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- The effect on firm performance if the family loses majority or supermajority voting rights -

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Abstract

This paper uses a unique data set from Norway to investigate how firm performance is affected if the family decides to reduce their ownership stake below the majority, supermajority, or both voting thresholds. Our findings indicate that operating revenue is positively affected if the family reduces its ownership stake below both thresholds, however, higher operating revenue comes at the expense of lower firm profitability, measured by ROA and net income, in the year after the ownership change. We identify this relationship by applying two analysis methods: First, we perform univariate tests, which analyze the average yearly and industry adjusted firm performance in the year of the ownership change as well as in the two years before and after one or both voting thresholds has been crossed. Second, we run fixed-effects regressions to analyze the relation between firm performance and ownership changes further. In addition, we perform a logit, probit and hazard model to analyze whether ownership changes are driven by firm performance. However, the findings of these models do not support the hypothesis that weak firm performance is the main driver behind the family's decision to reduce their ownership stake in the firm.

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1. Introduction

1.1 Motivation

Family firms are estimated to account for more than half of global gross domestic product (GDP) and roughly two-thirds of employment (PWC, 2021). Due to the high importance of family firms, extensive research on the firm performance of family firms has been done. However, relatively little research has been done on how firm performance changes if the family reduces their ownership stake in the company. To bridge this gap, this paper provides an insight into how the firm performance of small and medium-sized private Norwegian family firms is affected by the family's decision to reduce their ownership stake below the majority, supermajority, or both voting thresholds. Based on previous studies, which found evidence that family firms perform better on average compared to non-family firms and that agency conflicts become more significant if the ownership structure becomes more dispersed, we developed our main hypothesis, which assumes that the family's decision to reduce the ownership stake below one or both voting thresholds negatively affects firm performance. By investigating our main hypothesis, we will also empirically test the impact of agency conflicts, such as, for example, those between majority and minority shareholders, on firm performance. Lastly, we will also analyze which firm characteristics make an ownership change more likely.

Thanks to the Centre of Corporate Governance Research (CCGR) at BI Norwegian Business School, we have access to a data set that contains the accounting figures and ownership data of each private firm with limited liability in Norway. Considering the difficulty of gathering data about private firms, we are in a unique position to examine this research question. Any previous findings about public family firms do not necessarily apply to private family firms due to their different characteristics, such as their size and age, as well as lower stock liquidity and a more restricted access to financial markets.

The results from this thesis indicate that the loss of majority or both voting thresholds is of greater importance in explaining the variation in firm performance compared to the loss of supermajority. More specifically, we find a positive link between operating revenue and the family's loss of power, especially if the family loses its majority. However, our results show that the family's decision to reduce their stake below both voting thresholds lowers firm profitability. We find evidence that the crossing of both thresholds negatively affects ROA and net income in the year after the ownership change. Furthermore, we show that ownership changes are more likely to take place if firm performance, measured by ROA and operating revenue, is higher.

Overall, we believe that our findings contribute to a deeper understanding of the effects of a changing ownership structure on firm performance. We view this knowledge as highly valuable for current owners, investors and the government given that the owners are ultimately the root of every decision made within the company. From the current owners' and investors' perspective it is essential to know the effects of a changing ownership structure on firm performance so as to make the right strategic decisions that create shareholder value. Lastly, any government needs to understand the importance of family ownership in order to be able to maximize the impact of their economic policies on employment and GDP growth. This knowledge is also important to be able to, for instance, assess whether inheritance taxes are meaningful from an economic point of view.

1.2 Outline

This paper is structured in the following way: Section 2 will explore the differences in characteristics of family and non-family firms, in order to obtain a better understanding of how the decision of the family to reduce its stake below the two strategically important voting thresholds can affect the firm. This also includes the discussion of agency conflicts that exist in family firms, or that may arise because of the family control dilution. In section 3, we present our hypotheses based on the theoretical arguments explained in section 2. Section 4 will then introduce the reader to our underlying data set and state which

definitions we have used, as well as how we have filtered the data. Based on this, we will then illustrate a simple comparison between the average firm characteristics of small and medium sized family and non-family owned firms in Norway in the following section. In sections 6, 7 and 8 we will present the empirical findings of the univariate tests, fixed-effects regressions as well as probit, logit and hazard models. These empirical findings will then be tested further with different robustness tests in section 9. After discussing all findings in section 10, we will outline certain limitations of our study in section 11, before coming up with a final conclusion in section 12.

2. Literature review and theory

Given the importance of the topic, it needs to be stated that while we can build on a considerable amount of research, our aim is to provide a deeper understanding of how firm performance is affected by the family's decision to reduce their stake in the firm below strategically important ownership levels. To achieve this, a solid understanding of the key differences between family and non-family firms is needed.

2.1 Family vs. non-family firms

To start with, there are two different perspectives of family firms. On the one hand, there is the stewardship perspective, which underscores the long-term perspective of family firms, that arises from the family's strong emotional attachment to the firm (Miller, Breton-Miller and Scholnick, 2008). This, combined with the intrinsic motivation of the family to hand over the firm to their descendants, means it is often argued that family firms tend to focus more strongly on long-term growth maximization and firm survival rather than on short-term profit maximization. Such reputational effects also lead to better customer relations and more motivated employees, as well as lower financing costs. These firm characteristics ultimately ensure the longevity of the family firm and provide the family firm with greater downside risk protection (Sraer and Thesmar, 2007).

On the other hand, there is the stagnation perspective, which claims that family firms exist for a shorter period than non-family firms due to slow growth, which is a consequence of overly conservative strategies and a limited pool of resources, such as the choice of heirs that could take over the firm (Miller, Breton-Miller and Scholnick, 2008). The argument that family firms have lower growth rates compared to non-family firms could also be explained by the family's reluctance to increase leverage significantly or to issue equity in order to finance growth. A conservative debt policy may be preferred by the family, given that they often hold most of their assets in the firm. This implies that the family is not well-diversified and thus obliged to follow a more conservative strategy in terms of capital structure and firm expansion. Furthermore, due to the family's exposure to idiosyncratic risk, projects with a positive NPV may be rejected (Dhillon and Rossetto 2014). Finally, according to Fama and Jensen (1983), agency conflicts, which will be discussed in more detail in the next sections, can reduce firm performance especially when control and ownership are combined given that this combination allows the family to exchange profits for private benefits

Miller, Breton-Miller and Scholnick (2008) concluded that there is high empirical support for the stewardship perspective and no significant support for the stagnation perspective. This is in line with the findings of Anderson and Reeb (2003) as well as Sraer and Thesmar (2007), who found that family firms perform better on average than non-family firms. However, there are mixed findings regarding the firm performance of heir-managed firms. While the analysis of family firms listed on the French stock exchange by Sraer and Thesmar (2007) revealed that firm performance of heir-managed family firms is higher compared to non-family firms, Villalonga and Amit (2004) conclude that firm value is destroyed when heirs serve as the CEO or sit on the board.

To gain a more profound understanding of family and non-family firms it is also important to explore how agency conflicts may affect firm performance in both cases.

2.2 Agency conflicts

Existing literature generally describes four major types of agency conflicts, namely 1) between shareholders and managers, 2) between majority and minority owners, 3) between shareholders and debtholders, and 4) between shareholders and other stakeholders. The impact of those agency conflicts on the firm's performance varies depending on the ownership structure of the firm.

2.2.1 Agency conflict between shareholders and managers

This agency conflict arises as a result of conflicting interests between managers and owners. Managers may, for example, privately benefit from perquisites (Yermack, 2006), empire building (Jensen, 1986) or from living the "quiet life", which may lead to higher costs and untapped growth potential (Bertrand and Mullainathan, 2003). Furthermore, personal characteristics such as the overconfidence or risk-loving behaviour of the manager may negatively impact the firm. This agency conflict is of little to no importance, when the family has full control over the firm or when the CEO is part of the family, the latter being true due to strong reputational effects and trust between family members (Bertrand and Schoar, 2006). Therefore, it becomes more likely that this agency conflict will have a larger impact on the firm if the family dilutes its ownership stake in it. A more dispersed ownership structure may also make common solutions to this agency conflict, such as close monitoring, less attractive, considering that this may be too costly for small blockholders. Less monitoring may negatively affect corporate governance, which ultimately leads to a lower firm performance. If monitoring actually pays off for one or more of the blockholders, then the costs of monitoring will increase. These costs are deadweight costs which, again, negatively affect firm performance. An alternative solution for firms with a dispersed ownership structure, and thus weak control, is to increase leverage in order to discipline managers to run the firm efficiently and in line with the long-term interest of the shareholders (Jensen, 1986). Based on this, we expect family firms that strongly dilute their ownership, or become non-family firms, to be affected more severely by this agency conflict.

Considering this, we would expect to see such firms have lower firm performance and higher leverage to reduce the negative impact of this agency conflict.

2.2.2 Agency conflict between majority and minority owners

The family's decision to reduce its stake in the firm may also lead to agency conflicts between majority and minority shareholders. Berzins, Bøhren and Stacescu (2018) point out that this conflict is particularly severe when the controlling shareholder owns 50% plus one share of all outstanding shares. The reason for this is that the controlling shareholder, or in our case the family, has a strong incentive to transfer assets or profits out of the firm into the hands of the controlling family in ways other than dividends, given that the family only receives half of the dividends that are paid out proportionally to all shareholders. Johnson et al. (2000) have defined this action as "tunnelling". Evidence of tunnelling has been found in India (Bertrand, Mehta and Mullainathan, 2002) and Thailand (Bertrand et al., 2008). This behaviour is not only detrimental to minority shareholders but also reduces firm performance. However, it is worth noting that the controlling shareholder could possibly have less than 50% of the outstanding shares, but still exercises majority control over the firm thanks to dual-class shares or pyramiding. Further evidence that this agency conflict exists has been provided by Barclay and Holderness (1989), whose analysis revealed that large blocks of shares which provide the investor with control over the firm are typically sold at higher prices than the most recent market stock price; they have labelled this premium "control premium", which has an average value of 20%. In consideration of this agency conflict, we would expect that firm performance is likely to decrease, should the family reduce its stake in the firm but continue to hold control over the firm. Nevertheless, the effect of this agency conflict is reduced to some extent due to the strong legal protection of minority shareholders in Norway. Lastly, it should be stated that there is also a different side to tunnelling. While families may expropriate minority shareholders by extracting private benefits, families may also inject private funds into financially troubled firms to avoid bankruptcy and a reputational loss. Friedman, Johnson

and Mitton (2003) have called this “propping”, and Villalonga and Amit (2010) have shown that this characteristic partly explains the higher firm performance of family firms during economic downturns relative to non-family firms.

2.2.3 Agency conflict between shareholders and debtholders

Agency conflicts between shareholders and debtholders may arise as a consequence of the different pay-off function of equity and debt. The main root of this agency conflict is debt overhang that is caused by high leverage. Debt overhang may lead to underinvestment, short-termism, delayed liquidation as well as excessive risk-taking (Eisdorfer, 2008). These conflicts between shareholders and debtholders may lead to credit rationing, which implies that the firm will not get financing regardless of the contractual interest rate. Considering that the reputation is generally of high importance to the family, it could be argued that the family’s dilution of control may reduce the debt capacity of the firm, given that the family may have less reputational concerns then it comes to harming debtholders. Consequently, creditors may demand higher interest rates, provided this does not exacerbate the moral hazard problem, and impose strict covenants on the firm. Overall, this would reduce the firm’s ability to undertake positive NPV projects and thus harm firm performance. In the situation of a debt overhang problem, the firm may even have to declare insolvency, should the debt renegotiation fail due to any collective action problem that arises if old debt holders cannot agree on debt forgiveness.

2.2.4 Agency conflict between shareholders and other stakeholders

Reputational effects, which are known to be greater in family firms compared to non-family firms, are of importance not only when it comes to financing costs, but also in many other aspects. Being trustworthy allows for deeper ties with customers and suppliers, which might ultimately lead to higher revenues and lower costs. Moreover, a strong reputation may come along with a higher (perceived) job security and better career opportunities, which can positively affect the working morale of employees and thus increase the firm’s efficiency. A strong reputation may also become advantageous when dealing with the

government, for example when applying for public orders. Therefore, if a family firm transforms into a non-family firm, we expect that the positive reputational effects that are associated with family firms to diminish. This may ultimately reduce firm performance after the change in ownership structure.

Overall, we can observe that the dilution of family control is more associated with larger agency conflicts that should reduce firm value. Despite this, ownership changes may also come along with positive effects, as explained in the next section.

2.2.5 Other reasons and effects of ownership changes

At the start of a firm's lifetime there is typically one owner, who usually also serves as the manager of the firm. Over the following years, the ownership structure may change various times for multiple reasons, but above all else, changes in ownership are driven by capital needs. The pecking order theory, which states that firms prefer to use internal financing over debt financing, and only use equity financing as a last resort; this is particularly applicable to family firms, which are highly reluctant to dilute their stake in the firm. Because of this, the dilution of a family stake in the firm could indicate that the firm is either in a bad state, or that there are growth opportunities whose returns are expected to outweigh the cost of the reduced stake.

However, there are several other aspects that also need to be considered. On the one hand, a new owner could add value in multiple ways, for instance, by creating links between the companies within the new owner’s portfolio, using existing sales channels, sharing manufacturing capabilities, adding valuable skills and knowledge about market developments or by having a better connection to critical stakeholders of the firm. This is in line with the theory of the best-owner life cycle, which states that the best owner(s) of a firm change, given that the firm’s circumstances change continuously. On the other hand, the ownership structure becomes more dispersed, which may not only lead to agency conflicts, but also to a slower decision-making process that reduces firm performance. Moreover, in order to reach agreement between multiple owners,

more conservative strategies may be chosen, which also leads to a reduced firm growth. It is also possible that certain value-maximizing decisions are not made at all given that no majority or supermajority can be reached. For example, no mergers or demergers, capital increases or reductions, nor amendments of the articles of an association can be completed in Norway if no supermajority can be reached.

In conclusion, this study will be testing multiple factors that impact firm performance, including these agency conflicts discussed above.

2.3 Ownership structure and firm performance

There have been previous studies which have investigated the relationship between ownership structure and firm performance, however, the resulting evidence has been mixed. For instance, Demsetz and Villalonga (2001) concluded that there is no statistically significant relationship between firm performance and ownership structure. The two authors argue that no significant relation can be found, because although diffuse ownership might increase agency problems, there are also compensating effects that offset these negative effects. According to them, it is important to take into account the problem of endogeneity, since corporate performance affects the ownership structure and vice versa. This could be explained, for example, by two reasons: First, the pecking order hypothesis states that firms prefer to finance their business with retained earnings or debt, rather than via the issuance of equity. This means that, if the owners need to issue equity, it is most likely caused by low corporate firm performance, which hinders the firm from financing the business with retained earnings or by raising debt (Myers and Majluf, 1984). Therefore, a change in ownership structure could have been caused by a low firm performance. Second, a changing ownership structure may also be influenced by insider information, which creates an incentive for the owners to sell or buy shares of the firm, according to their expectations of future firm performance. Furthermore, the two authors argue that the ownership structure of a firm is influenced by specific firm characteristics, such as the riskiness of its assets or its contracting environment.

Contrary to Demsetz and Villalonga (2001), Gugler and Weigand (2003) concluded that the largest shareholder, or in our case the family, affects firm performance exogenously. The authors argue this is because large shareholders are commonly not well diversified and thus need to closely monitor and directly influence management decisions. As a consequence, firm performance is negatively affected if the family reduces its stake significantly, since the family becomes less incentivized to monitor the management of the firm.

Lastly, Bøhren et al. (2020) have analyzed the ownership dynamics of private firms and concluded that they undergo much less frequent ownership changes compared to public firms. The authors suggest that ownership is a very stable characteristic in privately held small and medium-sized firms due to the illiquidity of the shares. This illiquidity makes it particularly costly for owners to adjust the ownership structure. Thus, we find it essential to examine the effect that such a costly change in the ownership structure would have on firm performance.

3. Hypotheses and methodology

The overall goal of our thesis is to examine how firm performance is affected when the largest family reduces its ownership stake below 50% and/or 66.67% percent, or in other words, when the family loses its majority, supermajority, or both. In order to examine this research question, we test the following three hypotheses:

Hypothesis 1:

"Firm performance increases in the year where the family loses its majority, supermajority, or both."

The first hypothesis (H1) focuses on the short-term effect of the ownership change on firm performance. The reasoning here is that the negative effects of increased agency conflicts may be outweighed by other effects in the year of the ownership change. One possible argument is that new owners may aim to

restructure the firm by divesting unprofitable business areas, laying off employees, or undertaking other actions that lead to short-term profit maximization. Firm performance may also be increased in the year of the ownership change if the family polishes up the accounting values of the firm before selling it to achieve a higher price for their shares.

Hypothesis 2:

"*If the family loses its majority and/or supermajority vote, firm performance is reduced in the two years thereafter."*

The second hypothesis (H2) is based on the arguments outlined in section 2, which state that the amount of agency conflicts between majority and minority owners as well as between shareholders and managers, debt holders and other stakeholders is increased if the largest family reduces its stake in the firm. In general, these agency conflicts are known to lower firm performance in the long term. Furthermore, the loss of power of the largest family may lead to lower firm growth as a result of a slower and more difficult decision-making process, which may also lead to more conservative strategies with a lower return. Overall, we expect that these factors negatively materialize in the two years after the ownership change.

Hypothesis 3:

"The family's decision to reduce their ownership stake below the majority, supermajority, or both voting thresholds is driven by negative firm performance."

By examining the third hypothesis (H3) we hope to gain more insight into the big picture of why ownership changes happen in the first place. The third hypothesis is based on the pecking order theory, which predicts that firms prefer to finance themselves with retained earnings, then by raising debt, and as a last resort, by issuing equity (Myers and Majluf, 1984). The pecking order theory is of particularly high importance to family firms, whose owners tend to be highly reluctant to dilute their ownership stake in the firm. Therefore, it could be

assumed that an ownership change takes place if the family firm faces a high cost of capital due to low earnings, that limits their ability to take on debt. As a consequence, the dilution of a family stake in the firm could also indicate that future firm performance might be lower given that the firm has struggled historically to generate returns that can be used to finance the business.

We test H1 and H2 by running univariate tests in section 6 and by performing fixed-effects regressions in section 7. H3 is tested by univariate tests and in section 8 by running a probit, logit and hazard regression. The goal of the univariate tests is to compare the industry and year-adjusted firm performance of firms with a stable ownership structure and firms with an unstable ownership structure. More specifically, we measure the return on assets (ROA) and sales (ROS), change in revenue, assets, paid-in capital, debt and employees in the two years prior to the crossing of one of or both the voting thresholds, in the year of the ownership change and in the two years afterwards. A similar methodology has been used by Grullon, Michaely and Swaminathan (2002) in order to analyze whether dividend changes are a sign of firm maturity.

In order to determine whether a fixed effects or a random effects regression model is more suitable to our research question and underlying data, we have run a Hausman test, which tests whether the unique residuals are correlated with the explanatory variables. According to the Hausman test (see Table 1) a fixed effects estimation is more appropriate for the regressions to test H1 and H2, as shown below. This is similar to the study by Himmelberg et al. (1999), in which the author also used fixed effects estimators to examine the relationship between firm performance and managerial ownership. By demeaning all the observations included in the regression with the entity mean value, we are able to control for unobservable time-invariant firm characteristics (Gormley and Matsa, 2014). As a result, we reduce the negative impact of omitted variables and the likelihood of endogeneity problems, which puts us in a better position to capture the effect of a family's decision to weaken their ownership position below 66.67% and 50% on firm performance. Lastly, we use the log value of variables that are

expressed in positive numerical values so as to account for the large range of these values.

Therefore, we will test H1 by running the following fixed-effects regression:

$$(1)\ \text{Firm Performance}(i,t) = \text{alpha} + \text{beta}(1) * \text{Operating Revenue}(i,t) + \text{beta}(2) * \text{Fixed Assets}(i,t) + \text{beta}(3) * \text{Current Assets}(i,t) + \text{beta}(4) * \text{Debt Ratio}(i,t) + \text{beta}(5) * \text{Age}(i,t) + \text{beta}(7) * \text{Dividends}(i,t) + \text{beta}(8) * \text{Employees}(i,t) + \text{beta}(9) * \text{Under50/(⅔)\%/both\_Dummy}(i,t) + \text{beta}(n) * \text{year\_Dummies}(i,t)$$

As the dependent variable we will use the following for firm performance measures:

1) ROA, which we compute by dividing Net Income through total assets.

2) ROS, which we compute by dividing net income through operating revenue.

3) Operating revenue, which refers to the cash-flow that is generated by the firm's primary income generating activity and is thus not influenced by non-operating revenue streams such as the sale of assets etc.

4) Net income, which is the amount of profit that is left over after the firm has paid off all its expenses.

Furthermore, we also add a series of control variables. Firstly, we add the log of fixed and current assets to the regression to control for firm size. Secondly, we include the log of operating revenue as an explanatory variable. Note however that we will not use this control variable in the regression in which operating revenue is used as the dependent variable. The control variable leverage is defined as total debt divided by total assets. Furthermore, we add the log function of 1 + firm age as an explanatory variable to account for firm age as well as the log of dividends and employees. Regarding the dummy variables, it is important to mention that the "under_50" and "under_(67)" dummy variables take on the value 1 in the year the respective ownership takes place and 0 otherwise. As a result, we are able to observe the short-term effect of the ownership change. It

should also be noted that we do not include all of the dummies in one single regression in order to avoid them being correlated, like in the case where both thresholds are crossed. Lastly, we include time period dummies for each year of our sample period to control for economy-wide shocks. This allows us to interpret firm performance relative to the overall state of the economy.

In the case of H1 we expect that the family's decision to reduce its ownership stake in the firm below 50% or two-thirds to have a positive effect on the firm's performance and thus we expect beta(9) > 0 for each dummy variable.

We use the same equation to test H2, however, we regress all explanatory variables on the performance measures that are lagged by one and two periods. As a result, we aim to get an insight into how an ownership change affects firm performance in the two years after the ownership change.

Our model is the following:

$$
\begin{aligned}
(2)\ \text{Firm performance}(i, t+1/2) \;=\; & \text{alpha} + \text{beta}(1) * \\
& \text{Operating Revenue}(i,t) + \text{beta}(2) * \text{Fixed Assets}(i,t) + \text{beta}(3) * \\
& \text{Current Assets}(i,t) + \text{beta}(4) * \text{Debt Ratio}(i,t) + \text{beta}(5) * \text{Age}(i,t) + \\
& \text{beta}(7) * \text{Dividends}(i,t) + \text{beta}(8) * \text{Employees}(i,t) + \text{beta}(9) * \text{Under50/} \\
& (⅔)\%/\text{both\_after\_Dummy}(i,t) + \text{beta}(n) * \text{year\_Dummies}(i,t)
\end{aligned}
$$

Unlike in equation (1), we expect beta(9) < 0 for every dummy variable given that we expect that firm performance is lowered as a result of agency conflicts.

Note that the performance measures used as a dependent variable and all control variables, except for the dummy variable, included in this regression are defined in the same way as the variables included in the regression to test H1.

In order to test H3 we will perform a logit, probit and hazard regression. These models are used to perform a regression for binary outcome variables. Applied to our case this means that we will use the dummy variables that signal whether the majority, supermajority or both voting thresholds have been crossed, as the dependent variable in the regression. Of these three models we perceive the hazard model to be the most appropriate one for this kind of analysis. More

specifically, the hazard model measures what influences the probability that a family reduces its ownership stake below one or both of the voting thresholds.

Therefore, we get the following equation:

$$(3)\ \text{Under50/67\%/both\_Dummy}(i,t) = \text{alpha} + \text{beta}(1) * \text{Operating Revenue}(i,t) + \text{beta}(2) * \text{Fixed Assets}(i,t) + \text{beta}(3) * \text{Current Assets}(i,t) + \text{beta}(4) * \text{Debt Ratio}(i,t) + \text{beta}(5) * \text{Age}(i,t) + \text{beta}(6) * \text{Dividends}(i,t) + \text{beta}(7) * \text{Employees}(i,t) + \text{beta}(8) * \text{ROA}(i,t) + \text{beta}(9) * \text{ROS}(i,t) + \text{beta}(10) * \text{Net Income}(i,t) + \text{beta}(n) * \text{year\_Dummies}(i,t)$$

Please note that the dummies are designed as in the case of equation (1). Contrary to the fixed-effects regression in equation (1) we will add ROA, ROS and net income as additional explanatory variables. Otherwise, all explanatory variables included in this equation are the same as the variables included in the regression to test H1.

In this case, we expect to observe that beta(1) < 0, beta(8) < 0, beta(9) < 0 and beta(10) < 0.

4. Data sample

Our hypotheses are tested using the data set provided by the Centre for Corporate Governance Research (CCGR) at BI Norwegian Business School. The unbalanced panel data set covers the accounting data of every Norwegian firm with limited liability from 2000 to 2017. The quality of the data sample is high, as Norwegian law demands that every Norwegian firm with limited liability, regardless of its firm characteristics, reports a certified and standardized set of accounting statements. Should a firm fail to report those accounting values within a given time period, it will automatically be liquidated by the court. In total it contains 4,800,897 observations from 598,880 firms. More specifically, the CCGR data we were provided covers the following items:

- Total operating revenue

- Net Income
- Dividends
- Total fixed assets
- Total current assets
- Total paid-in capital
- Total Equity
- Industry codes
- Company age
- Number of employees
- % Equity held by ultimate owner with rank 1
- % Equity held by ultimate owner with rank 2
- % Equity held by ultimate owner with rank 3
- Aggregated fraction held by institutional owners (ultimate ownership)
- Aggregated fraction held by international owners (ultimate ownership)
- Herfindahl Index (based on ultimate ownership)
- Numbers of owners with more than 10% share (ultimate ownership)
- Is independent (ultimate ownership)
- Largest family sum ultimate ownership
- Ultimate ownership held by families

4.1 Applied filter to data set

In order to produce a relevant sample for our research question, we filter the data in the following way:

First of all, we define SMEs and family firms. For the SME classification we will use the definition provided by the European Commission, which states that SMEs have a turnover of less than NOK 500 million and a total balance sheet worth less than NOK 400 million (European Commission, 2020). To reduce large fluctuations in the classification of a firm, we use the average value of total assets and revenues of each firm. In addition to this, we exclude not only larger firms but also micro firms that have an average annual revenue of less than NOK

2 million. Lastly, we exclude all firms that have on average more than 250 employees or less than three employees.

Next, we classify a firm as a family firm if the one single family controls more than 50% of the shares. If the ultimate stake of the family was above 50% at any point in time, we include that firm in the sample. This means that we remove all firms in which the total ultimate ownership of the family has always been below 50%. Besides removing firms that have always been non-family firms from our sample, we also remove all firms that have transformed from a non-family firm to a family firm during our observed time period in order to produce a valid control group. As a result, our control group consists of firms that have always been family firms, while our treatment group consists of firms that have transformed from being family owned to non-family owned.

Thirdly, we homogenize our data set further by removing firms with accounting reported in foreign currency, as well as firms that either contain missing values or show signs of inconsistent accounting. We also exclude companies operating in the financial, real estate, public administration, social welfare, and gambling sectors, given that these industries exhibit unique characteristics. Additionally, we have also removed most holding firms by excluding all firms that have less than three employees. To avoid the risk of obtaining spurious regressions, we have removed outliers by winsorizing the data items at the 1% and 99% tails. By winsorizing the data, we do not completely remove outliers, but rather limit extreme values at an upper and lower bound. In addition to this, we have excluded firms in which the stakes of all ultimate owners add up to over 101%, as well as firms that have an age of zero, which can happen if they are founded before the end of the year but have not yet been registered in the Norwegian company registry, meaning they still have to provide tax filings, which our data is based on, even though they have not been operative. Last but not least, we have removed all firms that exhibit negative equity, total assets and operating revenue at some point in time, in order to avoid non-operative firms.

Finally, after applying all these filters we have removed 6,232 firms that have always been a non-family firm and 1,544 firms that transform from non-family

to family owned. By doing so we create a distinct control group, consisting of firms that have always been a family firm within our time period, and a distinct treatment group, consisting of firms that cross one or both of the ownership thresholds. By applying the steps explained above, we reduce the observations in our data set from 4,800,897 observations to 159,184 observations.

4.2 Historical events

Given that our data sample is drawn from the time period from 2000 to 2017, we need to take several historical events into account. Most notably, the dot-com crash in 2000/01, the financial crisis of 2007/2008 and the oil price shock of 2014/15. All of them had a notable impact on the Norwegian economy and as a consequence, on ownership structures as well.

Moreover, there was a change in tax regulation in 2004, which increased personal taxes on dividends and capital gains from 0% to 28% in most cases (Berzins, Bøhren and Stacescu, 2013). As a result, it could be observed that the amount of dividends paid out to the shareholders increased sharply before the tax reform was implemented in 2006 (Thoresen et al., 2011). Nonetheless, the introduced tax reform did not increase taxes on dividends paid out to corporations; this incentivized many owners to switch from direct ownership to indirect ownership by establishing a holding company. In fact, it has been observed that the number of holdings increased by 450% in 2005 (Berzins, Bøhren and Stacescu, 2013). The establishment of holdings also reduced agency conflicts between majority and minority owners, as excess cash available to the management for the potential consumption of private benefits could now be reduced by transferring the money tax-free from the operating firm to the holding. Setting up a holding also has the benefit that owners with low liquidity needs do not have to pay a dividend tax if they do not want to withdraw cash from the holding.

Nevertheless, it is most important to note that the establishment of holding structures also led to some recording errors regarding the ownership structure of firms in the years of 2005 and 2006. In order to avoid analyzing ownership

changes that are in fact non-existent, we set the requirement that an ownership change needs to persist over at least two years. If this is not the case, we consider it to be an ownership recording error, rather than a true ownership change. Based on this we exclude all observations from 2016 and 2017 from our sample, so that these last two years can be used to check whether an ownership change in 2015 is persistent or not. By applying this procedure, we avoid misclassifying 2,326 ownership recording errors as ownership changes in 2005 and 2006. This can be seen in Table 2 and 3. In Table 3 we illustrate the distribution of the number of ownership changes across time before checking for their persistence and in Table 2 after checking for their persistence. In addition, it can be seen in Table 2 that ownership changes were particularly frequent in the years 2005, 2006, 2007, 2012, 2014 and 2015. Disregarding the year 2005 and 2006, in which there may still be some ownership recording errors due to the tax reform, it appears that most ownership changes take place when the economy is in an economic downturn, such as during the global financial crisis of 2007/08, the European debt crisis in 2012, or the oil crisis in 2014/15. By contrast, in years where the economy is stable or in an economic upturn, we observe fewer ownership changes.

Finally, it is important to consider that there has been a change in the industry codes in 2007. For the sake of simplicity, we have used the last available industry codes for all observations of a firm in the past. Therefore, we noted that there may be some misclassifications if the firm has operated in a different industry prior to 2007. In more detail, we have grouped the industries according to the first two digits of their industry code. We have also assigned firms that operate in multiple industries to the industry in which they generate the highest revenue.

5. Descriptive statistics

Before testing the hypotheses, we want to gain an overview of the filtered data sample that we will use to perform our research. In the following, we will illustrate the results of a simplistic comparison between the average firm characteristics of family firms that always remain family firms (ownership stake of the largest family does not drop below the 50% ownership threshold), and family firms that become non-family firms (ownership stake of the largest family does drop below the 50% ownership threshold). In both cases, the observations are from the time period between 2001 and 2015, and we only take into account ownership changes that persist over at least two years. For further clarification, note that we have removed all observations of firms that become a non-family firm, except the year of the ownership change and the two years before and after the ownership change. By doing so we have a clear treatment group, consisting of firms that become non-family, and a clear control group, consisting of firms that always remain a family firm within our time period. Lastly, the items operating revenue, net income, dividends, equity, debt, paid-in capital as well as fixed and current assets have been winsorized at the 1% and 99% tails in order to remove outliers.

As it can be seen in Table 4, our control group includes 16,954 firms that always remain a family firm within our time period from 2001 to 2015, while our treatment group consists of 1,545 firms, which become a non-family firm at least one point in time. In terms of firm characteristics of family firms and firms that become non-family firms, it can be observed in Table 4 that almost all firm characteristics of firms that become non-family owned are larger on average than those of the firms that always remain a family firm. This means that firms that become non-family owned are larger, employ more employees, and generate more revenue and net income on average. In terms of firm profitability, it can be observed that firms, which become non-family owned, are slightly less profitable on average relative to firms, which always remain a family firm. More specifically, the average ROA and ROS of family firms is on average 8.54% and 4.42%, while it is 7.71% and 4.31% on average for firms that become non-family

owned, respectively. Regarding the debt ratio, it can be observed that firms that become non-family owned are also slightly more leveraged on average. Additionally, firms that become non-family owned are 15.55 years old on average, while family firms are 14.18 years old on average.

Regardless, it is worth pointing out that in this specific case, we may be comparing apples and oranges. There may be some heterogeneity in the data, which implies that, for instance, ownership-changing firms are more likely to operate in a specific industry, in which firms on average tend to be larger, more leveraged etc. Moreover, the values for firms that always remain a family firm are more averaged down due to the larger amount of firm observations. To alleviate this problem, we account for firm size in the following table by removing family firms that are significantly smaller than non-family firms. More explicitly, we have removed all observations, where total operating revenue is below NOK 8,300,000. By applying this matching method, we are in a better position to compare key figures, such as firm profitability. The results of this matching can be seen in Table5.

After matching both groups by size, we can observe in Table 5 that firms, which become non-family owned, remain less profitable in terms of ROA, but become slightly more profitable in terms of ROS than firms that always remain a family firm. All other item values of firms that become non-family owned remain slightly larger on average relative to firms that always remain a family firm. The only exception can be found in terms of firm age.

In terms of the average ownership structure, we observe the results we expected to see given the definition of both groups. More specifically, the average stake of the largest family (84.98%) is significantly higher for family firms compared to firms that become non-family owned (46.64%). In total, the Herfindahl index is also significantly higher for family firms.

Overall, we view this comparison to be helpful, given that it provides us with an overview of the data, even though any interpretation of the results should be taken with a pinch of salt. Therefore, in order to come up with a more meaningful

interpretation of the data, we will adjust the firm values by year and industry in the univariate tests in the next section.

6. Empirical findings of univariate tests

To begin with, it can be seen in Tables 6, 7 and 8, that the largest family has persistently crossed the majority voting threshold 1,231 times, the supermajority threshold 1,622 times and in 465 cases the largest family has persistently crossed both thresholds in one year. Thus, we observe in total 2,388 persistent ownership changes. This reasonable amount of ownership changes allows us to perform statistically valid univariate tests.

6.1 Test of Hypothesis 1

As it can be seen in Tables 7 and 8, the average ROA and ROS in excess of the average yearly industry ROA and ROS is negative or approximately zero in the year in which the family reduces its ownership stake below two-thirds or both voting thresholds. Essentially, we observe a relatively large underperformance in terms of ROA and ROS in the year in which the family reduces its stake below both voting thresholds. More specifically, in terms of ROA and ROS the average small and medium-sized firm, which was previously controlled by a family with more than two-thirds of the votes, underperforms relative to the yearly industry return by 0.60% and 0.73%, respectively. Note that the average yearly industry return has been computed based on the whole sample, which includes firms that always remain a family firm, and family firms that become non-family owned. Regarding the majority voting threshold, the findings are mixed, given that we observe an outperformance by 0.24% in terms of ROA and an underperformance by 0.31% in terms of ROS in the year of the ownership change (see Table 6).

Next on we look at the change in operating revenue and net income in the year of the ownership change: If the family decides to reduce their ownership stake below one of or both of the thresholds, we can observe a large excess increase in operating revenue and net income in the year of the ownership change. The

excess return in operating revenue is highest in the case where the family crosses the majority threshold (6.88%), and lowest in the case where the supermajority threshold is crossed (3.90%). In terms of net income, we can observe that the excess return in net income is also the highest in the case where the family crosses the majority threshold (8.46%) and lowest in the case where the family crosses the supermajority threshold (5.81%). In this regard, it is also important to point out that the excess return in operating revenue and net income is significantly higher compared to the year before the ownership change. More specifically, the excess in operating revenue is higher by 3.13% if the majority threshold is crossed, 2.45% higher if the supermajority threshold is crossed, and 2.01% higher if both thresholds are crossed relative to the year before the ownership change. The excess in net income is higher by 7.16% if the majority threshold is crossed, 2.41% higher if the supermajority threshold is crossed and 1.06% higher if both thresholds are crossed compared to the period before the ownership change.

Overall, the findings indicate that the ownership changes seem to have an important impact on the operating revenue and net income performance measures. The reason for the spike in net income cannot, however, be explained by the layoff of employees in the year of the ownership change. According to the results of the univariate tests, in all cases the number of employees increases by between 2.46% and 3.63% on average.

Considering the mostly negative excess return of ROA and ROS, as well as the large positive excess return in operating revenue and net income, it could be argued that firms with a dispersed ownership structure are growing more strongly in terms of operating revenue and net income, however, at the expense of firm profitability, as measured by ROA or ROS, in the year of the ownership change. Nevertheless, if we take into account that the negative excess ROA and ROS are rather small compared to the large positive excess returns in operating revenue and net income, we fail to reject H1.

6.2 Test of Hypothesis 2

To start with, we can observe in Figures 1, 2 and 3, that the average ROS in excess of the average yearly industry ROS remains negative in the two years after the ownership change, although at more negative levels compared to the two years before the ownership change. This holds true if the family crosses the majority threshold, supermajority threshold, or both. Nonetheless, it is most significant when the family reduces its stake below both voting thresholds. The pattern of ROA is similar in the case when both voting thresholds are crossed. However, if we look at the case in which the family loses its supermajority, we can observe that the excess return in ROA turns slightly positive in the two years after the ownership change. In terms of the majority threshold, we can notice that the excess return in ROA does remain on a similar level in the two years after the ownership change as in the two years before.

In terms of net income, it can be observed that the excess return becomes significantly smaller on average relative to the year of the ownership change and the year before the ownership change. A similar trend can be observed in terms of operating revenue. Thus, it appears that the ownership change has, on average, a negative impact on net income and operating revenue, even though the average firm continues to outperform the yearly industry return.

All in all, these results indicate that firm performance tends to decrease in the two years after the ownership change, compared to the year of the ownership change and the year before the ownership change. This holds true in particular if the family reduces its stake below both voting thresholds. Thus, based on the univariate tests we fail to reject H2.

6.3 Test of Hypothesis 3

Based on the negative average ROA and ROS in excess of the average yearly industry ROA and ROS in the two years before the ownership change, we see some evidence that negative firm performance increases the likelihood of an ownership change below the supermajority level or both thresholds. However,

this does not apply to the case in which the family reduces its stake below the majority threshold. In this case we can observe a slightly positive average ROA and ROS in excess of the average yearly industry ROA and ROS in the two years before the ownership change.

Furthermore, we can detect that firms with an unstable ownership structure outperformed the yearly industry return in terms of operating revenue and net income in the year before the ownership change. Therefore, the hypothesis cannot be generally rejected. The answer depends on how firm performance is measured.

Last but not least, please note that we have not looked at ROE to test all three hypotheses. The reason for this is that the distribution of ROE is heavily skewed to the right, which means that any valid inference is extremely difficult. Furthermore, we consider winsorizing ROE at extremely high levels to not be appropriate.

6.4 Further insights from univariate tests

In addition to the above, it can be seen that firms with an unstable ownership structure, on average, exhibit a large increase in debt in excess of the average yearly industry change in debt in the year of the ownership change. More explicitly, the increase has a magnitude between 6.42%, as in the case where the supermajority threshold is crossed, and 9.23%, as in the case where the majority threshold is crossed. This increase in leverage is in line with theory, which predicts that firms with a more dispersed ownership structure increase leverage to mitigate agency costs related to the free cash flow problem. In other words, increasing leverage extracts capital from the hands of the manager, which cannot be overinvested as a result. This also limits the need for monitoring, which may be too costly for small blockholders. Given that no percental change in dividends can be computed if the firm has not paid out any dividends before, we can only look at the change in leverage. However, we expect that firms with a more dispersed ownership structure would also pay out more dividends in order to avoid investments into negative NPV projects. In fact, Berzins, Bøhren and

Stacescu (2011) have shown that a higher amount of free cash flow is paid out to investors when there is a higher potential of conflicts between shareholders.

7. Empirical findings of fixed-effects regressions

7.1 Test of Hypothesis 1

As can be observed from Table 9, operating revenue is positively affected if the largest family decides to reduce its ownership stake below 50%. More explicitly, the "under_50" dummy, which equals 1 in the year in which the family reduces its ownership stake below 50% and 0 otherwise, is statistically significant at the 15% level. In terms of ROA, ROS and net income it can be observed that firm performance tends to be negatively affected in the year of the ownership change if the family reduces its stake below the majority voting threshold, supermajority voting threshold, or both. However, no statistically significant relationship at the 20% level can be found in any of these cases.

Based on these empirical findings, we would reject H1, except in the case where the family loses its majority and firm performance is measured by operating revenue.

7.2 Test of Hypothesis 2

In order to test H2 we have used equation 2, which essentially regresses the non-lagged explanatory variables on different performance measures that are lagged by one and two years. The results of the fixed effects regressions in Table 10 show that firm performance, measured by ROA and net income, is negatively affected in the year after the ownership change if the family reduces its ownership stake below both voting thresholds. More specifically, the "under_50" dummy, which equals 1 in the year in which the family reduces its ownership stake below 50% and 0 otherwise, is statistically significant at the 17% level in terms of explaining the variation in ROA in the year after the ownership change and at the 15% level in terms of net income in the year after the ownership change. However, we observe the exact opposite effect two years

after the ownership change. The dummy which signals the crossing of both voting thresholds in the year of the ownership change positively affects net income two years after the ownership change. The dummy is statistically significant at the 12% level.

Similarly, the same pattern can be observed if firm performance is measured by ROS, although no ownership change is statistically significant at the 20% level.

Finally, we can neither observe any statistical relationship between the family's loss of majority, supermajority, or both in the case of operating revenue. Nevertheless, it should be pointed out that adjusted R2 is lower in all fixed-effects regression that aim to explain the variation in the firm performance two years after the ownership change.

Overall, it is striking that the simultaneous loss of the majority and supermajority appears to have a particularly strong impact on firm performance, as measured by ROA and net income. The family's decision to reduce their stake below 50% or two-thirds has no statistically significant impact on firm performance in the two years after the ownership change. Therefore, we fail to reject H2 if firm performance is measured by ROA and net income in the year after the ownership change and reject H2 if firm performance is measured by ROA and net income in the second year after the ownership change.

8. Empirical findings of Probit, Logit and Hazard model

8.1 Test of Hypothesis 3

The results of the logit, probit and hazard model, as displayed in Table 11, are mixed. To start with, all models predict that a family is more likely to reduce their ownership stake below the majority, supermajority voting threshold, or both, if the firm has a higher ROA. The non-lagged performance measure ROA is statistically significant at the 1% level in explaining the likelihood of a family's decision to reduce their ownership stake below 50% or 66.67% in all three models. In addition, we can observe in all three models that the coefficient

of ROA is positive and statistically significant at least at the 7% level in explaining the likelihood that both thresholds are crossed at once in. The same interpretation holds true for the operating revenue performance measure, which is statistically significant at the 0.1% level in all three models. Furthermore, in comparison to the performance measure ROA, we can observe relatively high coefficients or hazard ratios.

Meanwhile we can observe that a family is more likely to reduce their ownership stake below the majority voting threshold, supermajority voting threshold, or both, if the firm has a lower net income. The net income independent variable is highly significant at the 1% level in explaining the three possible ownership changes in all three models. Finally, we observe that ROS is not statistically significant at the 20% level in explaining the likelihood of any ownership change.

Taking everything into account, we can confidently state that firm performance is related to ownership changes. Nevertheless, whether we reject or fail to reject H3 depends on how firm performance is measured. We reject H3 if firm performance is measured by ROA and operating revenue, while we fail to reject H3 if firm performance is measured by net income.

9. Robustness test

In this section, we present two robustness tests that shall further support our empirical findings. First, we modify equation (1) by constructing the dummy variables, which signal the crossing of one or both of the thresholds, differently. More specifically, the dummy variables will take on the value of 1 not only in the year of the ownership change, but also in the two subsequent years. To be able to differentiate between the two dummy variable definitions, we will label the latter one as the "under_X_after" dummy. By constructing the dummies in this way, we would attribute any short-term effect on the firm's performance to the change in ownership. As a result, the ownership change has more time to unfold its effect on firm performance. Moreover, as done before, we remove all

observations of a firm in which one or both ownership thresholds are crossed except the two years before and after the ownership change as well as the year of the ownership change in order to guarantee that we have a clear control and treatment group.

Secondly, we modify equation (1) by replacing the dummy variables with the variable accounting for the largest ultimate family stake. By doing so, we want to test whether the stake of the largest family has a statistically significant impact on firm performance.

This test is performed by applying the following model:

$$(4)\ Firm\ performance\ (i,t) = alpha + beta(1) * Operating\ Revenue(i,t) + beta(2) * Fixed\ Assets(i,t) + beta(3) * Current\ Assets(i,t) + beta(4) * Debt\ Ratio(i,t) + beta(5) * Age(i,t) + beta(6) * Dividends(i,t) + beta(7) * Employees(i,t) + beta(8) * Largest\_Family\_Stake + beta(n) * year\_Dummies(i,t)$$

Similar to equation (1), we will again use ROA, ROS, operating revenue and net income as the dependent variable.

9.1 Results of robustness test 1

If we construct the dummy variables, as explained above, and include them in equation (1), we get the following results: First, we observe that the crossing of any voting threshold has a positive impact on operating revenue. This can be seen in Table 12. While the loss of majority and both voting thresholds are statistically significant at the 5% level in explaining the variation in operating revenue, the loss of supermajority is statistically significant at the 15% level. Second, we observe that net income tends to be negatively affected if the majority or both voting thresholds are crossed. Both dummies are statistically significant at the 15% level. Third, we can find no statistically significant relation between any of the three ownership changes and ROS. Finally, we find that the family's loss of supermajority has a positive impact on the firm's ROA. More explicitly, the dummy is statistically significant at the 5% level.

9.2 Results of robustness test 2

The findings of this robustness test (see Table 13) show that the stake of the family is important in explaining the variation in firm performance. More specifically, the regression indicates a positive and statistically significant relationship between firm performance, in terms of ROA and net income, and the stake of the largest family. Therefore, if the largest family reduces its stake in the firm, ROA and net income will be decreased. Nonetheless, it needs to be pointed out that the regression coefficients of all performance measures are rather small and, in some cases, such as operating revenue, approximately 0.

Our finding that the largest family stake is positively correlated with firm performance is in line with the results of Villalonga and Amit (2006), as well as Gugler and Weigand (2003), who found that the stake of the largest family affects firm performance positively and exogenously.

10. Discussion of results

10.1 Hypothesis 1

To begin with, both the results of the univariate tests and the fixed-effects regression show that firm performance measured by operating revenue is increased, especially if the family reduces its ownership stake below 50%. Thus, we fail to reject that firm performance measured by operating revenue is increased in the year where the family loses its majority. However, the findings of the fixed-effects regressions cannot confirm other results of the univariate tests, as for example that ROA and ROS is reduced in the year of the ownership if the family loses majority, supermajority, or both. Lastly, we find contradictory results regarding the impact of an ownership change on net income. Thus, no other statements regarding H1 are supported by both analysis methods.

10.2 Hypothesis 2

Regarding H2, we can observe that the results of the univariate tests and fixed-effects regressions show that net income is negatively affected in the year after the ownership change if the family reduces its stake in the firm below both thresholds. The same holds true for the case of ROA. Therefore, we conclude that we fail to reject H2 in the case where the family reduces its stake in the firm below both thresholds.

In terms of operating revenue, it needs to be pointed out that an ownership change is not statistically significant in explaining the variation in operating revenue in the two years after the ownership change, however, if we redefine our ownership dummy, as in robustness test 1, we find strong evidence that the crossing of any ownership threshold has a positive impact on operating revenue. Therefore, if performance is measured by operating revenue, we reject H2. Finally, we find no evidence that there is a link between ROS and the family's loss of power in the two years after the ownership change.

10.3 Hypothesis 3

Last but not least, we can conclude that both the results of the univariate tests as well as those of the probit, logit and hazard regressions show that a family is more likely to lose their majority if the firm has a higher ROA. Both methods of analysis show the same picture in terms of operating revenue. However, in this case it holds true for all three ownership changes. In terms of ROS, neither the univariate tests, nor the logit, probit and hazard model can identify a statistically significant relation between ROS and the likelihood of an ownership change. Finally, we find contradictory results in both analysis methods regarding net income. On the one hand, univariate tests show that an ownership change is more likely if the firm outperforms the industry in a given year before the ownership change, on the other hand, the logit, probit and hazard models show that any ownership change is more likely if net income is lower. Nevertheless, we would rather place more weight on the results of the probit, logit and in particular the hazard model than on the univariate tests. Thus, our final verdict is that we reject

H3 if firm performance is measured by ROA, ROS and operating revenue and fail to reject H3 if firm performance is measured by net income.

11. Limitations of study

In order to draw valid and insightful conclusions, it is vital to admit certain limitations of the data set and the research methods used in this thesis. First of all, we record fewer ownership changes than the number that actually happened in the data sample. This is because we do not observe whether the owner or family ID has changed. In other words, if one family reduces its stake to zero by transferring all their shares to another owner, we are not able to observe that this ownership change has happened as the largest ultimate owner will still have the same level of ownership. Similarly, we do not observe any ownership changes that have happened before 2000. Thus, we may have wrongly classified a firm where the ownership structure has changed shortly before 2000 as "stable". However, we believe that these effects are rather small and can thus be neglected. Furthermore, we do not know with full certainty whether the dilution of the family's stake below one of the two thresholds necessarily comes along with the loss of the voting power. As a consequence of super-voting shares or pyramiding, the family can hold less than 50% of the outstanding shares, but still exercise majority or supermajority control over the firm.

Second, and as outlined previously, our research method might be affected by endogeneity. The problem of endogeneity may arise, for example, from reverse causality, given that firm performance affects the ownership structure and vice versa. A possible method to alleviate this problem of endogeneity would be to introduce additional instruments into the regression. Bach (2016), for instance, uses an instrument based on family composition. The reasoning behind this instrument is that family firms tend to exist for a longer time period if the gender of the founder's firstborn child is male. If this is the case, then anticipated succession may impact current and future firm performance. Furthermore, the findings of Bach (2016) indicate that if the founder's first child is male, the firm is 15% less likely to be acquired by a different investor. Therefore, it appears

that this variable also plays an important role in predicting an ownership change. Overall, the validity of the instrument is confirmed by the fact that the gender of the founder's firstborn child is randomly decided by nature.

Third, our research results are likely biased to some extent due to omitted variables. For instance, we do not know whether a family member is also managing the family firm, or whether the family firm is founder or heir-managed. As outlined in section 2.1, these variables have a significant impact on firm performance and should thus be included in the regressions. Furthermore, it should be noted that we cannot observe the reason why the family reduces its stake in a firm. There are, however, various possibilities. For example, the family may lack available or competent successors, may have high personal liquidity needs, or decide to issue equity to finance growth opportunities.

Fourth, it should be taken into account that the effects of the ownership change may unfold at different points in time. On the one hand there are changes that slowly creep in, such as a shift in corporate culture if the firm transitions from a family firm to a non-family firm. On the other hand, it may well be anticipated by stakeholders that the family will sell or reduce their stake in the firm due to a lack of successors. This anticipation may, for example, reduce the job security and motivation of employees and thus negatively affect firm performance before the ownership change even takes place. To sum up, such lagged effects introduce further noise into the data and make inferences more difficult.

Finally, it needs to be stated that this research is sensitive to the definitions of family firms and SMEs, to different measurements of firm performance as well as to the winsorization of the data. Considering that we have filtered the raw data sample provided by CCGR based on our definitions of family firms and SMEs, we may have induced a selection bias to some extent.

12. Conclusion

To sum up, our findings indicate that firm performance is to a greater extent affected if the family reduces its ownership stake below the majority or both

voting thresholds. The loss of supermajority appears to be of less importance. More specifically, our most robust findings include the following: First, operating revenue is positively affected if the family loses power, in particular if the family loses its majority. Second, net income and ROA is negatively affected in the year after the ownership change if the family reduces its ownership stake below both thresholds. From our perspective it appears that the family's decision to reduce their ownership stake below one or both voting thresholds tends to come along with higher operating revenue, however, at the expense of firm profitability. Therefore, a plausible interpretation would be that an ownership change is more likely to happen if there are growth opportunities that can be unlocked. This interpretation fits also the common perception of family firms, namely that family firms focus more strongly on firm survival. Therefore, we would expect higher revenue growth if the family firm becomes non-family owned. Apart from the results outlined above, we cannot find any other robust relations between firm performance measures and ownership changes. This may be due to the reason that an ownership change affects firm performance in various ways, which ultimately may cancel each other out.

Third, we find evidence that the family is more likely to reduce their ownership stake below one or both voting thresholds, if the firm has a higher ROA and operating revenue. This contradicts the argument that ownership changes are mainly driven by weak firm performance.

Nevertheless, due to the numerous factors that influence firm performance, we need to acknowledge that ultimately, we do not know the driving factors behind our results. While it could be assumed that firm performance is lowered as a result of agency conflicts, we cannot state with full certainty whether this is truly the case. Neither can we state which types of agency conflicts negatively affect firm performance after an ownership change. To find out more about how agency conflicts affect firm performance it would be insightful to compare our findings to the effect of ownership changes on firm performance in countries with weaker legal rights.

Further research could be done as well by introducing additional control or instrumental variables to strengthen and substantiate the validity of our results. In addition, the hypotheses could be tested on public family firms in the Nordic countries. In this case stock returns could be used as a performance measure. Given that stock returns are more forward-looking than accounting values, it would be particularly interesting to see how market participants react to significant ownership changes. Last but not least, we are curious to know how firm performance is affected in the case where an ownership change comes along with an increase in paid-in capital and in the case where it does not.

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Appendix:

List of Figures

Figure 1:

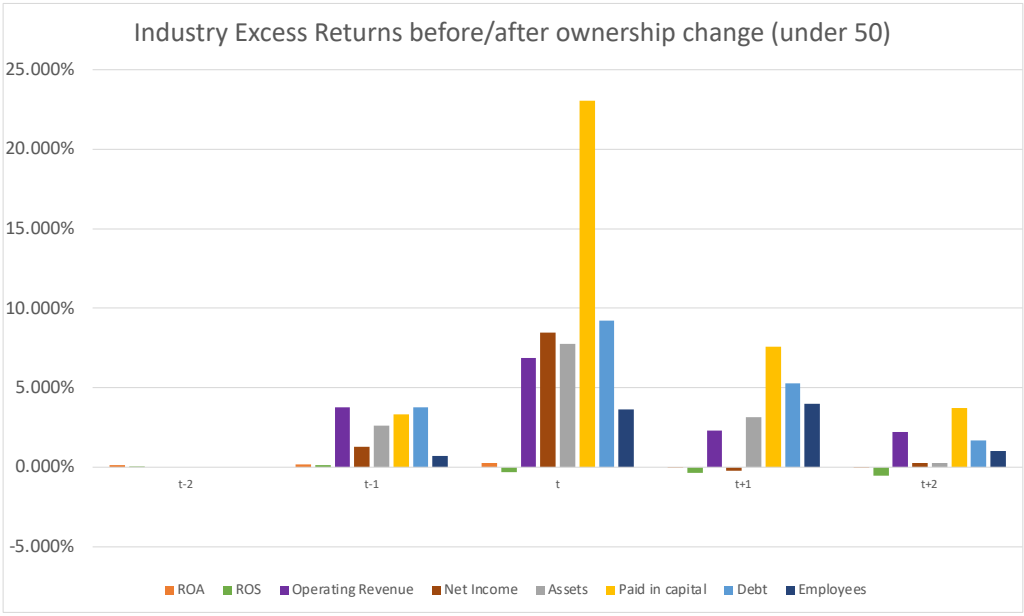


Figure 2:

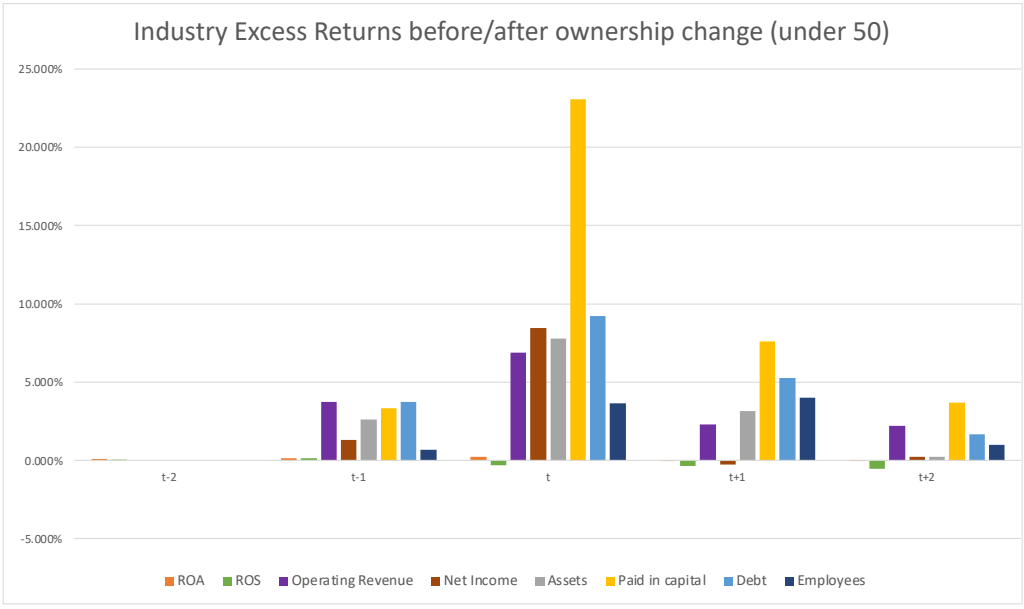
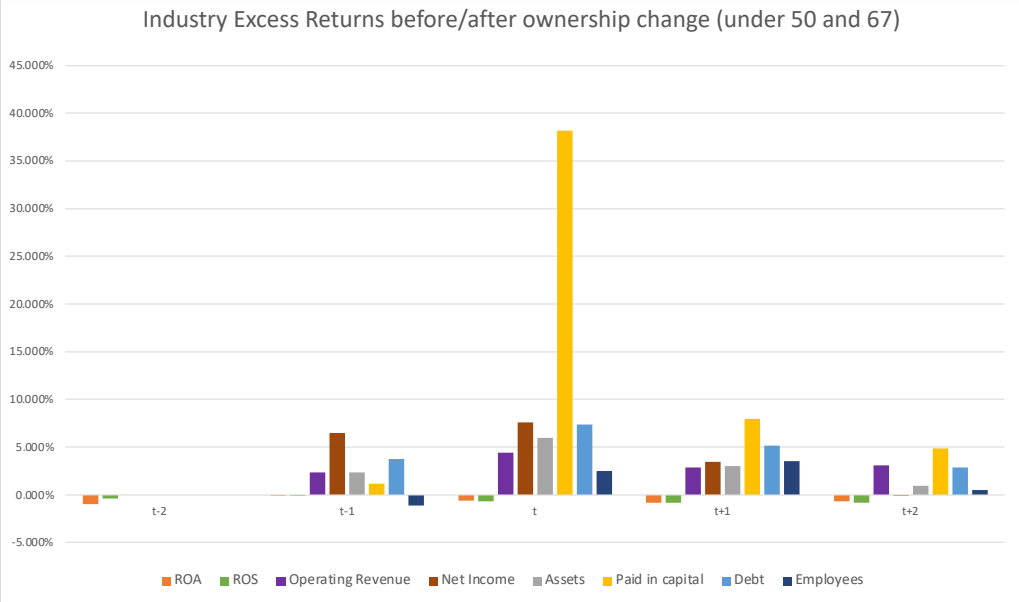


Figure 3:



List of Tables:

Table 1: Hausman Test applied to H1 and H2

	H1: Prob > chi2	**H2: Prob > chi2**
Hausman test	< 0.0001	< 0.0001

Table 2: Ownership changes after checking for ownership persistence

Year	Under 50%	Under 66.67%	Under both
2002	61	91	29
2003	81	118	27
2004	77	111	27
2005	167	224	68
2006	104	120	36
2007	130	156	45
2008	95	141	37
2009	62	82	19

2010	111	120	40
2011	78	114	30
2012	212	308	91
2013	114	128	45
2014	154	173	55
2015	155	176	51
Total Frequency	1,601	2.062	600

Table 3: Ownership changes before checking for ownership persistence

Year	Under 50%	Under 66.67%	Under both
2001	91	94	29
2002	95	128	44
2003	121	154	45
2004	133	153	59
2005	1,090	898	758
2006	1,052	1,199	644
2007	245	230	103
2008	169	202	70
2009	115	143	51
2010	177	175	74
2011	142	177	62
2012	336	444	165
2013	217	226	102
2014	228	240	91
2015	267	272	114
Total Frequency	4,478	4,735	2,411

Table 4: Comparison between family firms and family firms that become non-family owned before matching by firm size

Average Item Size	Always Family Firm	Become Non-Family
N. Companies	16,954	1,545
N. Observations	160,782	7,476
Operating Revenue	NOK 20,100,000	NOK 33,000,000
Net Income	NOK 887,678	NOK 1,422,874
ROA	8.54%	7.71%
ROS	4.42%	4.31%
Dividends	NOK 425,654	NOK 784,687
Fixed Assets	NOK 3,345,989	NOK 5,956,547
Current Assets	NOK 7,053,144	NOK 12,500,000
Paid-in Capital	NOK 795,534	NOK 1,651,295
Equity	NOK 3,285,943	NOK 5,241,665
Debt	NOK 6,322,360	NOK 10,900,000
Debt Ratio (Debt/Total Assets)	65.80%	67.53%
Age	14.18	15.55
Number of Employees	11.95	18.18
Largest family sum ultimate ownership	86.05%	46.64%
Ultimate ownership held by families	95.09%	76.05%
% Equity held by ultimate owner with rank 1	73.00%	46.83%
% Equity held by ultimate owner with rank 2	19.30%	24.48%
% Equity held by ultimate	4.53%	11.76%

owner with rank 3		
Numbers of owners with more than 10% share	1.80	2.70
Aggregated fraction held by institutional owners	0.33%	1.24%
Aggregated fraction held by international owners	0.10%	0.87%
Herfindahl Index	0.69	0.39

Table 5: Comparison between family firms and family firms that become non-family owned after matching by firm size

Average Item Size After Matching	**Always Family Firm**	**Become Non-Family**
N. Companies	10,791	1,545
N. Observations	87,746	7,476
Operating Revenue	NOK 33,000,000	NOK 33,000,000
Net Income	NOK 1,383,032	NOK 1,422,874
ROA	8.46%	7.71%
ROS	4.19%	4.31%
Dividends	NOK 641,601	NOK 784,687
Fixed Assets	NOK 5,142,458	NOK 5,956,547
Current Assets	NOK 11,200,000	NOK 12,500,000
Paid-in Capital	NOK 1,208,315	NOK 1,651,295
Equity	NOK 4,991,774	NOK 5,241,665
Debt	NOK 9,988,567	NOK 10,900,000
Debt Ratio (Debt/Total Assets)	66.68%	67.53%
Age	16.02	15.55
Number of Employees	17.51	18.18
Largest family sum ultimate	84.98%	46.64%

ownership		
Ultimate ownership held by families	94.17%	76.05%
% Equity held by ultimate owner with rank 1	70.92%	46.83%
% Equity held by ultimate owner with rank 2	19.57%	24.48%
% Equity held by ultimate owner with rank 3	5.35%	11.76%
Numbers of owners with more than 10% share	1.89	2.70
Aggregated fraction held by institutional owners	0.44%	1.24%
Aggregated fraction held by international owners	0.13%	0.87%
Herfindahl Index	0.66	0.39

Table 6: Univariate test – Loss of Majority

	Yearly Industry Excess Returns before/after loss of majority									
	Number of Observations: 1,231									
	t-2		t-1		t		t+1		t+2	
Item	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
ROA	0.117%	0.356%	0.159%	0.366%	0.240%	0.379%	-0.026%	0.370%	-0.047%	0.348%
ROS	0.057%	0.244%	0.120%	0.239%	-0.307%	0.232%	-0.367%	0.234%	-0.547%	0.235%
Operating Revenue			3.743%	1.026%	6.876%	1.145%	2.283%	0.932%	2.203%	0.868%
Net Income			1.300%	2.008%	8.460%	2.120%	-0.240%	2.053%	0.242%	2.048%
Assets			2.595%	1.258%	7.768%	1.347%	3.160%	1.050%	0.254%	0.921%
Paid-in Capital			3.320%	2.580%	23.038%	3.520%	7.578%	2.450%	3.700%	2.047%
Debt			3.745%	1.663%	9.229%	1.778%	5.275%	1.521%	1.691%	1.359%
Employees			0.703%	0.915%	3.628%	1.062%	4.001%	1.112%	1.001%	1.026%

Table 7: Univariate test – Loss of Supermajority

	Yearly Industry Excess Returns before/after loss of supermajority									
	Number of Observations: 1,622									
	t-2		t-1		t		t+1		t+2	
Item	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
ROA	-0.731%	0.299%	-0.529%	0.305%	-0.054%	0.326%	0.159%	0.315%	0.150%	0.320%
ROS	-0.265%	0.199%	-0.136%	0.198%	-0.317%	0.198%	-0.317%	0.191%	-0.349%	0.192%
Operating Revenue			1.447%	0.780%	3.899%	0.901%	2.699%	0.813%	1.587%	0.718%
Net Income			3.398%	1.783%	5.808%	1.834%	0.509%	1.803%	0.355%	1.742%
Assets			0.802%	0.962%	5.393%	1.123%	2.438%	0.930%	1.578%	0.823%
Paid-in Capital			2.562%	2.082%	21.742%	3.018%	5.739%	2.031%	3.275%	1.715%
Debt			2.986%	1.347%	6.416%	1.483%	2.356%	1.221%	3.124%	1.186%
Employees			-0.747%	0.768%	2.656%	0.877%	1.803%	0.865%	0.472%	0.874%

Table 8: Univariate test – Loss of both voting thresholds

	Yearly Industry Excess Returns before/after loss of both voting thresholds									
	Number of Observations: 465									
	t-2		t-1		t		t+1		t+2	
Item	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
ROA	-0.985%	0.560%	-0.120%	0.600%	-0.600%	0.640%	-0.823%	0.630%	-0.730%	0.636%
ROS	-0.375%	0.379%	-0.123%	0.372%	-0.731%	0.359%	-0.817%	0.372%	-0.846%	0.370%
Operating Revenue			2.371%	1.516%	4.377%	1.798%	2.825%	1.610%	3.041%	1.478%
Net Income			6.490%	3.307%	7.547%	3.513%	3.439%	3.431%	-0.025%	3.331%
Assets			2.323%	2.020%	5.943%	2.239%	3.031%	1.824%	0.938%	1.541%
Paid-in Capital			1.148%	3.773%	38.208%	7.007%	7.921%	3.976%	4.843%	3.532%
Debt			3.719%	2.590%	7.374%	2.946%	5.166%	2.650%	2.824%	2.315%
Employees			-1.163%	1.384%	2.462%	1.629%	3.503%	1.690%	0.501%	1.817%

Table 9: Fixed-effect regression results of H1

Dependent Variable		ROA(i,t)			ROS(i,t)			log_revenue(i,t)			log_NI(i,t)		
Regression Type		FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
N OBS		159,184	156,129	159,184	159,184	156,129	159,184	159,184	156,129	159,184	159,184	156,129	159,184
R_2		0.0444	0.0527	0.0444	0.0010	0.0243	0.0010	0.5410	0.5439	0.5409	0.1300	0.1289	0.1299
log_(1+firm_age)	Coeff	-2.1602	-1.9874	-2.1603	9.7303	-0.4016	9.7264	0.1168	0.1226	0.1168	-1.0902	-1.0496	-1.0905
	P-value	< 0.001	< 0.001	< 0.001	0.327	< 0.001	0.328	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_D_R	Coeff	-3.5657	-3.3103	-3.5658	-33.6032	-2.5588	-33.6043	0.1824	0.1765	0.1824	-4.0617	-4.1588	-4.0618
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_revenue	Coeff	8.0426	7.3216	8.0427	8.5922	3.2656	8.5911				5.5401	5.5514	5.5400
	P-value	< 0.001	< 0.001	< 0.001	0.216	< 0.001	0.216				< 0.001	< 0.001	< 0.001
log_employees	Coeff	-3.6782	-3.5580	-3.6780	-13.4700	-2.0088	-13.4696	0.5095	0.5067	0.5095	-1.9101	-1.9442	-1.9100
	P-value	< 0.001	< 0.001	< 0.001	0.047	< 0.001	0.047	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_FA	Coeff	-1.3339	-1.2725	-1.3339	-7.9905	-0.4647	-7.9905	0.5095	0.0067	0.0067	-0.7080	-0.7355	-0.7080
	P-value	< 0.001	< 0.001	< 0.001	0.025	< 0.001	0.025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_CA	Coeff	3.8565	3.7019	3.8564	-14.4605	1.1826	-14.4630	0.1536	0.1540	0.1536	1.0083	0.9908	1.0081
	P-value	< 0.001	< 0.001	< 0.001	0.170	< 0.001	0.170	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_dividend	Coeff	0.4830	0.4707	0.4830	0.7195	0.2376	0.7197	0.0056	0.0055	0.0056	0.3623	0.3635	0.3623
	P-value	< 0.001	< 0.001	< 0.001	0.085	< 0.001	0.085	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
under50	Coeff	0.1115			-1.4640			0.0093			-0.0895		
	P-value	< 0.001			0.947			0.148			0.680		
under67	Coeff		0.1925			-0.0568			0.0073			-0.1181	
	P-value		0.358			0.641			0.570			0.537	
under50_67	Coeff			0.2361			0.3766			0.0027			-0.0930
	P-value			0.582			0.992			0.842			0.792
Year 2001	Coeff	1.8559	1.6543	1.8557	1.8080	0.4543	1.8138	-0.2709	-0.2649	-0.2710	1.8502	1.9297	1.8602
	P-Value	< 0.001	< 0.001	< 0.001	0.914	< 0.001	0.914	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2002	Coeff	2.5592	2.3465	2.5589	-20.1689	0.6772	-20.1728	-0.2638	-0.2571	-0.2638	2.1106	2.2074	2.1162
	P-Value	< 0.001	< 0.001	< 0.001	0.210	< 0.001	0.210	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2003	Coeff	2.5277	2.2535	2.5278	0.8720	0.6621	0.8727	-0.2621	-0.2556	-0.2621	1.8984	1.9806	1.8940
	P-Value	< 0.001	< 0.001	< 0.001	0.955	< 0.001	0.955	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2004	Coeff	3.1703	2.9304	3.1702	2.0105	1.1520	2.0154	-0.2188	-0.2119	-0.2621	2.3328	2.4278	2.3534
	P-Value	< 0.001	< 0.001	< 0.001	0.893	< 0.001	0.893	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2005	Coeff	6.3291	5.9923	6.3289	2.5659	2.6197	2.5584	-0.1084	-0.1039	-0.1084	4.5879	4.6272	4.6038
	P-Value	< 0.001	< 0.001	< 0.001	0.855	< 0.001	0.855	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2006	Coeff	4.1554	3.9180	4.1553	-0.3557	1.9288	2.5584	-0.0529	-0.0487	-0.0529	3.3909	3.4124	3.2915
	P-Value	< 0.001	< 0.001	< 0.001	0.979	< 0.001	0.979	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2007	Coeff	4.3959	4.1877	4.3959	-2.8327	1.9794	-2.8329	0.0342	0.0396	0.0342	2.7608	2.7709	2.7614
	P-Value	< 0.001	< 0.001	< 0.001	0.824	< 0.001	0.824	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2008	Coeff	2.2573	2.1647	2.2571	-7.9995	0.7041	-7.9964	0.0710	0.0743	0.0709	1.0672	1.1265	1.0427
	P-Value	< 0.001	< 0.001	< 0.001	0.510	< 0.001	0.510	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2009	Coeff	1.0301	0.9661	1.0300	-8.8713	0.3606	-8.8634	0.0298	0.0341	0.0298	0.7385	0.7811	0.7416
	P-Value	< 0.001	< 0.001	< 0.001	0.445	< 0.001	0.446	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2010	Coeff	0.2494	0.2029	0.2494	-9.0842	0.0560	-9.0807	0.0409	0.0446	0.0409	0.3432	0.3480	0.3516
	P-Value	0.060	0.093	0.060	0.414	0.427	0.414	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001
Year 2011	Coeff	0.1227	0.0394	0.1225	-11.7616	-0.0638	-9.0807	0.0799	0.0829	0.0799	0.5833	0.5251	0.5706
	P-Value	0.336	0.734	0.337	0.271	0.345	0.272	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2012	Coeff	-0.0049	-0.0150	-0.0050	-8.3668	-0.0893	-8.3718	0.1043	0.1061	0.1043	0.1404	0.1511	0.1401
	P-Value	0.968	0.893	0.967	0.415	0.169	0.415	< 0.001	< 0.001	< 0.001	0.162	< 0.001	< 0.001
Year 2013	Coeff	-0.6722	-0.6382	-0.6724	-12.5891	-0.2967	-12.5790	0.1159	0.1163	0.1159	-0.3294	-0.3837	-0.3170
	P-Value	< 0.001	< 0.001	< 0.001	0.201	< 0.001	0.202	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001
Year 2014	Coeff	-0.5880	-0.5740	-0.5880	-11.3179	-0.3497	-11.3134	0.1285	0.1291	0.1285	-0.2781	-0.3209	-0.2776
	P-Value	< 0.001	< 0.001	< 0.001	0.232	< 0.001	0.232	< 0.001	< 0.001	< 0.001	0.003	< 0.001	< 0.001
Alpha	Coeff	-114.1863	-102.7915	-114.1871	-162.1790	-46.0297	-162.1731	15.0299	15.0220	15.0299	-79.7909	-80.1748	-79.7907
	P-Value	< 0.001	< 0.001	< 0.001	0.138	< 0.001	0.138	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Table 10: Fixed-effect regression results of H2

Dependent Variable		ROA(i,t+1)			ROA(i,t+2)			ROS(i,t+1)			ROS(i,t+2)			log_revenue(i,t+1)			log_revenue(i,t+2)			log_NI(i,t+1)			log_NI(i,t+2)		
Regression Type		FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
N OBS		141.803	138.638	141.803	125.799	122.487	125.799	141.717	138.638	141.717	125.609	122.487	125.609	141.743	138.638	141.743	125.637	122.487	125.637	141.803	138.697	141.803	125.799	122.646	125.799
R_2		0.291	0.373	0.291	0.005	0.321	0.005	0.003	0.028	0.003	0.002	0.011	0.002	0.520	0.525	0.520	0.479	0.480	0.479	0.062	0.061	0.062	0.004	0.004	0.004
log_(1+firm_age)	Coeff	0.160	0.239	0.161	0.139	0.646	0.140	37.054	0.564	37.055	48.878	0.695	48.905	0.093	0.098	0.093	0.094	0.098	0.095	0.257	0.328	0.257	0.682	0.788	0.681
	P-value	0.279	0.042	0.278	0.610	< 0.001	0.607	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.022	0.004	0.022	< 0.001	< 0.001	< 0.001
log_D_R	Coeff	6.549	5.923	6.549	6.333	5.191	6.334	14.021	1.200	37.055	29.934	1.180	29.946	0.209	0.202	0.209	0.149	0.140	0.149	1.769	1.739	1.770	1.991	1.929	1.988
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.062	< 0.001	0.062	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_revenue	Coeff	0.881	0.590	0.881	-0.509	-0.635	-0.509	-119.780	0.038	-119.782	-157.586	-0.592	-157.568							1.236	1.193	1.236	0.180	0.138	0.179
	P-value	< 0.001	< 0.001	< 0.001	0.008	< 0.001	0.008	< 0.001	0.445	< 0.001	< 0.001	< 0.001	< 0.001							< 0.001	< 0.001	< 0.001	0.039	< 0.001	0.040
log_employees	Coeff	-1.580	-1.413	-1.580	0.483	-0.856	-0.482	50.894	-0.926	50.892	58.318	-0.594	58.331	0.442	0.435	0.442	0.331	0.322	0.149	-0.769	-0.830	-0.769	-0.499	-0.531	-0.505
	P-value	< 0.001	< 0.001	< 0.001	0.012	< 0.001	0.012	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_FA	Coeff	-0.392	-0.321	-0.392	-0.097	0.052	-0.097	-0.555	-0.216	-0.554	0.342	-0.074	0.339	0.010	0.008	0.010	0.012	0.009	0.149	-0.769	-0.230	-0.222	-0.007	-0.011	-0.008
	P-value	< 0.001	< 0.001	< 0.001	0.308	0.227	0.308	0.859	< 0.001	0.859	0.925	0.005	0.925	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.878	< 0.001	< 0.001
log_CA	Coeff	2.636	2.788	2.637	2.192	2.339	2.193	14.747	-0.056	14.750	0.342	0.041	13.835	0.010	0.105	0.110	0.068	0.058	0.068	0.195	0.122	0.195	0.383	0.318	0.377
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.111	0.452	0.111	0.194	0.599	0.194	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.098	0.307	0.069	0.003	< 0.001	< 0.001
log_dividend	Coeff	0.137	0.143	0.137	0.023	0.055	0.023	0.900	0.084	0.900	1.002	0.037	13.835	0.003	0.003	0.110	0.002	0.002	0.002	0.088	0.088	0.088	0.019	0.019	0.019
	P-value	< 0.001	< 0.001	< 0.001	0.030	< 0.001	0.030	0.012	< 0.001	0.012	0.014	< 0.001	0.014	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
under50	Coeff	-0.068			0.152			0.900			8.530			0.010			0.009			0.109			0.080		
	P-value	0.863			0.773			0.920			0.716			0.322			0.507			0.661			0.775		
under67	Coeff		-0.083			0.189			-0.072			0.078			0.009			0.007			0.123			0.187	
	P-value		0.720			0.450			0.601			0.608			0.294			0.505			0.571			0.441	
under50_67	Coeff			-0.679			-0.184			-4.696			1.933			0.007			0.006			-0.543			0.661
	P-value			0.167			0.854			0.881			0.959			0.686			0.759			0.146			0.112
Year 2001	Coeff	0.095	-0.067	0.095	-0.180	0.964	-0.182	-36.481	-0.458	-36.479	-53.010	-0.329	-53.084	-0.368	-0.364	-0.369	-0.334	-0.331	-0.334	0.746	0.815	0.741	0.489	0.593	0.490
	P-Value	0.684	0.734	0.686	0.654	< 0.001	0.351	0.009	< 0.001	0.009	0.001	0.008	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.399	0.001	0.007
Year 2002	Coeff	-0.553	-0.728	-0.552	1.261	2.321	1.261	-36.481	-0.709	-36.479	-53.365	0.480	-53.084	-0.379	-0.373	-0.379	-0.282	-0.279	-0.282	0.194	0.265	0.189	1.446	1.559	0.890
	P-Value	0.014	< 0.001	0.014	0.001	< 0.001	0.001	0.004	< 0.001	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.254	0.126	< 0.001	0.007	< 0.001	< 0.001
Year 2003	Coeff	1.081	0.837	1.080	1.249	2.277	1.248	-42.094	0.187	-42.095	-59.295	0.518	-59.348	-0.324	-0.318	-0.324	-0.247	-0.242	-0.247	1.295	1.370	1.291	1.466	1.523	1.447
	P-Value	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.001	0.001	0.084	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2004	Coeff	0.510	0.285	0.510	0.613	1.655	0.612	-42.094	0.053	-38.487	-53.346	0.676	-53.409	-0.296	-0.290	-0.296	-0.187	-0.181	-0.186	1.113	1.128	1.128	1.569	1.615	1.467
	P-Value	0.014	0.108	0.014	0.083	< 0.001	0.083	0.002	0.612	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2005	Coeff	2.035	1.804	2.036	3.071	4.177	3.071	-24.927	1.067	-24.922	-34.974	1.828	-34.984	-0.175	-0.169	-0.175	-0.066	-0.062	-0.066	2.196	2.213	2.200	2.275	2.339	1.570
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.030	< 0.001	0.030	0.005	< 0.001	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Year 2006	Coeff	3.309	2.987	3.309	0.597	1.650	0.596	-19.298	1.553	-19.296	-34.974	0.341	-34.984	-0.093	-0.088	-0.094	-0.044	-0.040	-0.044	2.277	2.300	2.274	0.292	0.419	2.275
	P-Value	< 0.001	< 0.001	< 0.001	0.053	< 0.001	0.053	0.076	< 0.001	0.076	0.006	0.001	0.006	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.037	0.003	< 0.001
Year 2007	Coeff	0.898	0.675	0.898	-0.569	0.436	-0.569	-14.512	0.145	-14.510	-21.841	0.060	-21.857	-0.063	-0.058	-0.064	-0.098	-0.093	-0.099	0.287	0.379	0.258	-0.121	-0.016	-0.120
	P-Value	< 0.001	< 0.001	< 0.001	0.051	0.005	0.051	0.159	0.106	0.159	0.048	0.529	0.048	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.029	0.005	< 0.001	0.360	0.907	0.036
Year 2008	Coeff	-0.094	-0.300	-0.094	-0.713	0.121	-0.713	-10.872	-0.107	-10.868	-14.901	-0.104	-14.939	-0.109	-0.104	-0.110	-0.084	-0.082	-0.084	-0.022	0.049	-0.023	-0.278	-0.275	-0.278
	P-Value	0.568	0.037	0.567	0.010	0.414	0.010	0.267	0.210	0.267	0.154	0.248	0.153	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.861	0.701	0.853	0.026	0.031	0.026
Year 2009	Coeff	-0.432	-0.683	-0.433	-0.144	0.593	0.145	-17.242	-0.294	-17.241	-23.260	0.022	-23.317	-0.088	-0.083	-0.088	-0.043	-0.040	-0.043	-0.152	-0.136	-0.151	0.355	0.318	0.355
	P-Value	0.006	< 0.001	0.006	0.583	< 0.001	0.580	0.065	< 0.001	0.065	0.019	0.799	0.019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.201	0.263	< 0.001	0.003	0.009	0.003
Year 2010	Coeff	0.003	-0.278	0.002	0.151	0.832	0.150	-17.896	-0.168	-17.896	-17.449	0.224	-17.508	-0.046	-0.042	-0.046	-0.025	-0.023	-0.025	0.482	0.434	0.470	0.209	0.214	0.210
	P-Value	0.984	0.034	0.987	0.545	< 0.001	0.548	0.045	0.031	0.045	0.065	0.007	0.064	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.065	0.063	0.064
Year 2011	Coeff	0.100	-0.170	0.100	-0.284	0.434	-0.285	-10.031	-0.072	-10.029	-16.462	0.195	-17.508	-0.031	-0.028	-0.031	-0.027	-0.024	-0.270	0.224	0.229	0.216	-0.100	-0.175	-0.101
	P-Value	0.484	0.177	0.487	0.236	< 0.001	0.234	0.239	0.333	0.239	0.070	0.014	0.068	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.039	0.038	0.047	0.355	0.112	0.353
Year 2012	Coeff	-0.251	-0.470	0.100	-0.121	0.864	-0.121	-11.312	-0.124	-11.308	-7.586	0.285	-7.567	-0.024	-0.021	-0.024	-0.006	-0.005	-0.006	-0.097	-0.145	-0.089	0.211	0.161	0.210
	P-Value	0.068	< 0.001	0.069	0.598	< 0.001	0.599	0.166	0.084	0.166	0.384	< 0.001	0.385	< 0.001	< 0.001	< 0.001	< 0.001	0.219	0.207	0.351	0.170	0.396	0.043	0.129	0.044
Year 2013	Coeff	0.317	-0.005	0.317				-8.472	0.007	-8.470				0.001	0.003	0.001				0.226	0.188	0.224			
	P-Value	0.016	0.967	0.016				0.278	0.925	0.278				0.839	< 0.001	0.847				0.023	0.063	0.024			
Alpha	Coeff	0.758	5.203	0.759	21.948	22.500	21.947	1781.552	4.888	1781.587	2365.262	14.439	2364.996	15.401	15.397	15.401	15.600	15.601	15.600	-10.172	-9.598	-10.241	6.365	6.750	6.332
	P-Value	0.647	< 0.001	0.647	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Table 11: Results of Logit, Probit and Hazard Model

Dependent Variable		under50			under67			under50_67		
Regression Type		Probit	Logit	Hazard	Probit	Logit	Hazard	Probit	Logit	Hazard
N OBS		152.455	152.455	156.395	154.814	154.814	152.463	152.455	152.455	158.814
R_2		0.0311	0.0311		0.0250	0.0249		0.0350	0.0350	
log_(1+firm_age)	Coeff	0.0626	0.1645	1.6974	0.0675	0.1723	1.7762	0.0835	0.2443	1.8276
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.043
log_D_R	Coeff	0.0489	0.1307	1.2699	0.1255	0.3298	1.6203	0.0684	0.2078	1.3622
	P-value	0.091	0.095	0.003	< 0.001	< 0.001	< 0.001	0.115	0.109	0.017
log_revenue	Coeff	0.1070	0.2836	1.2772	0.0665	0.1687	1.1385	0.1076	0.3172	1.3173
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_employees	Coeff	0.0627	0.1592	1.1561	0.0422	0.1081	1.1187	0.0513	0.1424	1.1382
	P-value	< 0.001	< 0.001	0.001	0.003	< 0.001	0.004	0.030	0.039	< 0.001
log_FA	Coeff	-0.0595	-0.1581	0.8610	-0.0323	-0.0816	0.9515	-0.0417	-0.1224	0.8953
	P-value	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.061	0.010	0.009	0.018
log_CA	Coeff	-0.0728	-0.1982	0.8453	-0.0251	-0.0011	1.0929	-0.0029	-0.0122	1.0140
	P-value	0.021	0.180	0.047	0.931	0.988	0.286	0.953	0.934	0.925
log_dividend	Coeff	-0.0010	-0.0022	1.0042	-0.0034	-0.0090	0.9977	-0.0058	-0.0172	0.9881
	P-value	0.576	0.615	0.340	0.026	0.022	0.566	0.022	0.020	0.099
ROA_3	Coeff	0.0034	0.0085	1.0067	0.0055	0.0141	1.0123	0.0026	0.0075	1.0066
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.064	0.031	0.043
ROS_3	Coeff	0.0000	0.0000	1.0000	-0.0036	-0.0092	0.9939	0.0000	0.0000	1.0000
	P-value	0.992	0.999	0.981	0.292	0.231	0.315	0.996	0.997	0.990
log_NI	Coeff	-0.007	-0.018	0.995	-0.006	-0.015	0.997	-0.006	-0.017	0.995
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.003
Year 2002	Coeff	-0.0363	-0.1105		0.0765	0.1887		0.1282	0.3869	
	P-Value	0.535	0.486		0.122	0.140		0.113	0.104	
Year 2003	Coeff	0.0205	0.0496		0.0776	0.2060		0.0233	0.0867	
	P-Value	0.707	0.733		0.104	0.094		0.784	0.732	
Year 2004	Coeff	-0.0250	-0.0671		0.0437	0.1067		0.0351	0.0932	
	P-Value	0.650	0.650		0.364	0.392		0.672	0.708	
Year 2005	Coeff	0.2516	0.6496		0.2907	0.7268		0.2948	0.8535	
	P-Value	< 0.001	< 0.001		< 0.001	< 0.001		< 0.001	< 0.001	
Year 2006	Coeff	0.0407	0.0912		0.0171	0.0337		0.0521	0.1276	
	P-Value	0.412	0.488		0.710	0.778		0.491	0.571	
Year 2007	Coeff	0.0897	0.2213		0.0892	0.2244		0.0996	0.2894	
	P-Value	0.057	0.073		0.040	0.044		0.165	0.169	
Year 2008	Coeff	-0.0419	-0.1270		0.0227	0.0576		0.0067	0.0040	
	P-Value	0.402	0.342		0.609	0.615		0.929	0.986	
Year 2009	Coeff	-0.2131	-0.6147		-0.1939	-0.5250		-0.2226	-0.7242	
	P-Value	< 0.001	< 0.001		< 0.001	0.615		0.013	0.010	
Year 2010	Coeff	-0.0096	-0.0340		-0.0668	-0.1637		0.0182	0.0503	
	P-Value	0.842	0.790		0.143	0.171		0.802	0.815	
Year 2011	Coeff	-0.1727	-0.4875		-0.0915	-0.2419		-0.1095	-0.3322	
	P-Value	0.001	0.001		0.046	0.051		0.162	0.162	
Year 2012	Coeff	0.2019	0.5053		0.3046	0.7383		0.2739	0.7615	
	P-Value	< 0.001	< 0.001		< 0.001	< 0.001		< 0.001	< 0.001	
Year 2013	Coeff	-0.0542	-0.1485		-0.0833	-0.2208		0.0035	0.0122	
	P-Value	0.250	0.237		0.059	0.064		0.960	0.953	
Year 2014	Coeff	0.0294	0.0730		0.0206	0.0291		0.0538	0.1536	
	P-Value	0.509	0.532		0.618	0.792		0.424	0.439	
Alpha	Coeff	-4.4906	-10.3232		-3.6254	-7.8589		-4.8313	-11.9315	
	P-Value	< 0.001	< 0.001		< 0.001	< 0.001		< 0.001	< 0.001	

Table 12: Results of Robustness Test 1

Dependent Variable		ROA(i,t)			log_revenue(i,t)			ROS(i,t)			log_NI(i,t)		
Regression Type		FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
N OBS		159.184	156.129	159.184	159.184	156.129	159.184	159.184	156.129	159.184	159.184	156.129	159.184
R_2		0.0445	0.0526	0.0445	0.5417	0.5444	0.5411	0.0001	0.0242	0.0010	0.1302	0.1289	0.1302
log_(1+firm_age)	Coeff	-2.1588	-1.9883	-2.1598	0.1166	0.1225	0.1168	9.7330	-0.4016	9.7318	-1.0892	-1.0499	-1.0897
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.327	< 0.001	0.327	< 0.001	< 0.001	< 0.001
log_D_R	Coeff	-3.5648	-3.3117	-3.5654	0.1823	0.1763	0.1824	-33.5998	-2.5588	-33.5988	-4.0609	-4.1589	-4.0610
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
log_revenue	Coeff	8.0439	7.3195	8.0428				8.5976	3.2654	8.5940	5.5413	5.5515	5.5404
	P-value	< 0.001	< 0.001	< 0.001				0.215	< 0.001	0.216	< 0.001	< 0.001	< 0.001
log_employees	Coeff	-3.6775	-3.5590	-3.6781	0.5093	0.5065	0.5095	-13.4660	-2.0089	-13.4677	-1.9093	-1.9441	-1.9098
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.047	< 0.001	0.047	< 0.001	< 0.001	< 0.001
log_FA	Coeff	-1.3341	-1.2724	-1.3339	0.0068	0.0067	0.0067	-7.9915	-0.4647	-7.9903	-0.7082	-0.7355	-0.7079
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.025	< 0.001	0.025	< 0.001	< 0.001	< 0.001
log_CA	Coeff	3.8560	3.7024	3.8568	0.0068	0.1540	0.1536	-14.4661	1.1826	-14.4595	1.0075	0.9907	1.0086
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.170	< 0.001	0.170	< 0.001	< 0.001	< 0.001
log_dividend	Coeff	0.4830	0.4707	0.4830	0.0056	0.0055	0.0056	0.7196	0.2376	0.7196	0.3623	0.3635	0.3623
	P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.085	< 0.001	0.085	< 0.001	< 0.001	< 0.001
under50_after	Coeff	-0.2451			0.0317			-1.2929			-0.2585		
	P-value	0.276			< 0.001			0.945			0.161	< 0.001	
under67_after	Coeff		0.3793			0.0304			0.0391			-0.0195	
	P-value		0.033			< 0.001			0.705			0.904	
under50_67_after	Coeff			-0.1324			0.0169			-3.1298			-0.4397
	P-value			0.712			0.144			0.917			0.136
Year 2001	Coeff	1.8498	1.6661	1.8543	-0.2701	-0.2638	-0.2707	1.7836	0.4552	1.7873	1.8445	1.9298	1.8468
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.915	< 0.001	0.915	< 0.001	< 0.001	< 0.001
Year 2002	Coeff	2.5542	2.3589	2.5581	-0.2630	-0.2561	-0.2635	-20.1994	0.6786	-20.2044	2.1049	2.2065	2.1059
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.209	< 0.001	0.209	< 0.001	< 0.001	< 0.001
Year 2003	Coeff	2.5218	2.2662	2.5266	-0.2612	-0.2546	-0.2620	0.8413	0.6634	0.8453	1.8922	1.9802	1.8946
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.957	< 0.001	0.956	< 0.001	< 0.001	< 0.001
Year 2004	Coeff	3.1644	2.9409	3.1689	-0.2179	-0.2109	-0.2176	1.9855	1.1529	1.9904	2.3272	2.4278	2.3296
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.895	< 0.001	0.894	< 0.001	< 0.001	< 0.001
Year 2005	Coeff	6.3258	6.0002	6.3289	-0.1078	-0.1033	-0.1079	2.5397	2.6208	2.5442	4.5835	4.6260	4.5853
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.856	< 0.001	0.856	< 0.001	< 0.001	< 0.001
Year 2006	Coeff	4.1516	3.9240	4.1544	-0.0524	-0.0481	-0.0526	-0.3701	1.9292	-0.3675	3.3875	3.4127	3.3889
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.978	< 0.001	0.978	< 0.001	< 0.001	< 0.001
Year 2007	Coeff	4.3938	4.1922	4.3956	0.0345	0.0399	0.0338	-2.8438	1.9798	-2.8406	2.7586	2.7708	2.7597
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.823	< 0.001	0.823	< 0.001	< 0.001	< 0.001
Year 2008	Coeff	2.2540	2.1699	2.2565	0.0714	0.0747	0.0706	-8.0123	0.7047	-8.0100	1.0643	1.1263	1.0655
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.509	< 0.001	0.509	< 0.001	< 0.001	< 0.001
Year 2009	Coeff	1.0261	0.9714	1.0288	0.0303	0.0347	0.0296	-8.8825	0.3609	-8.8811	0.7353	0.7815	0.7366
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.445	< 0.001	0.445	< 0.001	< 0.001	< 0.001
Year 2010	Coeff	0.2442	0.2128	0.2481	0.0416	0.0455	0.0408	-9.1073	0.0568	-9.1076	0.3382	0.3481	0.3397
	P-Value	0.066	0.079	0.062	< 0.001	< 0.001	< 0.001	0.413	0.420	0.413	0.002	0.002	0.002
Year 2011	Coeff	0.1164	0.0497	0.1208	0.0807	0.0838	0.0798	-11.7832	-0.0630	-11.7826	0.5778	0.5251	0.5797
	P-Value	0.362	0.669	0.344	< 0.001	< 0.001	< 0.001	0.271	0.352	0.271	< 0.001	< 0.001	< 0.001
Year 2012	Coeff	-0.0080	-0.0083	-0.0052	0.1048	0.1065	0.1038	-8.3895	-0.0883	-8.3869	0.1365	0.1499	0.1380
	P-Value	0.948	0.941	0.966	< 0.001	< 0.001	< 0.001	0.414	0.174	0.414	0.175	0.141	0.170
Year 2013	Coeff	-0.6759	-0.6354	-0.6733	0.1163	0.1167	0.1157	-12.5960	-0.2967	-12.5911	-0.3321	-0.3829	-0.3305
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.201	< 0.001	0.201	0.001	< 0.001	0.001
Year 2014	Coeff	-0.5892	-0.5737	-0.5883	0.1286	0.1291	0.1285	-11.3187	-0.3498	-11.3154	-0.2789	-0.3205	-0.2781
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0001	0.232	< 0.001	0.232	0.003	0.001	0.003
Alpha	Coeff	-114.2012	-102.7702	-114.1873	15.0294	15.0210	15.0337	-162.2486	-46.0271	-162.1844	-79.8058	-80.1770	-79.7922
	P-Value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.138	< 0.001	0.138	< 0.001	< 0.001	< 0.001

Table 13: Results of Robustness Test 2

Dependent Variable		ROA(i,t)	log_revenue(i,t)	ROS(i,t)	log_NI(i,t)
Regression Type		FE	FE	FE	FE
N OBS		159.184	159.184	159.184	159.184
R_2		0.0447	0.5416	0.0010	0.1311
log_(1+firm_age)	Coeff	-2.1658	0.1171	9.7556	-1.0972
	P-value	< 0.001	< 0.001	0.326	< 0.001
log_D_R	Coeff	-3.5675	0.1825	-33.5947	-4.0639
	P-value	< 0.001	< 0.001	< 0.001	< 0.001
log_revenue	Coeff	8.0461		8.5741	5.5441
	P-value	< 0.001		0.217	< 0.001
log_employees	Coeff	-3.6753	0.5093	-13.4840	-1.9067
	P-value	< 0.001	< 0.001	0.046	< 0.001
log_FA	Coeff	-1.3350	0.0068	-7.9851	-0.7093
	P-value	< 0.001	< 0.001	0.025	< 0.001
log_CA	Coeff	3.8533	0.1538	-14.4462	1.0043
	P-value	< 0.001	< 0.001	0.171	< 0.001
log_dividend	Coeff	0.4833	0.0056	0.7180	0.3627
	P-value	< 0.001	< 0.001	0.086	< 0.001
Largest Family	Coeff	0.0055	-0.0003	-0.0269	0.0064
	P-value	0.001	< 0.001	0.850	< 0.001
Year 2001	Coeff	1.8598	-0.2711	1.7919	1.8556
	P-Value	< 0.001	< 0.001	0.915	< 0.001
Year 2002	Coeff	2.5644	-0.2640	-20.1965	2.1162
	P-Value	< 0.001	< 0.001	0.209	< 0.001
Year 2003	Coeff	2.5314	-0.2623	0.8544	1.9028
	P-Value	< 0.001	< 0.001	0.956	< 0.001
Year 2004	Coeff	3.1738	-0.2190	1.9960	2.3376
	P-Value	< 0.001	< 0.001	0.894	< 0.001
Year 2005	Coeff	6.3797	-0.1108	1.9960	4.6461
	P-Value	< 0.001	< 0.001	0.869	< 0.001
Year 2006	Coeff	4.2366	-0.0568	-0.7541	3.4866
	P-Value	< 0.001	< 0.001	0.955	< 0.001
Year 2007	Coeff	4.4011	0.0340	-2.8581	2.7668
	P-Value	< 0.001	< 0.001	0.822	< 0.001
Year 2008	Coeff	2.2584	0.0709	-8.0030	1.0690
	P-Value	< 0.001	< 0.001	0.510	< 0.001
Year 2009	Coeff	1.0285	0.0298	-8.0030	0.7377
	P-Value	< 0.001	< 0.001	0.446	< 0.001
Year 2010	Coeff	0.2451	0.0411	-9.0607	0.3386
	P-Value	0.065	< 0.001	0.416	< 0.001
Year 2011	Coeff	0.1160	0.0802	-11.7236	0.5767
	P-Value	0.363	< 0.001	0.273	< 0.001
Year 2012	Coeff	-0.0043	0.1043	-8.3723	0.1405
	P-Value	0.972	< 0.001	0.415	< 0.001
Year 2013	Coeff	-0.6736	0.1159	-12.5765	-0.3297
	P-Value	< 0.001	< 0.001	0.202	< 0.001
Year 2014	Coeff	-0.5887	0.1285	-11.3116	-0.2784
	P-Value	< 0.001	< 0.001	0.232	< 0.001
Alpha	Coeff	-114.7085	15.0529	-159.5998	-80.4013
	P-Value	< 0.001	< 0.001	0.148	< 0.001