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Master thesis:
How does dividend taxation change ownership structure?

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Thank you,
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Abstract

This master thesis aims to explain how dividend taxation changes ownership structure in privately held Norwegian firms. While previous studies have focused on changes in dividend policy, our thesis looks at how changes in dividend taxation affect companies' ownership structure.

We find that the proportion of privately held companies in Norway have shifted toward being more single-owned after the tax reform in 2006. This shows evidence of a high increase in ownership concentration after the tax reform was introduced in 2006. We also observe a significant decrease in the average dividend payout ratio. The cost of reducing potential conflict between minority and majority shareholders is higher with dividend taxation. We also found that firms are less likely to raise paid-in capital from minority shareholders. The majority shareholders may choose to have more concentrated ownership, reducing the firm's ability to bring in new equity in the long term.

Jointly, these facts suggest that newer companies avoid having minority shareholders to avert dividends that became expensive after tax reform. We have fewer owners that are less diversified and are risk-averse because of the lack of diversification. This could seriously affect the future investment opportunities for privately held Norwegian firms.

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Chapter 1

Introduction

1.1 Motivation

A company is often started with an idea by one or a few shareholders with the primary goal of generating a surplus for the owners, which is distributed to shareholders, usually in the form of dividends. Eventually, when the company needs more cash to grow, it can finance itself with debt or new equity. Issuing equity to new shareholders affects the ownership structure of a firm over time. There is also reason to believe that the dividend payout policy of a firm significantly affects the ownership structure of a firm. A reason could be that dividends are a way to protect the interest of minority shareholders (Berzins et al., 2018). Furthermore, according to theory, dividend taxation has an impact on the payout policies of companies. This will affect the portfolio decisions of individual investors and, thus, the ownership structure of firms (Chang & Rhee, 1990). Furthermore, Michaely and Roberts (2012) finds that private firms are more inclined to cut dividends. For private firms, prior literature finds that dividend taxes affect dividend payout decisions, but the studies do not find any clear evidence that dividend taxation affects firms' ownership structure (Jacob and Michaely, 2017; Berzins et al., 2018; Berzins et al., 2019).

In this study, we will try to explain how changes in dividend taxation can explain a change in ownership structure. Because of the well-known tax reform in 2006, the cost of paying dividends has increased. We find this important to address since dividends play an important role in attracting minority shareholders, which is important for private firms to attract new capital. We are concerned about a firm's ability to attract minority shareholders decrease due to the high cost of paying dividends.

Therefore it is much more difficult to attract new capital for privately held firms. We observe that the total paid-in capital to firms decreased after the tax reform in 2006. Since ownership concentration increases, new firms will likely start without minority shareholders. Also, high dividend taxation appears to lock in cash in firms as indicated by Alstadsæter et al. (2017). When firms start without additional partners (single-owned), the controlling shareholder is less likely to be diversified, and the companies will be more risk-averse when taking on new projects. This indicates a higher discount factor for these firms (Becker et al., 2013). This means that firms might reject several positive net present value projects. This further implies that higher dividend costs could dramatically affect future corporate investments for privately held firms.

By examining the changes in the behaviour of private firms, our study can make key contributions to the existing dividend and ownership literature. Our aim is to explore the topic using established and relevant theories in the areas of ownership and dividends. Most earlier studies have focused on companies from other regions, usually in the U.S. or Europe. We want to investigate the subject further regarding Norwegian firms. Another reason why we have chosen this subject is the quality of the data delivered by the CCGR database and access to detailed information on privately held Norwegian firms. Through our thesis, our main emphasis will be on the tax shock of the tax reform in 2006. Also, the effect of dividend taxation on ownership structure is very relevant in Norway since the Government has announced that the dividend tax will be further increased in 2023.

Our thesis starts with a short introduction covering the tax reform in 2006 and its reasons. After the introduction, we have created a literature review of studies carried out in the relevant field. Our objective is to identify crucial theories and find possible areas that require further exploration. Based on this gap in the research field, we have derived our research questions and, subsequently, hypotheses. In the second part of our thesis, we will present the descriptive statistics, methodology, and analysis results. Our results show that the ownership structure of firms has become more highly concentrated after the tax reform. Also, the dividend payout ratios have decreased substantially. In the end, we will conclude our views with some final thoughts.

1.2 Background

Before 2006, Norway had no taxation on dividends and capital gains. The tax reform in 2006 changed this by introducing new general tax rules. The introduction of this reform increased the dividend tax for Norwegian shareholders from zero to 28 %. The tax reform of 2006 had a substantial impact on Norwegian shareholders. Given that a Norwegian investor wanted to take out 100 NOK from the firm, they now had to pay 28 NOK to the Government and retain 72 NOK for themselves. To understand the impact the tax reform in 2006 had on Norwegian investors, we must understand the past and investigate the circumstances leading to this event to grasp the changes. Then we can find out what implications this tax reform had on shareholders.

The predecessors of the tax reform in 2006 were the 1992 reform, also known as "dual income tax". The dual-income tax system in Norway at this time also had zero dividend taxation. This tax system was mainly introduced in Nordic countries such as Denmark, Sweden, Norway, and Finland, but other countries adopted the same system in later years. This tax system deviated from global income taxation (GIT) because it separates the taxation of capital income from the taxation of other sources of income (Sørensen, 1994). The special characteristic of this DIT system in Norway for the 1992 tax reform was that it attempted to apply a uniform proportional tax to all forms of capital income and maintain progressive taxation of the taxpayer's total income from other sources (Sørensen, 1994). Therefore, the primary purpose of the tax reform in 2006 was to expand the tax base by reducing the general tax rates.

Before the 2006 reform, capital income and wage income were taxed by a (basic) flat rate

of 28 %, whereas a two-tier surtax supplemented the basic rate concerning wage income (Thoresen et al., 2011). Furthermore, the separation between capital and labour income and this zero per cent dividend taxation incentivized taxpayers to change from labour income to dividend income because this was based on lower overall taxes. For the governments to counter such incentives, the "split model" was introduced for privately held firms that were categorized as self-employed and closely held (Thoresen et al., 2011). This was defined as firms with over 2/3 of equity owned by an active owner who works more than 300 hours per year. If this was the case, the income should be treated as labour income instead of capital income. Furthermore, this was regardless of the dividend policy of the firm. When firms were widely held, meaning that more than 1/3 of the shareholders were passive investors, they could classify dividends as a capital gain (Alstadsæter, 2006). This gave majority investors an incentive to have below 2/3 of the shares.

Later in the 1990s, there was increased pressure on the dual-income tax system implemented in 1992 from the government (Thoresen & Alstadsaeter, 2010). It was argued that under this dual-income system, small business owners were encouraged to organize their daily operations and activities in a widely held corporation because of tax benefits. The policymakers concluded that the 1992 tax reform had flaws that the business owners exploited. In 2006, the new tax reform was introduced as a solution to prevent business owners from taking advantage of lower tax rates by converting labour income into capital income (Thoresen et al., 2011).

1.3 Tax reform of 2006

The tax reform in 2006 emerged out of a wish to replace the old split system with more general tax rules. The Norwegian parliament stated that the primary objective of the new tax reform was to ensure the more fair taxation of all income (Finansdepartementet, 2004). Creating a more equitable and better tax system aimed not to enable taxpayers to benefit from the lower tax rate on capital income (Thoresen & Alstadsaeter, 2010).

The main feature of this reform was to introduce partial double taxation on dividends for individual investors in Norway (Alstadsæter & Fjærli, 2009). This implied that the marginal rates on individual dividend income went from 0 to 28 % on the personal level. We expect that indirect ownership through a holding company should increase. This is because limited liability companies are not taxable for either capital gains or received dividends before the money is taken out privately. Therefore, firm-to-firm dividends are not being taxed. The new reform of 2006 has built an important incentive for the type of business entity investors should choose. Implications from this is an observed increase in limited companies established by private investors to receive dividends and buy and sell shares without taxation.

In contrast to the 1992 reform, taxes with the new reform were both on corporate and individual levels. To continue incentive individuals to invest in companies, the tax was levied on an individual's dividend above a risk-free rate of return (Thoresen & Alstadsaeter, 2010). Because of this, only the equity risk premium over this risk-free rate was subject to taxation. Later research has shown that this new dividend tax on the individual level not have come at the expense of new investments (Alstadsæter & Fjærli, 2009). Additionally, majority shareholders

were no longer concerned about having more than 2/3 of the shares and being taxed as labour income. This further incentives majority shareholders to increase their ownership stake in the firms.

The Norwegian government considered the 2006 reform superior to the 1992 reform (Finansdepartementet, 2005). The new reform was seen as a continuation of the 1992 tax reform but with a decrease in the difference between how labour income and capital income were being taxed. The Government still wanted to incentive investors and shareholders to have capital invested. Therefore, the main principle that capital being invested was the most beneficiary for society was not being abolished.

Chapter 2

Literature Review

2.1 Modigliani and Miller

Miller and Modigliani (1961) laid the theoretical foundation for dividend research and concluded that dividend policy is irrelevant in a frictionless world with perfect capital markets. However, they conclude that we do not live in a frictionless world and that the effects of a firm's dividend policy are of significant importance (Miller & Modigliani, 1961). Later research has studied how market imperfections create conditions where dividend policy might be relevant. If dividends are taxed more heavily than capital gains, companies are incentivized to return equity capital through share repurchases instead of dividends.

2.2 Signaling Theory

As mentioned, Miller & Modigliani's proposition about perfect and complete markets does not exist in reality (Miller & Modigliani, 1961). Several other theories were developed that contradict the dividend irrelevance theory. Lintner (1956) conducted an analysis of 28 Managers from US companies between the years 1947 and 1953. Here, he investigated the dividend policies and found that managers hesitate to raise or cut existing dividends. Raising dividends would only occur if the managers were highly confident that it would be sustained in the future, and cutting dividends would only happen if they had no other option. Lintner (1956) also finds that dividends tend to stay fixed to reach the long-term dividend payout ratio set by the companies.

Bhattacharya (1979) argues that outside investors have imperfect information about firms' profitability and that cash dividends are taxed higher than capital gains. Under such circumstances, he shows that dividends function as a signal of expected cash flows to come. Other studies have been developed on signaling theory over the years, see Miller and Rock (1985) and John and Williams (1985). Here, they argue, among other things, that dividends are costly and signal important information about a firm's long-term prospects. Under the signal theory, the distribution of cash dividends allows managers of firms to signal to the investors the firm's true value based on the manager's future perspectives (Taleb, 2019).

Bernheim and Wantz (1995) have taken an alternative approach where they propose and implement a new test of dividend signaling that discriminates between signaling and other theories of dividend preference. Their main conclusion is that the value in return for money invested generated by the dividend announcement rises with the dividend tax rate. Bernheim and Wantz (1995) also indicated that firms can use tax-disadvantaged dividends to signal the firm's intrinsic value. This is an indication that the signal given by profitability in dividend payments is stronger when there are taxes.

2.3 Agency Theory

A study by La Porta et al. (2000) finds that the controlling shareholders can effectively determine the manager's decisions. In many cases, managers come from the controlling family firm. The implication is that the managerial control problem is less severe than in common-law countries that are wealthy. The majority shareholder can therefore implement various policies that benefit themselves at the expense of the minority shareholder. This means that no matter the insider's identity, the minority shareholders are the insider victims inside a firm. Furthermore, the authors argue that it is the minority shareholders that want dividend payouts the most (La Porta et al., 2000).

Firms pay dividends to return corporate earnings to investors. Therefore, the insiders can no longer use these earnings for private benefits. The authors further use the metaphor that a bird in the hands is better than a bird in the bush (La Porta et al., 2000). Stated differently, this means that getting dividends is better than earnings since earnings might never materialize into future dividends.

According to the research conducted by La Porta et al. (2000), it is possible to determine the relationship between better shareholder protection and higher dividend payouts through a cross-sectional analysis of countries with varying shareholder protection levels. Shareholders of a financially sound company with good shareholder protection are more likely to accept low dividends and higher retained earnings. This is because they believe that once the investment pays off, they can benefit from higher dividends in the future.

Jacob and Michaely (2017) finds that dividend taxation greatly impacts firms' payout policy. This means that without any friction, taxes significantly impact dividend policy. Secondly, the conflicts of interest between owners and management result in a weaker response of dividends to tax changes (Jacob & Michaely, 2017). Said in another way, when there are more agency frictions and other frictions, dividend taxation becomes less important for a firm's payout policy. Their study also finds that dividends can be used as a tax-based tool for splitting dividend pay-out into dividend and labour income. Further theories strengthen this, indicating that dividend taxes affect the payout policy of firms (Chetty and Saez, 2010; Blouin et al., 2011).

A closely related way of distributing cash flow to investors is through stock repurchases representing an alternative payout method. A study by Pindado et al. (2012) finds that the expected higher dividends of family firms avert the agency problems between minority shareholders that a reduction in share repurchase activity can explain. Their study is based on a sample of firms

from nine different Eurozone nations, and their main result is that family firms distribute higher and more stable dividends to relieve the expropriation of minority shareholders.

2.4 Conflict between shareholders

In a company, there are often conflicts between majority and minority shareholders about dividends. Majority shareholders may have several reasons to hold back dividends. Firstly, they are able to extract private benefits from the cash the firm holds. Secondly, they can hold back dividends to save taxes. There have been several studies that have been looking into this conflict between majority and minority shareholders. A conflict can then arise when the majority shareholders use their controlling stakes to their benefit, thereby holding back dividends (Holderness & Sheehan, 1988). A study (Berzins et al., 2018) finds that the payout is almost 50 % higher when the majority shareholder's stake is 55 % rather than 95 %. This difference gives empirical support for the fact that the average payout is higher when there is a high-conflict potential between the majority and the minority shareholders. Another study done by the same researchers (Berzins et al., 2019) finds that the impact of taxes on dividends is affected mainly by the severity of agency cost. A conflict of interest between majority and minority shareholders is called a horizontal agency problem, while a conflict between managers and shareholders is called a vertical agency problem (Roe, 1994).

Rommens et al. (2012) found that group companies pay higher dividends if they have minority shareholders; however, if it is a closely held individual firm, it can payout the benefits as salary. Berzins et al. (2018) have argued that higher payout is voluntarily used to reduce conflict and build trust. However, if firms use salary as a payout option, this might not benefit minority shareholders. Therefore, we also want to see if the payout policy of firms after a tax reform differs based on the presence of minority shareholders and do these policies effectively address agency conflicts, as highlighted in studies such as Rommens et al. (2012) and Berzins et al. (2019).

2.5 Ownership Structure

According to a study in Germany (Hillmann, 2021), minority shareholders have little influence on dividend payout policy and can react to reform by selling their shares. Also, Hillmann (2021) argued that affected shareholders primarily sell their minority stake to the most significant existing shareholders, resulting in greater ownership concentration after dividend tax reform. A similar study from Finland (Korkeamaki et al., 2010) examines how firms adjust their dividend payout decision when new tax reform occurs and the ownership structure changes. The authors find that dividend tax reform changes the behavior of both firms and shareholders. We want to analyze the same effect on privately held Norwegian firms after the tax reform in 2006. Hillmann (2021) further argues that dividend taxes are costly to minority shareholders, thus creating a change in the ownership concentration of the companies. We will analyze the changes in the dividend payout ratio of Norwegian privately held firms and how their ownership structure has changed over time. Furthermore, these changes have implications since the dividend tax may have encouraged firms to adopt alternative forms of capital distribution, such as share buybacks,

rather than paying dividends.

However, La Porta et al. (2000) have argued that firms operating in countries with better protection of minority shareholders pay higher dividends. Analysis of ownership concentration along with the dividend payout ratio will answer whether the tax reform in 2006 has caused the majority shareholders to buy shares from minority shareholders or change the ownership structure of the firms or establish holding companies to defer taxes.

Few studies look into the relationship between ownership structure and dividend taxation because of the lack of good data on private firm ownership. The classical papers by Elton and Gruber (1970), look into ways to determine tax brackets of marginal shareholders and explore its importance for corporate investment policy. They look at the change in the stock price around the ex-dividend date (tax brackets). The authors find that these tax brackets are related to a firm's dividend policy. In their case, different people had different taxes on dividends because of differences in wealth. On the ex-dividend day, in companies that paid high dividends, shareholders were selling their shares to avoid high taxes. Companies that pay low dividends find high implied tax on dividends. This implies that wealthy people invest in companies that pay low dividends under this tax regime. This is the clientele effect (Elton & Gruber, 1970), meaning that investors that need to pay high dividend tax would choose low dividend-paying companies, and the opposite for small dividend-paying companies. The idea between taxes and ownership is that the wealthy shareholders will sell their shares to less wealthy investors before the ex-dividend date and buy them back after the dividend has been paid, thereby trading around the ex-dividend date. As opposed to Elton and Gruber (1970), we have data on ownership, enabling deeper analysis into the ownership structure of firms. Furthermore, in Norway, the tax on dividends is designed to be the same for everybody.

We can measure ownership concentration using variables based on ultimate ownership rather than direct ownership. La Porta et al. (1999) was the first to introduce ultimate ownership. This measure could be defined as the sum of indirect and direct equity ownership within a firm held by the owner. The percentage of equity held by the owner with rank 1 owner can be used as a variable to define ownership concentration. We also use the same measure in our study. In their paper, they also define widely held companies, meaning a company where the management of the controlling company is not accountable to an ultimate owner or controlled by the management. Their paper is based on a database of the ownership structure of companies from 27 various nations, and they assemble two sample companies for each nation. They find that relatively few firms are widely held in countries with good shareholder protection. Furthermore, they find that families or the State often control these firms (La Porta et al., 1999).

Chapter 3

Research question and Hypotheses

3.1 Research question

Our main objective for this thesis is to explore how dividend taxation changes the ownership structure for privately held companies. We believe this subject needs more investigation based on our literature review and related studies. Therefore, our research question is as follows:

"How has dividend taxation changed ownership structure in privately held Norwegian companies?"

This research question is based on the current literature regarding the influence of dividend taxes on the dividend payout ratio of privately owned companies (Michaely and Roberts, 2011; Berzins et al., 2018; Berzins et al., 2019). While earlier studies often find evidence that dividend tax affects payout decisions (Berzins et al., 2018; Berzins et al., 2019), we want to extend the existing literature on Norwegian privately held firms concerning ownership structure. Furthermore, if dividends are used to reduce conflicts between majority and minority shareholders, higher dividend taxation may make it more difficult to address those conflicts. As a result, the optimal ownership concentration is likely to be higher.

Through this study, we will provide evidence that the ownership structure of Norwegian privately held companies is changing because of dividend taxation. We aim to fill the knowledge gap for Norwegian firms by investigating and answering this research question.

3.2 Hypotheses

According to studies (Berzins et al., 2018; Berzins et al., 2019), a distinct difference in payout ratio was observed as an effect of the tax reform in 2006. As mentioned, our goal is to extend the existing literature by looking at shifts in ownership structure because of dividend taxation. Thus, our first and most crucial hypothesis is as follows:

Hypothesis 1: After the tax reform in 2006, ownership concentration goes up, and companies are more likely to be single-owned (H1)

We will test H1 by comparing the changes in the firm's ownership concentration over the sample period (2000-2015). We define the period before the tax reforms as pre-reform (2000-2006). As it becomes harder for firms to reduce the conflict potential between majority and minority shareholders and reduce agency problems with the increased cost of dividends. Companies are more likely to be single-owner firms to avoid potential conflicts. The controlling majority can avoid paying expensive dividends when they don't need to consider minority shareholders. We also want to investigate this further by comparing firms' established pre-reform and post-reform period

Hypothesis 2: Firms are more likely to have fewer minority shareholders after tax reform in 2006 (H2)

We expect ownership concentration to increase, especially for new firms established after the tax reform in 2006. This means we expect that these companies will have a lower presence of minority shareholders. For new firms established after the tax reform was announced, we expect them, in many instances, to start without any minority shareholders. The companies established before tax reform will still have minority shareholders to please. This is because it is difficult for majority shareholders to buy out minority shareholders who have been a part of the company for a long time.

The following hypothesis focus on dividend payout ratios:

Hypothesis 3: The dividend payout ratio has decreased after the tax reform in 2006 (H3)

We expect dividend payout ratios to decrease substantially after the tax reform in 2006. This is because firms will be more reluctant to pay dividends because of the renowned tax reform. Therefore, we expect companies to retain their earnings and compile substantial cash instead. As in Berzins et al. (2018), we expect the average payout to be much lower due to the tax reform.

3.3 Limitations

There are limitations to our thesis, given our research question and hypotheses. In this part, we will shortly present other factors that could impair our analysis but we cannot test for.

In 2011, the government reduced the minimum capital requirement to start a limited liability company to 30.000 kroner from the earlier 100.000 kroner. Implications from this were that many unlimited liability companies were converted into limited liability companies. This year we observed a lot of new single-owner firms that suddenly appeared in the data. This might introduce noise and distortions in our data. We address this partially by including the firms that were present during the whole sample. We also found that newly incorporated firms do not drive our key results.

Before 2011 there was also a requirement that small companies had audit duty on their accounting. In 2011 this audit duty was repealed for small companies with revenues below 5 million NOK, total assets below 20 million NOK, and less than 10 employees working for the company in a year. Because of this, limited liability companies have become more attractive, and we will see a further spike in the number of firms in our data.

In Norway, dividends may depend on the owner's wealth and ability to pay the wealth tax. In many instances, shareholders need to take out dividends from their firm just to be able to pay this tax. This external factor can affect the significance of our analysis when testing for changes in ownership structure regarding dividend taxation and is difficult to control for.

Another limitation is that we don't observe every layer of ownership. For example, we don't have enough information on indirect ownership, meaning that we don't know if minority shareholders are setting up holding companies or not.

Chapter 4

Data

We use the CCGR database to investigate our research questions and hypotheses. The Centre for Governance Research database focuses on how ownership and governance impact value-creating and the welfare of a firm's stakeholders ("Centre for Corporate Governance Research", n.d.). The data from CCGR is very reliable since all limited liability companies registered in Norway are required to register their firm to the state agency (Brønnøysundregistrene). Since our study will solely be based on privately held Norwegian firms, we have access to all necessary and relevant quantitative data through the CCGR database. Our request for data was mainly focused on ownership and dividend-related variables. In addition, we used some supporting variables, such as income statement and balance sheet variables, that enabled us to filter our data. The list of all variables is to be found in the appendix (Table A.1).

4.1 Filtering of the data

Our initial dataset consisted of 3,461,962 observations from 2000-2015. We started our process by filtering out data that was not relevant or unwanted in our research.

The first step was to remove the subsidiaries from the data, as the subsidiaries may have had particular objectives or paying dividends, and subsidiaries might have been established just to avoid the tax paid by holding dividends. The second step was to exclude financial firms. This is a common filter to use in the dividend literature (DeAngelo et al., 2006; Berzins et al., 2018; Berzins et al., 2019). This was done to prevent the impact of special capital rules, accounting rules, and caps on ownership concentration in this industry. While filtering out the financials, we considered that the industry codes were changed in 2009, and only relevant industry codes were filtered out from the data.

Thirdly, we removed the inactive firms based on the total operating revenue. We took each company's average over the years present in the data and filtered out the companies with zero or negative income on average for twenty years. Creating averages instead of removing all the firms with less than or equal to zero operating income helped us identify inactive firms.

Some firms have reported their figures in a currency other than NOK. However, since we can not identify the company and are particularly interested in seeing what the Norwegian tax reform

did to Norwegian firms, we removed the observations with currencies other than NOK.

Instead of directly removing the NAs from the observation, we saw the NA counts of the variables over the years for some of the variables. For variables such as % equity held by ultimate owner with rank 1, number of families, and largest owner being direct personal owner, mainly for years from the tax shock of 2006, we created the lead and lags of the observations for the period. Therefore, we interpolated the values if the information and lag were the same. Since these variables tend not to fluctuate every year, it allowed us to have many observations in the final sample.

In some instances, we observed some errors where % equity held by the ultimate with rank 1 was more than 100 %. Since this is not possible, we removed these values since they might be data entry or reporting errors.

We find the subset of the company that existed from 2003-2009 to find the effect of tax sock. 45,867 companies existed all the years from 2003-2009. We then constructed the dataset of those 45,867 companies from 2000 to 2015. In the table below, we can observe the number of firms after having applied different filters (Table 4.1):

Table 4.1: Filtering process

Filter	1	2	3	4	5	6	7	8	9	10
Year	**Initial Database**	**Removing subsidiaries**	**Removing Financials**	**Removing inactive firms**	**Other Currencies**	**Removing NA**	**Removing Equity Errors**	**Survived through 2003-2009**	**Same firms 2000-2015**	**Applying income filter > 0**
2000	145,656	112,494	111,068	101,838	101,838	87,708	87,708		35,453	55,801
2001	149,468	113,328	111,563	103,801	103,801	77,010	77,010		33,592	48,026
2002	153,912	118,157	116,478	109,088	109,088	72,985	72,985		34,235	46,277
2003	155,996	118,825	114,438	108,546	108,546	92,091	92,091	45,867	45,867	57,976
2004	158,259	120,565	116,199	110,565	110,565	89,473	89,473	45,867	45,867	60,035
2005	182,689	133,483	128,588	120,476	120,476	94,188	94,188	45,867	45,867	62,316
2006	208,971	146,769	130,431	122,082	122,068	96,385	96,358	45,867	45,867	64,207
2007	222,196	149,837	133,970	124,936	124,933	93,956	93,955	45,867	45,867	62,670
2008	233,955	157,623	140,009	129,791	129,717	92,995	92,995	45,867	45,867	55,427
2009	238,213	160,361	144,948	133,973	133,853	92,914	92,914	45,867	45,867	57,545
2010	242,762	162,024	146,380	135,643	135,436	93,945	93,944		42,538	57,927
2011	248,352	164,860	148,987	137,706	137,443	95,584	95,584		39,892	59,439
2012	261,253	171,003	157,002	144,076	143,777	103,035	103,032		37,448	66,061
2013	274,047	177,919	164,509	150,230	149,915	110,932	110,930		35,220	69,520
2014	286,344	188,305	174,644	157,503	157,166	118,086	118,083		33,398	74,674
2015	299,889	198,000	184,330	162,359	162,001	124,664	124,660		31,804	78,002

4.2 Variables

After the filtering, our dataset still had 1,535,801 observations left. In the next section, in-depth elaboration on these variables will be presented. Based on the outcome, we winsorized the variables' size, leverage ratio and cash-to-assets ratio at 5% as these variables had more extreme outliers. We also have winsorized DPR ratio at 2% to replace extreme values in a variable with less extreme values to reduce the impact of outliers.

Dividend Payout ratio

We calculated the dividend payout ratio for all firms in our final sample. The dividend payout ratio could indicate how much earnings the firm pays its shareholder(s). It could also be seen as an indicator of how much money the company chooses to keep and instead reinvest in the company. Since our main objective is to see how dividend taxation affects ownership structure, we will include the dividend payout ratio in our analysis. Since we don't have access to the net income variable in our thesis, we are using income before extraordinary items instead. Because of this, the dividend payout ratios will be inflated throughout our thesis. Below is the formula for the dividend payout ratio:

$$Dividend\,payout\,ratio = \frac{Dividend\,payable}{Income\,before\,Extraordinary\,Items}$$

Dividend propensity

We also have the dividend propensity variable to further look at firm characteristics regarding dividends. This measure captures the difference between moving resources firms' actual and expected percentages. Over the last decades, firms have appeared increasingly reluctant to return cash to their shareholders through dividend payments.

$$Dividend\,propensity = \frac{Number\,of\,firms\,paying\,dividend}{Total\,firms}$$

DeAngelo et al. (2006) suggest that a decline in dividend propensity is especially significant among firms with high retained earnings. We expect to see privately held Norwegian firms retain significantly excess cash holdings or increase their share repurchases prior to what has been observed in earlier years.

Ownership structures variables

% equity held by ultimate owner with rank 1 measures the % of equity held by a majority owner. If, for example, the variable is 60 %, this means that the majority shareholder holds 60 % of the equity, while the other shareholder(s) hold the rest of the equity. We also included a variable that shows the number of owners in each firm. If this variable is 2, and the percentage equity held by the ultimate owner with rank 1 is 60 %, then only one other shareholder has the rest of the 40 % of the equity.

We also have a variable called *largest owner is personal (direct ownership)*. This variable shows if the largest owner of the firm has direct or indirect ownership. We observe that there was a change to indirect ownership in 2006. This is because the tax rate of 28 % on dividends that were announced is a private tax. By changing into indirect ownership through a holding company, the owners don't need to pay the dividend tax until the money is taken out of the holding company.

In our data, we also have several variables that give information about family ownership. *Largest family sum ultimate ownership* is the same as *% equity held by ultimate owner with rank 1*, with the exception that this new variable is observing ownership of families.

We also have several variables that we are going to use in our later estimations. These are:

Leverage ratio
The leverage ratio can be calculated in the following way:

$$Leverage = \frac{Total\ Assets - Total\ Equity}{Total\ Assets}$$

By applying this variable, we can observe if companies expect to finance their operation with more debt or are accumulating cash. If the leverage ratio goes down over time, this could indicate that companies are accumulating more cash because of the dividend taxation and not thereby reducing financing through leverage. Jensen and Meckling (1976) finds that companies with higher ownership concentration may prefer lower leverage if debt brings out more monitoring over the firms. We also want to look at the cash-to-asset ratio to see if this is true. Myers and Majluf (1984) modified the well-known pecking order theory, where they concluded, among other things, that information symmetry between investors and managers makes companies prefer some financing sources over others. Also, Frank and Goyal (2009) tests the pecking order theory of capital structure and finds that dividend and leverage have a negative correlation.

Cash-to-Asset ratio
The cash to assets show the relationship between cash holdings and Total Assets on the firm's balance sheet and can be calculated as follows:

$$Cash\ Asset\ ratio = \frac{Cash\ holdings}{TotalAssets}$$

Since shareholders are more reluctant to pay dividends, we assume that firms retain more earnings than before. Therefore, this indicates that companies hold more cash than in earlier years. If this ratio goes up over time, this confirms our assumption. This assumption is supported by earlier research (Fama & French, 2001).

Size
Larger firms are likely to have less concentrated ownership. *Size* can be defined as the log of

operating revenues. We assume that bigger companies are widely held and inclined to pay more dividends than smaller, higher-concentrated firms. Larger companies are also more likely to pay out dividends, given that firm size will determine profitability and stability as seen by Lloyd et al. (1985).

Industries

Industries affect the ownership structure of the firm as seen by Thomsen and Pedersen (1998). So we consider industry when we analyze the ownership concentration of the firms. We observed that the NAIC industry was announced to change in 2007 and implemented in 2009. To account for this, we classified the various industries with industry dummies. Our data contains years before and after the changes in 2009, so we defined various dummies taking into consideration the changed industry codes.

Total paid-in Capital

As mentioned in the introduction, we expect the firm's ability to bring in new capital from new investors will decrease since dividends have become more expensive after the tax reform in 2006. This is because after the tax shock in 2006, ownership concentration increased, and firms were less inclined to have minority shareholders. Alstadsæter et al. (2017) finds that dividend taxation makes firms lock in more cash than before. Becker et al. (2013) argue that when dividend tax is high, it could lock in the capital in firms. This should indicate that since capital is locked in, we should observe that the total paid-in capital ratio from minority shareholders should decrease in the year after the tax reform. Alstadsæter et al. (2017) finds that investors will be more inclined to invest new equity in firms when there is a dividend tax reduction. Since we have the opposite scenario, we expect it will be less attractive for investors (especially minority shareholders) to invest in firms after the tax reform in 2006.

4.3 Descriptive Statistics

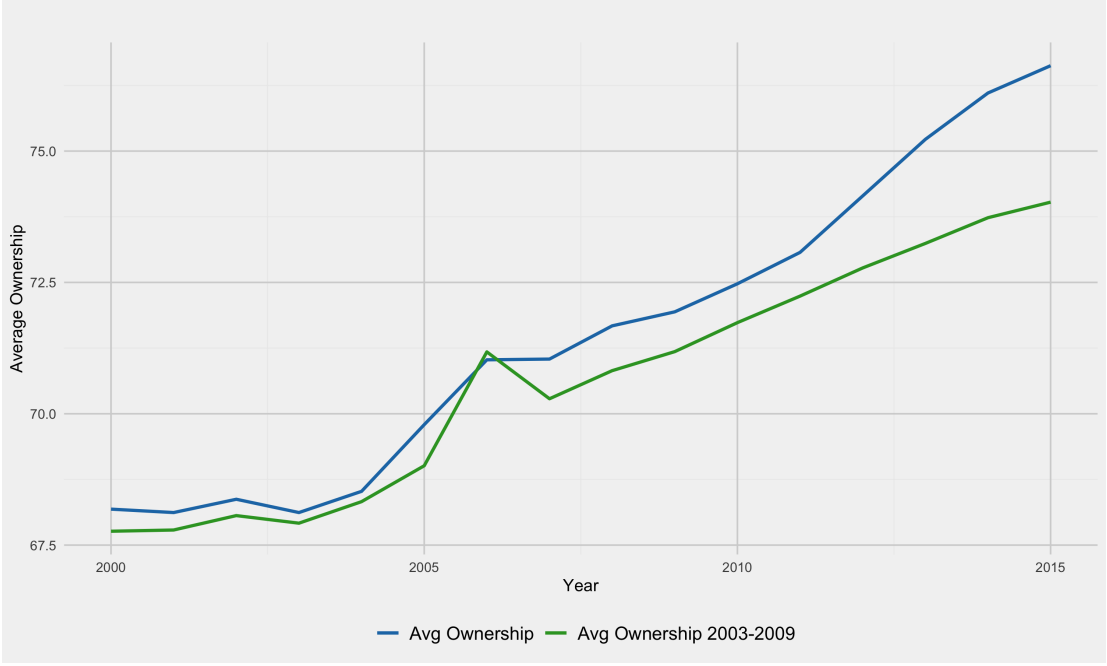
This section presents the descriptive statistics for two important variables used in our study: *% equity held by ultimate owner with rank 1* and *largest family sum ultimate ownership*. We use a sample of data from 2000-2015 for the two variables. We also analyze a sample of firms that existed in all years between 2003 to 2009 to better identify the true effects of tax reform on the firms present immediately before and after the tax reform. The table below shows the mean, median, and standard deviation for the two most important variables used in our study (Table 4.2):

Table 4.2: Ownership overview

	% equity held by ultimate owner with rank 1			% equity held by ultimate owner with rank 1 (2003-2009)			Largest family sum ultimate ownership			Largest family sum ultimate ownership (2003-2009)		
Years	Mean.	Med.	Std. Dev.	Mean.	Med.	Std. Dev.	Mean.	Med.	Std. Dev.	Mean.	Med.	Std. Dev.
2000	68.15	65.00	27.70	67.76	64.51	27.90	75.94	98.68	28.55	77.18	100.00	28.16
2001	68.10	65.00	27.87	67.79	65.00	28.00	76.80	100.00	28.21	77.83	100.00	27.88
2002	68.36	65.00	27.85	68.07	65.00	28.06	77.12	100.00	28.18	78.03	100.00	27.88
2003	68.12	65.00	28.00	67.94	65.00	28.26	76.52	100.00	28.38	77.50	100.00	28.14
2004	68.52	65.00	27.96	68.34	65.00	28.29	76.85	100.00	28.30	78.04	100.00	28.01
2005	69.76	66.00	28.33	69.02	66.00	28.44	75.89	99.99	29.23	78.33	100.00	28.19
2006	70.11	70.00	29.96	71.19	67.00	27.99	78.02	100.00	27.36	79.02	100.00	27.43
2007	70.99	70.00	28.73	70.30	66.66	28.67	78.12	100.00	28.64	79.71	100.00	27.83
2008	71.61	75.00	28.75	70.83	70.00	28.67	78.68	100.00	28.54	80.24	100.00	27.68
2009	71.88	75.33	28.80	71.20	70.00	28.56	78.96	100.00	28.57	80.52	100.00	27.64
2010	72.43	80.00	28.83	71.76	75.00	28.54	79.51	100.00	28.43	81.18	100.00	27.44
2011	73.01	83.00	28.81	72.26	77.50	28.55	80.06	100.00	28.23	81.65	100.00	27.32
2012	74.14	92.12	28.63	72.82	80.00	28.32	79.33	100.00	28.74	80.09	100.00	28.16
2013	75.24	100.00	28.36	73.32	81.21	28.26	80.24	100.00	28.36	80.45	100.00	28.10
2014	75.95	100.00	28.15	73.65	83.00	28.17	80.80	100.00	28.12	80.72	100.00	27.97
2015	76.47	100.00	27.95	73.94	85.00	28.09	81.02	100.00	28.03	80.86	100.00	27.97

We also have a graph for % equity held by the ultimate owner with rank 1 (graph 4.1). Here, we observe that, like in the previous table, the ownership structure change substantially over time. This further strengthens our assumption that dividend tax shocks cause more highly concentrated firms:

Figure 4.1: Average ownership Comparison



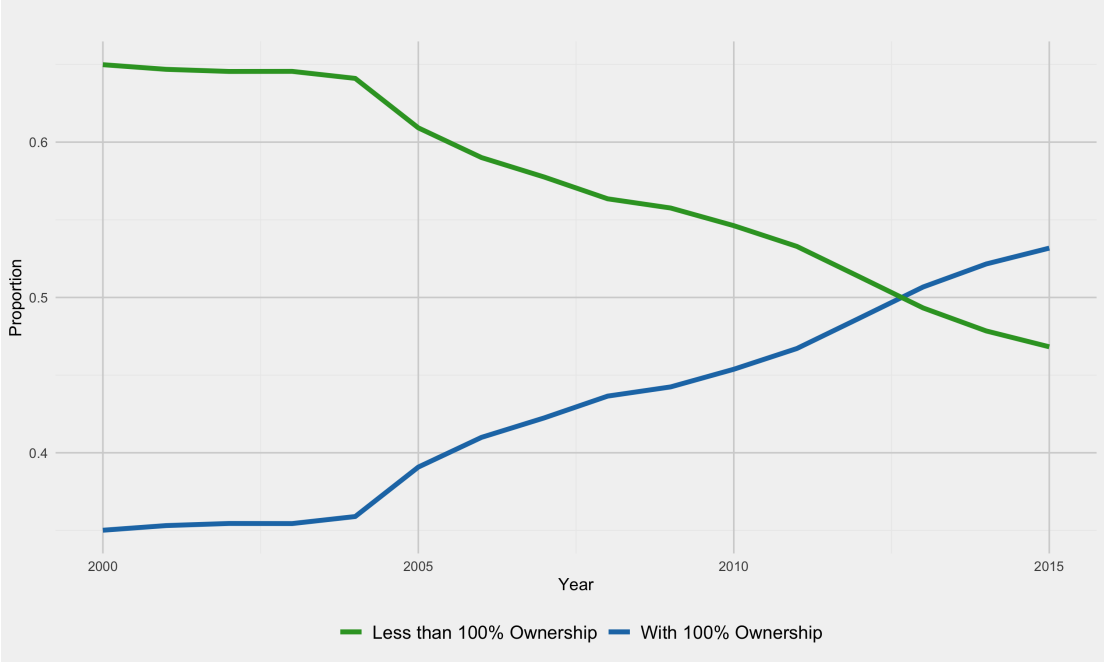
From the figure, we observe the % equity ownership held by the ultimate owner with rank 1 has increased sharply after 2004 for all the firms in the sample. We see similar trends for companies that survived 2003 through 2009, which is the crucial period before and after the tax reform of

2006 was announced. We also have the same graph for family ownership (see appendix, figure A.1). From the figure, when we look at the Largest family sum ultimate ownership, we observe that for firms that existed in the entire sample, there was a sharper increase in average ownership concentration when compared to firms that only existed between 2003-2009.

Among the firms that are in the sample during 2003 to 2009, we see that 15.89% of the firms with minority shareholders in 2003 transformed to being single-owner companies without minority shareholders in 2009. (See appendix, Table A.2).

The graph below (Figure 4.2) displays the proportion of the companies with 100 % ownership held by individuals owners with rank one (single-owned by one shareholder) and the proportions of firms without 100 % ownership (multiple-owner firms) for the sample period 2000-2015:

Figure 4.2: Proportion of Companies with 100 % Ownership vs without 100 % Ownership



We observe that the proportions of firms that are single-owned have increased sharply, especially after 2005. Initially, the proportion of single-owned firms during 2000-2005, was around 20 %, while the proportions of the firms with minority owners (multiple owner) were around 80 %. The proportion of single-owned firms increased after 2004 and exceeded that of those with less than 100 % ownership (multiple-owner firms).

There could be several reasons for this change in ownership structure. The tax shock of 2006 was announced in 2004 and made majority shareholders reluctant to have minority shareholders because of majority and minority conflicts. As intercompany dividends were not taxed, individual investors also chose to own firms through a holding company. This allows them to use the dividends for other investments without incurring any taxes. As previously mentioned investors would only pay tax if they took dividends out of the holding companies. This shift towards indirect ownership will only affect direct ownership, but will not affect ultimate ownership.

We also observe similar trends for family ultimate ownership, as illustrated by the graph (see appendix, figure A.2). Proportions of firms with minority shareholders decreased substantially after 2006.

The table (Table 4.3) below shows the proportions of the firm with and without minority shareholders in the overall sample before and after the tax reform. We have used both % equity held by the ultimate owner with rank 1 owner and family ultimate ownership to find the proportions of the firms.

Table 4.3: Proportions of the firms with and without minorities

	% Equity held by rank 1		**Family Ultimate Ownership**	
Years	Without Minority	With Minority	Without Minority	With Minority
Before Tax.ref	0.360	0.640	0.502	0.498
After Tax.ref	0.470	0.530	0.533	0.467

We see that the proportions of firms with minority shareholders have decreased in the years after tax reform. The possible explanation for these changes is that the companies are less likely to issue minority shares as it will force them to give dividends to keep the minority shareholders satisfied. As dividends have become more and more expensive, firms without minority shareholding have increased substantially.

The table below (Table 4.4) shows the development in a dividend payout ratio for the companies in our sample period (2000-2015). *DPR 2000-2015* presents the mean and median for all firms (old and new firms) in the sample period (2000-2015). *DPR existed 2000-2005* present mean and median only for firms that existed for all years between 2000-2005, for the sample period (2000-2015). By applying this restriction, we observe only the firms that existed before tax reform. *DPR existed 2000-2005 (with only minorities)* present mean and median with the same restriction as the previous column, with the only exception that all firms included have minority shareholders (multiple owner firms).

Table 4.4: Dividend Payout Ratio numbers

	DPR 2000-2015		**DPR existed 2000-2005**		**DPR existed 2000-2005 (with only minorities)**	
Years	Mean.	Med.	Mean.	Med.	Mean.	Med.
2000	0.4139	0.0000	0.4864	0.2895	0.4734	0.3030
2001	1.1423	0.0000	1.4018	0.7953	1.0453	0.7667
2002	1.5051	0.4520	1.6560	0.9855	1.5978	0.9871
2003	1.1702	0.4641	1.4567	0.9868	1.4881	0.9868
2004	1.6560	0.8512	1.9099	1.0159	1.9836	1.0191
2005	0.1375	0.0000	0.1162	0.0000	0.1086	0.0000
2006	0.2202	0.0000	0.3758	0.0000	0.3529	0.0000
2007	0.0677	0.0000	0.1280	0.0000	0.1445	0.0000
2008	0.1946	0.0000	0.2597	0.0000	0.2588	0.0000
2009	0.2429	0.0000	0.3772	0.0000	0.3345	0.0000
2010	0.2574	0.0000	0.3523	0.0000	0.3576	0.0000
2011	0.2707	0.0000	0.3569	0.0000	0.3301	0.0000
2012	0.2154	0.0000	0.4182	0.0000	0.3962	0.0000
2013	0.3441	0.0000	0.8352	0.0000	0.9057	0.0000
2014	0.3352	0.0000	0.5133	0.0000	0.5436	0.0000
2015	0.3553	0.0000	0.6426	0.0000	0.6820	0.0000

Before the tax reform in 2006, we observed a high dividend payout ratio in the firms. This is because firms anticipated the tax changes, and firms are taking out the cash while they can without dividend tax. From 2005 we observe a sharp decline in the dividend payout ratio as the dividends payable in 2005 were to be taxed in 2006. After the tax reform was implemented, we observed that the average dividend payout ratios were higher for companies that only existed before the tax reform. An explanation for this could be that these companies have minority shareholders, and to reduce agency frictions, companies are paying dividends.

Firms that existed before 2005 have a higher dividend payout ratio compared to the overall sample of firms. Especially, after the tax reform in 2006, companies with minority shareholders have continued paying more dividends than the overall sample of companies. This is similar to the findings of Rommens et al. (2012). In the appendix (Figure A.3), we have shown the average dividend payout ratio of the companies over the years, which clearly shows that the dividend payout ratio has decreased substantially and firms with established before 2006 dividends than the overall sample.

The table below (Table 4.5) compares the average dividend payout ratios for all the companies that existed between 2000-2015. Here we compare the dividend payout before and after the

tax reform of the companies with and without minority shareholders.

Table 4.5: DPR with- and without minority shareholders

	DPR % Equity held by rank 1		**DPR Family Ultimate Ownership**	
Years	Without Minority	With Minority	Without Minority	With Minority
Before Tax. Ref	1.263	1.127	1.340	1.001
After-Tax. Ref	0.269	0.224	0.246	0.245

The table above shows that the firms without minority shareholders paid higher dividends than those with minority shareholders. This is different from our assumption about having minority shareholders and the need for dividends as the way to satisfy minority shareholders. This might be because tax reform was announced in 2004 and implemented in 2006, firms without minority shareholders paid out unusually high dividends, before the tax was introduced but as expected, the dividend payout ratio has decreased significantly for both firms with and without minority shareholders. Similar trends can be seen for family sum ultimate ownership as well. In the years before the tax reform, families without minority shareholders are paying more dividends than families with minority shareholders. An explanation could be that since the dividend taxation was announced in 2004 and not implemented before 2006, families might have taken out higher dividends before it was subject to taxes.

In the appendix, (figure A.4), we see that the firms established after 2006 pay lower dividends than those founded before 2006. One explanation can be that the firms are smoothing the dividends as discussed by Fama and French (2001). Still, the main reason is that most firms established after 2006 are established with high ownership concentration or as single-owner firms and do not need to pay dividends to make minority shareholders satisfied.

Chapter 5

Methodology and Analysis Results

In this section, we analyze how dividend taxation changes ownership structure over time. Furthermore, we extend related research on privately held Norwegian firms like Berzins et al. (2018) and Berzins et al. (2019). We examine large datasets containing 299 889 companies from 2000-2015. Our focus is on quantitative data and techniques to test our hypotheses and answer our research question. We use a quantitative approach, and the external validity of the research conducted will be high. Using this approach, the internal validity will suffer to some extent because there could be methodological errors. After all, no single company is investigated in-depth. Although there are drawbacks to using this approach, the benefits of using a quantitative approach exceed the potential drawbacks.

Based on earlier theory and research papers, as well as findings when handling and examining the data, there may be evidence suggesting that dividend taxation can influence the changes in ownership structure within the firms included in our study. The descriptive statistics showed that the 2006 tax reform significantly affected the ownership structure. The decline in dividend ratios over time and the development of higher ownership concentration could indicate that shareholders, especially majority shareholders, take a proactive approach to protect themselves against dividend taxation.

In the next section (5.1), we define 5 different univariate tests. In section 5.2, we will define more advanced multiple regressions.

5.1 Univariate Tests

We conduct univariate tests to test for five key variables of interest. The first two tests look at ownership concentration measures (Table 5.1), while the three other tests look at dividend payout ratio measures (Table 5.2).

From the paired-sample test for the mean in the ownership concentration part, we can observe a significant increase in the ownership concentration of the firms after the tax reform. From before the tax reform period, we have a mean = 68.527 % to the after-tax reform period,

with a mean = 73.386 %. This indicates that the average ownership concentration has increased by 5.059 %. We conduct univariate tests for companies that were established before and after 2006 (old and new companies) companies after the reform. For old companies after the tax reform, we observe a mean = 72.226 %, and for new companies established after the reform, we observe a mean = 75.444 %. This indicates that companies established after the tax reform in 2006 are established with higher ownership concentration.

Table 5.1: Univariate tests on Ownership concentration

Univariate regression Ownership concentration				
Dependent variable		*Parameters*		
	mean	mean difference	t-stat	p-value
Ownership Conc Before Reform	68.527			
		5.059	-100.630	0.000**
Ownership Conc After Reform	73.386			
Ownership Conc After reform Old Comp	72.226			
		3.218	-54.664	0.000***
Ownership Conc After reform New Comp	75.444			

The table shows large and significant differences in mean before and after the reform in ownership concentration. It is statistically significant at all significance levels (p-value <0.01). This indicates that there is clear evidence that ownership concentration gets higher after the tax reform. We have also executed a Wilcoxon Signed Rank Test, showing the significant differences in medians before and after the tax reform 2006 for ownership concentration (See appendix, Table A.3). From the table we observe this is significant on all significant levels (p-value <0.01). This supports hypothesis 1, that ownership concentration increases after the tax reform.

As previously stated, we also performed basic univariate tests to analyze the dividend payout ratio. We test for the DPR of companies founded before and after the tax reform (old and new) and companies with and without minority shareholders. From the descriptive statistics, we saw unusually high dividends paid in the years before tax reform, as tax reform was anticipated, firms took out higher dividends before it was subject to taxes. To reduce the impact of such outliers we have winsorized DPR ratio at 2% to replace extreme values in a variable with less extreme values.

The first univariate test shows a significant difference in the DPR among all the firms in the sample before and after the tax reform. Before the tax reform, firms had a DPR of mean = 0.608; after the tax reform, firms had a DPR mean = 0.142. The second univariate test shows a significant difference in the DPR after the tax reform of the firms established before and after the tax reform. The firms established before the tax reform period have DPR of mean = 0.155, while those established after the tax reform in 2006 have DPR of mean = 0.118. Firms established before tax reform have higher DPR after tax reform than firms established after tax reform. Furthermore, in the third univariate test, we can observe a significant difference in the

DPR after tax reform of the firms with and without minority shareholders established before tax reform. The firms established before the tax reform with minority shareholders have DPR after tax reform of mean = 0.170, while the firms established before tax reform without minority have DPR of mean = 0.162. Companies with minority shareholders have a higher average dividend ratio than companies without minority shareholders.

Table 5.2: Univariate test on Dividend Payout ratio

Univariate regression Dividend Payout Ratio				
Dependent variable	*Parameters*			
	mean	mean difference	t-stat	p-value
DPR Before Tax reform	0.608			
		-0.466	297.85	0.000 *
DPR After Tax reform	0.142			
DPR After tax reform Old Comp	0.155			
		0.037	37.504	0.008 *
DPR After tax reform New Comp	0.118			
DPR After tax reform Old firms w/ minority	0.170			
		0.008	-3.8454	0.0001
DPR After tax reform w/o minority	0.162			

The table exhibits significant differences in dividend payout ratios of companies before and after the tax reform. All the results are statistically significant at all significance levels (p-value <0.01). This indicates that there is clear evidence that the dividend payout ratio of companies decreases after the tax reform. Furthermore, companies established before tax reform and companies established with minority shareholders pay higher dividends than companies established after tax reform and companies established without minority shareholders.

5.2 Multiple Regressions

We will define several econometric models to examine the relationship between ownership structure and dividend taxation. We define four econometrical models for an ownership structure to test hypotheses 1 and 2. Further, we have 3 econometrical models for dividend payout ratios that test hypothesis 3. In the, we have robustness regressions to test the robustness of models. In all our models we combine cross-sectional and time-series data.

5.2.1 The Baseline model: Ownership Structure

These first four econometrical models assess the impact of the ownership structure of firms for the sample period (2000-2015). We include explanatory variables of size, leverage, and cash-to-assets ratio characteristics. Our dependent variable for all four regressions is *% of equity held by the ultimate owner with rank 1* to test hypotheses 1 and 2. This variable is denoted as

Ownership in the equations. We let YearAfter be a dummy variable that is 1 for all the years after the tax reform and 0 otherwise. We have three different control variables that we control for. *Size* is the log of operating revenue, *Cash* is the cash-to-asset ratio, and *Leverage* is the leverage ratio.

Below we will present the different equations for the different models and a short description for each models:

Model (1):
The first model represents the initial test to test our first hypotheses about whether ownership concentration increased after the tax reform in 2006. We are running the following regression:

$$Ownership_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Service_{it} + \beta_3 * Trade_{it} + \beta_4 * Mining\ \&Oil_{it} + \beta_5 * Industry_{it} + \beta_6 * It\ \&Telecom_{it} + \beta_7 * Building_{it} + \beta_8 * Tourism_{it} + \beta_9 * Utilities_{it} + \beta_{10} * Size_{it} + \beta_{11} * Cash_{it} + \beta_{12} * Leverage_{it} + \epsilon_{it}$$

The dependent variable in this model is the % equity held by the ultimate owner with rank 1. We define the YearAfter dummy as 1 for all the years after the tax reform and 0 otherwise.

Model (2):
The second model has the same regression as the model (1). The difference is that we impose the restrictions that companies have to have existed between 2003-2009. We want to ensure that the effect is not driven by new firms entering the sample or firms shutting down. This helped to control the effect of unlimited liability firms getting incorporated after the reform in 2006 to avoid taxes. This also means hypothesis 1 will be better tested here:

$$Ownership_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * service_{it} + \beta_3 * Trade_{it} + \beta_4 * Mining\ \&Oil_{it} + \beta_5 * Industry_{it} + \beta_6 * It\ \&Telecom_{it} + \beta_7 * Building_{it} + \beta_8 * Tourism_{it} + \beta_9 * Utilities_{it} + \beta_{10} * Size_{it} + \beta_{11} * Cashit + \beta_{12} * Leverage_{it} + \epsilon_{it}$$

Model (3):
Also here we test the main hypothesis (H1) that the ownership concentration increases after the tax reform and that firms are more likely to be single-owner firms after the tax reform. We will use DiD estimator to test this hypothesis in the following model. As discussed by Roberts and Whited (2012), we will compare two groups of firms before and after the tax reform. For the DiD estimator to conduct a cross-sectional analysis and time series comparison of firms, we will be dividing them into treatment and control groups. The treatment group will consist of firms likely to change their ownership structure due to tax reform, while the control group will consist of firms that will not change their ownership structure after the tax reform. This will allow us to use the difference-in-differences (DD) estimator.

$$Ownership_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Treatment1_{it} + \beta_3 * Treatment1_{it} * yearAfter + \beta_4 * Service_{it} + \beta_5 * Trade_{it} + \beta_6 * Mining\ \&Oil_{it} + \beta_7 * Industry_{it} + \beta_8 * It\ \&Telecom_{it} + \beta_9 * Building_{it} + \beta_{10} * tourism_{it} + \beta_{11} * utilities_{it} + \beta_{12} * Size_{it} + \beta_{13} * Cash_{it} + \beta_{14} * Leverage_{it} + \epsilon_{it}$$

The dependent variable in this model is the % equity held by the owner with rank one. We have the data from the period 2000-2015. To analyze the effect of tax reform in 2006, the YearAfter dummy equals 1 for all the years after the reform. This variable will control for trends common to both treatment and control groups.

The variable for treatment 1 equals 1 if the firm has minority shareholders for the given year and 0 otherwise. This variable controls for permanent differences between the treatment and control groups. Our interaction term is the YearAfterDummy*Treatment1 which will show the variations in ownership structure due to tax reform.

As found by Berzins et al. (2019), dividends can be used to minimize conflicts between majority and minority shareholders. With the rise in dividend taxation, the cost to make minority shareholders satisfied has raised. As we mentioned in descriptive statistics, several multiple-owner firms are becoming single-owner after the tax reform in 2006. Because of this, we define the firms with more than one ultimate owner (multiple-owner firms) as the treatment group, and the firms without minority shareholders (single-owner firms) as the control group.

Model (4):
The fourth model is also a difference-in-difference estimation where we test our second hypothesis (H2), that firms are less likely to have minority shareholders after 2006. We have the following regression equation for this model:

$$Ownership_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Treatment2_{it} + \beta_3 * Treatment2 * YearAfter + \beta_4 * Service + \beta_5 * Trade + \beta_6 * Mining\ \&Oil + \beta_7 * Industry + \beta_8 * It\ \&Telecom + \beta_9 * Building_{it} + \beta_{10} * Tourism_{it} + \beta_{11} * Utilities_{it} + \beta_{12} * Size_{it} + \beta_{13} * Cash_{it} + \beta_{14} * Leverage_{it} + \epsilon_{it}$$

The dependent variable is the % equity held by the ultimate owner with rank one. As with the previous model, the YearAfter dummy equals 1 for all the years after the reform and 0 if not. The variable for treatment2 equals 1 if the firms do not have more than 2/3 percentage ownership by the individual owner. In this model, our DiD coefficient is YearAfterDummy*Treatment2, which will show the variation in the ownership structure of the firms which do not have more than 2/3 percentage ownership by the individual owner.

The majority shareholders with more than 2/3 percentage ownership by the individual owner are not affected as much by the tax reform as they had to pay labour income tax (Alstadsæter, 2006). They are the group that decides the dividend-payout-ratio policy of the firm (La Porta et al., 2000). Therefore, we define those firms as the control group. Similarly, we define the firm that does not have more than 2/3 personal direct ownership as our treatment group. The reason for this is that this group could classify dividends as capital gain before the tax reform in 2006, and had an incentive for lowering their ownership concentration (Alstadsæter, 2006). After the tax reform in 2006 the firms that do not have more than 2/3 personal direct ownership have incentives to increase the ownership concentration to avoid paying expensive dividends and also to avoid agency frictions.

The table below (Table 5.3) reports the regression results for all four models we have applied.

The models in column (1) and column (2) test the effect of the year-after effect of the tax reform on the ownership % held by equity ultimate owner with rank 1. Model (1) includes the total dataset of all firms observed over the sample period 2000-2015. However, in model (2), we are restricting that the companies included had to have existed from 2003 through 2009. By doing this, we impose that companies have to have existed in the years right before and after the tax reform. The models in column (3) and column (4) are the DiD estimators, where we include the treatment groups. The reported values are the coefficient, with standard error in parentheses. ***, **, and * denote significance at the 1 %, 5% and 10 % levels, respectively (two-tailed). The results of the four econometric models defined is shown in the table below (Table 5.3):

Table 5.3: Models for Ownership structure

Ownership concentration				
Dependent variable:	*The regressions*			
Ownership concentration	(1)	(2)	(3)	(4)
Intercept	80.433***	81.690***	95.353***	92.345***
	(0.172)	(0.273)	(0.096)	(0.112)
YearAfterDummy	4.462***	3.120***	1.261***	2.212***
	(0.048)	(0.073)	(0.038)	(0.044)
Size	-0.840***	-0.920***	0.045***	-0.582*
	(0.012)	(0.019)	(0.006)	(0.008)
Cash	3.275***	2.598***	1.010***	3.33***
	(0.093)	(0.145)	(0.050)	(0.068)
Leverage	-0.165***	-0.200***	0.022***	0.057***
	(0.008)	(0.014)	(0.004)	(0.006)
Treatment 1			-46.704***	
			(0.040)	
Treatment 2				-37.967***
				(0.054)
YeearAfter*Treatment 1			-2.321***	
			(0.051)	
YearAfter*Treatment 2				-3.737***
				(0.071)
Indstrustry dummies	YES	YES	YES	YES
$Adj.R^2$	0.013	0.009	0.7076	0.466
N	1,535,747	644,636	1,535,747	1,535,747

The findings from the table above provide the following insights. Firstly, model (1) and model (2) indicate that the average ownership structure, as we expected, is positive and significant at all significant levels (p-value <0.01). This demonstrates that ownership concentration increased after the tax reform in 2006 was introduced, and provides additional evidence for our first hypothesis (H1). This support findings by Korkeamaki et al. (2010) and Hillmann (2021). Secondly, the magnitude and significance of the coefficient estimates are similar across both models. The YearAfter coefficient estimate is 4.462 for model (1), and the YearAfter coefficient estimate for model (2) is 3.120. We observe that the coefficient is smaller for model (2) since we impose the restriction that firms have to have existed between 2003-2009. This indicates

that old firms still have minority shareholders they need to please to avoid conflicts between the minority and majority shareholders (Berzins et al., 2018; Berzins et al., 2019). It also suggests that the increased concentration that we observe is indeed more prominent in the new firms. However, it also shows that the effect is quite sizeable and significant even after imposing the restriction. This provides evidence that the aggregate effect is not driven entirely by new entrants.

Model (3) shows the results for the first DiD estimator. The interaction term (YearAfter * treatment1) considers the years after the reform for firms with more than 1 owner. The coefficient for this interaction term is -2.321. This indicates that more firms are becoming single-owner firms after the tax reform in 2006 to avoid shareholder conflict (Berzins et al., 2019). Since the tax reform has made the dividends more expensive, it is costly to have minority shareholders. This proves the second part of our first hypothesis (H1) that firms will likely be single-owned after tax reform.

Model (4) shows that the coefficient for the interaction term YearAfter * treatment2 is -3.737. This coefficient is significant at all significance levels. This indicates that the majority shareholders with an ownership percentage below 2/3 before the tax reform in 2006 are moving toward having more than 2/3 ownership of the firms after the tax reform. The results from this model support our second hypothesis (H2). Alstadsæter (2006) argued that most investors had the incentive to hold their controlling share below 2/3 in the companies. The interaction term shows that after taking into account the yearly trend, the majority shareholdings have increased for the firms having below 2/3 percentage ownership before the tax reform of 2006. This indicates that majority shareholders are no longer concerned about having more than 2/3 of the shares in the companies as seen by Thoresen and Alstadsaeter (2010). This indicates that after the tax reform in 2006, majority shareholders instead wish to increase their ownership stake in the companies in order to reduce conflicts between majority and minority shareholders as seen by Berzins et al. (2018) and Berzins et al. (2019). Our findings are consistent with Hillmann (2021), which also finds that minority shareholders reduce their minority stake in the firm after tax reform.

Another explanation could be that minority shareholders have become reluctant to buy minority stakes in a company since majority shareholders decide the dividend policy (La Porta et al., 2000). We assume that dividend taxation significantly impacts dividend policy as seen by Jacob and Michaely (2017). This indicates majority shareholders are less inclined to pay dividends after the tax reform in 2006, making companies more concentrated and less attractive for minority investors.

The negative beta coefficient for leverage for model (1), model (2) supports the work done by Jensen and Meckling (1976). This could indicate that companies with high ownership concentration may prefer low leverage since it could bring more monitoring of the firm. Therefore, when a firm becomes more highly concentrated, it may prefer not to bring on more debt but instead bring in more equity or use retained earnings. We observed when adding treatment group 1 that the leverage coefficient became positive. For model (3) and model (4), The coefficient for leverage has become positive (0.022) and (0.057), and significant.The positive leverage coefficient can be consistent with the pecking order model suggested by Myers and Majluf (1984). This

is because since equity financing has become more expensive, firms may prefer debt financing after the tax reform.

The coefficients have the same positive relationship to ownership concentration for the cash-to-asset ratio and size for all four econometrical models. The positive beta coefficient between cash-to-assets and average ownership concentration supports our assumption and the prediction of Fama and French (2001), that dividends payouts have decreased and cash is retained in the companies. This indicates that when ownership concentration increase, more cash is retained in the companies. The negative beta coefficient for size is as expected. This indicates that when ownership concentration increases, the size of the companies is smaller. The negative sign of the size coefficient indicates that larger companies are more likely to have lower ownership concentration (more widely held).

5.2.2 The Baseline model: Dividend Payout Ratio

The next 3 econometrical models asses the dividend payout ratio of firms in the sample period (2000-2015). Hypothesis 3 will be tested for each model in this section. The previous sections show that minority stakes were reduced after the tax reform in 2006. From the literature review, we observed that La Porta et al. (2000) found that minority shareholders want dividends the most. Since minority shareholders don't have the decision-making rights to influence the dividend payout policy, as seen by Jacob and Michaely (2017), they often react to the reform by selling their stakes. Firms might also be reluctant to issue minority shares to avoid expensive dividends. Because of this, we want to test the effect of tax reform on the firms' dividend payout policies.

The dependent variable for these models is *The Dividend payout ratio*, denoted as *Dividend* in the equations. We let YearAfter be a dummy variable that is 1 for all the years after the tax reform and 0 otherwise. We use the same three different control variables to control for as in the ownership section. $Size$ variable is the log of operating revenue, the $Cash$ is the cash-to-asset ratio, and the $Leverage$ is the leverage ratio. Below we will present our 3 different regressions models for dividends and their subsequent equations:

Model (5):

To test hypothesis 3, we run the following regression equation:

$$Dividend_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Service_{it} + \beta_3 * Trade_{it} + \beta_4 * Mining\ \&Oil_{it} + \beta_5 * Industry_{it} + \beta_6 * It\ \&Telecom_{it} + \beta_7 * Building_{it} + \beta_8 * Tourism_{it} + \beta_9 * Utilities_{it} + \beta_{10} * Size_{it} + \beta_{11} * Cash_{it} + \beta_{12} * Leverage_{it} + \epsilon_{it}$$

The dependent variable for this model is the firm's dividend payout ratio, denoted as *Dividend* for the period 2000 to 2015. We define the YearAfter dummy as the years after the tax reforms and run the regression analysis on the dividend payout ratio along with firm and industry control variables. We expect a negative coefficient for the year after because dividends have become more expensive after the reform.

Model (6):

This model is the same as model (5), with the only exception that we impose the restriction that firms have to have existed between 2000-2006. We have the following regression equation for the first model:

$$Dividend_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Service_{it} + \beta_3 * Trade_{it} + \beta_4 * Mining\ \&Oil_{it} + \beta_5 * Industry_{it} + \beta_6 * It\ \&Telecom_{it} + \beta_7 * Building_{it} + \beta_8 * Tourism_{it} + \beta_9 * Utilities_{it} + \beta_{10} * Size_{it} + \beta_{11} * Cash_{it} + \beta_{12} * Leverage_{it} + \epsilon_{it}$$

In this model, we exclude the firms established after 2006. The reason for this is that firms established after 2006 are established mostly as single-owner firms without minority shareholders. Therefore, we want to ensure that the effect of the model is not driven by new firms, established as single-owner firms. From the descriptive statistics, we observed that firms before 2006 still had many minority holders. So the firms included in the data for this model need to pay higher dividends to make existing shareholders satisfied (Berzins et al., 2018; Berzins et al., 2019).

Model (7:)

This is our only model for Dividend payout ratios where we have applied the DiD-estimator. We have the following regression equation for the first model:

$$Dividend_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Treatment_{it} + \beta_3 * Treatment_{it} * YearAfter + \beta_4 * Service_{it} + \beta_5 * Trade_{it} + \beta_6 * Mining\ \&Oil_{it} + \beta_7 * Industry_{it} + \beta_8 * It\ \&Telecom_{it} + \beta_9 * Building_{it} + \beta_{10} * Tourism_{it} * + \beta_{11} * Utilities_{it} + \beta_{12} * Size_{it} + \beta_{13} * Cash_{it} + \beta_{14} * Leverage_{it} + \epsilon_{it}$$

We define the control variable as single-owner firms since these firms do not have minority shareholders and, therefore, no conflicts between minority and majority shareholders as indicated by Berzins et al. (2019). As mentioned earlier, firms that have minority shareholders use dividends as a tool to make minority shareholders satisfied. As a result of dividend taxation, firms have to make minorities satisfied as shown by Berzins et al. (2018) and Berzins et al. (2019). This means majority shareholders have to consider whether they should have minority shareholders or not. Multiple owners firms with minority shareholders are the firms most affected by tax reform, so we consider this the treatment group.

The DiD estimator tests our third hypothesis and shows if the dividend payout ratio decreased after the tax reform 2006. Since many firms with minority shareholders are becoming single owners than multiple owners with minority shareholders, we also support our hypothesis 2 by including the treatment group.

The table below (Table 5.4) reports the regression results for our three DPR models. Model (5) includes the total dataset of all firms observed over the sample period 2000-2015. However, in the model (6), we are imposing the restriction that the companies included had existed from 2000-2006 (before the reform). The model in column (7) is the DiD-estimator since we include

the treatment and control groups. The reported values are the coefficient, with standard error in parentheses. ***, **, and * denote significance at the 1 %, 5% and 10 % levels, respectively (two-tailed). The result of the three econometric models is shown in the table below (Table 5.4):

Table 5.4: Models for Dividend Payout Ratio

Dividend Payout ratio Models			
Dependent variable:	*The regressions*		
Dividend Payout Ratio	(5)	(6)	(7)
Intercept	0.1330***	0.1261***	-0.0389**
	(0.0048)	(0.0062)	(0.0058)
YearAfterDummy	-0.3172***	-0.2719***	-0.2967***
	(0.0011)	(0.0015)	(0.0017)
Size	0.0091***	0.0059***	0.0091***
	(0.0003)	(0.0004)	(0.0003)
Cash	0.3314***	0.3932***	0.3301***
	(0.0022)	(0.0029)	(0.0019)
Leverage	0.0498***	0.0641***	0.04977***
	(0.0002)	(0.0003)	(0.0002)
Treatment			0.0729***
			(0.0024)
Treatment *yearAfterDummy			-0.0329***
			(0.0022)
Indstrustry dummies	YES	YES	YES
$Adj.R^2$	0.1474	0.1317	0.1480
N	975,889	689,002	975,889

From the table, we observe that model (5) and model (6) indicate that the YearAfter dummy coefficient, as we predicted, is negatively significant at all significant levels (p-value <0.01). This shows that the dividend payout ratio decreased after introducing the tax reform and proved hypothesis 3. Secondly, the magnitude and significance of the coefficient estimates are similar across both model (5) and model (6). This indicates that our results are consistent between the sample from old firms (before 2006) and old and new firms (model 5).

We observe from model (5) that when we consider the yearly trend effect year after, the Year after dummy has a negative coefficient (-0.3172) which is highly significant. This supports findings by Jacob and Michaely (2017) that dividend taxation greatly impacts the dividend payout ratios of firms. From model (6), we observe a beta coefficient of -0.2719 which is less negative than in the previous model (5). This indicates the old firms have less reduction in the dividend payout policy than the model (5) that includes both old and new firms.

From model (7), we observe that the interaction term (Treatment*YearAfterDummy) is negative (-0.0329) and significant on all significance levels (p-value <0.01). This indicates that the DPR of companies with minority owners after the tax reform has decreased even when considering the yearly trends. This coefficient is not as negative as the previous models as these companies

have more minority shareholders to please. The coefficient ownership dummy is positive, which implies that companies that have minority shareholders have a positive impact on the dividend payout ratio, as seen by Berzins et al. (2018). This supports our third hypothesis and shows clear evidence that the dividend payout ratio decreased after the tax reform in 2006. Since many firms with minority shareholders are becoming single owners after the tax reform in 2006, we also find support for hypothesis 2 in model (7).

We observe that the beta coefficient for leverage is positive for all 3 models. This contradicts findings by Frank and Goyal (2009) about the pecking order theory, that dividend and leverage have a negative correlation. The beta coefficient between cash-to-assets is positive for all 3 models. The dividend payout ratio supports our assumption and the prediction of Fama and French (2001) that dividends are falling and cash is retained for future long-term investments. The positive beta coefficient for size indicates that size affects a firm's dividend policy as by Lloyd et al. (1985). This indicates that bigger companies are paying higher dividends as expected since they are often more widely held.

5.2.3 The Baseline model: Total paid-in capital

The next econometrical model asses the firms' paid-in capital change in the sample period (2000-2015). The previous sections show that minority stakes were reduced after the tax reform in 2006, and dividend payout ratios decreased significantly. We want to see the changes in paid-in capital to understand if the family with controlling ownership has raised capital after tax reform. This further strengthens the hypothesis that firms are more likely to be more concentrated. Also, this will show the preferences of controlling families toward debt or equity and see if investors are less likely to invest in firms after the tax reform in 2006.

Model (8):

We run the following regression equation:

$$Capital_{it} = \alpha + \beta_1 * YearAfter + \beta_2 * Service_{it} + \beta_3 * Trade_{it} + \beta_4 * Mining\ \&Oil_{it} + \beta_5 * Industry_{it} + \beta_6 * It\&Telecom_{it} + \beta_7 * Building_{it} + \beta_8 * Tourism_{it} + \beta_9 * Utilities_{it} + \beta_{10} * Size_{it} + \beta_{11} * Cash_{it} + \beta_{12} * Leverage_{it} + \epsilon_{it}$$

In this model, we define the paid-in capital as 1 if the paid-in capital has increased for each company than the previous year and if the share of the controlling family has remained the same or lower. Since the paid-in capital dummy accounts for any potential increases in paid-in capital by the ultimate family owner, we can find if any minority stakeholders have acquired minority stakes. By testing this, we can see if minority shareholders buy minority stakes in companies. We define the year after the dummy as 1 for all the years after the tax reform and 0 otherwise.

Table 5.5: Model for Total Paid-in Capital

Model for Total Paid in Capital	
Dependent variable:	
Paid in capital dummy	(8)
Intercept	0.0620***
	(0.0017)
YearAfterDummy	-0.0597***
	(0.0004)
Size	0.0017***
	(0.0001)
Cash	-0.0105***
	(0.0009)
Leverage	0.0006
	(0.0009)
Indstrustry dummies	YES
$Adj.R^2$	0.0197
N	975,892

We observe from the model (8) that when considering the yearly trend effect year after, the YearAfter dummy has a negative coefficient (-0.0597) which is highly significant on all significance levels (p-value <0.01). This means that the tendency to raise capital from minority shareholders decreased after the tax reform in 2006. This also supports our second hypothesis (H2) that firms are less likely to have minority shareholding after the tax reform in 2006. Furthermore, it strengthens our assumption that companies after the tax reform in 2006 are no longer taking paid-in capital from minority shareholders. This also indicates that firms are likely to be more concentrated and less diversified after the tax reform in 2006. As Becker et al. (2013), we find that when the dividend taxation is high, this indicates that companies are locking in the capital in the firms. Alstadsæter et al. (2017) finds that reducing dividend taxation makes investing new equity in firms more attractive. In our case, with a tax increase for dividends, it makes sense that it will be less attractive for minority shareholders to invest new equity in firms after the tax reform in 2006. The combining factors that cash retained in the companies, and the tendency for paid-in capital to decrease, give further indications that minority shareholder is no longer investing new equity in companies. Furthermore, we observe that the cash coefficient is negatively correlated to paid-in capital. This makes sense and strengthens our assumption that companies are compiling cash instead of diversifying by bringing in outside capital.

5.3 Robustness tests

We conduct several robustness tests. as mentioned earlier the tax reform was announced in 2004, but not implemented until 2006. When we ran the initial analysis for the data, we found disturbances in the data for 2006 for most of the variables. Therefore, we checked the robustness of our implemented models by running four more regressions. Models 3 and 4 in the ownership regression explained several changes in the ownership percentage. We now want to run another regression where we exclude 2006 from the dataset to check the robustness of models 3 and 4.

Therefore, model (9) and model (10) are the same regression as models (3) and (4), except that year 2006 is excluded.

We have used the *% equity held by the ultimate owner with rank 1* to analyze the change in ownership concentration in previous models. To further check the robustness of the models, we used *family sum ultimate ownership* as the dependent variable instead. As personal owners were affected by the tax reform, looking at family sum ultimate ownership is interesting and can explain if the percentage ownership has changed because of interfamily share transfers. We also find it interesting to run the same models with family ownership as the dependent variable, as families could have other incentives and priorities than other shareholders. Bocatto et al. (2010) finds that families prioritize continuity and survival over short-term profit-maximizing short-term incentives. In models (11) and (12), we run the same regression as models (3) and (4) but with family sum ultimate ownership as the dependent variable.

Table 5.6: Robustness tests Ownership Structure

Robustness Test				
	The regressions			
	(9)	(10)	(11)	(12)
Intercept	95.808***	93.541***	102.633***	100.762***
	(0.098)	(0.130)	(0.151)	(0.141)
YearAfterDummy	0.729***	0.691***	1.494***	0.646***
	(0.040)	(0.046)	(0.061)	(0.060)
Size	0.054***	0.506***	-0.720***	-0.229***
	(0.006)	(0.007)	(0.010)	(0.009)
Cash	0.906***	0.525 ***	0.458 ***	-0.194 **
	(0.051)	(0.060)	(0.080)	(0.074)
Leverage	0.007	-0.110***	0.143 ***	0.124***
	(0.004)	(0.005)	(0.007)	(0.008)
Treatment 1	-46.994		27.922***	
	(0.043)		(0.063)	
Treatment 2		-44.592***		-33.330
		(0.051)		(0.061)
YeearAfter*Treatment 1	-2.032***		-2.164***	
	(0.053)		(0.081)	
YearAfter*Treatment 2		-2.350***		-2.108***
		(0.072)		0.077)
Indstrustry dummies	YES	YES	YES	YES
$Adj.R^2$	0.7171	0.6034	0.2702	0.3645
N	1,439,389	1,439,389	1,535,747	1,535,747

Based on Table 5.6 above, we can observe that the coefficient for a year after dummy * treatment1 is -2.032 for model (9) and -2.164 for model (11). These findings are consistent with the results from models (3) and (4), where we were able to prove our hypotheses (H1) and (H2). Moreover, the coefficient for dummy * treatment2 in model (10) is -2.350, which shows a similar trend. Additionally, the coefficient for model (12) is -2.108, which is similar to the

results obtained from model (4), where we confirmed our second hypothesis(H2). Therefore, the significance and extent of the coefficient estimates are similar across the four models, implying that our results are robust to changes in the sample composition.

To sum up, when running the regression to test the robustness test, we first excluded the data for 2006, and second, we used the family sum ultimate ownership as the dependent variable instead of the percentage equity held by the owner with rank 1. All the results are consistent with the previous models. Therefore the study's central finding is that the ownership concentration has increased, and new companies are established more as single-owner firm holds.

Table 5.7: Robustness test Dividend

Robustness Test	
Dependent variable:	
Dividend	(13)
Intercept	0.1330***
	(0.0048)
YearAfterDummy	-0.3172***
	(0.0011)
Size	0.0091***
	(0.0003)
Cash-to-Assets ratio	0.3314***
	(0.0022)
Leverage	0.0498***
	(0.0002)
Indstrustry dummies	YES
$Adj.R^2$	0.1474
N	975,889

For the dividend payout models, we check the robustness similarly. As we have already discussed, the tax reform was announced in 2004 but not implemented until 2006. The firms would therefore decide to take out the cash from the firm while they can or give the dividends to make the minority shareholders satisfied and avoid giving dividends after the tax reform. So the divided data paid by the companies in 2004 and 2005 might not accurately indicate dividends payable. Therefore, we excluded 2004 and 2005 to measure the actual effects of the tax reform from 2006 and ran the regression with year-after results. The coefficient (-0.3172) for the YearAfter dummy is highly significant. This indicates that even after excluding 2004 and 2005 there is a highly significant negative decrease in the dividend payout ratio after 2006.

Chapter 6

Conclusion

This thesis documents that increased dividend taxation change has changed the ownership structure. This is consistent with existing studies from other regions (Korkeamaki et al., 2010; Hillmann, 2021). Even though existing literature is limited regarding this subject for privately held Norwegian firms, we found it interesting to support already existing related dividend literature on privately held Norwegian companies in Norway (Berzins et al., 2018; Berzins et al., 2019).

We observe evidence that the ownership structure increased after the tax reform in 2006. We also observed that dividend payout ratios decreased dramatically. Our univariate and multivariate regressions gave highly significant results that the ownership structure changed because of dividend taxation. All econometric models on ownership structure also show clear evidence that the ownership structure has changed after the tax reform. Furthermore, we see a decrease in the dividend payout ratio as dividend taxation is introduced.

All models in the first part of the multiple regression section showed clear evidence that after the tax reform in 2006, ownership concentration and companies are more likely to be singled owned, supporting our first hypothesis (H1). Model 4 also gave proof for our second hypothesis (H2) that firms are more likely to have fewer minority shareholders after the tax reform in 2006. For our third hypothesis (H3), we had significant results for the three models on the dividend payout ratio, indicating that the dividend payout ratio decreased after the tax reform.

We also tested our results with robustness tests. All the results in the robustness test are consistent with the previous estimated models. The study's central finding is that the ownership concentration has increased, and new companies are established more as single-owner firms.

We find this subject important to address since dividends play an important role in attracting minority shareholders, which is important for private firms to attract new capital. A firm's ability to attract minority shareholders decreases due to the high cost of paying dividends. When firms start without additional partners (single-owned), the controlling shareholder is less likely to be diversified, and the companies will be more risk-averse when taking on new projects. This indicates a higher discount factor for these firms (Becker et al., 2013). This could further damage Norwegian companies ability to take on future investment opportunities in the long term.

Bibliography

Alstadsæter, A. (2006). *The Achilles heel of the dual income tax : The Norwegian case* (Working paper) [Accepted: 2011-11-15T21:15:49Z Publication Title: 24 s.]. Statistics Norway, Research Department. Retrieved June 16, 2023, from https://ssb.brage.unit.no/ssb-xmlui/handle/11250/180583

Alstadsæter, A., & Fjærli, E. (2009). Neutral taxation of shareholder income? Corporate responses to an announced dividend tax. *International Tax and Public Finance*, *16*(4), 571–604. https://doi.org/10.1007/s10797-009-9107-2

Alstadsæter, A., Jacob, M., & Michaely, R. (2017). Do dividend taxes affect corporate investment? *Journal of Public Economics*, *151*, 74–83. https://doi.org/10.1016/j.jpubeco.2015.05.001

Becker, B., Jacob, M., & Jacob, M. (2013). Payout taxes and the allocation of investment. *Journal of Financial Economics*, *107*(1), 1–24. https://doi.org/10.1016/j.jfineco.2012.08.003

Bernheim, B. D., & Wantz, A. (1995). A Tax-Based Test of the Dividend Signaling Hypothesis [Publisher: American Economic Association]. *The American Economic Review*, *85*(3), 532–551. Retrieved May 23, 2023, from https://www.jstor.org/stable/2118186

Berzins, J., Bøhren, Ø., & Stacescu, B. (2018). Shareholder Conflicts and Dividends. *Review of Finance*, *22*(5), 1807–1840. https://doi.org/10.1093/rof/rfx046

Berzins, J., Bøhren, Ø., & Stacescu, B. (2019). Dividends and taxes: The moderating role of agency conflicts. *Journal of Corporate Finance*, *58*, 583–604. https://doi.org/10.1016/j.jcorpfin.2019.07.003

Bhattacharya, S. (1979). Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy [Publisher: [RAND Corporation, Wiley]]. *The Bell Journal of Economics*, *10*(1), 259–270. https://doi.org/10.2307/3003330

Blouin, J. L., Raedy, J. S., & Shackelford, D. A. (2011). Dividends, Share Repurchases, and Tax Clienteles: Evidence from the 2003 Reductions in Shareholder Taxes. *The Accounting Review*, *86*(3), 887–914. https://doi.org/10.2308/accr.00000038

Bocatto, E., Gispert, C., & Rialp, J. (2010). Family-Owned Business Succession: The Influence of Pre-performance in the Nomination of Family and Nonfamily Members: Evidence from Spanish Firms [_eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1540-627X.2010.00306.x]. *Journal of Small Business Management*, *48*(4), 497–523. https://doi.org/10.1111/j.1540-627X.2010.00306.x

Centre for Corporate Governance Research. (n.d.). Retrieved June 24, 2023, from https://www.bi.edu/research/research-centres/centre-for-corporate-governance-research/

Chang, R. P., & Rhee, S. G. (1990). The Impact of Personal Taxes on Corporate Dividend Policy and Capital Structure Decisions [Publisher: [Financial Management Association

International, Wiley]]. *Financial Management*, *19*(2), 21–31. https://doi.org/10.2307/3665631

Chetty, R., & Saez, E. (2010). Dividend and Corporate Taxation in an Agency Model of the Firm. *American Economic Journal: Economic Policy*, *2*(3), 1–31. https://doi.org/10.1257/pol.2.3.1

DeAngelo, H., DeAngelo, L., & Stulz, R. M. (2006). Dividend policy and the earned/contributed capital mix: A test of the life-cycle theory. *Journal of Financial Economics*, *81*(2), 227–254. https://doi.org/10.1016/j.jfineco.2005.07.005

Elton, E. J., & Gruber, M. J. (1970). Marginal Stockholder Tax Rates and the Clientele Effect [Publisher: The MIT Press]. *The Review of Economics and Statistics*, *52*(1), 68–74. https://doi.org/10.2307/1927599

Fama, E. F., & French, K. R. (2001). Disappearing dividends: Changing firm characteristics or lower propensity to pay? *Journal of Financial Economics*, *60*(1), 3–43. https://doi.org/10.1016/S0304-405X(01)00038-1

Finansdepartementet. (2004). St.meld. nr. 29 (2003-2004) [Publisher: regjeringen.no]. Retrieved March 29, 2023, from https://www.regjeringen.no/no/dokumenter/stmeld-nr-29-2003-2004-/id404206/

Finansdepartementet. (2005). St.meld. nr. 1 (2005-2006) [Publisher: regjeringen.no]. Retrieved June 27, 2023, from https://www.regjeringen.no/no/dokumenter/stmeld-nr-1-2005-2006-/id136265/

Frank, M. Z., & Goyal, V. K. (2009). Capital Structure Decisions: Which Factors Are Reliably Important? [Publisher: [Financial Management Association International, Wiley]]. *Financial Management*, *38*(1), 1–37. Retrieved June 25, 2023, from https://www.jstor.org/stable/20486683

Hillmann, L. (2021). Dividend Taxation and the Ownership Structure of Private Firms. https://doi.org/10.2139/ssrn.3683813

Holderness, C. G., & Sheehan, D. P. (1988). The role of majority shareholders in publicly held corporations: An exploratory analysis. *Journal of Financial Economics*, *20*, 317–346. https://doi.org/10.1016/0304-405X(88)90049-9

Jacob, M., & Michaely, R. (2017). Taxation and Dividend Policy: The Muting Effect of Agency Issues and Shareholder Conflicts. https://doi.org/10.2139/ssrn.2516927

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

John, K., & Williams, J. (1985). Dividends, Dilution, and Taxes - a Signaling Equilibrium [Place: Hoboken Publisher: Wiley-Blackwell WOS:A1985AQL3100002]. *Journal of Finance*, *40*(4), 1053–1070. https://doi.org/10.2307/2328394

Korkeamaki, T., Liljeblom, E., & Pasternack, D. (2010). Tax reform and payout policy: Do shareholder clienteles or payout policy adjust? *Journal of Corporate Finance*, *16*(4), 572–587. https://doi.org/10.1016/j.jcorpfin.2009.12.003

La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (1999). Corporate Ownership Around the World [_eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/0022-1082.00115]. *The Journal of Finance*, *54*(2), 471–517. https://doi.org/10.1111/0022-1082.00115

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Agency Problems and Dividend Policies around the World. *The Journal of Finance*, *55*(1), 1–33. https://doi.org/10.1111/0022-1082.00199

Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes [Publisher: American Economic Association]. *The American Economic Review*, *46*(2), 97–113. Retrieved May 22, 2023, from https://www.jstor.org/stable/1910664

Lloyd, W. P., Jahera, J. S., & Page, D. E. (1985). Agency Costs and Dividend Payout Ratios [Publisher: University of Nebraska-Lincoln College of Business Administration]. *Quarterly Journal of Business and Economics*, *24*(3), 19–29. Retrieved June 18, 2023, from https://www.jstor.org/stable/40472822

Michaely, R., & Roberts, M. R. (2012). Corporate Dividend Policies: Lessons from Private Firms [Publisher: [Oxford University Press, Society for Financial Studies]]. *The Review of Financial Studies*, *25*(3), 711–746. Retrieved June 25, 2023, from https://www.jstor.org/stable/41407845

Miller, M. H., & Modigliani, F. (1961). Dividend Policy, Growth, and the Valuation of Shares [Publisher: University of Chicago Press]. *The Journal of Business*, *34*(4), 411–433. Retrieved January 12, 2023, from https://www.jstor.org/stable/2351143

Miller, M. H., & Rock, K. (1985). Dividend Policy under Asymmetric Information [_eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1540-6261.1985.tb02362.x]. *The Journal of Finance*, *40*(4), 1031–1051. https://doi.org/10.1111/j.1540-6261.1985.tb02362.x

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

Pindado, J., Requejo, I., & de la Torre, C. (2012). Do Family Firms Use Dividend Policy as a Governance Mechanism? Evidence from the Euro zone. *Corporate Governance: An International Review*, *20*(5), 413–431. https://doi.org/10.1111/j.1467-8683.2012.00921.x

Roberts, M. R., & Whited, T. M. (2012). Endogeneity in Empirical Corporate Finance. https://doi.org/10.2139/ssrn.1748604

Roe, M. J. (1994). *Strong Managers, Weak Owners: The Political Roots of American Corporate Finance*. Princeton University Press. Retrieved January 12, 2023, from https://press.princeton.edu/books/paperback/9780691026312/strong-managers-weak-owners

Rommens, A., Cuyvers, L., & Deloof, M. (2012). Dividend Policies of Privately Held Companies: Stand-Alone and Group Companies in Belgium. *European Financial Management*, *18*(5), 816–835. https://doi.org/10.1111/j.1468-036X.2010.00554.x

Sørensen, P. B. (1994). From the global income tax to the dual income tax: Recent tax reforms in the Nordic countries. *International Tax and Public Finance*, *1*(1), 57–79. https://doi.org/10.1007/BF00874089

Taleb, L. (2019). Dividend Policy, Signaling Theory: A Literature Review. https://doi.org/10.2139/ssrn.3359144

Thomsen, S., & Pedersen, T. (1998). Industry and ownership structure. *International Review of Law and Economics*, *18*(4), 385–402. https://doi.org/10.1016/S0144-8188(98)00022-2

Thoresen, T. O., & Alstadsaeter, A. (2010). Shifts in Organizational Form under a Dual Income Tax System [Place: Tubingen Publisher: Mohr Siebeck WOS:000286908400003]. *Finanzarchiv*, *66*(4), 384–418. https://doi.org/10.1628/001522110X549262

Thoresen, T. O., Bø, E., Fjærl, E., & Halvorsen, E. (2011). Evaluating the redistributional effects of tax policy changes - With an application to the 2006 Norwegian tax reform. Retrieved March 28, 2023, from https://www.ssb.no/forskning/discussion-papers/evaluating-the-redistributional-effects-of-tax-policy-changes

Appendix A

Appendix

Table A.1: CCGR Variables list

Item	**Filter Names**
Item 11	Total operating revenue
Item 35	Income Before extraordinary income
Item 63	Total fixed Assets
Item 76	Cash and Cash equivalents
Item 78	Total Current Assets
Item 82	Total paid-in capital
Item 86	Retained Earnings
Item 87	Total Equity
Item 94	Liabilities to financial Institutions
Item 105	Dividends Payable
Item 232	Largest owners is personal (Direct ownership)
Item 14002	Number of owners (Ultimate ownership)
Item 14011	% Equity held by ultimate owner with rank 1
Item 14507	Is independent (Ultimate ownership)
Item 15307	Largest family number of owners (Ultimate ownership)
Item 15302	Largest family sum ultimate ownership
Item 13401	Foundation date
Item 11102	Industry codes
Item 15309	Number of families
Item 15304	Largest Family have CEO

Table A.2: 100% Ownership 2003 vs 2009

	Less than 100 % ownership in 2003	**From less than 100% to 100% ownership**
Number of firms w/majority	29,483	4,685
% change from 2003 to 2009	15.89%	

Table A.3: Wilcoxon Signed Rank test

	W	$P - value$
Test	1.5084e+11	2.2e-16

Figure A.1: Average ownership Comparison Family

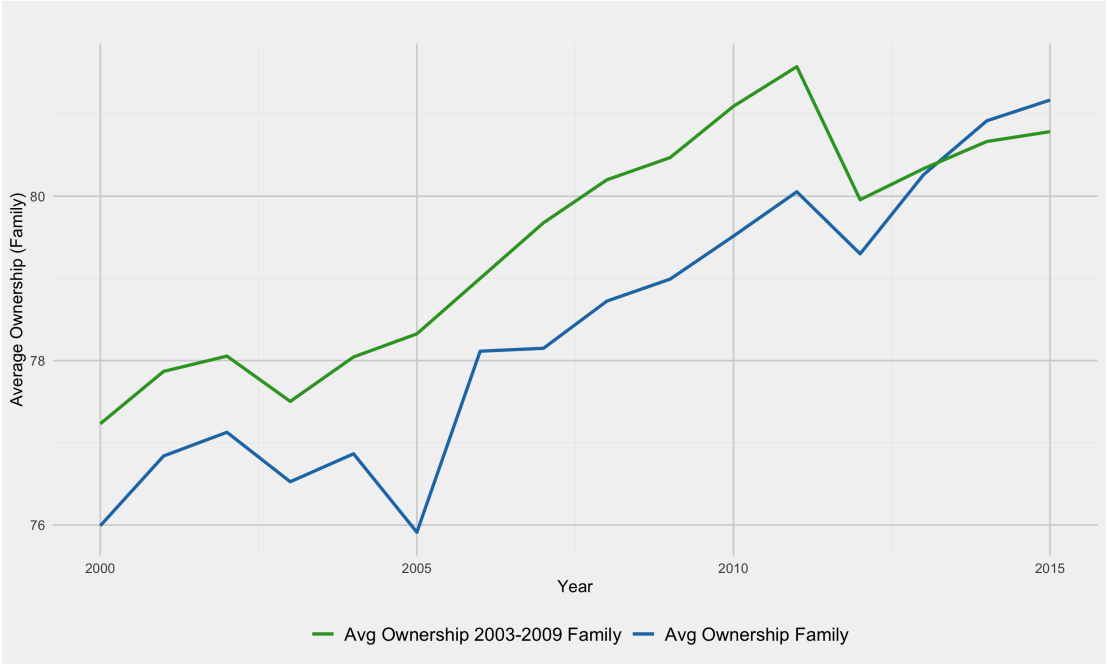


Figure A.2: Less than 100 % vs 100 % (Single-owned)

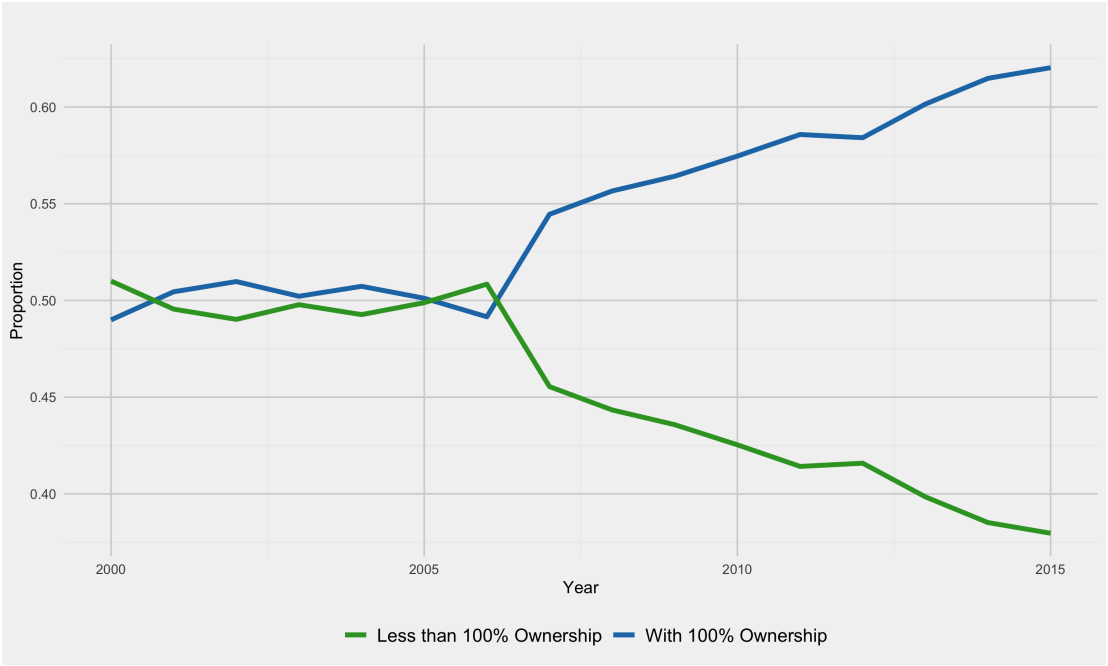


Figure A.3: Dividend Payout Ratio over time

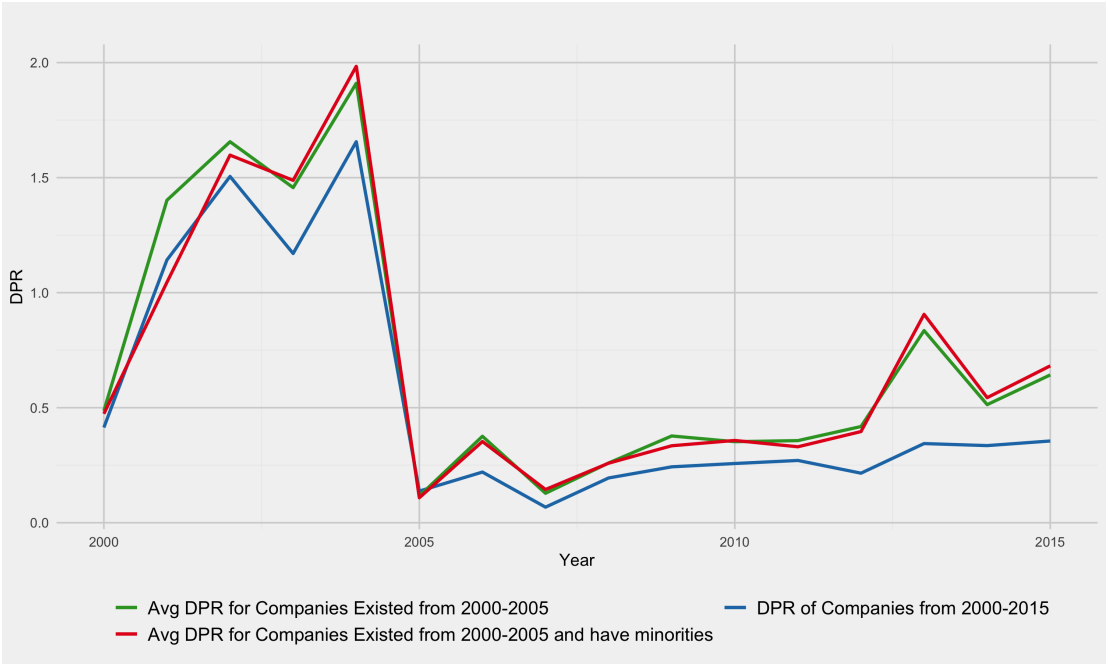


Figure A.4: Dividend Payout Ratio companies established before 2006 vs after 2006