firm and the following OLS regressions, adapted from Stock & Watson (2015), are ran on the differences:

$$1: \Delta Risk_i = \beta_0 + \beta_1 Change_i + WR'_i \beta + y'_i \beta + I'_i \beta$$

$$2: \Delta Debt_i = \beta_0 + \beta_1 Change_i + WD'_i \beta + y'_i \beta + I'_i \beta$$

Where:

ΔRisk: The difference in risk taking 3 years prior to and 3 years after the change of CEO. Risk taking is defined as the standard deviation of ROA and will be further explained in later sections.

ΔDebt: The difference in average debt 3 years prior to and 3 years after the change of CEO. Debt is defined as total debt to assets and will be further explained in later sections.

Change is a binary variable taking the value 1 if the ith firm changes from a family to an outside CEO.

WR is a vector of control variables measured 1 year prior to the change of CEO and include: firm size, firm age, board size, ROA, CEO duality & whether or not the largest family has chairman of the board.

WD is a vector of control variables measured 1 year prior to the change of CEO and includes: tangible assets and cash flow scaled as well as the variables included in *WR*.

I is a vector of industry controls, included to control for potential industry specific effects. ***y*** is a vector of year controls included to control for year specific effects.

Regressions by Hypothesis

In this section we will present the regressions used to test each hypothesis, explain the variables included and present our predictions of the coefficients for the explanatory variable in each regression. We include several control variables commonly used to explain debt and risk in corporate finance literature (Lardon, Deloof & Jorissen, 2017; Frank & Goyal 2009), most controls are the same for all our hypotheses, as such they are explained once under hypothesis 1. A table of the variables used can be found in Appendix 3.

Hypothesis 1: Family firms take less entrepreneurial risk than their non-family counterparts

The following regression is used to test our hypothesis 1:

$$Risk_i = \beta_0 + \beta_1 Own_i + \beta_2 Size_i + \beta_3 Age_i + \beta_4 Board_i + \beta_5 ROA_i + \beta_6 Duality_i + \beta_7 Fchair_i + I'_i \beta$$

Dependent variable:

The dependent variable **(Risk)** in this specification is entrepreneurial risk taking. Risk taking is often measured through performance variability as large variability in performance may indicate that firms have pursued new strategies and thus been more willing to accept risk (Huybrechts, Voordeckers & Lybaert, 2012). We measure this performance variability with the 3-year standard deviation of return on assets. Where return on assets is calculated as operating income over the average value of total assets for the start and end of year. For our cross sectional samples, the standard deviation of ROA is calculated for the current and 2 years back. The fixed effects regressions in hypothesis 2 & 3 uses the standard deviation for the current and 2 years ahead to reduce potential reverse causality issues of change in CEO being a result of variability in past returns.

Explanatory variable:

Family firm (own)**:** Family firms are defined as firms where one family has ultimate ownership of over 50%. In addition, we also created variables with 33% and 66% ultimate ownership for robustness tests. The ownership variables are created as binary variables taking the value of 1 if ultimate ownership is above the defined threshold. Due to the Norwegian tax system a lot of shareholders own stocks through holding companies, we therefore use the sum of ultimate ownership

to compute the threshold. In order to confirm our hypothesis we expect to find a negative and significant coefficient on the variable family firm.

Control variables:

Company size (*Size*)**:** We chose to use the logarithm of revenues as a measure of company size as suggested by Frank & Goyal (2009). Size is included as a control variable as smaller companies tend to have higher growth and thus more volatile income, while larger more diversified companies often face lower default risk.

Company age (*Age*)**:** Company age is the years passed since creation of the firm. Older firms may have more dispersed ownership, making the hiring of a professional CEO more likely. Older firms may also have accumulated assets over time leading to less need for debt, as well as less expansive growth.

Board size (*Board*)**:** The Board variable indicates the number of board members and is included as a proxy for family control. An active board may have a moderating effect on both strategic and financial decisions taken by the CEO. Larger boards may be more conservative with regards to strategic and financial decisions.

Return on assets (*ROA*): Return on assets is calculated as operating income over average total assets. The risk return trade-off is one of the most fundamental concepts in finance. To obtain a high return investors must take on risky projects, while high risk might also leads to higher borrowing costs.

Duality: *Duality* is a binary variable taking the value 1 if the incumbent CEO is a member of the board. Previous research has found a moderating effect on outside CEOs from boards (Lardon, Deloof & Jorissen, 2017). It seems reasonable that this effect might be reduced if the CEO is a member of the board.

Family chairman (Fchair)**:** Is a binary variable taking value 1 if the owning family has the chairman of the board. If the family control the board they may limit managements window to take advantage of entrepreneurial projects

Industries (I')**:** Past research in finance have shown large differences in ROA and capital structure between various industries. We therefore think it is necessary to control for industry specific effects in our sample. Industry variable are binary variables generated by matching the NACE code to the classification from SSB.

Hypothesis 2: Family firms led by an outside CEO take more entrepreneurial risk than firms led by a family CEO

The following regressions are used to test hypothesis 2:

$$Cross\ sectional:\ Risk_i = \beta_0 + \beta_1 Outside_i + VR'_i\ \beta + I'_i\ \beta$$

$$Fixed\ effects:\ Risk_{it} = \beta_1 Outside_{it} + VR'_{it}\ \beta + \alpha_i + \lambda_t$$

Dependent variable:

Risk taking (*Risk*)**:** Risk is as previously defined the 3-year standard deviation of return on assets.

Explanatory variable:

Outside CEO (*Outside*)**:** Is a binary variable taking the value 1 if the incumbent CEO is not a member of the owning family. As mentioned in the development of hypothesis 2 we predict that outside CEO have a positive effect on risk taking. For our hypothesis to be confirmed we need a positive and significant coefficient on the variable outside.

Control variables (VR):

The control variables in the regression are largely based on controls explained in hypothesis 1 (*Size, Age, Board, ROA, Duality* & *Fchair*), in addition we include **Tenure** which is a continuous variable reporting the length of the incumbent CEO's tenure. If the CEO has a long tenure it is believed she gets emotionally connected with the firm and the effect of being unrelated is reduced. For the fixed effects regression α_i represents the entity fixed effects while λ_t represents the time fixed effects.

Hypothesis 3: Firms led by an outside CEO have higher debt levels than firms led by a family CEO

The following regressions are used to test our hypothesis:

$$Cross\ sectional:\ Debt_i = \beta_0 + \beta_1 Outside_i + VD'_i + I'_i\,\beta$$

$$Fixed\ effects:\ Debt_{it} = \beta_1 Outside_{it} + VD'_{it}\,\beta + \alpha_i + \lambda_t$$

Dependent variable:

Total debt (*Debt*): Debt is total debt scaled by total assets. Where total debt is defined as Total provisions + Total other long-term liabilities + Total current liabilities.

Explanatory variable:

Outside CEO (*Outside*)**:** Is a binary variable taking the value 1 if the incumbent CEO is not a member of the owning family. Based on our literature review we predict that outside CEO has a positive and significant effect on Debt. To confirm our hypothesis we need positive and significant coefficients on the variable Outside.

Control variables (VD):

The control variables in the regression are largely based on controls explained in hypothesis 1 (*Size, Age, Board, ROA, Duality* & *Fchair*), in addition we use lagged *ROA* instead of current year *ROA* and include the following two variables:

Asset tangibility for the previous year (*L.Tang*)**:** Asset tangibility is total tangible assets scaled by total assets. Tangible assets make it easier to post collateral to lenders which leads to lower cost of debt.

Cash flow for the previous year (*L.CF*)**:** CF is cash flow scaled by total assets. Firms with high cash flow generate enough cash to keep liquidity at an acceptable level. We therefore assume they need less debt financing to cover running expenses.

Data

Sample and filters

Our sample was gathered from BI's CCGR database. The data set provided contained accounting data as well as relevant governance variables for all Norwegian limited liability companies from 2000-2015. As the database include all limited liability companies, we use ultimate ownership as our determinant of family firm status and define family firms as firms with 50% or higher ultimate ownership. Industry classification was determined by each firms NACE code in accordance with the classification reported by SSB. For firms with multiple NACE codes the first NACE code in the string of NACE codes reported was used. As our sample spans multiple years, we inflation adjusted accounting variables to 2014 levels using the SSB KPI index. We start our sample in 2005 due to some issues with our Tenure variable, and after these initial adjustments the following filters were applied to our data:

1. **Board size:** We argue that when studying the topics in our thesis a working board is important. Therefore, companies with less than 3 board members were dropped from our sample. The reasoning behind this threshold is that three board members is the minimum for a meaningful vote. This limitation on board size also filters out the smallest firms.

2. **Active firms:** We include only active firms in our sample, as such all firms with average revenues and total assets smaller than or equal to zero over the sample period were dropped.

3. **Financial firms:** We exclude financial firms from our sample due to accounting rules, ownership restrictions etc.

4. **Missing data:** The dataset contained a lot of missing data on the governance variables, and these observations were dropped in line with (Che & Langli, 2015).

5. **Debt to total assets & ROA:** For our dependent variables, we dropped observations that were exceeded 200% ROA in absolute terms. We also dropped observations for which the debt to total assets ratio exceeded 1 or dropped below 0.

6. **Gap years:** After applying the above-mentioned filters our sample contained gap years, and these firms were dropped from our data set.

Sample specific filters

Cross sectional samples: We only included companies which had constant ownership and CEO affiliation for the calculation window of the risk taking variable. Meaning 3 years of ownership either above or below the 50% threshold and a family/outside CEO for the 3 years in which the standard deviation of ROA was calculated.

Panel used for fixed effects regressions: The last 2 observations of each company are not included tin the regression, as our risk-taking variable is calculated as the 3 year ahead standard deviation of ROA. This was done to limit potential reverse causality issues related to using a lagged risk variable when looking at changes in CEO affiliation.

After filtering our cross-sectional samples ranges from 12 736 to 13 853 firm observations per year, for which 8273 to 9035 are family firms. Our panel used for the fixed effects regressions contains a total of 27 072 firms of which 11 902 are family firms.

Summary statistics

Table 1 and 2 shows the correlation among variables for the full and family firm only samples respectively. Table 3 compares differences in means for family firms operated by outside and family CEO. From table 1 we see that family ownership (own 50) and entrepreneurial risk taking (Risk) is negatively correlated, significant at the 5% level. Furthermore, there is a negative correlation between family ownership and board size, firm size, ROA and debt indicating that family firms are smaller, have smaller boards, lower ROA and use less debt than non-family counterparts. Lastly family ownership is positively correlated with age, duality and tenure. This indicates that family-firms tend to be older, have less separation between CEO and board and that CEO´s in family firms tend to have longer tenures.

From the sample of family firms only (table 2) we see a somewhat surprising negative correlation between outside CEO and entrepreneurial risk taking, while the relationship is positive between debt and outside CEO. As can be seen from table 3, this relationship is present and significant when comparing the means for

our two samples. Firms with an outside CEO are larger and tend to have larger boards. Their CEO has lower tenure and is highly negatively correlated with duality as seen in table 2 and 3. This is an interesting potentially indicating that family firms who engage an outside CEO are more professionalized with working boards and separation of the CEO and the board role.

Looking at table 1 and 2 we see high correlation between some of our right hand side variables, which could potentially indicate multicollinearity issues. To see the scope of this issue we looked at the variance inflation factors for the independent variables in our cross sectional samples and found that the largest vif was 4.94[1]. This is below the rule of thumb threshold of 5 (Studenmund, 2011). We chose to keep the variables as is to avoid introducing possible bias by removing them (Studenmund, 2011) while keeping the possible multicollinearity in mind.

---

[1] Highest average VIF including industry dummies was 13.49 however only the industry dummies had vifs above 4.

Table 1 Correlations of Risk and Debt with firm characteristics for the full sample including non-family firms

	Risk	Board	Age	ROA	Size	Debt	Tang	CF	Tenure	FChair	Duality
Board	**-0.036**										
Age	**-0.151**	**0.032**									
ROA	**0.142**	**-0.047**	**-0.050**								
Size	**-0.352**	**0.211**	**0.214**	**-0.024**							
Debt	**-0.058**	-0.004	**-0.151**	**0.064**	**0.106**						
Tang	**-0.228**	**-0.016**	**0.033**	**-0.153**	**0.169**	**0.177**					
CF	**-0.053**	-0.004	**0.018**	**0.073**	**0.031**	**-0.023**	-0.002				
Tenure	**-0.140**	**-0.065**	**0.433**	-0.007	**0.080**	**-0.132**	-0.005	**0.026**			
Fam Chair	**-0.026**	**-0.216**	**0.071**	0.005	**-0.075**	**-0.071**	**0.030**	**0.017**	**0.113**		
Duality	**0.038**	**-0.174**	**-0.031**	**0.076**	**-0.228**	0.004	**0.021**	**0.009**	**0.170**	**0.196**	
own 50	**-0.036**	**-0.237**	**0.087**	**-0.010**	**-0.057**	**-0.057**	**0.032**	**0.013**	**0.138**	**0.411**	**0.226**

Table 1 shows the correlations between variables for the full sample of family and non-family firms. **Risk** is entrepreneurial risk taking calculated as the standard deviation of return on assets for the current and 2 years back. **Board** is the number of board members. **Age** is the age of the firm. **ROA** is return on assets. **Size** is the logarithm of revenues. **Debt** is total provisions + total other long term liabilities + total current liabilities scaled by total assets. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO has a board seat. **Own 50** is a binary variable equal to 1 if one family has ultimate ownership exceeding 50%. Bold numbers indicate significance at at least the 5% level. N=131 902

Table 2 Correlations of Risk and Debt with firm characteristics for the sample of family firms

	Risk	Board	Age	ROA	Size	Debt	Tang	CF	outside	Tenure	FChair
Board	**-0.041**										
Age	**-0.162**	**0.042**									
ROA	**0.207**	**-0.027**	**-0.071**								
Size	**-0.370**	**0.199**	**0.246**	**-0.051**							
Debt	**-0.032**	**0.026**	**-0.140**	**0.029**	**0.079**						
Tang	**-0.208**	**-0.004**	**0.034**	**-0.149**	**0.172**	**0.198**					
CF	**-0.053**	0.002	**0.015**	**0.067**	**0.028**	**-0.031**	-0.005				
outside	**-0.014**	**0.082**	-0.013	**-0.002**	**0.164**	**0.082**	**-0.020**	**-0.011**			
Tenure	**-0.138**	**-0.037**	**0.443**	**-0.034**	**0.100**	**-0.143**	-0.006	**0.020**	**-0.180**		
Fam Chair	**-0.022**	**-0.149**	0.046	**-0.001**	**-0.070**	**-0.090**	**0.024**	**0.015**	**-0.106**	**0.070**	
Duality	**0.042**	**-0.096**	**-0.041**	**0.046**	**-0.214**	**-0.037**	**0.015**	0.004	**-0.426**	**0.160**	**0.112**

Table 2 shows the correlations between variables for the sample containing only family firms. **Risk** is entrepreneurial risk taking calculated as the standard deviation of return on assets for the current 2 and years back. **Board** is the number of board members. **Age** is the age of the firm. **ROA** is return on assets. **Size** is the logarithm of revenues. **Debt** is total provisions + total other long term liabilities + total current liabilities scaled by total assets. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. **Outside** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO has a board seat. Bold numbers indicate significance at at least the 5% level. N= 75 618

Table 3 Difference in means between Family and Outside CEO

	Mean Family	Mean Outside		P value
Risk	9.052	8.721	0.332	0.000
Board	3.459	3.610	-0.151	0.000
Age	13.567	13.163	0.404	0.000
ROA	12.345	12.240	0.105	0.499
Size	15.542	16.139	-0.598	0.000
Debt	0.608	0.654	-0.045	0.000
Tang	0.259	0.246	0.014	0.000
CF	0.000	0.000	0.000	0.003
Tenure	8.190	6.039	2.151	0.000
	N = 57190	N = 18428		

Table 3 shows the means and differences in means between firms employing a family CEO and those employing an outside CEO. **Outside** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Risk** is entrepreneurial risk taking calculated as the standard deviation of return on assets for the current and 2 years back. **Board** is the number of board members. **Age** is the age of the firm. **ROA** is return on assets. **Size** is the logarithm of revenues. **Debt** is total provisions + total other long term liabilities + total current liabilities scaled by total assets. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO.

5.0 Initial results

In this section we will discuss our results from the models developed in the preceding sections. For hypothesis 2 and 3 we split the analysis into two parts, first focusing on the cross-sectional results as a baseline and then moving on to the within analysis with the results from the fixed effects model.

H1: Family firm takes less risk than non-family firms

Table 4 presents our regression results for the years 2010 to 2014 using risk taking as the dependent variable and 50% ownership as the explanatory variable. As can be seen from table 4 there is a negative relationship between family ownership and entrepreneurial risk taking for all years in our sample, significant at 5% or lower for the last 3 out of 5 years. These results, although not definitive, lends support to our hypothesis 1 indicating that family firms take less risk than non-family firms. This is in line with existing literature such as Gomez-Mejia, Makri & Kintana (2010) who finds that families are less diversified and thus takes less risk. It may also be explained by other factors like preservation of socioemotional wealth (Kalm & Gomez-Mejia, 2016) or other non-financial utilities families gain from their companies.

Further examination of table 4 shows that the coefficients for both size and company age are negative and significant at the 1% level for all years. These findings indicating that larger and older firms have less variability in their return on assets which is in line with previous research (Gomez-Mejia et al, 2007) potentially implying that larger firms are more resistant to entrepreneurial risk taking. Another possible explanation for lower risk propensity among older firms is fewer growth opportunities and thus less volatile revenues. In addition, governance in older and larger companies may be more bureaucratic limiting managements window to take advantage of entrepreneurial projects. Zahra (2005) controls for founder managed firms as founders tend to be more entrepreneurial spirited, our data does not let us control for this and hence we believe our control variable company age may capture some of this effect. In summary our initial results show moderate evidence in support of hypothesis 1, and we will discuss this further in later sections after robustness testing our initial results.

Table 4: Ownership & Risk taking, Dependent variable: Risk

	Year				
	2010	2011	2012	2013	2014
50% ownership	-0.107	-0.132	-0.539***	-0.709***	-0.437**
	(0.201)	(0.191)	(0.206)	(0.208)	(0.216)
Comp Size	-2.123***	-2.029***	-1.950***	-1.993***	-1.986***
	(0.078)	(0.070)	(0.065)	(0.069)	(0.072)
Comp Age	-0.057***	-0.056***	-0.056***	-0.048***	-0.044***
	(0.006)	(0.005)	(0.005)	(0.007)	(0.008)
Board	0.145	0.242***	0.071	-0.062	0.078
	(0.090)	(0.090)	(0.079)	(0.083)	(0.089)
ROA	-0.036***	0.039***	0.049***	0.018	0.041***
	(0.014)	(0.012)	(0.013)	(0.013)	(0.013)
Fam Chair	-0.463**	-0.376**	-0.096	-0.464**	-0.258
	(0.185)	(0.173)	(0.184)	(0.181)	(0.191)
Duality	-0.380*	-0.625***	-0.995***	-0.329*	-0.552***
	(0.208)	(0.195)	(0.210)	(0.200)	(0.213)
Constant	46.055***	43.771***	43.205***	43.035***	39.577***
	(1.726)	(1.826)	(1.992)	(2.176)	(1.419)
Observations	13727	13853	13312	13181	12736
Adjusted R^2	0.176	0.167	0.164	0.161	0.159

Table 4 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current and 2 years back. Regressions are run on the full sample of both family and non-family firms for the years 2010 to 2014. **50% ownership** is a binary variable equal to 1 if one family has ultimate ownership exceeding 50%. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

H2: Outside CEO makes family firms take more risk

Cross-sectional

Table 5 presents the results from our regression using risk taking as the dependent variable and outside CEO as the explanatory variable. The sample contains only family firms and spans the period 2010 to 2014. Table 6 presents the results for the same sample, extended to control for CEO tenure.

From table 5 we find positive coefficients on the effect of outside CEO on risk taking across firms for all years, significant at the 5% level for 2010, 2011 and 2013, significant at the 10% level for 2012 and insignificant for 2014. These results deviate from (Huybrechts, Voordeckers and Lybaert, 2012) who find little support for outside CEO having a significant effect on risk taking on its own.

Looking at the results in table 6 the coefficients on outside CEO is still positive when controlling for tenure, they are however only significant for 2010 and 2011, causing the results to be somewhat ambiguous in relationship to our hypothesis. Furthermore, the coefficient for Fam chair, is negative for both models and significant at at least the 10% level. This negative effect is consistent with previous research indicating that control measures available to the owning family might have a moderating effect on risk taking (Lardon, Deloof and Jorissen, 2017). Our cross-sectional regressions give ambiguous results in support of hypothesis 2, the effect vary across years indicating that other factors than choice of CEO might drive risk taking. These results will be discussed further following the results from our fixed effects regression and robustness tests.

Table 5: Outside CEO and Risk taking, Dependent variable: Risk

	Year				
	2010	2011	2012	2013	2014
outside ceo	0.891***	0.843***	0.414*	0.511**	0.419
	(0.268)	(0.242)	(0.249)	(0.249)	(0.261)
Comp Size	-2.175***	-2.176***	-2.056***	-2.114***	-2.139***
	(0.097)	(0.092)	(0.083)	(0.085)	(0.088)
Comp Age	-0.049***	-0.051***	-0.047***	-0.040***	-0.037***
	(0.007)	(0.006)	(0.006)	(0.009)	(0.010)
Board	0.231*	0.351***	0.131	0.256**	0.218*
	(0.123)	(0.133)	(0.117)	(0.122)	(0.128)
ROA	-0.007	0.047***	0.067***	0.045***	0.078***
	(0.017)	(0.015)	(0.015)	(0.016)	(0.016)
Fam Chair	-0.579***	-0.569***	-0.431**	-0.402*	-0.473**
	(0.220)	(0.209)	(0.211)	(0.213)	(0.224)
Duality	-0.003	-0.431	-1.095***	-0.632**	-0.892***
	(0.288)	(0.275)	(0.317)	(0.281)	(0.308)
Constant	45.365***	44.007***	42.362***	42.180***	42.113***
	(2.123)	(2.467)	(1.790)	(2.170)	(2.037)
Observations	8899	9035	8723	8680	8273
Adjusted R^2	0.183	0.187	0.185	0.172	0.187

Table 5 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current and 2 years back. Regressions are run on sample containing only family firms for the years 2010 to 2014. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

**Table 6: Outside CEO and Risk taking controlling for tenure,
dependent variable: Risk**

	Year				
	2010	2011	2012	2013	2014
outside ceo	0.634**	0.573**	0.084	0.159	0.140
	(0.270)	(0.243)	(0.249)	(0.249)	(0.262)
Comp Size	-2.163***	-2.166***	-2.031***	-2.088***	-2.112***
	(0.097)	(0.091)	(0.082)	(0.084)	(0.087)
Comp Age	-0.023***	-0.025***	-0.017***	-0.007	-0.005
	(0.007)	(0.006)	(0.006)	(0.010)	(0.011)
Board	0.188	0.302**	0.061	0.200*	0.164
	(0.122)	(0.132)	(0.116)	(0.121)	(0.128)
ROA	-0.007	0.047***	0.065***	0.044***	0.077***
	(0.017)	(0.015)	(0.015)	(0.016)	(0.016)
Fam Chair	-0.552**	-0.531**	-0.393*	-0.363*	-0.434*
	(0.219)	(0.208)	(0.210)	(0.212)	(0.222)
Duality	0.325	-0.114	-0.745**	-0.210	-0.450
	(0.288)	(0.274)	(0.314)	(0.281)	(0.310)
Tenure	-0.160***	-0.154***	-0.167***	-0.175***	-0.159***
	(0.019)	(0.018)	(0.017)	(0.018)	(0.018)
Constant	46.136***	44.820***	42.908***	42.862***	42.572***
	(2.147)	(2.485)	(1.812)	(2.177)	(2.035)
Observations	8899	9035	8723	8680	8273
Adjusted R^2	0.188	0.192	0.192	0.181	0.194

Table 6 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current and 2 years back. Regressions are run on sample containing only family firms for the years 2010 to 2014. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Fixed effects

Table 7 contains the results from our fixed effects regressions on our sample of family firms for 2005 to 2014[2] testing both risk and debt, columns 1 & 2 contains the results for hypothesis 2.

Looking at table 7 model 1 & 2 we find positive coefficients on the effect of outside CEO on risk taking, significant at the 5% level for both models. These results lend credibility to our hypothesis 2, indicating that firms who changes to an outside CEO take more entrepreneurial risk. For both model 1 & 2 the coefficients on company age and size are negative and significant as with our cross sectional sample. This is in line with both previous research and our expectations. Interestingly enough, we find positive coefficients on the control variable board size, indicating that increases in board size have a positive effect on the level of entrepreneurial risk taking in family firms, this is contrary to previous research who find reduced risk taking when increasing board control (Lardon, Deloof & Jorissen, 2017). We do however include various board control variables that may influence this coefficient. ROA has a positive and significant effect on our risk measure, which is to be expected as our risk measure is an indication of variability in returns.

In summary we find evidence, although not conclusive, in support of our hypothesis that family firms led by an outside CEO take more entrepreneurial risk than those led by a member of the owning family.

---

[2] Due to the calculation of the dependent variable Risk in our fixed effects regressions (3 year forward looking standard deviation of ROA), the sample effectively runs from 2005 up to and including 2012 for H2.

Table 7: Dependent: 1&2 Risk 3&4 Debt Results for full 2005 to 2014 sample

	(1)	(2)	(3)	(4)
	Risk	Risk	Debt	Debt
outside ceo	0.390**	0.376**	0.002	0.001
	(0.182)	(0.181)	(0.003)	(0.003)
Comp Size	-2.907***	-2.904***	0.107***	0.107***
	(0.200)	(0.200)	(0.004)	(0.004)
Comp Age	-6.862***	-6.867***	-0.025***	-0.024***
	(0.104)	(0.104)	(0.001)	(0.001)
Board	0.276**	0.274**	-0.004	-0.004
	(0.134)	(0.134)	(0.003)	(0.003)
Duality	-0.209	-0.157	0.004	0.007
	(0.261)	(0.267)	(0.005)	(0.005)
Fam Chair	-0.060	-0.060	-0.001	-0.001
	(0.187)	(0.187)	(0.004)	(0.004)
ROA	0.104***	0.104***		
	(0.006)	(0.006)		
Tenure		-0.026		-0.001***
		(0.023)		(0.000)
L.Tang			0.085***	0.085***
			(0.009)	(0.009)
L.ROA			-0.001***	-0.001***
			(0.000)	(0.000)
L.CF			-4.193	-4.182
			(2.680)	(2.677)
Observations	54860	54860	48575	48575
Adjusted R^2	0.071	0.071	0.219	0.219

Table 7 contains the results from our fixed effects regressions on our sample of family firms for 2005 to 2014. Columns 1 & 2 contains the results for hypothesis 2 using Entrepreneurial **risk** taking as the dependent variable, calculated as the 3 year ahead standard deviation of return on assets. Colums 3 & 4 presents the results for hypothesis 3 and uses Total **debt** scaled by total assets as the dependent variable. **Outside CEO** is a binary variable equal to one if the CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets & **L.ROA** is the ROA for the previous year. **Fam Chair** is a binary variable equal to one if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. Standard errors clustered at the firm level reported in parentheses. Both time and entity fixed effects used but suppressed in table. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

H3: Outside CEO on debt level

Cross sectional

Table 8 presents our results from the regression using debt as the dependent variable and outside CEO as the main variable of interest, the sample contains only family firms and spans the period 2010 to 2014. Table 9 presents the results for the same sample, extended to control for CEO tenure.

The coefficient of the effect of outside CEO on total debt is positive and significant at the 1% level for all years in our sample, as can be seen in table 8. Looking at table 9 we find this relationship to continue to hold when controlling for tenure. These results indicate that firms lead by an outside CEO seems to have higher debt levels than those led by a family CEO, consistent with Amore et al (2011) and in support of our hypothesis 3.

Looking at the control variables the coefficient on company size is positive and significant. A potential interpretation is that larger firms may be more developed and diversified, causing lower risk which in turn implies lower borrowing costs. The coefficient on company age is significant and negative for both models for all years included in our sample. This indicates that older firms have lower debt in line with pecking order theory as they might use retained earnings to finance projects. Older companies also tend to have fewer growth opportunities and as a result need less financing for new ventures. We also find that the level of tangible assets in the previous period affects debt levels positively. This may be due to the fact that tangible assets are easier to collateralize and hence debt financing is more accessible. Coefficient on Fam chair is negative and significant, indicating that family chairman of the board has a moderating effect on outside CEOs debt propensity consistent with previous research (Lardon, De loof & Jorissen, 2017).

Table 8: Outside CEO and Debt, Dependent variable: Debt

	Year				
	2010	2011	2012	2013	2014
outside ceo	0.042***	0.031***	0.040***	0.045***	0.045***
	(0.007)	(0.009)	(0.009)	(0.008)	(0.011)
Comp Size	0.011***	0.021***	0.020***	0.022***	0.016***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
Comp Age	-0.003***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Board	0.002	-0.002	0.002	-0.002	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Fam Chair	-0.044***	-0.041***	-0.038***	-0.043***	-0.037***
	(0.005)	(0.007)	(0.006)	(0.006)	(0.009)
Duality	-0.002	0.005	-0.006	-0.002	-0.003
	(0.008)	(0.009)	(0.008)	(0.009)	(0.009)
L.Tang	0.269***	0.229***	0.228***	0.226***	0.208***
	(0.010)	(0.017)	(0.015)	(0.013)	(0.021)
L.CF	-9.344	-1472.233*	-1282.875*	-875.747*	-1725.747*
	(6.682)	(778.078)	(659.901)	(498.570)	(1013.281)
L.ROA	0.000	0.001**	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.305***	0.186***	0.187***	0.142***	0.178***
	(0.052)	(0.050)	(0.045)	(0.052)	(0.048)
Observations	8899	9035	8723	8680	8273
Adjusted R^2	0.134	0.205	0.192	0.169	0.212

Table 8 contains the results from cross sectional regressions using total debt as the dependent variable, calculated as total provisions + total other long term liabilities + total current liabilities scaled by total assets. Regressions are run on sample containing only family firms for the years 2010 to 2014. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. **L.ROA** is the return on assets for the previous year. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Table 9: Outside CEO and Debt controlling for tenure, Dependent variable: Debt

	Year				
	2010	2011	2012	2013	2014
outside ceo	0.037***	0.027***	0.034***	0.039***	0.039***
	(0.007)	(0.008)	(0.008)	(0.007)	(0.011)
Comp Size	0.012***	0.021***	0.021***	0.022***	0.017***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
Comp Age	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Board	0.001	-0.003	0.001	-0.003	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Fam Chair	-0.044***	-0.040***	-0.037***	-0.043***	-0.036***
	(0.005)	(0.007)	(0.006)	(0.006)	(0.009)
Duality	0.004	0.009	0.001	0.006	0.006
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
L.Tang	0.269***	0.229***	0.227***	0.225***	0.207***
	(0.010)	(0.017)	(0.015)	(0.013)	(0.021)
L.CF	-9.337	-1457.684*	-1259.846*	-860.873*	-1701.059*
	(6.598)	(773.183)	(651.840)	(491.920)	(1001.850)
L.ROA	0.000	0.001**	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure	-0.003***	-0.002***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.319***	0.199***	0.199***	0.156***	0.189***
	(0.052)	(0.050)	(0.045)	(0.052)	(0.049)
Observations	8899	9035	8723	8680	8273
Adjusted R^2	0.137	0.207	0.195	0.173	0.217

Table 9 contains the results from cross sectional regressions using total debt as the dependent variable, calculated as total provisions + total other long term liabilities + total current liabilities scaled by total assets. Regressions are run on sample containing only family firms for the years 2010 to 2014. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. **L.ROA** is the return on assets for the previous year. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Fixed effects:

Table 7 model 3 & 4 presents the fixed effects regressions for hypothesis 3. Looking at model 3 we find a positive coefficient for the effect of outside CEO on debt levels, this also holds for model 4 when controlling for tenure. However, neither model has a significant coefficient at any level. Control variables age, size, tenure & tang are significant and show the same relationship as in the cross sectional analysis[3].

The insignificant coefficients for outside CEO on debt levels stand in contrast to the results from our cross sectional analysis. The cross section analysis shows a significant difference between firms employing an outside CEO to those run by a family CEO, this difference however is not present when looking at the within firm variation in our fixed effects regressions. This gives us ambiguous results for hypothesis 3 potentially indicating that the differences in debt found in the cross sectional analysis is driven by differences among firms other than their CEO's family status, which will be further discussed in the discussion part.

6.0 Robustness tests

In the following section we will present the results from our robustness tests, herein the difference in differences analysis and results from our regressions using different definitions of family firms.

Results from difference in differences analysis

To robustness check the results from our within firm analysis for potential change specific shocks (Bennedsen et al 2007) we performed a difference in differences analysis. Our sample consists of 616 family firms led by a family CEO, of which 418 transitioned to a new family CEO while the remaining 198 changed to an outside CEO. Table 10 shows the difference in means at the year of CEO succession for the two groups, with only Size, debt and tangible assets being significantly different from 0. We suspect these differences to be driven in large by yearly differences within our sample. The two groups become similar in all or most aspects

---

[3] Return on assets have the opposite sign, we suspect this to be due to differences in periods for the two models, the cross section is post crisis while the panel runs from 2005. Looking at an extended cross sectional sample we find negative coefficient for ROA for all years prior to 2009.

when controlling for the year in which the change took place, keeping in mind that looking at individual years greatly reduces our sample size.

Table 10: Firms characteristics for full sample at the year of CEO succession

	Change to Family CEO	Change to Outside CEO	Difference	P value
Board	3.541	3.652	-0.111	0.143
Age	16.995	14.793	2.202	0.065
ROA	11.273	13.829	-2.556	0.058
Size	15.805	16.170	-0.365	0.004
Risk	8.395	8.382	0.013	0.987
Debt	0.608	0.657	-0.049	0.009
Tang	0.278	0.208	0.070	0.005
CF	0.000	0.000	0.000	0.648
	N=418	N=198		

Table 10 contains firm characteristics for firms going through CEO succession once during our sample period. The characteristics are measured at the year of CEO succession. **Board** is the number of board members. **Age** is the age of the firm. **ROA** is return on assets. **Size** is the logarithm of revenues. **Risk** is the standard deviation of return on assets for the current and 2 years back. **Debt** is total provisions + total other long term liabilities + total current liabilities scaled by total assets. **Tang** is tangible assets. **CF** is cash flow scaled by total assets.

Table 11: Differences in debt and risk taking pre/post CEO transition

		Type of succession		
		Fam	Outside	Difference
Risk	Before	8.031	8.862	0.832
	After	8.045	7.992	-0.053
	Difference	0.015	-0.870	-0.885
Debt	Before	0.652	0.688	0.036**
	After	0.581	0.630	0.049***
	Difference	-0.071***	-0.058***	0.013

Risk is defined as the standard deviation of ROA over a 3 year period pre/post succession. Debt is defined as average debt over a 3 year period pre/post succession. *** signifies 1%, ** 5% and * 10% significance level.

Table 11 presents the differences in debt and risk before and after CEO transition for the two groups, as well as the difference in differences of pre/post transition between them. From the table we find no significant difference in risk taking, neither between, within or in the difference in the differences resulting from transition between the two groups. This absence of significant difference in risk

taking resulting from transition is contradictory to what we would expect when looking at the results in model 1 & 2 from our within analysis in table 7. Looking at the differences in debt from table 11 we find results in line with results in table 10 that the two groups are significantly different in debt levels pre and post transition, matching the results from our cross-sectional analysis. As with the previous differences, these differences become less significant or dissipates all together when controlling for the year in which the change took place. Furthermore, we notice that firms have a reduced 3 year average debt levels after a transition, significantly different from zero at the one percent level, regardless of type of transition. The difference in reduced debt level between the two groups is however insignificant, in line with the results from the within analysis in model 3 & 4 in table 7.

To determine the effect on risk taking and debt levels from family firms changing to an outside CEO we run the following regressions, explained in the methodology section:

$$\Delta Risk_i = \beta_0 + \beta_1 Change_i + WR'_i \beta + y'_i \beta + I'_i \beta$$
$$\Delta Debt_i = \beta_0 + \beta_1 Change_i + WD'_i \beta + y'_i \beta + I'_i \beta$$

Results from these regressions are presented in table 12.

Models 1 & 3 shows a negative, however insignificant, effect on risk taking for firms changing to an outside CEO, both with and without inclusion of controls. This is contradictory to the results from the within analysis in table 7 and might indicate that the variation found in our earlier results suffer from endogeneity issues such as potential change specific shocks.

Models 2 & 4 shows no significant coefficient for the effect from the change to an outside CEO on debt; and is in line with previous results from the within analysis[4].

---

[4] Running our fixed effects regressions from table 7 on the difference in differences sample gives no significant results neither for risk taking nor debt.

Table 12: Regression on differences

	(1) ΔRisk	(2) ΔDebt	(3) ΔRisk	(4) ΔDebt
ChangeO	-0.885	0.004	-0.736	0.009
	(0.952)	(0.015)	(1.007)	(0.015)
Size			-0.016	-0.008
			(0.352)	(0.007)
Age			0.104**	0.000
			(0.042)	(0.000)
Board			0.117	-0.002
			(0.452)	(0.007)
ROA			0.056	-0.001
			(0.036)	(0.001)
Duality			3.013	-0.027
			(1.832)	(0.026)
Fam Chair			0.123	-0.014
			(1.003)	(0.015)
Tang				0.018
				(0.026)
CF				609.506***
				(156.272)
Year controls	No	No	Yes	Yes
Industry controls	No	No	Yes	Yes
Observations	616	616	616	616
Adjusted R^2	-0.000	-0.001	0.048	0.091

Table 12 contains the results from regressions run on the differences in debt and risk pre/post transition. **ΔRisk** is the difference in risk for the 3 years pre and 3 years post CEO transition. **ΔDebt** is the difference in debt for the 3 years pre and 3 years post CEO transition. **ChangeO** is a binary variable taking the value 1 if the firm changes form a family to an outside CEO. Control variables: **Size** is the logarithm of revenues. **Age** is the age of the firm. **Board** is the number of board members. **ROA** is return on assets. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. All control variables are measured one year prior to the CEO transition. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Robustness to different definitions of family firms

To robustness check our results to different definitions of family firms we selected 33% and 66% ultimate ownership as alternative definitions. 33% constitutes negative control as the family can block bylaw changes, while 66% gives the largest family full control of the company as they can change bylaws at their own discretion. We therefore believe these cut-off points may influence appointment of new CEO's as well as degree of control of incumbent CEO.

Ownership and risk taking

Our cross-sectional analysis of firms with 33% ultimate ownership shows a negative coefficient for family ownership on risk taking for all years except 2011. The coefficient is however insignificant for all years, as can be seen in appendix 4. This contradicts our initial findings from the 50% sample. With 66% ultimate ownership on the other hand, the coefficient for ownership is negative and significant for all years except 2014 (Appendix 5). These findings lend support to our hypothesis 1 of family firms taking less entrepreneurial risk than non-family firms. The control variables for both samples are for the most part consistent both in sign and significance with those of the initial results.

Outside CEO and risk taking

From our cross-sectional analysis of the effects of outside CEO on risk taking for 33% ownership, we find significant results only for 2011 when controlling for tenure (Appendix 6). For the 66% ownership sample we get similar results with only 2010 & 2011 showing significant coefficients (Appendix 7). All coefficients are positive, except for 2014 in the 33% sample. Control variables for both samples are consistent with those of the initial results.

Extending to the within analysis and running our fixed effects regressions using the 33% and 66% ownership definitions we find no significant effect from outside CEO on risk, opposing our initial results. Results shown in appendix 8 table 1 and 2 column 1 and 2. And as shown in appendix 9 table 1 and 2 difference in difference analysis with the same ownership definitions gives insignificant results as well. These results show scattered and dubious support for our hypothesis 2.

Outside CEO and debt

Controlling for tenure using the 33% sample yields the same results as for the 50% sample, with positive and significant coefficients for the effect of outside CEO on debt (Appendix 10). For the 66% sample controlling for tenure leaves only 2013 and 2014 significantly different from 0 at a 5% or lower significance level, although all coefficients are still positive (Appendix 11). Control variables remain consistent with those of the initial sample for both definitions of family firms.

Running our fixed effects regressions on the sample with 33% ultimate ownership yielded insignificant results on debt, consistent with our initial results (Appendix 8). With the sample defining family firms as 66% ultimate ownership, outside CEO had a positive and significant coefficient for its effect on debt. Running the difference in difference analysis for the alternative ownership definitions show no significant results for debt for either the 33 or 66% definition, as shown in appendix 9.

7.0 Discussion

In this section we will discuss our findings, compare our initial results to those of the robustness tests and comment upon the implications for our stated hypotheses.

Hypothesis 1: Family firms take less entrepreneurial risk than their non-family counterparts

In our initial results we find a difference between family and non-family firms with respects to risk taking for 3 out of the 5 years in our sample, with a negative and significant coefficient for family ownership on risk taking. From our robustness tests we find the same relationship for the 66% ultimate ownership definition of family firms significant for 4 out of 5 years. Our results are however not robust to the 33% ownership definition, although the coefficients are still negative. We believe this increase in significance of the negative relationship between risk taking and ultimate ownership to be in support of our hypothesis. Lower ultimate family ownership might indicate that the family is more diversified and hence less concerned about entrepreneurial risk taking, matching results of Gomez-Mejia, Makri & Kintana, (2010). Furthermore, the socioemotional wealth obtained by the family (Gomez-Mejia et al., 2011) can reasonably be assumed to increase in

ownership and as a result so is the wish to preserve it, making risky ventures less appealing. On the other hand, our findings contradict those of Zahra (2005) who finds evidence of high ownership encouraging entrepreneurial ventures in domestic and international markets. We do however believe that the increase in significance for the higher ownership concentration constitute moderate support for our hypothesis of family firms taking less entrepreneurial risk than their non-family counterparts.

Hypothesis 2: Family firms led by an outside CEO take more entrepreneurial risk than firms led by a family CEO

Our initial results show a scattered and ambiguous picture of the effect of outside CEO on entrepreneurial risk taking in family firms, especially when controlling for tenure. When robustness testing results to different definitions of family firms we find similar results in our cross-section analysis. Few years have a significant coefficient, although the sign is consistently positive, in line with our initial expectations.

From our fixed effects regression, we find some evidence of outside CEO's increasing risk propensity when testing with the 50% ownership definition, indicating that family firms transitioning to an outside CEO experiences an increase in entrepreneurial risk taking. These results are however not robust to the alternative ownership definitions of 33 and 66% ultimate ownership. Furthermore, the effect is not present when performing a difference in differences analysis comparing firms changing from a family to an outside CEO to those changing CEO within the family. Here we find no significant change in risk taking, neither within nor between the two groups. This inconsistency coupled with the scattered significance of the cross-sectional analysis casts doubt on the initial results. As a consequence, we are unable to find compelling evidence in support of our hypothesis of outside CEO's significantly affecting the level of risk taking in family firms compared to their family counterparts. These findings match those of (Huybrechts, Voordeckers & Lybaert, 2012) who find no support for their hypothesis of outside CEO taking more risk than family CEO's, they do however contradict those of (Lardon, Deloof & Jorissen, 2017) who find significant effects of outside CEO on risk taking in family firms. Based on our scattered results and the fact that existing literature to

a large degree has focused on data for one year only, there are clear indications that future research is needed in this field.

Hypothesis 3: Firms led by an outside CEO have higher debt levels than firms led by a family CEO

From our initial results we find a clear difference in debt levels between firms led by an outside CEO and those led by a family CEO. These cross sectional results are also robust to the 33% definition of ownership, however less so for the 66% definition when controlling for tenure. The general finding of positive and significant coefficients lends credibility to our initial hypothesis of outside CEO's taking on higher debt levels.

However, testing for within variation using our fixed effects regressions shows no significant results at either 50 or 33% ownership, indicating that the effects found in the cross-sectional sample might be caused by differences amongst firms, not necessarily by the CEO's family affiliation. Interestingly enough, as seen from our 66% robustness test we find evidence of a positive relationship between outside CEO and debt levels. Potentially indicating that for largely family-controlled firms changing to an outside could have an effect on debt levels. This is consistent with (Amore, Minichilli & Corbetta, 2011) who found significant increases in debt following appointment of outside CEO in Italian family firms. In our analysis however, the significant results are limited to the cross sectional and 66% definition of ownership, while the majority of tests show no significant impact, including our difference in differences analysis. In the difference in differences analysis we find a significant reduction in debt levels for the difference between pre and post transition for both groups, with those transitioning to an outside CEO having the smallest reduction. The difference between these differences is however insignificant. Furthermore, running the regression on the differences pre/post transitions for the two groups turns up insignificant for all definitions of ownership as well. Based on this we are unable to provide convincing evidence in support of our hypothesis of outside CEOs positively driving debt levels in family firms, even with the initial positive results from our cross-section analysis. This finding of no effect is consistent with the findings of Anderson & Reeb (2003) who found no significant difference in leverage in firms with an outside CEO.

8.0 Caveats

As with other corporate finance studies our analysis is vulnerable to multiple endogeneity issues, among these reverse causality. We are unable to clearly determine the path of causality in our regressions. As previously mentioned we have used forward looking risk measures to attempt to remedy this to some extent. Ideally, we would have liked to instrument the variable outside CEO. However, we were unable to do so as we found no suitable instruments in our sample that we were confident were both relevant and exogenous.

Studies such as (Lardon, Deloof & Jorissen, 2017) controls for founder manager in their sample. However, our sample contains no information on founder manager, and in fear of reducing the variability in our outside CEO binary variable to the point where the fixed effects regressions become unusable, we refrained from restricting the sample to firms exceeding an age at which we could be fairly certain the founder had been replaced. Company age was included as a control to capture some of this effect. Furthermore, we chose to drop observations for which we had missing variables, in line with Che & Langeli (2015). This could potentially introduce bias in our estimates if there is a common reason among firms as to why these observations were missing.

For our models on risk taking in the within analysis we see a rather low adjusted r2, indicating that there is a lot of unexplained variation indicating that other factors are key in driving risk taking. We were unable to include CEO characteristics as our data is anonymized, however Malmendier, Tate & Yan (2011) has shown managerial characteristics, such as overconfidence to be important drivers in corporate financing decisions. This could be interesting to incorporate in future research into the effects of outside CEOs in family firms.

Lastly our sample consists of Norwegian firms during the period 2005 - 2014 and while Norwegian firms are arguably similar to those of other northern European countries, the generalizability to less similar regions is limited.

9.0 Conclusion, implications and further research

In this paper we used a sample of Norwegian firms to investigate the effects on entrepreneurial risk taking from family ownership, as well as the effects on entrepreneurial risk taking and leverage in family firms from employing an outside CEO. We set out to answer 3 questions, namely do family firms take less entrepreneurial risk than non-family owned firms? Second, does family firms take on more risk when employing an outside CEO rather than a member of the owning family? And last, does outside CEOs cause family firms to use more debt?

From our results we find evidence of family firms taking less entrepreneurial risk than their non-family counterparts, specifically we find moderate evidence of risk taking decreasing in ownership concentration. As such we confirm our Hypothesis 1 of family firms taking less entrepreneurial risk than non-family firms.

Looking into the effects on entrepreneurial risk taking from outside CEOs in family firms the results are less clear. We do find some scattered results indicating that outside CEOs increase risk taking, we are however unable to find compelling evidence that this increase is driven by the outside CEO. As a result, we reject our hypothesis 2, and conclude that firms operated by an outside CEO have similar propensity for risk taking as those run by family CEOs.

Across firms, debt levels seem to differ among related and unrelated CEOs for large parts of our sample. However, looking at the within variation, we are unable to find convincing evidence in support of this difference being driven by the outside CEO. As such we reject hypothesis 3, and conclude that outside CEOs do not affect debt levels differently than family CEOs.

As family firms constitutes a large part of the Norwegian economy, an understanding of why their risk-taking deviates from their peers is important. We find no compelling evidence linking this to outside CEOs, indicating that other factors contribute to a much larger extent. Our results have important implications for family firms going through transition decisions, as the appointment of an outside CEO does not seem to influence neither risk nor leverage alone. For future research it would be interesting to try to decompose the factors driving our results of less

risk propensity in family firms. Furthermore, as we have shown previously, there are conflicting results and no clear consensus as to the effects of outside CEOs on risk and leverage in existing theory. We believe that including CEO characteristics, such as overconfidence (Malmendier, Tate & Yan, 2011) as well as finding a valid instrument for outside CEO would be fruitful avenues of research in this field. Additionally, we believe that it is important to continue to test within firm in addition to across firm variation if consensus of the effects of outside CEOs is to be achieved.

10.0 References

Altman, E., & Saunders, A. (1997). Credit risk measurement: Developments over the last 20 years. *Journal Of Banking & Finance*, *21*(11-12), 1721-1742. doi: 10.1016/s0378-4266(97)00036-8

Amore, M., Minichilli, A., & Corbetta, G. (2011). How do managerial successions shape corporate financial policies in family firms?. *Journal Of Corporate Finance*, *17*(4), 1016-1027. doi: 10.1016/j.jcorpfin.2011.05.002

Anderson, R., & Reeb, D. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal Of Finance*, *58*(3), 1301-1328. doi: 10.1111/1540-6261.00567

Anderson, R., Mansi, S., & Reeb, D. (2003). Founding family ownership and the agency cost of debt. *Journal Of Financial Economics*, *68*(2), 263-285. doi: 10.1016/s0304-405x(03)00067-9

Ang, J., Cole, R., & Lin, J. (2000). Agency Costs and Ownership Structure. *The Journal Of Finance*, *55*(1), 81-106. doi: 10.1111/0022-1082.00201

Arregle, J., Hitt, M., Sirmon, D., & Very, P. (2007). The Development of Organizational Social Capital: Attributes of Family Firms. *Journal Of Management Studies*, *44*(1), 73-95. doi: 10.1111/j.1467-6486.2007.00665.x

Astrachan, J. (2003). Commentary on the special issue: the emergence of a field. *Journal Of Business Venturing*, *18*(5), 567-572. doi: 10.1016/s0883-9026(03)00010-7

Bennedsen, M., Nielsen, K., Perez-Gonzalez, F., & Wolfenzon, D. (2007). Inside the Family Firm: The Role of Families in Succession Decisions and Performance. *The Quarterly Journal Of Economics*, *122*(2), 647-691. doi: 10.1162/qjec.122.2.647

Berrone, P., Cruz, C., & Gomez-Mejia, L. (2012). Socioemotional Wealth in Family Firms. *Family Business Review*, *25*(3), 258-279. doi: 10.1177/0894486511435355

Bøhren, Ø. (2011). *Eierne, styret og ledelsen* (pp. 179-197). Bergen: Fagbokforlaget.

Brooks, C. (2008). *Introductory econometrics for finance*. Cambridge [u.a.]: Cambridge Univ. Press.

Che, L., & Langli, J. (2015). Governance Structure and Firm Performance in Private Family Firms. *Journal Of Business Finance & Accounting*, *42*(9-10), 1216-1250. doi: 10.1111/jbfa.12170

Chrisman, J., Chua, J., & Litz, R. (2004). Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence. *Entrepreneurship Theory And Practice*, *28*(4), 335-354. doi: 10.1111/j.1540-6520.2004.00049.x

Corbetta, G., & Salvato, C. (2004). The Board of Directors in Family Firms: One Size Fits All?. *Family Business Review*, *17*(2), 119-134. doi: 10.1111/j.1741-6248.2004.00008.x

Dekker, J., Lybaert, N., Steijvers, T., Depaire, B., & Mercken, R. (2012). Family Firm Types Based on the Professionalization Construct. *Family Business Review*, *26*(1), 81-99. doi: 10.1177/0894486512445614

Donckels, R., & Fröhlich, E. (1991). Are Family Businesses Really Different? European Experiences from STRATOS. *Family Business Review*, *4*(2), 149-160. doi: 10.1111/j.1741-6248.1991.00149.x

Dyer, W., & Whetten, D. (2006). Family Firms and Social Responsibility: Preliminary Evidence from the S&P 500. *Entrepreneurship Theory And Practice*, *30*(6), 785-802. doi: 10.1111/j.1540-6520.2006.00151.x

Fama, E., & Jensen, M. (1983). Separation of Ownership and Control. *The Journal Of Law And Economics*, *26*(2), 301-325. doi: 10.1086/467037

Frank, M., & Goyal, V. (2009). Capital Structure Decisions: Which Factors Are Reliably Important?. *Financial Management*, *38*(1), 1-37. doi: 10.1111/j.1755-053x.2009.01026.x

Gomez-Mejia, L., Cruz, C., Berrone, P., & De Castro, J. (2011). The Bind that Ties: Socioemotional Wealth Preservation in Family Firms. *The Academy Of Management Annals*, *5*(1), 653-707. doi: 10.1080/19416520.2011.593320

Gómez-Mejía, L., Haynes, K., Núñez-Nickel, M., Jacobson, K., & Moyano-Fuentes, J. (2007). Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills. *Administrative Science Quarterly*, *52*(1), 106-137. doi: 10.2189/asqu.52.1.106

Gomez-Mejia, L., Makri, M., & Kintana, M. (2010). Diversification Decisions in Family-Controlled Firms. *Journal Of Management Studies*, *47*(2), 223-252. doi: 10.1111/j.1467-6486.2009.00889.x

González, M., Guzmán, A., Pombo, C., & Trujillo, M. (2013). Family firms and debt: Risk aversion versus risk of losing control. *Journal Of Business Research*, *66*(11), 2308-2320. doi: 10.1016/j.jbusres.2012.03.014

Huybrechts, J., Voordeckers, W., & Lybaert, N. (2012). Entrepreneurial Risk Taking of Private Family Firms. *Family Business Review*, *26*(2), 161-179. doi: 10.1177/0894486512469252

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal Of Financial Economics*, *3*(4), 305-360. doi: 10.1016/0304-405x(76)90026-x

Kalm, M., & Gomez-Mejia, L. (2016). Socioemotional wealth preservation in family firms. *Revista De Administração*, *51*(4), 409-411. doi: 10.1016/j.rausp.2016.08.002

Kepner, E. (1991). The Family and the Firm: A Coevolutionary Perspective. *Family Business Review*, *4*(4), 445-461. doi: 10.1111/j.1741-6248.1991.00445.x

La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (1999). Corporate Ownership Around the World. *The Journal Of Finance*, *54*(2), 471-517. doi: 10.1111/0022-1082.00115

Lardon, A., Deloof, M., & Jorissen, A. (2017). Outside CEOs, board control and the financing policy of small privately held family firms. *Journal Of Family Business Strategy*, *8*(1), 29-41. doi: 10.1016/j.jfbs.2017.01.002

Lee, M., & Rogoff, E. (1996). Research Note: Comparison of Small Businesses with Family Participation versus Small Businesses Without Family Participation: An Investigation of Differences in Goals, Attitudes, and Family/Business Conflict. *Family Business Review*, *9*(4), 423-437. doi: 10.1111/j.1741-6248.1996.00423.x

Litz, R. (1995). The Family Business: Toward Definitional Clarity. *Family Business Review*, *8*(2), 71-81. doi: 10.1111/j.1741-6248.1995.00071.x

MALMENDIER, U., TATE, G., & YAN, J. (2011). Overconfidence and Early-Life Experiences: The Effect of Managerial Traits on Corporate Financial Policies. *The Journal Of Finance*, *66*(5), 1687-1733. doi: 10.1111/j.1540-6261.2011.01685.x

McConaughy, D., Matthews, C., & Fialko, A. (2001). Founding Family Controlled Firms: Performance, Risk, and Value. *Journal Of Small Business Management*, *39*(1), 31-49. doi: 10.1111/0447-2778.00004

Miller, D., Minichilli, A., & Corbetta, G. (2012). Is family leadership always beneficial?. *Strategic Management Journal*, *34*(5), 553-571. doi: 10.1002/smj.2024

Mishra, C., & Mcconaughy, D. (1999). Founding Family Control and Capital Structure: The Risk of Loss of Control and the Aversion to Debt. *Entrepreneurship Theory And Practice*, *23*(4), 53-64. doi: 10.1177/104225879902300404

Naldi, L., Nordqvist, M., Sjöberg, K., & Wiklund, J. (2007). Entrepreneurial Orientation, Risk Taking, and Performance in Family Firms. *Family Business Review*, *20*(1), 33-47. doi: 10.1111/j.1741-6248.2007.00082.x

Ozkan, N. (2009). CEO Compensation and Firm Performance: an Empirical Investigation of UK Panel Data. *European Financial Management*, *17*(2), 260-285. doi: 10.1111/j.1468-036x.2009.00511.x

Penas, M., & Ortiz-Molina, H. (2006). Lending to Small Businesses: The Role of Loan Maturity in Addressing Information Problems. *SSRN Electronic Journal*. doi: 10.2139/ssrn.509882

Rogoff, E., & Heck, R. (2003). Evolving research in entrepreneurship and family business: recognizing family as the oxygen that feeds the fire of entrepreneurship. *Journal Of Business Venturing*, *18*(5), 559-566. doi: 10.1016/s0883-9026(03)00009-0

Ryan, H., & Wiggins, R. (2001). The influence of firm- and manager-specific characteristics on the structure of executive compensation. *Journal Of Corporate Finance*, *7*(2), 101-123. doi: 10.1016/s0929-1199(00)00021-3

Schulze, W., Lubatkin, M., & Dino, R. (2002). Altruism, agency, and the competitiveness of family firms. *Managerial And Decision Economics*, *23*(4-5), 247-259. doi: 10.1002/mde.1064

Schulze, W., Lubatkin, M., Dino, R., & Buchholtz, A. (2001). Agency Relationships in Family Firms: Theory and Evidence. *Organization Science*, *12*(2), 99-116. doi: 10.1287/orsc.12.2.99.10114

Shleifer, A., & Vishny, R. (1989). Management entrenchment. *Journal Of Financial Economics*, *25*(1), 123-139. doi: 10.1016/0304-405x(89)90099-8

Short, J., Payne, G., Brigham, K., Lumpkin, G., & Broberg, J. (2009). Family Firms and Entrepreneurial Orientation in Publicly Traded Firms. *Family Business Review*, *22*(1), 9-24. doi: 10.1177/0894486508327823

Stock, J., & Watson, M. (2015). *Introduction to econometrics*. Boston, Mass: Pearson.

Studenmund, A. (2011). *Using econometrics*. Boston, Mass.: Pearson.

Tsai, W., Kuo, Y., & Hung, J. (2007). Corporate diversification and CEO turnover in family businesses: self-entrenchment or risk reduction?. *Small Business Economics*, *32*(1), 57-76. doi: 10.1007/s11187-007-9073-y

Westhead, P., Cowling, M., & Howorth, C. (2001). The Development of Family Companies: Management and Ownership Imperatives. *Family Business Review*, *14*(4), 369-385. doi: 10.1111/j.1741-6248.2001.00369.x

Zahra, S. (2005). Entrepreneurial Risk Taking in Family Firms. *Family Business Review*, *18*(1), 23-40. doi: 10.1111/j.1741-6248.2005.00028.x

11.0 Appendix

Appendix 1 hausmantests

Hausman for Risk

	Fixed	Random	Difference	S.E
outside	0.389	0.567	-0.178	0.098
Size	-2.851	-2.682	-0.169	0.083
Age	-0.085	-0.057	-0.028	0.015
Board	0.281	0.336	-0.054	0.079
ROA	0.105	0.105	0.000	0.001
Duality	-0.212	-0.582	0.370	0.134
Fchair	-0.056	-0.506	0.450	0.107

Test: Ho: Difference in coefficients is not systematic

Ha: Difference in coefficients is systematic

Chi squared = 41.48

P > chi2 = 0.000

Reject Ho

Hausman for Debt

	Fixed	Random	Difference	S.E
Outside	0.002	0.009	-0.007	0.001
Size	0.106	0.042	0.064	0.001
Age	-0.025	-0.008	-0.017	0.000
Board	-0.004	-0.003	-0.001	0.001
Duality	0.004	0.009	-0.005	0.002
Fchair	-0.002	-0.013	0.012	0.001
L.Tang	0.087	0.131	-0.044	0.003
L.ROA	-0.001	0.000	0.000	0.000

Test: Ho: Difference in coefficients is not systematic

Ha: Difference in coefficients is systematic

Chi squared = 5929.04

P > chi2 = 0.000

Reject Ho

Appendix 2: F test year dummies

F test for year dummies being jointly equal to 0:

Risk: $F(7. 42944) = 9.77$

$P > F = 0.000$

Debt: $F(6. 36658) = 53.11$

$P > F = 0.000$

Appendix 3: List of variables

Appendix 3: The empirical variables

Variable	Definition
Risk	Fixed effects: $\sqrt{\dfrac{\sum\limits_{T=0}^{2}(ROA_t - \overline{ROA})^2}{3}}$
	Cross sectional: $\sqrt{\dfrac{\sum\limits_{T=0}^{-2}(ROA_t - \overline{ROA})^2}{3}}$
	ΔRisk = Standard deviation of return on assets for the 3 years after transition subtracted the standard deviation of return on assets for the 3 years before transition.
Total Debt	(Total provisions + Total other long-term liabilities + Total current liabilities) / Total assets
	ΔDebt = Average total debt for the 3 years after transition subtracted the average total debt for the 3 years before transition.

General firm characteritics

Total assets	Total fixed assets + Total current assets
Size	Log(Total assets)
Tangible assets	Total fixed assets tangible / Total assets
Cash flow scaled	Cash flow / Total assets
ROA	Operating income / ((Total assets + Total assets t-1)/2)
Age	years since inception of firm

Ownership and governance characteristics

Change	Change from family to outside CEO
Own	ultimate ownership either above 33, 50 or 66%
Board	Continuous variable measuring actual Board size
Duality	Binary variable taking the value of 1 if CEO serves on board
Fam chair	Binary variable taking the value of 1 if the family with the largest ultimate ownership has chairman of the board
Tenure	Continuous variable of sitting CEO tenure
ChangeO	Binary variable taking value of 1 if firm changes from family to outside CEO

This table explains variables used in our empirical analysis

Appendix 4: 33% ownership

Appendix 4: 33% Ownership & Risktaking, Dependent variable: Risk

	2010	2011	2012	2013	2014
33% ownership	-0.293	0.011	-0.378	-0.342	-0.016
	(0.248)	(0.242)	(0.263)	(0.268)	(0.266)
Comp Size	-2.115***	-2.019***	-1.978***	-1.986***	-1.986***
	(0.078)	(0.069)	(0.065)	(0.069)	(0.070)
Comp Age	-0.057***	-0.057***	-0.058***	-0.052***	-0.045***
	(0.006)	(0.005)	(0.005)	(0.008)	(0.008)
Board	0.132	0.219**	0.106	0.002	0.086
	(0.089)	(0.090)	(0.080)	(0.086)	(0.090)
ROA	-0.034**	0.033***	0.056***	0.016	0.044***
	(0.014)	(0.012)	(0.013)	(0.013)	(0.013)
Duality	-0.321	-0.655***	-1.037***	-0.375*	-0.672***
	(0.204)	(0.194)	(0.212)	(0.200)	(0.210)
Fam Chair	-0.410**	-0.463***	-0.133	-0.613***	-0.377**
	(0.186)	(0.172)	(0.181)	(0.178)	(0.182)
Constant	46.315***	44.013***	41.844***	41.224***	39.684***
	(1.730)	(1.793)	(1.508)	(1.550)	(1.415)
Observations	13794	13983	13422	13289	12835
Adjusted R^2	0.173	0.165	0.164	0.160	0.163

Appendix 4 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current 2 years back. Regressions are run on the full sample of both family and non-family firms for the years 2010 to 2014. **33% ownership** is a binary variable equal to 1 if one family has ultimate ownership exceeding 33%. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 5: 66% ownership

Appendix 5: 66% Ownership & Risktaking, Dependent variable: Risk

	2010	2011	2012	2013	2014
66% ownership	-0.432**	-0.351**	-0.614***	-0.635***	-0.265
	(0.183)	(0.172)	(0.185)	(0.189)	(0.194)
Comp Size	-2.083***	-2.006***	-1.917***	-1.966***	-2.007***
	(0.075)	(0.069)	(0.063)	(0.068)	(0.073)
Comp Age	-0.056***	-0.054***	-0.058***	-0.049***	-0.045***
	(0.006)	(0.005)	(0.005)	(0.007)	(0.008)
Board	0.166*	0.200**	0.084	-0.026	0.123
	(0.096)	(0.090)	(0.078)	(0.083)	(0.092)
ROA	-0.042***	0.041***	0.054***	0.016	0.038***
	(0.013)	(0.012)	(0.013)	(0.013)	(0.013)
Duality	-0.290	-0.628***	-1.054***	-0.436**	-0.604***
	(0.209)	(0.192)	(0.209)	(0.199)	(0.208)
Fam Chair	-0.324*	-0.325*	-0.030	-0.422**	-0.330*
	(0.186)	(0.172)	(0.184)	(0.187)	(0.193)
Constant	45.326***	43.685***	42.805***	42.488***	39.936***
	(1.711)	(1.757)	(1.912)	(2.191)	(1.444)
Observations	13661	13854	13245	13126	12719
Adjusted R^2	0.173	0.165	0.164	0.158	0.158

Appendix 5 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current 2 years back. Regressions are run on the full sample of both family and non-family firms for the years 2010 to 2014. **66% ownership** is a binary variable equal to 1 if one family has ultimate ownership exceeding 66%. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 6: 33% risk

Appendix 6: Outside CEO and Risk, 33% own, Dependent variable: Risk

	2010	2011	2012	2013	2014
outside ceo	0.345	0.519***	0.223	0.218	-0.044
	(0.223)	(0.199)	(0.215)	(0.214)	(0.219)
Comp Size	-2.164***	-2.117***	-2.044***	-2.062***	-2.083***
	(0.091)	(0.081)	(0.074)	(0.077)	(0.082)
Comp Age	-0.023***	-0.027***	-0.022***	-0.017**	-0.008
	(0.007)	(0.006)	(0.006)	(0.009)	(0.010)
Board	0.164	0.295***	0.106	0.181*	0.194*
	(0.105)	(0.111)	(0.100)	(0.107)	(0.114)
ROA	-0.022	0.033***	0.072***	0.031**	0.064***
	(0.016)	(0.013)	(0.014)	(0.015)	(0.015)
Duality	0.431*	0.032	-0.638**	0.001	-0.287
	(0.244)	(0.232)	(0.260)	(0.240)	(0.259)
Fam Chair	-0.503***	-0.474***	-0.285	-0.477**	-0.408**
	(0.195)	(0.183)	(0.185)	(0.188)	(0.192)
Tenure	-0.169***	-0.166***	-0.173***	-0.184***	-0.175***
	(0.017)	(0.016)	(0.015)	(0.016)	(0.017)
Constant	47.541***	45.223***	43.389***	42.653***	42.549***
	(2.121)	(2.095)	(1.666)	(1.838)	(1.686)
Observations	11207	11431	11053	11005	10555
Adjusted R^2	0.180	0.180	0.186	0.178	0.187

Appendix 6 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current 2 years back. Regressions are run on sample containing only family firms for the years 2010 to 2014, defining family firms as higher than 33% ultimate ownership. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 7: 66% risk

Appendix 7: Outside CEO and Risktaking 66% ownership, Dependent variable: Risk

	2010	2011	2012	2013	2014
outside ceo	0.861**	1.299***	0.310	0.180	0.124
	(0.365)	(0.333)	(0.331)	(0.335)	(0.373)
Comp Size	-2.147***	-2.211***	-2.053***	-2.194***	-2.229***
	(0.109)	(0.107)	(0.092)	(0.099)	(0.106)
Comp Age	-0.024***	-0.022***	-0.014*	-0.001	0.002
	(0.009)	(0.007)	(0.007)	(0.012)	(0.014)
Board	0.280*	0.346**	0.153	0.271*	0.331*
	(0.153)	(0.161)	(0.142)	(0.155)	(0.169)
ROA	-0.007	0.051***	0.077***	0.071***	0.081***
	(0.016)	(0.017)	(0.016)	(0.018)	(0.021)
Duality	0.218	0.337	-0.839**	-0.436	-0.388
	(0.365)	(0.317)	(0.402)	(0.353)	(0.391)
Fam Chair	-0.402	-0.698***	-0.484*	-0.597**	-0.396
	(0.263)	(0.243)	(0.257)	(0.270)	(0.292)
Tenure	-0.137***	-0.133***	-0.155***	-0.172***	-0.166***
	(0.022)	(0.020)	(0.019)	(0.021)	(0.022)
Constant	43.181***	44.063***	42.595***	44.491***	44.046***
	(2.214)	(2.960)	(1.952)	(2.609)	(2.560)
Observations	6589	6784	6397	6385	6069
Adjusted R^2	0.187	0.195	0.207	0.193	0.198

Appendix 7 contains the results from cross sectional regressions using entrepreneurial risk-taking as the dependent variable, calculated as the standard deviation of return on assets for the current 2 years back. Regressions are run on sample containing only family firms for the years 2010 to 2014, defining family firms as higher than 66% ultimate ownership. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 8: Fixed effects regressions alternative ownership definitions

Appendix 8 Table 1 33% ownership, Dependent variable 1&2: Risk, 3&4: Debt/Total assets

	(1) Risk	(2) Risk	(3) Debt	(4) Debt
outside ceo	0.126	0.106	0.000	-0.001
	(0.121)	(0.121)	(0.002)	(0.002)
Comp Size	-2.803***	-2.799***	0.106***	0.106***
	(0.168)	(0.168)	(0.003)	(0.003)
Comp Age	-6.753***	-6.765***	-0.023***	-0.022***
	(0.088)	(0.088)	(0.000)	(0.000)
Board	0.140	0.133	-0.003	-0.003
	(0.104)	(0.104)	(0.002)	(0.002)
Duality	-0.408**	-0.313	-0.000	0.003
	(0.204)	(0.208)	(0.004)	(0.004)
Fam Chair	-0.114	-0.114	0.002	0.002
	(0.131)	(0.131)	(0.002)	(0.002)
ROA	0.088***	0.088***		
	(0.005)	(0.005)		
Tenure		-0.046**		-0.001***
		(0.019)		(0.000)
L.Tang			0.083***	0.083***
			(0.008)	(0.008)
L.ROA			-0.001***	-0.001***
			(0.000)	(0.000)
L.CF			-0.290	-0.280
			(2.679)	(2.677)
Observations	81388	81388	72468	72468
Adjusted R^2	0.056	0.056	0.203	0.203

Appendix 8 table 1 contains the results from our fixed effects regressions on our sample of family firms for 2005 to 2014, defining family firms as higher than 33% ultimate ownership. Columns 1 & 2 contains the results for hypothesis 2 using Entrepreneurial risk taking as the dependent variable, calculated as the 3 year ahead standard deviation of return on assets. Colums 3 & 4 presents the results for hypothesis 3 and uses Total debt scaled by total assets as the dependent variable. **Outside CEO** is a binary variable equal to one if the CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets & **L.ROA** is the ROA for the previous year. **Fam Chair** is a binary variable equal to one if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. Standard errors clustered at the firm level reported in parentheses. Both time and entity fixed effects used but suppressed in table. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 8 Table 2 66% ownership, Dependent variable 1&2: Risk, 3&4: Debt/Total assets

	(1) Risk	(2) Risk	(3) Debt	(4) Debt
outside ceo	0.598	0.574	0.023***	0.020**
	(0.445)	(0.436)	(0.009)	(0.009)
Comp Size	-3.017***	-3.015***	0.101***	0.101***
	(0.253)	(0.253)	(0.005)	(0.005)
Comp Age	-6.966***	-6.970***	-0.026***	-0.025***
	(0.129)	(0.129)	(0.001)	(0.001)
Board	0.298	0.297	-0.007	-0.007
	(0.203)	(0.203)	(0.004)	(0.004)
Duality	0.049	0.069	0.017**	0.020***
	(0.380)	(0.388)	(0.008)	(0.008)
Fam Chair	-0.625*	-0.628*	-0.000	-0.000
	(0.363)	(0.364)	(0.008)	(0.008)
ROA	0.122***	0.122***		
	(0.008)	(0.008)		
Tenure		-0.016		-0.002**
		(0.032)		(0.001)
L.Tang			0.102***	0.102***
			(0.012)	(0.012)
L.ROA			-0.001***	-0.001***
			(0.000)	(0.000)
L.CF			-10.329	-10.355
			(8.676)	(8.667)
Observations	33476	33476	29437	29437
Adjusted R^2	0.087	0.087	0.220	0.220

 Appendix 8 table 2 contains the results from our fixed effects regressions on our sample of family firms for 2005 to 2014, defining family firms as higher than 66% ultimate ownership. Columns 1 & 2 contains the results for hypothesis 2 using Entrepreneurial risk taking as the dependent variable, calculated as the 3 year ahead standard deviation of return on assets. Colums 3 & 4 presents the results for hypothesis 3 and uses Total debt scaled by total assets as the dependent variable. **Outside CEO** is a binary variable equal to one if the CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **ROA** is the return on assets & **L.ROA** is the ROA for the previous year. **Fam Chair** is a binary variable equal to one if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. Standard errors clustered at the firm level reported in parentheses. Both time and entity fixed effects used but suppressed in table. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 9: Diff in Diff alternative ownership definitions

Appendix 9 table 1: 33% ownership

	(1)	(2)	(3)	(4)
	Drisk	Ddebt	Drisk	Ddebt
changeO	-1.077	0.004	-0.890	0.008
	(0.810)	(0.012)	(0.800)	(0.012)
L2.Size			-0.264	-0.010*
			(0.311)	(0.006)
L2.Age			0.108***	0.000
			(0.040)	(0.000)
L2.Board			0.170	-0.002
			(0.406)	(0.006)
L2.ROA			0.034	-0.001**
			(0.032)	(0.000)
L2.Duality			2.705*	-0.024
			(1.470)	(0.023)
L2.FChair			-0.147	-0.012
			(0.857)	(0.013)
L2.Tang				0.021
				(0.024)
L2.CF				746.695***
				(147.226)
Constant	0.288	-0.044***	-5.595	0.133
	(0.456)	(0.007)	(5.582)	(0.112)
Observations	826	826	826	826
Adjusted R^2	0.001	-0.001	0.044	0.067

Appendix 9 table 1 contains the results from regressions run on the differences in debt and risk pre/post transition defining family firms as exceeding 33% ultimate ownership. **ΔRisk** is the difference in risk for the 3 years pre and 3 years post CEO transition. **ΔDebt** is the difference in debt for the 3 years pre and 3 years post CEO transition. **ChangeO** is a binary variable taking the value 1 if the firm changes form a family to an outside CEO. Control variables: **Size** is the logarithm of revenues. **Age** is the age of the firm. **Board** is the number of board members. **ROA** is return on assets. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. All control variables are measured one year prior to the CEO transition. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 9 table 2: 66% ownership

	(1) Drisk	(2) Ddebt	(3) Drisk	(4) Ddebt
changeO	0.125	-0.000	0.298	0.011
	(1.327)	(0.018)	(1.397)	(0.018)
L2.Size			-0.566	-0.011
			(0.410)	(0.008)
L2.Age			0.096*	0.000
			(0.050)	(0.000)
L2.Board			0.240	-0.010
			(0.679)	(0.010)
L2.ROA			0.045	-0.001
			(0.048)	(0.001)
L2.Duality			4.572*	-0.027
			(2.338)	(0.035)
L2.FChair			-0.682	-0.013
			(1.242)	(0.018)
L2.Tang				0.012
				(0.031)
L2.CF				357.323
				(493.723)
Constant	-0.138	-0.040***	-3.546	0.132
	(0.531)	(0.008)	(7.938)	(0.166)
Observations	428	428	428	428
Adjusted R^2	-0.002	-0.002	0.018	0.061

Appendix 9 table 2 contains the results from regressions run on the differences in debt and risk pre/post transition defining family firms as exceeding 66% ultimate ownership. **ΔRisk** is the difference in risk for the 3 years pre and 3 years post CEO transition. **ΔDebt** is the difference in debt for the 3 years pre and 3 years post CEO transition. **ChangeO** is a binary variable taking the value 1 if the firm changes form a family to an outside CEO. Control variables: **Size** is the logarithm of revenues. **Age** is the age of the firm. **Board** is the number of board members. **ROA** is return on assets. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Tang** is tangible assets. **CF** is cash flow scaled by total assets. All control variables are measured one year prior to the CEO transition. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 10: 33% debt

Appendix 10: Outside CEO and Debt, 33% ownership, Dependent variable: Debt

	2010	2011	2012	2013	2014
outside ceo	0.033***	0.023***	0.029***	0.031***	0.029***
	(0.005)	(0.007)	(0.007)	(0.006)	(0.007)
Comp Size	0.015***	0.023***	0.024***	0.026***	0.020***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Comp Age	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Board	-0.002	-0.006**	-0.002	-0.007***	-0.001
	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Duality	0.008	0.010	0.002	0.008	0.003
	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)
Fam Chair	-0.039***	-0.034***	-0.035***	-0.040***	-0.034***
	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
L.Tang	0.249***	0.209***	0.210***	0.208***	0.192***
	(0.009)	(0.012)	(0.012)	(0.012)	(0.015)
L.CF	-11.327	-1439.608**	-1339.805**	-986.630*	-1605.050**
	(8.143)	(635.868)	(605.465)	(517.206)	(751.546)
L.ROA	0.000*	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure	-0.003***	-0.003***	-0.003***	-0.004***	-0.003***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.256***	0.147***	0.136***	0.112***	0.148***
	(0.044)	(0.045)	(0.040)	(0.043)	(0.041)
Observations	11207	11431	11053	11005	10555
Adjusted R^2	0.131	0.196	0.197	0.179	0.207

Appendix 10 contains the results from cross sectional regressions using total debt as the dependent variable, calculated as total provisions + total other long term liabilities + total current liabilities scaled by total assets. Regressions are run on sample containing only family firms for the years 2010 to 2014, defining family firms as exceeding 33% ultimate ownership. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. **L.ROA** is the return on assets for the previous year. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

Appendix 11: 66% debt

Appendix 11: Outside CEO and Debt 66% ownership, Dependent variable: Debt

	2010	2011	2012	2013	2014
outside ceo	0.020*	0.019*	0.022*	0.032***	0.029**
	(0.011)	(0.011)	(0.011)	(0.010)	(0.014)
Comp Size	0.015***	0.017***	0.019***	0.019***	0.015***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Comp Age	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Board	0.004	0.000	0.004	0.001	0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Duality	-0.011	-0.009	-0.016	-0.013	-0.008
	(0.010)	(0.011)	(0.011)	(0.011)	(0.012)
Fam Chair	-0.038***	-0.042***	-0.036***	-0.042***	-0.030***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.010)
L.Tang	0.269***	0.252***	0.255***	0.255***	0.231***
	(0.020)	(0.018)	(0.016)	(0.014)	(0.023)
L.CF	-1278.526	-1250.992*	-1077.401*	-706.465	-1463.468
	(837.232)	(732.390)	(613.334)	(438.293)	(954.371)
L.ROA	0.001***	0.001	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure	-0.002***	-0.003***	-0.003***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.194***	0.232***	0.176***	0.169***	0.205***
	(0.061)	(0.060)	(0.053)	(0.058)	(0.055)
Observations	6589	6784	6397	6385	6069
Adjusted R^2	0.207	0.207	0.196	0.178	0.210

Appendix 11 contains the results from cross sectional regressions using total debt as the dependent variable, calculated as total provisions + total other long term liabilities + total current liabilities scaled by total assets. Regressions are run on sample containing only family firms for the years 2010 to 2014, defining family firms as exceeding 66% ultimate ownership. **Outside CEO** is a binary variable taking the value 1 if the incumbent CEO is not a member of the family with the largest ultimate ownership. **Comp Size** is the log of revenues. **Comp Age** is the age of the firm. **Board** is the number of board members. **Fam Chair** is a binary variable taking the value 1 if the family with the largest ultimate ownership has chairman of the board. **Duality** is a binary variable taking the value 1 if the incumbent CEO is on the board. **L.Tang** is tangible assets for the previous year, measured as the ratio of total fixed tangible assets to total assets. **L.CF** is the cash flow in the previous year scaled by total assets. **L.ROA** is the return on assets for the previous year. **Tenure** is a continuous variable measuring the tenure of the incumbent CEO. Industry dummies used in regression but suppressed in table. Heteroscedasticity robust standard errors are reported in parentheses. * indicates significance at the 10% level; ** significance at 5% level; *** significance at 1% level.

BI Norwegian Business School Preliminary Thesis Report

Study program: MSc in Business Major in Finance

Title: Outside CEO, risk taking and financing policy of privately held family firms in Norway

Name of supervisor: Siv Staubo

Exam code: GRA 19502

Date of submission: 13.01.2018

Study place: BI Oslo

Henrik J. Wilskow & Jaran S. Salvesen

Contents

1.0 Introduction

The purpose of our master thesis is to study the effect of having an outside CEO in a family firm on financial policies. More specifically we want to study if family firms with an external CEO take more entrepreneurial risk and leverage. Economic theory suggests that owners of family firms are less diversified and hence less prone to risk taking trough the company. To be able to control the level of risk the members of the family needs to influence financial and strategic decisions in the firm, for example trough the CEO position. However, if this CEO is recruited externally principal agent problems might occur, where incentives between CEO and owners are misaligned. We believe the topic is particularly interesting in Norway as 66% of all limited liability firms can be considered family firms (dependent on exact definition of family firm). This indicates that these firms contribute substantially to the national gross domestic product and understanding of their governance is therefore important. A significant stage in the life cycle of family firms is the appointment of an external CEO, this often occurs when ownership is scattered across many members of the family. In this area of study past research have primarily focused on performance, but little research has been designated to how outside CEO affect the debt policies, and risk taking in non-listed family firms. We build our study on a paper published in journal of family business strategy which looks at this effect in Belgium and found significant effects. We believe it would be interesting to see if the results can be replicated using data on Norwegian firms, as this would bode well for the study's validity.

In the following we will first perform a literature review of related research to see if other studies find similar results. Based on this literature review we start to outline the hypotheses that we will test in our master thesis. Next, we comment upon the method and variables that we will need in order to test the hypotheses. In the conclusion of this preliminary we outline a tentative progress plan that we will work to uphold. Lastly, we present our bibliography.

2.0 Literature review:

Family firms

The exact definition of family firms is an important consideration in empirical studies related to our topic as it might influence the final results. Through previous studies of family firm's, various definitions have been proposed. Dockels & frohlich (1991) suggests equity ownership of more than 60% by the family. La Porta, Lopez-de-Silanes and Schleifer (1999) proposes a threshold of 20% equity stake to determine if a family has control over the company. Reeb and Anderson (2003) suggests that the presence of a family CEO or other management position might magnify financial implications of family firms. This is due to the fact that a family CEO should be expected to align firm and family interests. Litz (1995) further backs this definition through defining family business as businesses where ownership and control is concentrated within one family unit.

Berzins and Bøhren (2013) suggests that ultimate ownership of 50% of equity is an important threshold in definition of family firms, since this gives control in the general assembly. However, Bøhren (2011) argues that there are many ways to gain control, e.g. a family can have negative control if they own more than 1/3 of shares as they can block bylaw changes. In addition, if the family own more than 2/3 of shares they can change bylaws at their own discretion, giving total control of the company. If one uses the last definition of a family firm, approximately 68% of active private Norwegian firms can be defined as family firms. This indicates that family firms have great importance in various aspects of the Norwegian Economy.

Agency Theory:

Based on the various definitions of family firms above, agency problems and agency cost are important factors to consider when looking at these types of family businesses. Agency cost is the value loss related to the agent having better information and other preferences than the principal (Bøhren, 2011). The Principal-agent problem, often referred to as Agency problem 1 relates to managers allocating resources in a way which benefits themselves, but that is not in the best interest of the shareholders (Jensen and Meckling 1976). A non-family CEO might become entrenched by making manager specific investments that make it hard for shareholders to replace them (Shelifer & Vishny, 1989) and Ozakan (2011) finds that CEO tenure increases this behavior. Huybrecht, Voordeckers & Lybaert (2012) challenges this and finds evidence that as tenure increase, the CEO develops

psychological ownership of the firm, thus creating more interest alignment than one would initially expect.

Agency problem 2, principal principal problem relates to potential conflicts between minority and majority shareholders (Villalonga and Amit, 2005). Several studies argue that firms run by family executives benefit from lower agency costs (Miller, Minichilli & Corbetta, 2013; Jensen & Meckling, 1976; Fama & Jensen, 1983) and especially the principal-agent problem is believed to be a lesser concern in the case of a family CEO (Jenssen & Meckling, 1976; Ang et.al, 2000). Chrisman, Chua & Litz (2003) finds evidence that family involvement decreases over all agency problems. Miller, Minichilli & Corbetta (2013) finds that family CEO's outperform their non-family counterparts in small family firms with concentrated ownership structures in terms of return on assets.

Socioemotional wealth:

Research indicates that family firms may differ somewhat in decision making from non-family owned firms (Gómez-Mejía, Cruz, Berrone, & De Castro, 2011). GómezMejía, Haynes, Núnez-Nickel, Jacobson, & Moyano-Fuentes (2007) explain these differences by proposing that the family owners draw utility from non-financial aspects of the business which they call socioemotional wealth. Socioemotional wealth is a collection of non-economic utilities such as a sense of identity from the firm (Kepner, 1983), family image and reputation (Westhead, Crowling & howorth, 2001; Lee & Rogoff, 1996; Dyer & Whetten, 2006) and accumulation of social capital (Arregle et al; 2007). Family firms seek to preserve this socioemotional wealth, and is therefore often less willing than non-family firms to take large risks. (Kalm, Luis & Gomez-Mejia, 2016). This risk can be split up into performance hazard risk and entrepreneurial risk (Gomez-mejia et al, 2007; Huybrechts, Voordeckers & Lybaert, 2012). Family firms are risk averse to entrepreneurial risk, while accepting towards performance hazard risk (Gomez-Mejia et al; 2007).

Entrepreneurial risk in family firms:

Through the definition of family firms above we indicated that families have control over operations. This includes the strategic and financial decisions which is a vital

part of all businesses. Investment and leverage decisions in family firms have been thoroughly researched with various results. Astrachan (2003) suggests that family firm are strategically positioned to take advantage of innovative opportunities and venture creation. Litz(1995) suggests that family businesses are often seen in the more general area of entrepreneurship. Zahra (2005) argues that owner-managed family firms pursue promising entrepreneurial opportunities, supporting radical innovations. On the other hand, a lot of research indicate that since owners of family firms often have large parts of their wealth concentrated in the firm, and thus less diversified, they are less prone to take risk. Naldi et. al (2007) finds that family firms to a lesser extent are willing to take entrepreneurial risk. Schulze et al.(2002) finds that member of family firms might prefer status quo and thus oppose new entrepreneurial ventures and the accompanying risks. The fact that there are large deviations and discussion between scholars of entrepreneurial risk taking in family firms suggests that further research in various aspects needs to be conducted.

An important connection to entrepreneurial risk taking is leverage ratios and agency costs in debt financing. Anderson et al.(2001) investigates this relationship between family and non-family firms. They find that family firms have fewer conflicts with bond holders, and seen as better protecting their interest. This due to the fact that family ownership leads to less diversification through higher concentration of ownership, and thus less willingness to take risk. This is also consistent with results obtained by (Mishra & Mcconaughy, 1999) where owner managed family firms tend to have lower debt levels. Short et al. (2009) found that family firms tended to use less leverage, indicating risk taking.

Based on the papers discussed in this section we see that family business tend to take lower risk and have less debt than their non-family counterparts. However, many of the papers doesn't thoroughly control for whether the family firms have an outside CEO or not, we believe that our thesis contributes to discuss this particular issue and seeks to understand the effect on risk and leverage from outside CEO in family firms. Prior research has largely been conducted on larger listed firms, due to the availability of data, we intend to look at smaller private firms in Norway to supplement the existing studies.

3.0 Theory:
Entrepreneurial risk and family firms:

As seen in the literature review there are deviating results and opinions as to whether family firms take more entrepreneurial risk than non-family firms. Zahra (2005) finds that family ownership promotes entrepreneurship, in line with research such as (Rogoff & Heck, 2003). On the other hand, Naldi, Nordqvist, Sjoberg & Wiklund (2007) and Huybrechts, Voordeckers & Lybaert (2012) amongst others, finds that family firms take less entrepreneurial risk than their non-family counterparts.

A rationale behind the stance that family firms are more averse to entrepreneurial risk can be found in agency theory. According to agency theory restricting residual claims to the decision makers leads to less risky projects being undertaken (Fama & Jenssen, 1983). Ownership concentration in Norwegian family firms are higher than for non-family firms and the largest family tend to have a significant share, amounting for an average of 93% in 2008 (Bøhren, 2011). This indicates that we should see a lesser tendency towards entrepreneurial risk taking in these types of firms. Research also shows that utility from non-financial aspects of the business influence owner decisions in family firms. Dyer & Whetten (2006) points to that the wish to preserve the business for future generations might deter from investing in high risk projects, while Berrone, Cruz & Gomez-Mejia (2012) points to the wish to preserve socioemotional wealth. Family firms tend to avoid projects with high variance in outcomes, as this threatens their socioeconomic wealth (Gomez-Mejia et al., 2007). As such entrepreneurial risk in the form of high variance investments are often forgone by family firms (Gomez-Mejia, Cruz, Berrone & De Castro, 2011).

Due to the high owner concentration in Norwegian family firms coupled with the families' desire to preserve socioemotional wealth, we believe the following hypothesis to hold:

Hypothesis 1: Family firms take less entrepreneurial risk than their non-family counterparts.

Family vs non-family CEO:

The risk taking behavior of firms is influenced by both managers and owners (Fama & Jensen, 1983). Family ceo's are typically under diversified and heavily invested in the firm both in terms of wealth and wages (Naldi, Nordqvist, Sjoberg & wiklund,

2007). Outside CEO's on the other hand, typically have no ownership stake (Huybrechts, Voordeckers & Lyabert, 2012). Parallels can be drawn to the sole owner-manager vs outside manager (Jensen & Meckling, 1976) where the low diversification and high ownership stake causes family CEO to be less inclined towards taking up risky projects (Fama & Jenssen, 1983). Family members also tend to opt for low risk capital structures and little use of debt (McConaughy, Mattews & Fialko 2001), as they have a strong desire to retain control of the firm. The outside CEO on the other hand tend to be less averse to entrepreneurial risk taking (Tsai, Kuo & Hung, 2009).

In addition to the financial aspect of the ownership stake, the family CEO are likely to value the socioemotional wealth the family receives from the firm higher than the outside CEO (Huybrechts, Voordeckers & Lyabert, 2012). By watching over the family's socioemotional wealth, the family CEO also maintains the family's ability to exercise control, and thus appointing family members to positions in the firm. This in turn increases the family CEO's job security (Gomez-Mejia, Cruz, Berrone & De Castro, 2011). The outside CEO have to take other measures to increase job security, such as making manager specific investments that makes it hard for shareholders to replace them (Shelifer & Vishny, 1989).

As we see there is some difference in the interest between family and non-family CEO's. Family CEO's are more motivated to be more risk averse and preserve the socioemotional wealth while the outside CEO's have incentives to take on more risky projects and investments. Due to this difference we propose the following hypothesis:

Hypothesis 2 a: Family firms led by non-family CEO take more entrepreneurial risk than those led by a family CEO.

Non family CEO and effects on financing policy:
The effect of this expected increase in entrepreneurial risk and external CEO on the firm's financial policy is uncertain. There are several factors pointing both to increased and decreased leverage.

The outside CEO might want to offset the higher entrepreneurial risk by reducing the financial risk and thus minimizing the bankruptcy risk (Lardon, Deloof & Jorissen, 2017). This is in line with Gonzalez, Guzman, Pombo & Trujillo (2012) who find evidence of lower debt levels in family firms managed by founders or family

members. Entrepreneurial risk taking leads to more volatile cash flows (Altman & Saunders, 1997). Banks prefer conservative firms as they are exposed to the downside from risk taking on the firm's part, increasing default risk. They do however not receive any upside potential from risk taking by the borrower in ordinary credit facilities. In addition to this, banks might also prefer firms where the family is more involved, as family involvement tend to put long term survival of the firm first. This could align the interest of the firm with that of the lender (Chua, Chrisman, Kellerman & Wu, 2011). These factors point towards firms with a non-family CEO should be less levered than those with a family CEO.

Past research also suggests opposing views to the evidence presented above. Mishra and McConaughy (1999) suggests that family controlled firms may be averse to high levels of debt due to bankruptcy costs and risk of losing control. As such we would expect the debt level to be lower when family management is in control. Amore, Minichilli & Corbetta (2011) finds that the appointment of a non-family CEO led to an increase in the use of debt, supporting this stance. Furthermore investments of growth oriented family firms are likely to exceed retained earnings according to (Amore, Minichilli & Corbetta, 2011) and the increased growth pursuits under an outside ceo may increase the need for non-control diluting debt (Lardon, Deloof & Jorissen, 2017). Some researchers also propose that non family ceos facilitate access to funding. This as the appointment of an outside CEO might be viewed as a signal of quality by banks (Stijvers & Niskanen, 2013). An outside CEO might also reduce vulnerability to problems such as nepotism (Dekke, Lyabert, Steijvers, Depaire & Mercken, 2013). Higher earnings volatility can be more easily assessed in credit decisions than CEO characteristics (Lardon, Deloof & Jorissen, 2017) thus indicating that banks are more willing to lend to firms with external CEOs. This coupled with the aversion to debt seen in family firms leads us to believe the following hypothesis to hold:

Hypothesis 2 b: Firms with a non-family CEO will have higher debt levels than those with a family CEO.

Other related effects:

CEO tenure and risk taking:

Entrenchment theory could indicate that an outside CEO engage in more entrepreneurial risk taking as her tenure increases (Huybrechts, Voordeckers & Lybaert, 2012; Ryan & Wiggins, 2001; Ozkan, 2011). However, Huybrechts Voordeckers and Lybaert (2012) argues that risk taking behavior changes in CEO tenure, as the CEO gets more involved and creates a sense of ownership towards the firm, thus increasing her risk aversion. We believe this could be an interesting topic to explore, but more research is needed on our part to refine and support the hypothesis. The results from this hypothesis could be highly relevant in understanding the implications of hiring an outsider to the CEO position in family firms.

Hypothesis 3: The effect on entrepreneurial risk taking from an outside CEO is decreasing in tenure.

Board control and effect of CEO:

Lardon, Deloof and Jorissen (2017) argues that control of an outside CEO through the board of directors might have a moderating effect on the effect the choice of CEO have on debt levels. If the family controls the CEO trough the board of directors it seems reasonable that they can control the degree of debt to suit their own preferences. Supported by the theory and hypotheses above we believe that through a lot of various factors family owned firms prefer less debt. As such we propose to test the following hypothesis, but are currently unsure if our dataset contains sufficient variables to test it. We also would need to further investigate the theory behind this possible effect in order to develop a sound hypothesis.

Hypothesis 4: Board control in family firms reduces the effect on debt of an outside CEO.

Long term vs short term debt:

If our hypothesis 2a is in fact correct, i.e. that outside CEO takes more entrepreneurial risk we would believe this would lead to higher default risk and thus lower debt levels. (Penas and Ortiz-Molina, 2006) argues that short term lending mitigates some of the agency cost between borrower and lender in small firms. This due the fact that shorter maturity leads to more contact between parties and less information asymmetry. We consequently would like to test Hypothesis 5 to see if this effect is

larger for outside CEO´s. As with the previous two hypotheses, we need to further research the theory behind this rationale to refine and validate this hypothesis.

Hypothesis 5: The effects from an outside CEO on debt will be stronger for long term than short term debt.

4.0 Methodology

To test the hypotheses discussed above we will use data obtained from the CCGR database. First of all, we would like to create descriptive statistics to get an overview of the data and how these can be used to test our hypotheses. Following this we will need to create the variables not included directly in the data set obtained from the CCGR database, such as entrepreneurial risk taking. We also expect to make some modifications like removing outliers and potentially non-interesting firms e.g holding companies. We also intend to adjust for differences amongst firms such as industry and age by including control variables in the regressions.

We will employ various OLS specifications to test the hypotheses, the exact specification will need to be determined after we have obtained the data. We will use multivariate regressions where the dependent variable for the first hypotheses will be a measure of entrepreneurial risk, while the dependent for the later hypotheses will be measures of debt. The independent and control variables are as of yet to a large degree undecided, but will include amongst other things a dummy for family CEO, age of the company, board control, industry, size and CEO tenure. We plan to use stata as the main statistical tool for our thesis, although other programs such as Eviews might also be used.

We also expect robustness checks to be an important and significant part of our analysis. Herein we will have to take possible problems such as multicollinearity and endogeneity issues into account. We also intend to spend time on checking the robustness of our results to different regression specifications.

Variables:

As mentioned we will extract necessary data from CCGR (center of corporate governance research) which we will access through our supervisor Siv Staubo. We are currently working to determine which data points we need to extract and plan to have this ready by the middle of next week.

5.0 What's next:

We will continue to refine and research the theory around our hypotheses. This both in terms of defining the remaining hypotheses as well as better research and flesh out the underlying theory of our existing hypotheses. As an extension of this we will work to specifically determine which variables we need to conduct our analysis. We plan to extract these variables form the CCGR data base in the coming week, and start working with our data to look at the descriptive statistics as well as check if the data available to us will allow for the tests needed for the current and planned hypotheses.

When the hypotheses are finalized, and the data set is done we will start building our regressions and plan for which robustness checks that should be used to verify our results. Following this we will interpret our results and check their robustness to alternative model specifications.

6.0 Tentative implementation plan:

15th January 2018: Deliver Preliminary Thesis Report.
17th January: Apply for the needed data from the CCGR database through our supervisor.
February: Get feedback and make adjustments.
February/March: Having finished the data gathering and modification.
March: Done with research and refinement of hypotheses.
May: Done with research, methodology and statistical analysis.
1st of July: Target hand in date.
September: Official deadline

7.0 Bibliography

Amore, M., Minichilli, A., & Corbetta, G. (2011). How do managerial successions shape corporate financial policies in family firms?. *Journal Of Corporate Finance*, *17*(4), 1016-1027. http://dx.doi.org/10.1016/j.jcorpfin.2011.05.002

Anderson, R., & Reeb, D. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal Of Finance*, *58*(3), 1301-1328. http://dx.doi.org/10.1111/1540-6261.00567

Anderson, R., Mansi, S., & Reeb, D. (2003). Founding family ownership and the agency cost of debt. *Journal Of Financial Economics*, *68*(2), 263-285. http://dx.doi.org/10.1016/s0304-405x(03)00067-9

Ang, J., Cole, R., & Lin, J. (2000). Agency Costs and Ownership Structure. *The Journal Of Finance*, *55*(1), 81-106. http://dx.doi.org/10.1111/0022-1082.00201

Arregle, J., Hitt, M., Sirmon, D., & Very, P. (2007). The Development of Organizational Social Capital: Attributes of Family Firms. *Journal Of Management Studies*, *44*(1), 73-95. http://dx.doi.org/10.1111/j.1467-6486.2007.00665.x

Astrachan, J. (2003). Commentary on the special issue: the emergence of a field. *Journal Of Business Venturing*, *18*(5), 567-572. http://dx.doi.org/10.1016/s0883-9026(03)00010-7

Berrone, P., Cruz, C., & Gomez-Mejia, L. (2012). Socioemotional Wealth in Family Firms. *Family Business Review*, *25*(3), 258-279. http://dx.doi.org/10.1177/0894486511435355

Bøhren, Ø. (2011). *Eierne, styret og ledelsen* (pp. 179-197). Bergen: Fagbokforlaget.

Chrisman, J., Chua, J., & Litz, R. (2004). Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence. *Entrepreneurship Theory And Practice*, *28*(4), 335-354. http://dx.doi.org/10.1111/j.1540-6520.2004.00049.x

Corbetta, G., & Salvato, C. (2004). The Board of Directors in Family Firms: One Size Fits All?. *Family Business Review*, *17*(2), 119-134. http://dx.doi.org/10.1111/j.1741-6248.2004.00008.x

Dekker, J., Lybaert, N., Steijvers, T., Depaire, B., & Mercken, R. (2012). Family Firm Types Based on the Professionalization Construct. *Family Business Review*, *26*(1), 81-99. http://dx.doi.org/10.1177/0894486512445614

Dyer, W., & Whetten, D. (2006). Family Firms and Social Responsibility: Preliminary Evidence from the S&P 500. *Entrepreneurship Theory And Practice*, *30*(6), 785-802. http://dx.doi.org/10.1111/j.1540-6520.2006.00151.x

Fama, E., & Jensen, M. (1983). Separation of Ownership and Control. *The Journal Of Law And Economics*, *26*(2), 301-325. http://dx.doi.org/10.1086/467037

Gomez-Mejia, L., Cruz, C., Berrone, P., & De Castro, J. (2011). The Bind that Ties: Socioemotional Wealth Preservation in Family Firms. *The Academy Of Management Annals*, *5*(1), 653-707. http://dx.doi.org/10.1080/19416520.2011.593320

Gómez-Mejía, L., Haynes, K., Núñez-Nickel, M., Jacobson, K., & Moyano-Fuentes, J. (2007). Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills. *Administrative Science Quarterly*, *52*(1), 106-137. http://dx.doi.org/10.2189/asqu.52.1.106

González, M., Guzmán, A., Pombo, C., & Trujillo, M. (2013). Family firms and debt: Risk aversion versus risk of losing control. *Journal Of Business Research*, *66*(11), 2308-2320. http://dx.doi.org/10.1016/j.jbusres.2012.03.014

Huybrechts, J., Voordeckers, W., & Lybaert, N. (2012). Entrepreneurial Risk Taking of Private Family Firms. *Family Business Review*, *26*(2), 161-179. http://dx.doi.org/10.1177/0894486512469252

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal Of Financial Economics*, *3*(4), 305-360. http://dx.doi.org/10.1016/0304-405x(76)90026-x

Kalm, M., & Gomez-Mejia, L. (2016). Socioemotional wealth preservation in family firms. *Revista De Administração*, *51*(4), 409-411. http://dx.doi.org/10.1016/j.rausp.2016.08.002

Kepner, E. (1991). The Family and the Firm: A Coevolutionary Perspective. *Family Business Review*, *4*(4), 445-461. http://dx.doi.org/10.1111/j.1741-6248.1991.00445.x

La Porta, R., Lopez de Silanes, F., & Shleifer, A. (1998). Corporate Ownership Around the World. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.103130

Lardon, A., Deloof, M., & Jorissen, A. (2017). Outside CEOs, board control and the financing policy of small privately held family firms. *Journal Of Family Business Strategy*, *8*(1), 29-41. http://dx.doi.org/10.1016/j.jfbs.2017.01.002

Lee, M., & Rogoff, E. (1996). Research Note: Comparison of Small Businesses with Family Participation versus Small Businesses Without Family Participation: An Investigation of Differences in Goals, Attitudes, and Family/Business Conflict. *Family Business Review*, *9*(4), 423-437. http://dx.doi.org/10.1111/j.1741-6248.1996.00423.x

Litz, R. (1995). The Family Business: Toward Definitional Clarity. *Family Business Review*, *8*(2), 71-81. http://dx.doi.org/10.1111/j.1741-6248.1995.00071.x

McConaughy, D., Matthews, C., & Fialko, A. (2001). Founding Family Controlled Firms: Performance, Risk, and Value. *Journal Of Small Business Management*, *39*(1), 31-49. http://dx.doi.org/10.1111/0447-2778.00004

Miller, D., Minichilli, A., & Corbetta, G. (2012). Is family leadership always beneficial?. *Strategic Management Journal*, *34*(5), 553-571. http://dx.doi.org/10.1002/smj.2024

Mishra, C., & Mcconaughy, D. (1999). Founding Family Control and Capital Structure: The Risk of Loss of Control and the Aversion to Debt. *Entrepreneurship Theory And Practice*, *23*(4), 53-64. http://dx.doi.org/10.1177/104225879902300404

Naldi, L., Nordqvist, M., Sjöberg, K., & Wiklund, J. (2007). Entrepreneurial Orientation, Risk Taking, and Performance in Family Firms. *Family Business Review*, *20*(1), 33-47. http://dx.doi.org/10.1111/j.1741-6248.2007.00082.x

Ozkan, N. (2009). CEO Compensation and Firm Performance: an Empirical Investigation of UK Panel Data. *European Financial Management*, *17*(2), 260-285. http://dx.doi.org/10.1111/j.1468-036x.2009.00511.x

Penas, M., & Ortiz-Molina, H. (2006). Lending to Small Businesses: The Role of Loan Maturity in Addressing Information Problems. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.509882

Rogoff, E., & Heck, R. (2003). Evolving research in entrepreneurship and family business: recognizing family as the oxygen that feeds the fire of entrepreneurship. *Journal Of Business Venturing*, *18*(5), 559-566. http://dx.doi.org/10.1016/s0883-9026(03)00009-0

Romano, C., Tanewski, G., & Smyrnios, K. (2001). Capital structure decision making. *Journal Of Business Venturing*, *16*(3), 285-310. http://dx.doi.org/10.1016/s0883-9026(99)00053-1

Ryan, H., & Wiggins, R. (2001). The influence of firm- and manager-specific characteristics on the structure of executive compensation. *Journal Of Corporate Finance*, *7*(2), 101-123. http://dx.doi.org/10.1016/s0929-1199(00)00021-3

Schulze, W., Lubatkin, M., & Dino, R. (2002). Altruism, agency, and the competitiveness of family firms. *Managerial And Decision Economics*, *23*(4-5), 247-259. http://dx.doi.org/10.1002/mde.1064

Schulze, W., Lubatkin, M., Dino, R., & Buchholtz, A. (2001). Agency Relationships in Family Firms: Theory and Evidence. *Organization Science*, *12*(2), 99-116. http://dx.doi.org/10.1287/orsc.12.2.99.10114

Shleifer, A., & Vishny, R. (1989). Management entrenchment. *Journal Of Financial Economics*, *25*(1), 123-139. http://dx.doi.org/10.1016/0304-405x(89)90099-8

Short, J., Payne, G., Brigham, K., Lumpkin, G., & Broberg, J. (2009). Family Firms and Entrepreneurial Orientation in Publicly Traded Firms. *Family Business Review*, *22*(1), 9-24. http://dx.doi.org/10.1177/0894486508327823

Steijvers, T., & Niskanen, M. (2012). The determinants of cash holdings in private family firms. *Accounting & Finance*, *53*(2), 537-560. http://dx.doi.org/10.1111/j.1467-629x.2012.00467.x

Tsai, W., Kuo, Y., & Hung, J. (2007). Corporate diversification and CEO turnover in family businesses: self-entrenchment or risk reduction?. *Small Business Economics*, *32*(1), 57-76. http://dx.doi.org/10.1007/s11187-007-9073-y

Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value?. *Journal Of Financial Economics*, *80*(2), 385-417. http://dx.doi.org/10.1016/j.jfineco.2004.12.005

Westhead, P., Cowling, M., & Howorth, C. (2001). The Development of Family Companies: Management and Ownership Imperatives. *Family Business Review*, *14*(4), 369-385. http://dx.doi.org/10.1111/j.1741-6248.2001.00369.x

Zahra, S. (2005). Entrepreneurial Risk Taking in Family Firms. *Family Business Review*, *18*(1), 23-40. http://dx.doi.org/10.1111/j.1741-6248.2005.00028.x