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Employment in family firms - a study on Norwegian firms

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Abstract

In this master thesis, we investigate whether employees in family firms are better off in bad times than employees in non-family firms by using a sample of Norwegian firms. We focus on implicit contracts that is argued to be more present in family firms compared to non-family firms.

We fail to find evidence in support of our main hypothesis.

This might be due to the fact that payroll expense is a bad proxy for implicit contracts. Other reasons might be that the distribution between family firms and non-family firms in our dataset is highly skewed or that the theory might simply not be applicable in our sample.

On the other hand, we find a large difference in the intercept between boom and recession, meaning there is substantially lower payroll expenses during the recession period than the boom period.

Firm size has a significant impact on the independent variable in both sub-samples.

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1. Introduction

The interest for family firms has increased during the last 10-15 years, after La Porta, López-de-Silanes and Shleifer (1999) made the subject a focus point. Together with improved data availability, a series of new studies about family firms' governance issues has been generated and consequently family firms have gained increasing attention in the economic and finance literature. Research shows that family firms represent a large section of firms in many countries and even large listed firms are under control of the founders or their founders' descendants (La Porta, López-de-Silanes & Shleifer, 1999; Claessens, Fan & Lang, 2000; Faccio & Lang, 2002). Previous studies have mainly focused on the relationship between family ownership and firm performance and only a few researchers have addressed governance dynamics inside family firms and the actual behavior of family firms. One of these governance dynamics that has not yet been thoroughly researched is whether the existence of implicit contracts in family firms may be advantageous for its employees during bad times. Implicit contracts, also known as non-formal agreements, may provide an employment insurance for the employees of family firms in bad times. We expect family-firms to fire less employees in bad times compared to non-family firms.

Therefore, in this particular thesis, we want to have a closer look at the employment situation in family firms compared to non-family firms during bad times. This is done by comparing economic recession periods with economic boom periods. Using economic and finance literature, we finally aim to infer an explanation of our results related to the existence of implicit contracts. So, in particular, we will investigate whether employees in family firms are better off in bad times due to the insurance effect of implicit contracts.

We suggest that employment in family firms tends to be less sensitive to economic shocks than employment in non-family firms, due to a higher degree of implicit contracts.

The question why family firms may be willing to insure their workers with implicit contracts in contrast to non-family firms will be central to our thesis. We will base our discussion on theories, empirical findings and anecdotal evidence. Previous studies imply that the employment insurance may increase the employees' willingness to invest in firm-specific knowledge, thus the hold-up

problem and the long-term perspective and risk aversion of the family firms will be important theories for further discussion.

We can expect an insurance effect for the employees of family firms since descendants can commit on long-term employment (Sraer & Thesmar, 2007). Dynastic management endows the family with enough credibility to administer implicit contracts. Under implicit contracts, the firm gives word that most workers will keep their jobs even if there is downturn. Thus, the firm provides employment insurance to its employees (Shleifer & Summers, 1988).

Relevant background information is provided in chapter 2. The data are described in chapter 3. The model is presented in chapter 4 and the quantitative analysis in chapter 5. Finally, the results are discussed in chapter 6.

2. Background information

2.1 *What are family firms?*

There are two important dimensions of the definition of family firms. The first dimension is supposed to answer the question what family firms are, whereas the second dimension attempts to shed light on the question what a family firm must do in order to produce and establish a family firm (Stacescu, 2016).

Anderson and Reeb (2003) define a family as a group of persons (individuals) that are related by blood or marriage. However, this definition proves not to be the most common found in literature. Due to a lack of data, many studies define a “family” shareholder as the largest shareholder, the founder of the firm, or the set of direct individual shareholders. In order to choose an appropriate definition, it can be argued that the definition should create a firm type that is different from other types in terms of governance, behavior and performance (Stacescu, 2016).

In order for a firm to qualify as a family firm, a family needs to either hold equity in the firm, be a director, or be a CEO of the firm (Handler, 1989; Villalonga & Amit, 2006). Another selection criteria used in previous studies is the number of generations after the founder (Ward, 1987; Handler, 1989). In order to define a family-firm, it might be used one or a combination of those selection criteria (Westhead & Cowling, 1998).

If ownership is used as requirement for a family-firm, the family needs to hold a certain threshold of equity in the firm (Handler, 1989; Villalonga & Amit, 2006). Literature shows that previous studies have used different thresholds.

Another selection criterion is to use the existence of a family CEO as qualifying characteristic for a family-firm (Handler, 1989; Villalonga & Amit, 2006). Many studies also distinguish between first-generation CEOs (founders) and heirs (e.g. Sraer & Thesmar, 2007). The existence of a family CEO as selection criteria is mainly used when the purpose of the study focuses on family management (Villalonga & Amit, 2006).

Further, history might be used in order to determine whether a firm is a family firm or not, meaning that generations matter. Generations might matter since founding families often see themselves as agents of the family business for future generations (Villalonga & Amit, 2010). This might result in long-term horizons

for firms in which the family remains in active control for many generations (Ward, 1987; Handler, 1989). This also indicates that family-firms might rather focus on long-term than on short-term profit-maximization (Villalonga & Amit, 2010). Consequently, in order to determine a firm to be a family-firm there might be set a minimum/maximum number of consecutive years in which there has to be a family member represented in the management and/or on the board of the focal firm.

This review of existing literature has shown that due to data availability, the sample characteristics and the study's purpose (focus on family ownership or family management), different criteria have been used in order to define the term "family firm" in previous studies.

For the definition of family firms in this paper we would like to focus on a coherent group with similar objectives, meaning that blood and marriage links should be important in defining a family. Further, the major point of this topic is ownership by a family, since owners choose the board and the board chooses management (CEO). Additionally, generations may matter and therefore it makes sense to determine a minimum number of consecutive generations being represented in management or the board.

The criteria chosen will be presented in chapter 3.2 (data filters).

2.2 Implicit contracts

An implicit contract is a non-physical, non-formal, non-judicial agreement between an employer and an employee (Azariadis, 1975; Baily, 1974).

Many papers suggest that family firms more often are in the business for the long run compared to their non-family counterparts (Anderson & Reed, 2003 and Sirmon & Hitt, 2003). This means that they are more stable, have longer time-horizons and are able to commit to a long-lasting relationship with their employees (Davis, 1983).

Azariadis (1975) and Baily (1974) view the firm as a risk-neutral and the employee as a risk-averse stakeholder. The employee would like to get a long-term commitment on her work, rather than being laid off after the firm's next project is due. Family firms may provide credible commitment towards their employees as their time line lies beyond next quarters earnings and families want their company to be financially healthy for the next generation (Johansen &

Schoar, 2006). In turn, when the family firm makes a non-contractual promise, or implicit contract, this is more credible compared to a non-family firm, as the employee most likely knows who their successor will be and trust the firm to keep their employees on board (Chami, 2001).

Implicit contracts can be avoided by writing extensive contracts covering all aspects between employer and employee. As this solution is prohibitively expensive it fails to be of practical use and firms instead end up with incomplete contracts (Hart and Moore, 1999).

2.3 Hold-up problem

The hold-up problem is a theory in the contractual relationship between two parties and is present when certain factors are in place. The concept explains the phenomenon that two parties that would engage in a contract refrain from doing so due to the risk of the other party's bargaining power. An explanation is that the contractual parties need to make non-contractible relation specific investments which cannot be determined with certainty beforehand (Rogerson, 1988). For example, in case of a new employment, the new employee is required to get acquainted to the firm-specific working methods and routines. Consequently, the new employee needs to develop firm-specific skills, which might be without value outside of the focal firm. Thus, the employee might have an incentive not to invest in these firm-specific skills if there is no guarantee for employment over a longer time horizon.

However, the nature of family firms might solve this problem. As argued in chapter 2.1, family firms might have a longer time horizon than non-family firms because family members might feel responsible to run the business in a sustainable way in order to maximize long-term profits for its descendants. Thus, the family-firm might grant some kind of employment guarantee, which might make the employee willing to invest into the firm-specific skills.

2.4 Implicit contracts in family firms

For a firm to be recognized as a family-firm, our criterions are that the family should ultimately hold more than 50% of the shares, meaning that the family maintains control of the company. Something that differentiates family firms from other firms, is the private benefit of control, or amenity potential (Demsetz and

Lehn, 1985). May it be the joy for the founder of having his son running the business, or the possibility to influence the social or political arena.

Considering private benefits, a family name may carry subsequent reputational benefits, where the family name stands for high quality, which would be diluted if control is passed on to an outsider (Burkart, Panunzi and Shleifer, 2003).

Ehrhardt and Nowak's (2001) find something similar in their study on German family firms. They find that families retain control of the company for a long time after their IPOs. Here, private benefits are referred to as the number one reason for why the family wishes to maintain control.

Family firms are also special when it comes to refocusing and seem less eager to refocus compared to non-family firms. Empiric studies conclude that family firms undertake less divestitures than non-family firms (Feldman, Amit and Villalonga, 2014). In Taiwanese businesses, there was found a negative and significant relationship between family firms and human resource retrenchment practices (Tsao, Newman, Chen and Wang, 2016), which implies that family firms in particular should avoid retrenchment practices, e.g. downsizing of their employees.

Lee et. al (2006) investigate S&P500 firms, where they found that family firms maintain the employment stability during temporary market downturns which could give support for implicit contracts in family firms. In the same paper, they find that family firms have higher employment and higher profitability over the 10-year sample period. Lee et. al (2006) explicitly mention that implicit contracts, as described earlier in this paper, could be the cause for their findings.

Shleifer and Summers (1988) argue that dynastic management endows the family with enough credibility to enforce implicit contracts. Under implicit labor contracts, the firm promises that most workers will keep their jobs even if total sales decreases, in other words, they promise workers their jobs during recessions. The firm thus provides employment insurance to its employees. In exchange for that kind of insurance, workers accept a lower wage or accept to work harder for the same wage. However, this theory has weaknesses, since firms are usually not credible when making such promises due to the incentive to renegotiate.

Further, Sraer and Thesmar (2007), find that descendants smooth out industry shocks and manage to honor implicit labor contracts. They argue that families

might have an advantage by enforcing implicit contracts. The main argument for such an advantage is that families have a longer time-horizon than salaried managers. Thus, dynastic management can create value that would be destroyed by delegated management. If a family is e.g. involved in management, it will tie top management to employees, which might prevent job losses in bad times. Further, because of family ownership, the family members may be able to commit without fear of being taken over ex post. Professional managers, that are not owners, lack commitment ability. A survey by Astrachan and Allen (2003) supports the argument that family firms tend to keep employment levels stable, avoiding downsizing during financial recessions and therefore smooth out industry shocks. Lee (2006) tests the significance of this assertion empirically and finds confirming results. These results are argued to be connected with the founding family's commitment to firm continuity and stability. Such a commitment may be associated with the formation of an implicit contract between the founding family and its employees.

Sraer and Thesmar (2007) test the same assertion by looking at the sensitivity of firm employment to industry sales shocks. They find that firms managed by a descendant of the founder pay significantly lower wages, for a given skill structure. Further, they provide insurance across the business cycle to their workers.

Main findings from existing literature are consistent with the theory that family firms find it easier than non-family firms to sustain implicit contracts with their employees. Additionally, findings imply that family firms provide employment insurance during bad times in exchange for lower wages. This is one of the reasons why we believe that the research question should be investigated further.

2.5 Economic cycles

The economy goes through cycles where it may be over- or underconsuming depending on various factors. In the long-run, the economy will follow a path of equilibrium. During a recession, one can say that the economy is merely adapting to the new economic conditions, and may not only be the result of economic factors, but also non-economic factors (Schumpeter, 1934). Typically, booms and recessions are linked closely with unemployment rate, meaning that unemployment will increase in bad times and decrease in good times as more/less

people in the workforce are employed. A generally accepted view of a recession is a 3% decrease of a country's gross domestic product (GDP) (Hamilton, 1989).

In this thesis, we want to investigate whether or not the same trends appear in Norwegian family firms, as indications from previous literature may suggest that family firms will fire less of their workforce during recessions, than non-family firms. If they indeed will contain a larger part of their workforce during recessions, we believe that the effect is transparent and the same would apply for economic booms, but the firm would instead refrain from hiring new workers at the same rate of similar firms. If this holds, we would see that family firms smooth out industry shocks compared to other firms in terms of employment.

3. Data

3.1 Description of data

For our empirical investigation and analysis, we use data retrieved from the Centre of Corporate Governance Research (CCGR). Our sample consists of Norwegian limited liability firms (AS and ASA) operating in Norway between 2003 and 2011. Sole proprietorships will not be included in the data set, since they are smaller and considered as entrepreneurial firms rather than family firms.

Since Norwegian law requires that accounts be audited, all Norwegian limited liability firms must annually report balance sheet and income statements to the Brønnøysund Register (Norwegian company register), which ensures high quality data for limited liability companies irrespective their size and listing status on Oslo stock exchange.

Moreover, we aim to find recession and boom periods in the Norwegian economy in order to test the hypothesis that employees in family firms are better off during bad times (economic recessions) than employees of non-family firms due to the existence of implicit contracts. In order to do so, we used data from Statistics Norway, which were extracted on 13.05.2017, for identifying/defining economic cycles (boom/recession) (see appendix 1).

On basis of the fixed prices curve (appendix 1) we roughly defined the period between 2003 and 2007 a boom and the period between 2008 and 2011 a recession. A more detailed definition with smaller intervals did not makes sense in our case as our sample period was only 9 years.

3.2 Data filters

We apply several filters in order to improve the quality of our data. From the population of all AS and ASA firms, we exclude certain firms according to their two-digit Standard Industry Classification (SIC) code. We remove firms from the following industries: Finance and insurance (SIC code 64, 65), public administration (SIC code 84), educational services (SIC code 85), activities in membership organizations (SIC code 94), paid work in private households (SIC code 97) and international organizations and organs (SIC code 99).

Since we are interested in studying the reaction of variation in the times series of payroll expense, we exclude firms whose company ID is missing. Additionally,

we exclude firms with zero or negative revenue. Further, we exclude firms with yearly revenues below 1 million NOK in one or more years between 2003 and 2011 in order to ensure that our results are not driven by a number of very small firms with little economic importance. This leaves us with 9,954 firm-year observations and 1,106 individual firms.

In chapter 2.1 we mentioned that we would like to use three criteria to define a family firm. However, due to data availability, we cannot use the criteria “blood and marriage” and “generation”. Consequently, we will only use one criteria to distinguish between family and non-family firms. We categorized the firms from our sample applying the 50% ownership rule. If the ultimate family ownership is equal or higher than 50%, a firm qualifies as family firm.

Because we want to investigate whether there is a difference between economic boom and recession periods, we divide the main sample into two smaller sub-samples: a boom and a recession sample.

4. Model

4.1 Variables

In our paper, we aim to show that implicit contracts are the cause for why employees in family firms are better off during bad economic times than employees in non-family firms. As the concept of implicit contracts has not been studied thoroughly yet and because an implicit contract is not a tangible asset, we rely on a decent proxy to represent implicit contracts in our data.

4.1.1 Dependent variable

We believe that investigating the number of employees in a firm and how it varies over time could tell us to what extent implicit contracts are enforced in the focal firm. For example, if the number of employees in a firm rapidly increases (decreases) in times of high production (staggering production), there might just be few or no implicit contracts. On the other hand, implicit contracts might exist if we find that there is no fluctuation in the number of employees in the focal firm.

However, due to inconsistencies and missing values in the number of employees variable, we decided not to use this variable.

Instead, we use payroll expense as the dependent proxy variable for implicit contracts

4.1.2 Independent variables

We introduce a dummy for family firm as one of the independent variables. That is, the variable is 0 if a family ultimately owns 50% or more of the firm, and 1 if not (0=family firm; 1=non-family firm).

Further we decide not to use revenue as an independent variable since it might be a function of payroll expense and vice versa. This is the reason why we decide to use net income. Payroll expense should not be a function of net income.

As control variables, we use the following nine industry dummies (where 0=focal industry and 1=other industries): manufacturing (industry code 10), chemical production (industry code 20), transportation production (industry code 30), construction (industry code 40), seafaring (industry code 50), media (industry code 60), administration (industry code 70), security (industry code 80), culture and entertainment (industry code 90).

Further it needs to be noted that we have set manufacturing as the reference category for the industry codes. This means that the negative/positive coefficient in the industry code is compared directly to the industry code we intentionally leave out, this is, manufacturing. As we know how each industry compares to manufacturing, we can simply add two other industry codes together to see how they relate to one another.

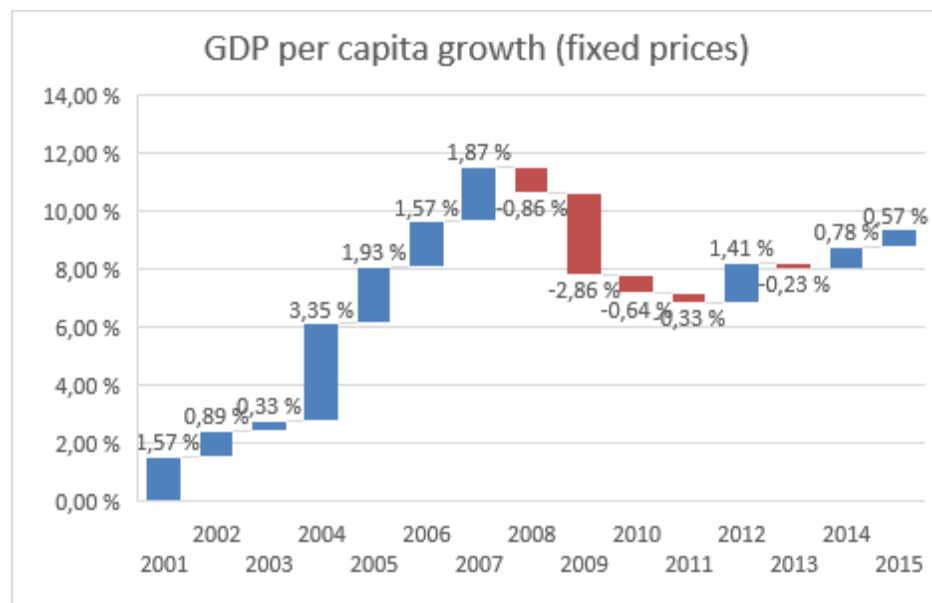
Moreover, we use a company size dummy (small/large) as an additional control variable (small=0; big=1). We decided to use revenues as measure for company size, since we do not have sufficient data on total assets. A company is small (big) if it has revenues between 1.000 NOK and 3.799.000 NOK (3.800.000 NOK and 9.991.000 NOK) per year.

4.2 Economic boom and recession

The variable used to define an economic boom and recessions is GDP-per capita yearly growth as defined below:

$$GDP\ growth = \frac{GDP\ Year_1 - GDP\ Year_0}{GDP\ Year_0}$$

We used the fixed 2005 numbers in GDP to rule out inflation as a driver of the gross domestic product from Statistics Norway. This was done yearly and the development of the GDP-per capita over the time period is shown in the table below:



Graph 1: GDP per capita growth (fixed prices)

As graph 1 shows, unfortunately, the time period of our sample does not meet the criteria we have set in order for some part to have the definition of a recession.

In the data, we see some clear trends, and these trends are the closest we will get to an economic boom and recession with this dataset. We define the period between 2003 and 2007 as boom, whereas the period between 2008 and 2011 can be defined as recession due to reduced growth. As we know, the financial crisis hit in 2007/2008, but to what extent this made the Norwegian economy go into a recession is debatable. We fail to meet the criteria we set at 3% decrease. We believe that the continuous downward and upward trend in the economy that lasted for several years will help reduce that impact.

In the regression, we first tried to use a dummy variable of 0 or 1 if boom/recession. Our results were inadequate, so we decided instead to split the dataset into two subsets and run the regressions in subset 1 (economic boom) and subset 2 (economic recession) and were pleased with the results.

4.3 Regression model

Our dataset provides two possible proxy variables for firms' employment situation: the "number of employees" and "payroll expense". Due to a high level of missing data in the "number of employees" variable, only the "payroll expense" was considered to be of high enough quality and will be used as a proxy variable for firms' employment situation in this thesis.

We want to test the hypothesis whether employees in family firms are better off in bad times (recessions) due to the existence of implicit contracts. Payroll expense will be used as the dependent variable.

It needs to be emphasized that our regression analysis will only be able to provide an answer to the first part of the hypothesis. More precisely, the regression will only be able to answer the question whether employees of family firms are better off in bad times than employees of non-family firms or not. The regression will not be able to provide an answer to whether this is due to the existence of implicit contracts. This needs to be inferred from theory.

To test the first part of the hypothesis we run the following regressions:

Regression 1: Sub-sample recession

payroll expense

$$\begin{aligned}
 &= \alpha + \beta_1 * netincome + \beta_2 * family + \beta_3 * SmallLarge + \beta_4 \\
 &* administration + \beta_5 * chemicalproduction + \beta_6 \\
 &* construction + \beta_7 * cultureentertainment + \beta_8 * media \\
 &+ \beta_9 * seafaring + \beta_{10} * security + \beta_{11} \\
 &* transportproduction + u_i
 \end{aligned}$$

Regression 2: Sub-sample boom

payroll expense

$$\begin{aligned}
 &= \alpha + \beta_1 * netincome + \beta_2 * family + \beta_3 * SmallLarge + \beta_4 \\
 &* administration + \beta_5 * chemicalproduction + \beta_6 \\
 &* construction + \beta_7 * cultureentertainment + \beta_8 * media \\
 &+ \beta_9 * seafaring + \beta_{10} * security + \beta_{11} \\
 &* transportproduction + u_i
 \end{aligned}$$

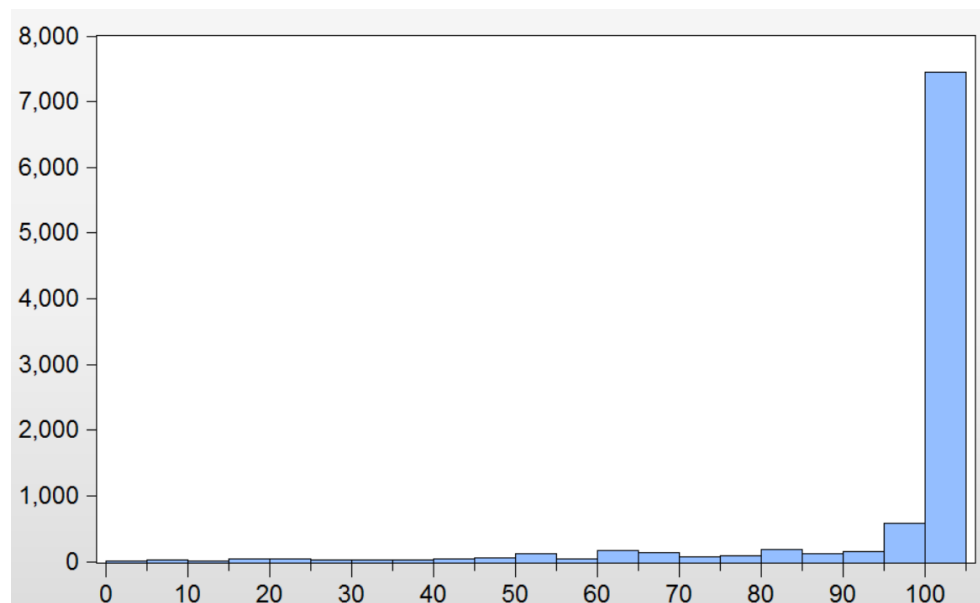
We include other variables to see if the eventual results are explained by other factors, such as net income, company size or the industry the company is operating in.

5. Quantitative analysis

5.1 Descriptive statistics

5.1.1 Main sample

As we mentioned in the previous section, our sample consists of 9,954 firm-year observations and 1,106 individual firms. From the family ownership variable on this data, we notice that the distribution is highly skewed. Approximately 7,500 of our observations have 100% family ownership, and the dataset only has 294 observations on what we define as non-family firms. The average firm has a family ownership of 94.5%, which is well beyond our threshold of 50% in order for a firm to be qualified as a family firm. Only 3% of the observations in our sample qualifies as non-family firms. In this thesis, we compare family with non-family firms and with few observations on non-family firms, the risk of statistical errors increases when comparing non-family to family firms. For Norway in total, approximately two-third of all firms are family firms according to Bøhren (2011), which verifies that our sample is skewed compared to the total population with regards to amount of family firms.



Graph 2: Family ownership distribution

In appendix 2 “industry codes distribution,” we notice there is a good distribution between industries, with data from all industry codes. Industry codes standing for construction, seafaring and administration make up the majority of over 60% of the total sample.

The variables revenue, payroll expense and net income are assumed to be listed in thousands.

| | SKEWNESS | KURTOSIS |
|----------------|----------|----------|
| PAYROLLEXPENSE | 1,48 | 5,73 |
| NET INCOME | 19,05 | 886,65 |
| REVENUE | 0,82 | 2,85 |

Table 1: Skewness and kurtosis

Payroll expense and revenue are both negatively skewed, meaning observations with low value occur more often than those with medium or high value. It is evident that small companies are more present than large in our study sample. Compared to revenue, payroll expense has fewer observations with high values, and therefore have higher skewness. High skewness and kurtosis for net income are believed to be caused by the heavy tails from this variable as firms report varying numbers for net income, with both positive and negative values.

5.1.2 Sub-samples

For our main regressions, we first tried to use a simple dummy to differentiate between recession and boom. It did not take long until we realized our interests in the boom/recession required more information about each time period. We then decided to divide the sample into two sub-sets with identical regressions run in each of the sub-sets. One for economic boom and another for economic recession, in order to be able to easily compare booms and recessions. We then end up with a subset for the economic boom from year 2003-2007 with 5,530 observations and our economic recession subset from 2008-2011 with 4,424 observations.

5.2 Correlation and multicollinearity

To test if our data would be affected by multicollinearity, we examined the correlation between the variables used in the regression without industry codes. The definition for when multicollinearity is considered to be a problem is not carved in stone. In our data, the highest correlation is between payroll expense and the dummy on small/large firm, as would be expected by the results from the previous part. The correlation is high at 0.60, and we believe the variable should

be used in our regression, although we are aware of the presence of multicollinearity.

| CORRELATION | PAYROLL EXPENSE | FAMILY* | NET INCOME | FIRM SIZE** |
|--------------------|------------------------|----------------|-------------------|--------------------|
| PAYROLL EXPENSE | 1 | | | |
| FAMILY* | 0,02 | 1 | | |
| NET INCOME | 0,04 | -0,01 | 1 | |
| FIRM SIZE** | 0,60 | 0,00 | 0,07 | 1 |

Table 2: Correlation Matrix

5.3 Regression and empirical results

In this section, we present the results for the regressions on our two sub-samples: boom sub-sample and recession sub-sample. We use Eviews to run the regressions and R Studio to control the results. Eviews results are only used when they are confirmed by R Studio.

For the regression analyses we use the Least Squares method and run the same regression on both sub-samples:

$$\begin{aligned} payroll\ expense = & \alpha + \beta_1 * netincome + \beta_2 * family + \beta_3 * SmallLarge + \\ & \beta_4 * administration + \beta_5 * chemicalproduction + \beta_6 * construction + \\ & \beta_7 * cultureentertainment + \beta_8 * media + \beta_9 * seafaring + \beta_{10} * \\ & security + \beta_{11} * transportproduction + u_i \end{aligned}$$

With an R^2 ranging from 0.36 to 0.413, our models explain at most 41.3% of the variation in payroll expense. This is a fairly good value.

5.3.1 Regression 1: Sub-sample boom

The intercept is high and positive, starting at 1,036,398, which indicates that most of the firms in our sample will have this high payroll expense if all other factors are 0. The coefficient for the family-firm dummy is positive and statistically significant at the 0.1% level. The results show that if the firm is a family firm (non-family firm), the payroll expense decreases (increases) during economic boom periods. These results indicate that family firms may have lower payroll expenses than non-family firms. This supports the hypothesis stated in Sraer and Thesmar (2007) that family firms pay lower wages than non-family firms.

| DEPENDENT VARIABLE: | | PAYROLLEXPENSE | | |
|---------------------------|-------------|----------------|--------------|-------|
| METHOD: | | Least Squares | | |
| VARIABLE | COEFFICIENT | STD ERROR | T-STATISTICS | PROB. |
| INTERCEPT | 1 036 398 | 351 106 | 2,95 | 0,00 |
| NET INCOME | 0 | 0 | -0,43 | 0,67 |
| FAMILY* | 49 260 | 51 394 | 0,96 | 0,33 |
| FIRM SIZE** | 1 111 735 | 20 536 | 54,14 | 0,00 |
| ADMINISTRATION | -239 732 | 23 388 | -10,25 | 0,00 |
| CHEMICAL PRODUCTION | 11 237 | 58 463 | 0,19 | 0,85 |
| CONSTRUCTION | -89 467 | 56 858 | -1,57 | 0,12 |
| CULTURE & ENTERTAINMENT | -435 004 | 51 314 | -8,48 | 0,00 |
| MEDIA | -260 481 | 44 479 | -5,86 | 0,00 |
| SEAFARING | 257 105 | 52 574 | 4,89 | 0,00 |
| SECURITY | 352 112 | 299 361 | 1,18 | 0,24 |
| TRANSPORTATION PRODUCTION | 22 272 | 74 606 | 0,30 | 0,77 |

Table 3: Regression results subsample boom

Further, the output indicates that company size highly impacts the results. To be more precise, if a firm is big, it has on average 1,111,735 higher payroll expense compared to a small firm and is statistically significant at the 0.1% level. This was as expected, as large firms tend to employ more people which in turn increases payroll expense.

Moreover, looking at the industry codes, administration, media and culture & entertainment have significantly lower payroll expense across the industries. On the other hand, security and seafaring can be considered as high-spending industries in terms of payroll expenses.

5.3.2 Regression 2: Sub-sample recession

It can be observed that the intercept coefficient is drastically lower in the regression sub-sample: Boom – 1,036,398 vs Recession – 327,184. This means that the payroll expense is 68% lower in recession period. This result indicates that the firms in our sample were affected by the change of economic climate in Norway during the time period we have defined as a recession. Despite this fact, the intercept coefficient is not statistically significant.

With regards to the difference in family vs. non-family firms, non-family firms have on average an increased payroll expense of about 160 000 – over 100 000 more if we compare this with the regression from the boom and is significant at the 5% level. Relative to the intercept, the difference between family and non-family firms is large. This shows that family firms do reduce their payroll expense more than their non-family counterparts. We believe this fails to support the theory that family firms are smoothing out industry shocks.

DEPENDENT VARIABLE: PAYROLLEXPENSE
METHOD: LeastSquares

| VARIABLE | COEFFICIENT | STD ERROR | T- STATISTICS | PROB. |
|---------------------------|-------------|-----------|---------------|-------|
| INTERCEPT | 327 184 | 411 357 | 0,80 | 0,43 |
| NET INCOME | -0,01 | 0,01 | -0,77 | 0,44 |
| FAMILY* | 159 065 | 72 878 | 2,18 | 0,03 |
| FIRM SIZE** | 1 406 640 | 25 624 | 54,90 | 0,00 |
| ADMINISTRATION | 29 577 | 62 138 | 0,48 | 0,63 |
| CHEMICAL PRODUCTION | 95 614 | 74 404 | 1,29 | 0,20 |
| CONSTRUCTION | 223 787 | 58 493 | 3,83 | 0,00 |
| CULTURE & ENTERTAINMENT | -161 275 | 82 108 | -1,96 | 0,05 |
| MEDIA | -33 750 | 65 517 | -0,52 | 0,61 |
| SEAFARING | 209 896 | 62 686 | 3,35 | 0,00 |
| SECURITY | 8 728 | 93 548 | 0,09 | 0,93 |
| TRANSPORTATION PRODUCTION | -18 227 | 88 312 | -0,21 | 0,84 |

Table 4: Regression results subsample recession

Further, we find that family firms lower their payroll expense in recession periods. This is statistically significant at the 1% level. The difference between small and large firms grows by 26.5%, showing that larger firms may have more challenges in cutting their payroll expense compared to small firms.

When we examine the net income variable, we find that an increase in net income by one unit will lead to approximately 1% drop in payroll expense. This means that companies that tend to be profitable may pay less in wages to their employees. As most economists know, low costs and high profits go hand-in-hand, so this might be affected by endogeneity, as one dollar less spent in wages

will make up for one more dollar on the bottom line. In addition, the net income variable fails to be statistically significant.

Most of the industry codes fail to be of any statistical significance over both periods, with the exception of seafaring and culture & entertainment. The industry codes are all based on a relationship with manufacturing, and most industries have had an increased coefficient in the recession period (except security), implying that manufacturing has managed to lower its payroll expense compared to the other industries.

| Industry | Change |
|------------------------------|---------------|
| ADMINISTRATION | 269 309 |
| CHEMICAL PRODUCTION | 84 377 |
| CONSTRUCTION | 313 254 |
| CULTURE & ENTERTAINMENT | 273 729 |
| MEDIA | 226 731 |
| SEAFARING | -47 209 |
| SECURITY | -343 384 |
| TRANSPORTATION PRODUCTION | -40 499 |

Table 5 Change in industry from boom to recession

As economists know, construction is a lagging indicator of economic growth, as new projects are planned and financed before they are started. This means that the construction industry will continue to have work for several years after the economy has entered from a boom to recession. We expected functions such as administration, culture & entertainment and media to have low payroll expense during recession as they are part of the tertiary economic sector which involves supplying of services and might be more subjected to budget cutbacks.

6. Discussion of results and conclusion

The purpose of this thesis is to find out whether employees in family firms are better off in bad times than employees in non-family firms. The empirical analysis is conducted on a dataset consisting of Norwegian firm data.

We argue that family firms grant some kind of insurance by the means of implicit contracts to their employees. Since implicit contracts are not measurable, we needed a proxy variable to run our regressions. Due to limited data availability, we decided to use payroll expense as proxy for the insurance effect originating from implicit contracts.

From theory, we expected family firms to have a higher level of implicit contracts and therefore higher insurance effect during economic recessions. Using payroll expense as a proxy variable for the insurance effect, we therefore expected payroll expense to be higher in family firms compared to non-family firms in economic recessions.

We expected family firms to have higher payroll expenses compared to non-family firms during recession periods. However, from the regression analysis, we found that family firms have lower payroll expense compared to non-family firms during economic recession periods.

Thus, using payroll expense as a proxy for employee insurance might not have been an optimal solution. Further, our expectation that payroll expense is higher in family firms compared to non-family firms might have been misleading and wrong.

One might have used another line of thought and therefore expected lower payroll expense for family firms during economic recessions because of offering insurance of long-term employment. The insurance for a secure job might be worth more than a salary increase. Thus, the family firm employer can pay less to its employees during economic recession.

This would also indicate that non-family firms on the other hand need to increase payroll expense during economic recessions since they cannot promise long-term employment. They do not offer employment insurance to their employees. Thus, they need to compensate for not offering insurance by increasing their payroll expense.

8. Literature

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9. Appendix

Appendix 1



Source: Statistics Norway

Appendix 2

