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Can Ownership Structure Explain Dividend Policy in Norwegian Private and Public Firms?

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Abstract

In this paper we analyze the effect of ownership concentration and structure on dividend policy in Norwegian private and public firms during 2006-2009. By focusing on firms with more dispersed ownership, including firms with less than 50% equity owned by the largest personal, family, industrial or institutional owning entity, we primarily address the classical agency problem between management and shareholders and further try to understand how dividend payments interact in the conflict.

We find a positive relationship between ownership concentration and dividends. Hence, the higher the potential management-shareholder conflict reflected in the ownership structure, less of the firm’s earnings are paid out as dividends. This supports the outcome model, where corporate insiders act opportunistically towards minority shareholders and maintain earnings in the firm for increased flexibility and private benefits. We also find strong evidence that institutional ownership increase dividend payments.
I Introduction

Throughout this paper, we seek to increase the understanding of how the potential conflict between management and shareholders affect dividend policies in Norwegian firms deprived of a natural monitoring mechanism. This conflict is the core of the classical agency problem discussed by Jensen (1985) describing the inability of dispersed shareholders to prevent corporate management from expropriating their wealth due to conflicts of interests, diversification of risk and different time horizons. Paying dividends is one way to reduce this conflict as paying cash to external claimholders limit flexibility and inefficient managerial investments. Once we have recognized the potential seriousness of conflict reflected by the ownership concentration, we rely on previous literature to assess how dividends are utilized to reduce this conflict. Further, we analyze how institutional ownership and management incentive mechanisms affect dividends and interact in the complex dividend puzzle described so prominent by Black (1976).

Our data sample is gained from the Centre for Corporate Governance Research (CCGR) and includes yearly accounting data from all Norwegian private and public firms between 2001 and 2009. The sample in total include 1 044 118 observations allocated to 216 135 unique firms. After filtering for basic criteria and applying variable filter, our working sample consist of 35 419 observations.

Our findings suggest that there is a positive relationship between dividends and ownership concentration, lending support to the outcome model described by La Porta et. Al (2000), where corporate insiders act opportunistically towards minority shareholders and maintain earnings in the firm for increased flexibility and private benefits. Further we document a robust and positive relationship between institutional ownership and dividends. Finally, we are not able to find any clear link between management incentives and dividends. Our results, however, seems to suggest that management incentives and dividends are compliments rather than substitutes, but it still remain an open empirical question.

The rest of our paper is organized as follows. Chapter 2 and 3 describes the economic problem and our research question and the objective of the thesis. In chapter 4, we present a comprehensive literature review accounting for earlier
work related to our topic. In chapter 5 we present the data and sample selection and in section 6 we introduce our methodology. The results are discussed in section 7, with a summary and conclusion in section 8.

II Economic Problem

The separation of ownership from control is one of the basic tenets of a free-market society because it allows for specialization and diversification. However, when ownership and control are separated, agency costs arise through monitoring due to different objective of interests and information asymmetries.

Agency conflicts arise in firms because corporate decisions are made by managers (agents) on behalf of the firm’s owners (principals). Jensen and Smith (1985) describe three main sources of conflict between managers and claimholders. The first is the choice of effort by managers and the structure of the management compensation contract. Management action is not always observable and the best action for the agent is not necessarily the best action for maximizing the wealth of capital suppliers. The second stems from the diversification of risk. Since the investment in firm-specific human capital represents a significant portion of the manager’s wealth, the manager is concerned about the idiosyncratic risk of the firm even though shareholders are able to diversify away that risk. As a result, a manager may undertake investment decisions that help diversify the firm which may not be in the interest of the shareholders. At last, the third source of conflict arises from the different time-horizons of managers and claimholders. A manager’s claim to the firm is limited although a firm’s lifetime is infinite. Hence managers may put less emphasis on cash flows occurring after their time horizon in their decision making.

How should the possible seriousness of conflict between management and shareholders be measured? According to a recent working paper by Berzins, Bøhren and Stacescu (2011) the potential conflict between majority and minority shareholders are measured by the ownership concentration of the firm. In the same way, we argue that the higher ownership concentration in a firm, the higher incentives for monitoring management and thus the potential for inefficient managerial investments decrease. As a result the possible conflict between managers and shareholders decrease with ownership concentration.
How does this relate to dividends? A study by Knyazeva (2007) shows that dividends act as a valuable tool in reducing agency conflicts in the way that dividends limit flexibility and inefficient managerial investment. Low incentives for monitoring management should therefore be compensated by increased dividend payments, and hence we expect to find dividends negatively linked to ownership concentration.

III Research question and objectives of the thesis

Our paper focuses on the first agency problem and the relation to dividend policy in Norwegian public and private firms during 2006 – 2009. By excluding companies with more than 50 % equity owned by an individual, family, industrial or institutional owning entity, we exclude the sample already accounted for by Berzins, Bøhren and Stacescu (2011) and focus our attention to firms where the distribution of control rights might be more vague. By focusing on firms with more dispersed ownership, the first agency problem dominates. Further, we investigate how dividend policy is utilized as a tool for reducing the first agency problem.

In the framework of Berzins, Bøhren and Stacescu (2011), the potential intensity of the conflict is measured as the fraction of shares held by the largest owner. We will concentrate on the first agency problem and thus the ownership concentration between 0 and 50 % of the total shares. The closer the share of the largest shareholder is to 0 % the lower incentives for monitoring management and thus higher potential for company management to influence owners to retain earnings in the company for increased flexibility and private benefits. We argue that the conflict between management and shareholders are more intense the lower the ownership concentration is. In other words, the intensity of the free-rider-problem magnifies. In economics, a free rider is someone who enjoys the benefits of an activity without paying for it. It also refers to a situation where some individuals in a population either consume more than their fair share of a common resource, or pay less than their fair share of the cost of a common resource. To encounter the free-rider problem, Easterbrook (1984) suggest that paying dividends may keep firms in the capital market, where monitoring of managers is available at lower cost, and may also be useful in adjusting the level of risk taken by managers.
and corporate insiders. Such an explanation offers a hope of understanding why firms simultaneously pay out dividends and raise new funds in the capital market:

“One form of agency cost is the cost of monitoring of managers. This is costly for shareholders, and the problem of collective action ensures that shareholders undertake too little of it. Although a monitor-shareholder would incur the full costs of monitoring, he would reap gains only in proportion to his holdings....Shareholders would be wealthier if there were some person, comparable to the bondholders' indenture trustee, who monitored managers on shareholders' behalf.”

Easterbrook (1984, 653)

Given the ownership concentration and the implied level of conflict, next step is to analyze the related dividend policy. Consequently, our main research question is:

**Can ownership structure explain dividend policy in Norwegian private and public firms?**

To answer this question we need to lend insights from previous literature. First, we consider the findings of Berzins, Bøhren and Stacescu (2011) where dividends decrease with ownership structure supporting the substitution model described by La Porta et. Al. (2000). La Porta et. Al (2000) introduce two models, the outcome model and the substitution model, where the former support an opportunistic behavior by corporate insiders towards minority shareholders and the latter support a reputation for fair treatment by corporate insiders towards minority shareholders. We want to investigate if the results found by Berzins, Bøhren and Stacescu (2011) are applicable on their residual sample; firms where the largest shareholder hold less than 50 % of the equity in the firm. Of course, by changing the sample, we now encounter a different agency problem, where the corporate insiders described by La Porta et. Al (2000) no longer reflects majority shareholders but management. To test if the substitution model (non-opportunistic behavior) also applies for Norwegian firms with more dispersed ownership we form our first hypothesis in the following way:
**H1: Dividends decrease with ownership concentration.**

To test this hypothesis we will run an ordinary least squares (OLS) regression where the first of our main variables reflect the ownership concentration, measured by the share of the largest personal, family, industrial or institutional owning entity. A negative beta coefficient will support our hypothesis and the substitution model. A positive beta coefficient will support the outcome model and an opportunistic management-approach toward shareholders.

Second, we want to test if the findings by Short, Zhang and Keasey (2002) may be applicable to Norwegian firms. The authors uncover strong support for the hypothesis that a positive association exists between dividend payout policy and institutional ownership. An explanation to these findings is linked to monitoring. Zeckhauser and Pound (1990) suggest that institutional shareholders may assume the responsibility for undertaking the monitoring activity and thereby keeping control of management. However, monitoring is costly and the authors further suggest that institutional shareholders are unlikely to actively provide monitoring themselves. Rather than providing monitoring, institutional shareholders, indeed force firms to increase dividends in order to become subject to market monitoring when future external financing is needed. We therefore want to test the following hypothesis:

**H2: Institutional ownership increase dividend payments.**

To test this hypothesis we introduce a dummy variable in our regression model, telling us if the largest owner is a financial institution. A positive beta coefficient will support our hypothesis.

To shed light on the potential seriousness of conflict we need to include the relationship between shareholders and management. We argue that the firm-specific management incentive mechanisms influence the potential conflict. Proper CEO incentives reduce the conflict and unhealthy incentive mechanisms increase the conflict. However, dividends and management incentive pay can be both complements and substitutes – whether they are one or another is an open
empirical question. If management incentive mechanisms and dividends are compliments we expect to find a positive relationship between the two variables. Opposite, a negative relationship supports the view that management incentives and dividends are substitutes. We thus want to examine how management incentives and the implied potential seriousness of conflict affect dividends. Consequentially, we form the following hypothesis:

\[ H3: \text{Management incentives and dividends act as substitutes} \]

To test this relationship we construct a variable reflecting the correlation between the change in CEO salary and the change in operating income. A positive correlation signals that management compensation varies with firm performance. Further, we include this variable in our regression model. A negative beta coefficient will support our third hypothesis while a positive beta coefficient will support the view that management incentives and dividends are compliments.

Further we want to examine if debt can substitute for dividend payments as described by Knyazeva (2007). Stultz (1990) states that a debt contract require the manager to make regular interest payments and imposes the threat of bankruptcy in case of deviations. Because both debt and dividends are costly and fulfill a similar reduction in conflict between management and shareholders, they are expected to act as partial substitutes in the dynamic context. We examine the following hypothesis:

\[ H4: \text{Dividends and the cost of debt are partly substitutes.} \]

We test this hypothesis through simple correlation analysis. Dividends are cash dividends and interest expenses reflect the cost of debt. To support our hypothesis we need to find a negative correlation coefficient.

### IV Literature Review

In the following section we review previous work within the field of ownership and dividend policy. This work form the basis for our hypotheses and help explain the economic intuition of our findings throughout the thesis.
Framework

Berzins, Bøhren and Stacescu (2011) examine the potential conflict between minority and majority shareholders and how this potential conflict affect dividend payout policy in a large sample of Norwegian private firms. This paper will function as our main framework in addressing how the more familiar conflict between shareholders and management affect dividend policy. To transfer the focus from internal shareholder conflicts to include management, we need to rely on previous research on the typical first agency problem to construct proxy variables explaining the shareholder-management relationship. Berzins, Bøhren and Stacescu (2011) find that the higher the potential for stockholder conflict reflected through the ownership structure, the more of the firm’s earnings are paid out as dividends. This result supports the view that majority stockholders are more concerned with reputation and securing future investment by the minority than to behave opportunistically. By investigating the residual sample of Berzins, Bøhren and Stacescu (2011) we want to examine if the findings to a certain extent can be applied to firms with more dispersed ownership, only now the main ownership concentration variable reflect the potential conflict between shareholders and management.

By including the insights of Faccio, Lang and Young (2001) and Holmén and Høgfelldt (2003), we may also argue that equity majority is not equivalent to formal control. Due to dual-class shares and deviations from one share/one vote, valuable private benefits of control are secured for lower equity holdings than 50%. Hence the internal shareholder conflict may still apply for firms with more dispersed ownership. Because dual share classes are not frequent in Norway, we concentrate on the 50% equity level in our base case.

Ownership structure

Ownership structure reflects the potential distribution of control in the firm. By controlling the firm, an investor by far, control or strongly influence the dividend payout policy. Berzins, Bøhren and Stacescu (2011) measure the potential conflict between minority- and majority shareholders through the ownership concentration reflected by the shareholdings of the largest personal, family, industrial or institutional owning entity. As they focus their attention on private firms and the second agency problem described by Villalonga and Amit (2006), they only
include firms with a concentrated ownership defined by shareholdings of the largest owner exceeding 50% including indirect ownership. Their findings support the aligned incentives hypothesis rather than the conflict of interest hypothesis discussed by Thomson (2005) or the substitution model rather than the outcome model described by La Porta et. Al (2000). Hence, the dividend payout ratio increases with ownership concentration. For a sample of UK-firms, this view is partially supported by the findings of Short, Zhang and Keasey (2002).

In contradiction, Renneboog and Trojanowski (2005) find that the relationship between the voting power of major blockholders (or coalitions) and dividend payouts to be always negative in a UK-firms sample. The magnitude, however, differ across the categories of blockholders (i.e. industrial firms, outside individuals, directors, financial institutions). There have been a number of studies on this subject, and results vary somewhat due to different approaches and countries in question. Norway and the UK are quite similar concerning liquid markets and investor protection and thus their findings might be highly applicable to Norwegian markets. Further the authors argue that strong blockholders mitigate the agency conflict between management and shareholders to render internal sources of financing attractive. At the same time, blockholders seems to be aware of the consequences of paying high dividends that may result in a liquidity constraint for the company and thus hinder optimal investments. The results of the studies indicate pecking order.

Like Short, Zhang and Keasey (2002) and Renneboog and Trojanowski (2005), Kahn (2006) investigates the relationship between dividends and ownership structure for a sample of UK-quoted firms. In support of Renneboog and Trojanowski (2005), when controlling for unobserved firm-specific effects, her results indicate a negative relationship between dividends and ownership concentration in contradiction to findings made by Short, Zhang and Keasey (2002). Meanwhile, ownership composition also matters, with a positive relationship observed between dividends and shareholding by insurance companies, and a negative one for individuals, to a certain extent supporting the findings of Short, Zhang and Keasey (2002). These results are consistent with agency models in which dividends substitute for poor monitoring by a firm’s shareholders.
Villalonga and Amit (2006) address how family ownership, control and management affect firm value. They explain that the classical agency problem between shareholders and management introduced by Berle and Means (1932) and further discussed by Jensen and Meckling (1976), in various situations concerning large family ownership, are substituted with a second agency problem between minority shareholders and majority shareholders. In corporations with one large shareholder and a fringe of small shareholders the first agency problem is substituted with the second agency problem. Their findings suggest that the classical conflict between management and shareholders is more costly than the conflict between family and nonfamily shareholders in founder-CEO firms. However the reverse becomes true when the CEO is a descendant. Throughout our extended analysis we will to a modest extent address family ownership.

In close relations to the ownership structure, we find the governance issues. Knyazeva (2007) examines the effects of corporate governance on dynamic dividend behavior on a sample of U.S firms. Weakly governed managers face a tradeoff between flexibility gains and expected shareholder reaction to the dividend decisions. In the absence of strong corporate governance, dividends can limit inefficient managerial investment thus reducing the first agency problem. Weak governance can be related to lack of monitoring incentives. Knyazeva finds that weakly governed managers face more shareholder pressure to sustain the dividend commitment and make fewer dividend cuts and engage in more dividend smoothing. She also finds that debt can be a partial substitute for dividends under the same dynamic context. A debt contract requires the manager to make regular interest payments and imposes the threat of bankruptcy in case of deviations. She notes that both constraints (interest payments and dividends) on managerial behavior involve distribution of a pre-specified amount on the firm’s free cash flow to external claim holders. Insights from Knyazeva (2007) will be important in relation to answer the last of our four hypotheses.

Finally, Michaely and Roberts (2011) compare dividend policies of private and publicly-held firms to determine what influences corporate dividends and the agency conflicts involved concerning different concentrations of blockholders. The paper tests how smoothing is related to whether firms are publicly held or privately held and how private firms distribute dividends. Since public firms
provide market price to the market, it is much easier to attract new investors than what private firms are able to. In turn, this makes private firms less able to distribute dividends. Their finding include that public firms also do a great deal of smoothing, which make public firms pay lower dividends than what minority shareholders would prefer. This can be seen as agency conflict, where management tries to protect their interests and pay less dividend. In general though, private firms pay less dividend overall.

**Institutional ownership**

Short, Zhang and Keasey (2002) examine the potential relationship between ownership structures and dividend policy in the UK, extending well-established dividend payout models introduced by Lintner (1956), Waud (1966) and Fama and Babiak (1968). The authors uncover strong support for the hypothesis that a positive association exists between dividend payout policy and institutional ownership. The explanation is linked to monitoring. Rozeff (1982) and Eastbrook (1984) argue that firms paying dividends often is forced to rely on external capital markets for additional funding of operations and investments, and hence become subject to market monitoring. A thorough discussion in this respect is further provided by Zeckhauser and Pound (1990) which suggest that institutional shareholders may assume the responsibility for undertaking the monitoring activity and thereby keeping control of management. However, monitoring is costly and the arm’s length view of investment held by several institutional investors, coupled with free rider-incentives regarding monitoring, suggests that institutional shareholders are unlikely to actively provide monitoring themselves. Rather than providing monitoring, Zeckhauser and Pound (1990) suggests that institutional shareholders, indeed force firms to increase dividends in order to become subject to market monitoring when future external financing is needed.

Another argument related to institutional ownership is discussed by Eastbrook (1984). The private benefits of control are in an institutional owning entity, diluted amongst several owners and the free rider problem becomes more severe as a firm is owned by several institutions. As the free rider problem magnifies, the incentives for undertaking monitoring activities decrease. This supports the argument of attracting market monitoring through external financing, and thereby increased dividend payments.
Likewise, Kahn (2006), argue along the same lines considering capacity constraints, that insurance companies are less likely to monitor a company management based on the fraction they represent due to diversified ownership across a great number of companies, while powerful individual blockholders would be more likely to monitor management more closely and dictate dividend policy according to their preferences.

**The Norwegian 2006 tax reform**

Critical for our framing of the period under investigation; 2006-2009, is the new Norwegian tax reform of 2006. The new regulations increased the top marginal tax rates on both dividend and capital gain from zero to 28 percent. The intentions behind the reform was to equalize the differences between labor and capital income, where the latter in the years before 2006 provided incentives for business owners to re-classify labor income as capital income, in order to minimize taxes.

Alstadsæter and Fjærli (2009) show that both the new and the old tax regimes are neutral with respect to timing of dividends and capital structure of the firm. Sørensen (2005) argue along the same line with respect to investment decisions and risk taking. With a positive tax rate on shareholder income, the only adaption the rational investor now needs to consider is the timing of dividends. Even if both tax regimes are neutral as explained above, the main investor adaption is not devoted within a certain regime itself but to the transition between them.

Alstadsæter and Fjærli (2009) document a strong timing effect on dividend payments as a consequence of the new tax reform. Aggregated proposed dividends increased by 82 percent the last year prior to the new regime (2005) and dropped by 41 percent in 2006. These tax motivated dividend payments may have severe opportunity costs. By reducing the cash holdings in firms, firms naturally reduce their investment capabilities for the future. As a natural consequence, the authors find increased debt-to-equity ratios amongst firms naturally driven by the increased dividend payments. As the findings in their paper indicate, the new regulations distorted the number of dividend payments prior to the 2006 reform, and hence influence any cross-period studies engaged in explaining dividend policy in Norway. This most definitely have weakened the relationship between...
dividends and earnings, for some time surrounding the initiation of the tax reform.
I.e. firm owners may want to extract as much capital as possible through dividends prior to the reform regardless of earnings and profitability.

V Data and Sample Selection

Through Centre for Corporate Governance Research (CCGR) we have gained access to a database with highly detailed accounting information and ownership concentration data on both public and private Norwegian firms. For years prior to 2011, all Norwegian firms, regardless of listing status, size and industry had to publish a full set of accounting statements certified by a public auditor. Failure to submit this information within 17 months after fiscal year-end triggers automatic liquidation of the firm by the court (Berzins, Bøhren and Stacescu (2011)). Due to the strict public regulations concerning financial reporting in the period under investigation, the data is of exceptional high quality. The data is in panel form from 2001 – 2009 and are balanced by the date-id in the Eviews software. This is done for the purpose of linking the lags to time and not to last observation within the same group-id. In total 1,044,118 observations allocated to 216,135 unique companies after basic1 filtering explained below.

To answer our economic question we start by including all Norwegian private- and public firms. Further we add the following restrictions to adequately answer the questions raised in chapter 3:

Basic filtering
1. To avoid non-operative firms, a sample must have positive sales and assets.
2. Observations representing negative dividends and cash holdings are taken out.
3. Missing values in the ownership concentration series are removed.

Advanced filtering
1. Less than 50% of the firm’s equity must be held by the largest shareholder directly/indirectly. The largest owner can be a person, family, an industry or a financial institution. A limitation to the variable reflecting the largest owner is that it doesn’t account for other potential cooperating entities. The chosen level of 50% represents the threshold level where the owner by Norwegian law has the control in the company (Lovdata 2012).
2. The period under investigation is 2006-2009.
   3. Variable filter (see chapter 6)

After advanced filtering, our sample is left with 35,419 panel observations.

**Descriptive statistics**

The descriptive statistics for the base case sample are presented in table 5.1 presented on the next page. By studying the data, our subjective opinion is that the financial crisis’ impact on Norwegian businesses has seemingly been less severe than the perceived image expressed through media.

The dividends-to-earnings ratio is 0.1355 on average for the whole sample. However, the median dividend-to-earnings ratio is zero for each year meaning that less than half of the firms actually pay dividends in any given year in our sample. Further, we can conclude that the ownership concentration measured by the shareholdings of the largest personal, family, industrial or institutional owning entity is stable throughout the period with an average of close to 0.33 for each year which also is the median for the entire sample. Likewise the ownership structure, both mean and median of the CEO incentives variable measured by the correlation between the change in CEO salary and the change in operating income is stable throughout the period. Also interesting, the average CEO salary increase on a yearly basis throughout the period while at the same time the average operating profit decrease each year between 2007 and 2009.

The most prominent evidence of the financial crisis we may find when looking at the profitability and growth measure in 2009. From the peak in 2007, the two year average earnings-to-assets ratio decrease 27.9% from 10.72% to 7.73% in 2009. The two year average growth in sales decreases 64.4% from 13.51% in 2007 to 5.08% in 2009 as shown in table 5.1. When interpreting these results, it is important to notice that both measures rely on a two year average, which means that the earnings-to-assets ratio and the growth in sales from 2007 to 2006 bias upwards the two measures for 2008.
## Table 5.1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>DIV</th>
<th>COND</th>
<th>CEOinc</th>
<th>Inst</th>
<th>Prof</th>
<th>Liq</th>
<th>Growth</th>
<th>Mat</th>
<th>Size</th>
<th>Debt/assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.1212</td>
<td>0.3201</td>
<td>0.0353</td>
<td>0.1009</td>
<td>0.2632</td>
<td>0.1128</td>
<td>2.2873</td>
<td>15.3500</td>
<td>0.7545</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>0</td>
<td>0.33</td>
<td>0.0289</td>
<td>0.0895</td>
<td>0.1977</td>
<td>0.0779</td>
<td>2.3026</td>
<td>15.4899</td>
<td>0.7251</td>
<td></td>
</tr>
<tr>
<td>Observ.</td>
<td>11680</td>
<td>11680</td>
<td>9460</td>
<td>11680</td>
<td>11680</td>
<td>11680</td>
<td>11680</td>
<td>11680</td>
<td>11680</td>
<td></td>
</tr>
</tbody>
</table>

Descriptive statistics for our main sample. Applied variable filter: COND<0.5, -1<DIV<2, -1<PROF<1, 0<LIQ<1 and -1<Growth<1.
VI Methodology

The Model

\[ \text{DIV}_{it} = \alpha + \beta_1 \text{Con}_{it} + \beta_2 \text{Inst}_{it} + \beta_3 \text{CeoInc}_{it} + \beta_4 \text{Prof}_{it} + \beta_5 \text{Growth}_{it} \]
\[ + \beta_6 \text{Liq}_{it} + \beta_7 \text{Mat}_{it} + \beta_8 \text{Size}_{it} + \epsilon_{it} \]

Variables

\( \text{DIV}_{it} \) is the classical dividend payout ratio measured by cash dividends to operating profits.

\( \text{Con}_{it} \) is the ownership concentration which will reflect the potential seriousness of conflict between management and shareholders in accordance with Berzins, Bøhren and Stacescu (2011). The higher the ownership concentration is, the lower the potential seriousness of conflict between shareholders and management and to a certain extent the conflict between majority- and minority shareholders. A negative beta will support our first hypothesis. \( \text{Con}_{it} \) is measured as the fraction of shares held by the largest personal, family, industrial or institutional owning entity.

\( \text{Inst}_{it} \) is a dummy variable with value equal to one if the largest owner is a financial institution. Insights from studies made by Short, Zhang and Keasey (2002) discussed in previous chapters indicate that the classical dividend payout ratio will be positively affected by institutional ownership. A positive relationship is expected and answer to our second hypothesis will be given through the institutional regression coefficient.

\( \text{CeoInc}_{it} \) is a proxy for the management incentives mechanisms applied by the firm. Proper incentive mechanisms are reflected through a positive correlation between shareholder wealth and management wealth. To construct this variable series we have calculated the correlation between change in operating profit and change in CEO salary for each unique firm and applied the correlation coefficient including most observations to proxy for the overall management incentive policy in the firm. An important insight is that firms with more observations have a stronger power behind it’s correlation coefficient. A second important limitation
to the proxy variable is found within the available data. The Ceo salary series include only fixed salary and not commonly used bonuses, stock options, pension benefits etc. described by Jensen and Murphy (1990) and Hall and Liebman (1998). Despite the limitations, we hope to assess whether Ceo incentives and dividends are compliments or substitutes, where a negative relationship would suggest that they are substitutes.

$Prof_{it}$ is a measure of company profitability and is measured by the average return on assets for the last two years. Firms that do well are expected to pay out a larger share of their earnings as dividends. A positive relationship is expected.

$Growth_{it}$ is related to the growth prospects of the firm and is measured by the reported revenue growth the last two years. High growth opportunities would result in increased need for capital investments and hence reduced resources to pay dividends. A negative relationship is expected.

$Liq_{it}$ is a measure of the liquid assets of the firm. We construct this proxy by dividing cash holdings on total assets within the same year. Highly liquid assets yield lower transaction costs for financing dividends. Hence a positive relationship is expected.

$Mat_{it}$ is a measure of the maturity of the company. According to Grullon, Michaely and Swaminthan (2002), operations mature as the firms gain experience. This result in more stabelle cash flows and thus less risk attached to operations. $Mat_{it}$ is measured by the log of company age. We expect that dividends will be positive affected.

$Size_{it}$ is the size of the company and is measured as the log of sales. Fama and French (2001) find that large firms are more likely to pay dividends. Hence, we expect to find a positive relationship between size and dividends.

**Variable Filter**

In order to ensure a sample that reflects the norm in Norwegian firms, we introduce a number of criteria for an observation to be included in our analysis.
We have performed a manual assessment of the variables and in order to eliminate extreme values in the sample we have made corridors that seem reasonable for the individual variable. As for the classical dividend ratio we have allowed a negative ratio of 1, hence taking into account possible negative operating profits, we also allow a positive ratio of 2 since some firms pay dividend from retained earnings. Growth is filtered between -1 and 1, where -1 means that the firm is facing bankruptcy and 1 means that the firm has grown 100 percent over a two year average, thereby excluding firms that are subject to unreasonable high growth. Profitability is measured as the two year average return on assets, the filter applied has -1 as the lower limit and 1 as the upper limit. Liquidity is filtered between 0 and 1.

**The Random Effects Model**

To account for the omitted variable bias and at the same time extract more information from the data, we apply the techniques introduced by Fama and Macbeth (1973). Both the fixed effects model and the random effects model account for the omitted variable bias, and it is often said that the random effects model is more appropriate when the entities in the sample can be thought on as having been randomly selected from the population, but the fixed effect model is more plausible when the entities in the sample effectively constitute the entire population (Brooks 2008). Considering our sample, which constitute all Norwegian limited liability firms; this qualifies for using the fixed effects model. However, due to the naturally low variability in most of our explanatory variables we are unable to proceed with the respective approach. Consequentially we continue with the Random effects model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical Dividend Ratio</td>
<td>&gt;-1</td>
</tr>
<tr>
<td>Ownership Concentration</td>
<td>&lt; 0.5</td>
</tr>
<tr>
<td>Growth</td>
<td>&gt;-1</td>
</tr>
<tr>
<td>Profitability</td>
<td>&gt;-1</td>
</tr>
<tr>
<td>Liquidity</td>
<td>&gt; 0</td>
</tr>
</tbody>
</table>
Intuition

The intuition is that the disturbance term $\varepsilon_{it}$ is composed by an individual specific effect, $v_{it}$, and the remainder disturbance $U_i$ that varies over time and entities; capturing everything that is left unexplained about $DIV_{it}$. Hence

$$\varepsilon_{it} = U_i + v_{it}$$

Rewriting our model yields:

$$DIV_{it} = \alpha + \beta_1 Con_{it} + \beta_2 Inst_{it} + ... + \beta_9 Size_{it} + U_i + v_{it}$$

We can think of $U_i$ as encapsulating all of the variables that affects $DIV_{it}$ cross-sectionally but do not vary over time. Now the problem is that the $U_i$ most likely is correlated with the explanatory variables. The estimator will ascribe every increase in $DIV_{it}$ to the explanatory variables in our model when in reality some of it arises from the error term, resulting in biased coefficients. We encounter this problem to some extent, by taking the first difference;

$$\Delta DIV_{it} = \beta_1 \Delta Con_{it} + \beta_2 \Delta Inst_{it} + ... + \beta_9 \Delta Size_{it} + \Delta v_{it}$$

Note that the above equation does not need an intercept term because the dependent variable now will have zero mean by construction.

Hausman test

The random effects approach has a major disadvantage which arises from the fact that it is valid only when the composite $\varepsilon_{it}$ is uncorrelated with all of the explanatory variables. This assumption is more strict than the corresponding one in the fixed effect case, because with random effects we thus require both $U_i$ and $v_{it}$ to be independent of all the explanatory variables. A test for whether this assumption is valid for the random effects estimator is based on a slightly more complex version of the Hausman test. Test statistics are reported in table 6.2.

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>687.109305</td>
<td>7</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
We see that the assumption does not hold and the parameter estimates will be biased and inconsistent. This is a complicated econometric issue and in some measure it will lower our paper’s explanatory power. In the absence of a qualified alternative we have chosen to report the random effects estimates in addition to the pooled sample estimates. Throughout the discussion of our empirical findings we will emphasize the random effects results.

VII Empirical Findings

Table 7.1 below presents the base-case estimates. The table reports the findings year by year, the pooled sample (ALL) and the results from the Fama-MacBeth-approach accounting for random effects (Fama and MacBeth, 1973). As we find that the results from the pooled sample and the random effects model are highly consistent, we will concentrate on the results from the random effects model in the first section.

To confirm our results in the base case, we carry out a variety of alternative ways of looking at the issues raised through different robustness tests. First, we include indirect ownership in the ownership concentration variable. Then we explore the characteristics of the ownership-dividend relationship before accounting for dividend-paying firms only in our sample.

After the robustness tests we have left a section to answer our fourth hypothesis concerning the relationship between debt and dividends.

Finally, we extend our base case analysis to include family-management relationships and explain how dividend policy is affected when the chairman, ceo or both are a member of the largest owning family in the firm.
The table reports the estimates for the base-case OLS regressions and the p-values are shown in the following column. The dependent variable is the classical dividend payout ratio, cash dividends to operational profit. Ownership concentration is the share of equity held by the largest personal, extended family, industrial or institutional owning entity. Extended family includes relations by blood or marriage. Ceo incentives is the correlation between changes in Ceo salary and change in operating profit. Profitability is the two year average operating profit before taxes to total assets ratio. Liquidity is the yearly cash holdings to assets. Growth is the two year average increase in sales to assets ratio. Size is the log of sales in million NOK and Maturity is the log of age (age is measured as number of years since the firm was founded). The sample is of both public and private limited liability firms where the ownership concentration defined above is less than 50%, consistent accounting figures and positive sales and assets. A variable filter can be found in table 6.1.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Description</th>
<th>Random effects model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership concentration</td>
<td>Cond</td>
<td>0.026443 0.3145 0.015771 0.5977 0.033025 0.2671 0.032666 0.3170 0.030801 0.0369 0.047609 0.0079</td>
</tr>
<tr>
<td>Ceo incentives</td>
<td>Ceoinc</td>
<td>0.010484 0.0772 -0.005233 0.3988 -0.006000 0.3110 0.002030 0.7520 0.000390 0.8988 0.005000 0.2018</td>
</tr>
<tr>
<td>Largest owner is institutional</td>
<td>Inst</td>
<td>0.111662 0.0000 0.092101 0.0000 0.071720 0.0000 0.040961 0.6949 0.084529 0.0000 0.053814 0.0000</td>
</tr>
<tr>
<td>Profitability</td>
<td>Prof</td>
<td>0.501408 0.0000 0.556585 0.0000 0.533083 0.0000 0.612121 0.0000 0.545754 0.0000 0.405907 0.0000</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Liq</td>
<td>0.138094 0.0000 0.199774 0.0000 0.205753 0.0000 0.194927 0.0000 0.187818 0.0000 0.190790 0.0000</td>
</tr>
<tr>
<td>Growth</td>
<td>Growth</td>
<td>-0.046137 0.0001 -0.069472 0.0000 -0.034236 0.0075 -0.066881 0.0000 -0.057598 0.0000 -0.037901 0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>Size</td>
<td>0.023775 0.0000 0.030976 0.0000 0.021439 0.0000 0.028070 0.0000 0.026719 0.0000 0.028028 0.0000</td>
</tr>
<tr>
<td>Maturity</td>
<td>Mat</td>
<td>0.001000 0.7818 0.005225 0.1823 0.010414 0.0071 0.012491 0.0057 0.007306 0.0002 0.011111 0.0000</td>
</tr>
</tbody>
</table>

R-squared: 0.186250 0.214652 0.216895 0.216820 0.206280 0.120656
Adjusted R-squared: 0.185561 0.213966 0.216171 0.216048 0.206101 0.120457
N: 9460 9169 8662 8128 35419 35419
Findings and intuition – Base case

Through our empirical results we are able to document a positive relationship between the dividend payout ratio and ownership concentration. This is contrary to both our first hypothesis and the research made by Berzins, Bøhren and Stacescu (2011) for a Norwegian limited liability firms sample containing an ultimate ownership concentration above 50%. Thus, the higher shareholdings of the controlling shareholder limited to 50%, more of a firm’s free cash flow is paid out as dividends. The relationship is positive and statistically significant for the total sample, but not on a yearly basis. Similarly, an increase of 0.48% in dividend payout ratio for each 10% increase in share ownership by the largest shareholder might be considered modest in economic terms. More important, the positive coefficient (0.047609) supports the outcome model and suggests that firm management behave opportunistically by retaining more of the earnings when ownership concentration decreases and the potential seriousness of conflict with the shareholders increases. To the extent that low ownership concentration can proxy for weak corporate governance, these findings also challenge the findings of Knyazeva (2007), where managers experience more shareholder pressure to increase dividends when weakly governed.

Regarding the institutional ownership and our second hypothesis, we find a statistical significant positive relationship to dividends in accordance with Short, Zhang and Keasey (2002). If the largest owner is a financial institution, the dividend ratio increases with 0.0538. For the pooled sample, the effect is even more severe implying an increase in dividend ratio of 0.0845.

Interestingly, on a year-by-year basis, the estimates are high but decreasing from 2006 throughout the period and finally insignificant in 2009. Considering the economic climate in Europe during the period of 2008–2009, one explanation might be that institutional owners recognized the difficulties concerning the credit crunch and hence accepted lower dividend payments. On the other hand, by viewing the descriptive statistics, Norwegian firms were to a much lower extent than European firms, affected by the financial crisis. Hence one might draw the conclusion that management used the financial crisis as an excuse for not paying dividends. Then again, the impact and potential future consequences of the
financial crisis was difficult to forecast, and management would be wise to be reluctant about the dividend payments.

Finally, according to EU regulations and «foretaksmodellen», industrial owners and financial institutions only need to report 3% of dividends as taxable income. This reduces the effective tax rate on dividends from 28% to 0.84% for corporate owners. Hence, dividends are favorable to corporate cash flow relative to other income. Our findings support this view.

Our third hypothesis states that management incentives and dividends are substitutes. Proper incentive mechanisms reduce the classical agency problem and hence dividends are not to the same extent needed to reduce the flexibility of management through reduced corporate cash holdings. Through our model we find no support for this view. The relationship to dividends appears near flat in both the pooled sample (0.00039) and the random effects model (0.005) and additionally the estimates are not significant in either sample. Nonetheless, the coefficients are positive which indicates that management incentives and dividends are compliments but we cannot draw any conclusion on this basis. To utterly explore the relationship between management incentives and dividends we perform a simple correlation analysis on the base case sample. The results are listed in table 7.2 below.

<table>
<thead>
<tr>
<th>DIV</th>
<th>CEOINC</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIV</td>
<td>1</td>
</tr>
<tr>
<td>CEOINC</td>
<td>0.007226</td>
</tr>
</tbody>
</table>

From table 7.2 we confirm that there seems to be a modest positive relationship between CEO incentives and dividends. A natural limitation to the variable lies within the data, which will be reviewed at the end of our thesis.

The relationship between the dividend payout ratio and the control variables is mainly as predicted. For a given ownership structure, large, mature and profitable firms with highly liquid assets pay more dividends. For firms with growth
measured by the two year average of growth in sales to assets, the dividends decrease slightly. All control variables are significant and intuitively correct in both the pooled sample estimate and for the random effects approach.

**Robustness**

*Ultimate ownership*

So far, we have measured the ownership concentration as the share held directly by the largest personal, family, industrial or institutional owning entity. To extend our analysis further and confirm our results in the previous section, we now replace the direct ownership variable with an ultimate ownership variable including both direct and indirect shares held by the largest personal, family or institutional owning entity.

To illustrate, an investor owns 20% in Firm A and 20% in Firm B. Firm B owns 50% in Firm A. The investor’s ultimate ownership in Firm A is 20% + (20% x 50%) = 30%. We now run the same regression as in the base case:

\[
DIV_{it} = \alpha + \beta_1 CON_{it} + \beta_2 INST_{it} + \beta_3 CEO\text{IN}C_{it} + \beta_4 PROF_{it} + \beta_5 GROWTH_{it} + \\
+ \beta_6 LIQ_{it} + \beta_7 MAT_{it} + \beta_8 SIZE_{it} + \varepsilon_{it}
\]

only changing the ownership variable and adjust the filter to account for the observations where the ultimate ownership is less than 50%. The results are reported in table 7.4 below:

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Description</th>
<th>Random effects model Direct ownership</th>
<th>Random effects model Ultimate ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership concentration</td>
<td>CON</td>
<td>0.047609</td>
<td>0.0079</td>
</tr>
<tr>
<td>CEO incentives</td>
<td>CEOINC</td>
<td>0.005000</td>
<td>0.2018</td>
</tr>
<tr>
<td>Largest owner is institutional</td>
<td>INST</td>
<td>0.053814</td>
<td>0.0000</td>
</tr>
<tr>
<td>Profitability</td>
<td>PROF</td>
<td>0.405907</td>
<td>0.0000</td>
</tr>
<tr>
<td>Liquidity</td>
<td>LIQ</td>
<td>0.190790</td>
<td>0.0000</td>
</tr>
<tr>
<td>Growth</td>
<td>GROWTH</td>
<td>-0.037901</td>
<td>0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>SIZE</td>
<td>0.028028</td>
<td>0.0000</td>
</tr>
<tr>
<td>Maturity</td>
<td>MAT</td>
<td>0.011111</td>
<td>0.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td>0.120656</td>
<td>0.0000</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td></td>
<td>0.120457</td>
<td>0.0000</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>35419</td>
<td>51012</td>
</tr>
</tbody>
</table>

Table 7.3: The Random Effects model; Direct vs. Ultimate ownership
From the table above we see that the relationship between ownership structure and dividends is slightly reduced from 0.047609 to 0.040676 and maintain significant. An explanation might be that the relationship between indirect ownership and control rights are more complex. Our Ceo incentives variable is still small and not significant. Further the relationship between institutional ownership and dividends are slightly increased from 0.053814 to 0.062832. Finally, the remaining control variables are considered highly consistent except the growth variable which indicates a less negative impact on dividends. However this variable is not significant in this regression. Overall, these findings support our base case findings that ownership concentration and institutional ownership are positively related to dividends.

Linear vs. nonlinear relationship

In our base case we found a positive relationship of 0.047609 between ownership concentration and the dividend-to-earnings ratio. But could it be that this coefficient applies to all levels of ownership concentration measured by the shareholdings of the largest owner? Or is the relationship indeed more complex? To further explore this relationship, we run the base case regression three more times only now reducing the sample to include ownership concentration on the 40%- , 30%- and 20% level. The results are reported in table 7.4 in the appendix.

From table 7.4 we register a significant increase in the impact of ownership concentration at the 30%- and 20% sample, 0.163340 and 0.318875 respectively and both significant. This indicates that ownership concentration and the presence of a seemingly controlling owner becomes more important in firms with more dispersed ownership. We improve the modeling of the relationship by including a nonlinear term into the regression. We do this by adding a quadratic term, namely the squared ownership concentration variable and then run the regression. Results are reported in table 7.5 below.
From the table above we get new insights about the relationship between ownership concentration and the dividend-earnings ratio. To illustrate, we plot the results and present the graph below in illustration 7.1.

A 1% increase of shares held by the largest shareholder in firms with relatively more dispersed ownership is better concerning dividend payments than a 1% increase of shares held by the largest shareholder in firms with an ownership concentration already close to 50%. The relationship is positive, but decreasing. Hence, instead of a linear relationship, we experience an inverted U-shaped (concave) relationship between ownership concentration and the dividend-earnings ratio.

### Table 7.5: The Random Effects Model: Accounting for a nonlinear relationship

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Description</th>
<th>Random effects model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership concentration</td>
<td>Cond</td>
<td>0.223950 0.0019</td>
</tr>
<tr>
<td>Ownership concentration^2</td>
<td>Cond^2</td>
<td>-0.303846 0.0116</td>
</tr>
<tr>
<td>Ceo incentives</td>
<td>Ceoinc</td>
<td>0.004954 0.2059</td>
</tr>
<tr>
<td>Largest owner is institutional</td>
<td>Inst</td>
<td>0.053971 0.0000</td>
</tr>
<tr>
<td>Profitability</td>
<td>Prof</td>
<td>0.405295 0.0000</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Liq</td>
<td>0.191013 0.0000</td>
</tr>
<tr>
<td>Growth</td>
<td>Growth</td>
<td>-0.037913 0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>Size</td>
<td>0.028114 0.0000</td>
</tr>
<tr>
<td>Maturity</td>
<td>Mat</td>
<td>0.011624 0.0000</td>
</tr>
</tbody>
</table>

R-squared 0.120819
Adjusted R-squared 0.120596
N 35419
Dividend-paying firms only

We now run our model only including firms that actually paid dividends in a given year. The results can be found in Table 7.6 in the appendix. The relationship between dividends and ownership concentration is negative in 2006 (-0.069009) but becomes positive in 2007 (0.050856) and remain so throughout 2008 (0.070866) and 2009 (0.089283) in total 0.037828 for the entire period accounting for random effects. The reason for the negative relationship in 2006 seems difficult to interpret, but it may be explained by the tax reform being effectuated in 2006. Even more important is that none of the above coefficients are statistically significant. These results will to a certain extent mitigate the importance of our findings.

The institutional ownership is however in accordance with the base case sample. The relationship to dividends seems most prominent in 2006 (0.081960) and further decreasing throughout 2007 (0.060447) and 2008 (0.043338) and finally it becomes negative in 2009 (-0.033600). The 2009 coefficient is however not significant. In total, the effect of institutional ownership on dividends including only firms actually paying dividends is 0.021107 and statistically significant when accounting for random effects.

Debt and Dividends

To answer our fourth hypothesis we first lend arguments from Knyazeva (2007). The role of debt in mitigating the agency conflict between shareholders and managers is in similar ways related to the dividend policy. A debt contract requires the manager to pay interest expenses and experience the threat of bankruptcy in case of deviations. Hence, both debt and dividends involve distribution of a pre-specified amount of the firms’s free cash flow to external claimholders. Because debt and dividends are costly and can fulfill a similar agency cost reduction role, they are expected to act as partial substitutes.

Through simple correlation analysis we investigate the relationship between dividends and interest expenses. Interest expenses represent the cost of debt. The result is reported in table 7.6 below.
The cost of debt, measured by Interest expenses (in levels), have a negative impact on dividends as predicted in our fourth hypothesis. These findings support the view that debt is a partial substitute for dividends.

**Extensions**

In this section we introduce additional dummy variables in an attempt to explain the family-management relationship. These variables include largest family have CEO, largest family have Chairman and two different combinations of these.

Villalonga and Amit (2004) address the potential problems between family management and shareholders, and question the value creation in such firms. Their paper suggests that the classical management-shareholder conflict in nonfamily firms is more costly than the conflict between family and nonfamily shareholders in Founder-CEO firms. We want to apply this insight to our paper, and test to what extent family-control affect dividend policies. In addition, we want to analyze if family controlled firms prefer an external CEO and rather control the board through the Chairman. We expect the relationship to dividend to be in line with our first hypothesis, namely that the dividend will decrease with increased influence by the largest family.

First we introduce a new dummy variable $lfam_{ceo}$ which is equal to one if the CEO alone or together with his/her family holds the largest fraction of shares in the firm. Likewise, the dummy variable $lfam_{chair}$ is equal to one if the Chairman alone or together with his/her family is the largest owner. We run the base case regression including the new dummy variables. The results are reported in table 7.8 below.

<table>
<thead>
<tr>
<th>DIVIDENDS</th>
<th>INTEXP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIVIDENDS</td>
<td>1</td>
</tr>
<tr>
<td>INTEXP</td>
<td>(-0.3183)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7.7: Correlation Interest expenses - Dividends</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIVIDENDS</td>
</tr>
<tr>
<td>DIVIDENDS</td>
</tr>
<tr>
<td>INTEXP</td>
</tr>
</tbody>
</table>
We find that in firms where the largest family has the CEO there is a significant negative relationship to dividends. The effect is -0.016227 and can be interpreted as canceling out the positive effect of ownership concentration (0.041876) on dividends when the largest owner holds about 39% of the total shares in the firm. The effect of the largest family to have the chairman is more modest, -0.005727 accounting for random effects and is also not significant. However, the economic intuition of the coefficient indicates a negative relationship to dividends. For the pooled sample the effect is even more prominent (-0.012177) and statistically significant. When the largest family secure more influence through management positions, less of the firms earnings are paid out as dividends.

Berzins, Bøhren and Stacescu (2011) explain how majority shareholders are able to exploit their control to reduce the dividends in the firm and increase private benefits. Hence the classical management-shareholder conflict is replaced by another conflict. In the literature, this conflict is often referred to as the majority-minority problem (Demsetz and Lehn (1985)), the horizontal agency problem (Roe (1994)), and the second agency problem discussed by Villalonga and Amit (2006). Since stockholders can appropriate maximum private benefits and dividends have to be shared proportionally with minority shareholders there exist incentives for the controlling entity to reduce dividends. An opposite view is that by placing family members as corporate insiders, the interests of the largest shareholder and management are more aligned and the classical management-

Table 7.8: Extended base case

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Description</th>
<th>Pooled</th>
<th>Random Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership concentration</td>
<td>cond</td>
<td>0.042434</td>
<td>0.0113</td>
</tr>
<tr>
<td>Ceo Incentive</td>
<td>Ceoinc</td>
<td>0.000718</td>
<td>0.8196</td>
</tr>
<tr>
<td>Largest owner is institutional</td>
<td>Inst</td>
<td>0.080459</td>
<td>0.0000</td>
</tr>
<tr>
<td>Profitability</td>
<td>Prof</td>
<td>0.545988</td>
<td>0.0000</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Liq</td>
<td>0.199865</td>
<td>0.0000</td>
</tr>
<tr>
<td>Growth</td>
<td>Growth</td>
<td>-0.058745</td>
<td>0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>Size</td>
<td>0.025951</td>
<td>0.0000</td>
</tr>
<tr>
<td>Maturity</td>
<td>Mat</td>
<td>0.010049</td>
<td>0.0000</td>
</tr>
<tr>
<td>Largest family have CEO</td>
<td>Ifam_Ceo</td>
<td>-0.024220</td>
<td>0.0000</td>
</tr>
<tr>
<td>Largest family have Chairman</td>
<td>Ifam_chair</td>
<td>-0.012177</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

R-squared 0.212128 0.125666
Adjusted R-squared 0.211892 0.125405
N 33506 33506
shareholder conflict is reduced. Hence, the need for dividends to reduce the management-shareholder conflict seems less important and resources can be kept within the firm for future investment opportunities.

We introduce two new variables in an attempt to shed some more light on the relationship between management and family. The variable where the largest family have the \textit{CEO and Chairman} in Table 7.9 below show a negative significant relationship of -0.028941 which indicates that the more concentration of power the largest family possesses the more likely they are to retain earnings as in line with our arguments above.

In contrast we find a positive significant relation when the largest family engages an external non-family CEO (\textit{Chairman not CEO}) but remain in the position as chairman. These findings may suggest that external CEOs are better agents and are able to create more profitable firms than family-CEOs. Profitability is the most important factor in explaining dividends and hence if external CEOs are more efficient, higher profitability could result in higher dividend payments.

\begin{table}[h]
\centering
\caption{Extended base case; Relationship between CEO and Chairman}
\begin{tabular}{l l c c c}
\hline
Independent variable & Description & Pooled & Random Effect \\
\hline
Ownership concentration & cond & 0.036231 & 0.0286 & 0.042882 & 0.0358 \\
Ceo Incentive & Ceoinc & 0.000560 & 0.8588 & 0.004872 & 0.2241 \\
Largest owner is institutional & Inst & 0.078767 & 0.0000 & 0.049505 & 0.0000 \\
Profitability & Prof & 0.543642 & 0.0000 & 0.407380 & 0.0000 \\
Liquidity & Liq & 0.199757 & 0.0000 & 0.203925 & 0.0000 \\
Growth & Growth & -0.059008 & 0.0000 & -0.038306 & 0.0000 \\
Size & Size & 0.025414 & 0.0000 & 0.027442 & 0.0000 \\
Maturity & Mat & 0.011358 & 0.0000 & 0.014412 & 0.0000 \\
Ceo and Chairman & Ceoandchair & -0.036776 & 0.0000 & -0.028941 & 0.0000 \\
Chairman no Ceo & chairnoceo & 0.015506 & 0.0001 & 0.015818 & 0.0002 \\
\hline
R-squared & 0.213983 & 0.127286 \\
Adjusted R-squared & 0.213749 & 0.127025 \\
N & 33506 & 33506 \\
\end{tabular}
\end{table}
VIII Conclusion

In this paper we analyze the effect of ownership concentration and structure on dividend policy in Norwegian private and public firms during 2006-2009. By focusing on firms with more dispersed ownership, including firms with less than 50% equity owned by the largest personal, family, industrial or institutional owning entity, we primarily address the classical agency problem between management and shareholders and further try to understand how dividend payments interact in the conflict.

Through the framework of Berzins, Bøhren and Stacescu (2011) and La Porta et. Al (2000) we find a statistically significant positive relationship between ownership concentration and dividends. Hence, the higher the potential management-shareholder conflict reflected in the ownership structure, less of the firm’s earnings are paid out as dividends. This supports the outcome model, where corporate insiders act opportunistically towards minority shareholders and maintain earnings in the firm for increased flexibility and private benefits. The results are also consistent when we include the indirect ownership. When dividing the base case sample into smaller samples we further document a nonlinear (concave) relationship between ownership concentration and dividends.

Further we find that if the largest owner is a financial institution the dividend-to-earnings ratio increase with 0.0538. These findings are in accordance with our second hypothesis and the findings made by Short, Zhang and Keasey (2002).

Through our model we are not able to assess how management incentives affect dividends. Our third hypothesis states that management incentives and dividends are substitutes. Through our model we find no support for this view. The relationship to dividends appears near flat in both the pooled sample (0.00039) and the random effects model (0.005) and additionally the estimates are not significant in either sample. Nonetheless, the coefficients are positive which indicates that management incentives and dividends are rather compliments. Through our extended analysis we find that when the largest family secure more influence through management positions, less of the firms earnings are paid out as dividends. By controlling both the CEO and Chairman, the negative effect on dividends by far cancel out the positive effect of ownership concentration.
Whether this dividend reduction is based on more aligned interests between management and shareholders or the fact that minority shareholders are somewhat exploited by the largest family in control with the help of corporate insiders is still an open empirical question. There is, however, a positive relation to dividends if the CEO is external and the position of Chairman is controlled by the largest family.

Finally, through simple correlation analysis, we confirm the findings of Knyazeva (2007) where debt and dividends acts as a partially substitutes.

IX  Limitations

The period under investigation, and hence our sample is relatively short compared to comparable literature. This is due to the latest Norwegian tax reform which took effect in 2006. Even if both the old and the new tax regimes are neutral with respect to dividend payments, the main investor adaption is not devoted within a certain regime itself but to the transition between the tax regimes. Alstadsæter and Fjærli (2009) find that the new regulations distorted the number of dividend payments prior to the 2006 reform, and hence influence any cross-period studies engaged in explaining dividend policy in Norway for some time surrounding the initiation of the new tax reform.

Another important limitation to our study can be found in the information content of our CEO salary variable. The reported CEO salary lack important information about several factors that help explain management incentives like bonuses, options, pension benefits, fringe benefits and other arrangements. We cannot reject the idea that with more data as explained above, we might have been able to contribute more to the literature concerning the management-incentives relationship to dividends. Through a more thorough understanding of the literature as we progress in our thesis, we also view the lack of insider ownership variable as an important limitation to our study.
X References


http://lovdata.no/all/nl-19970613-044.html


## Table 7.4: Sample reduction; Ownership concentration

<table>
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<tr>
<th>Independent variable</th>
<th>Description</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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</thead>
<tbody>
<tr>
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<td>0.017692</td>
<td>0.020736</td>
<td>0.021710</td>
<td>0.027711</td>
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<td>Ceo Incentive</td>
<td>Ceoinc</td>
<td>0.028530</td>
<td>0.030880</td>
<td>0.032257</td>
<td>0.032730</td>
<td>0.036857</td>
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<td>Largest owner is institutional</td>
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<td>0.023333</td>
<td>0.025000</td>
<td>0.025833</td>
<td>0.026333</td>
<td>0.028571</td>
</tr>
<tr>
<td>Profitability</td>
<td>Prof</td>
<td>0.023333</td>
<td>0.025000</td>
<td>0.025833</td>
<td>0.026333</td>
<td>0.028571</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Liq</td>
<td>0.023333</td>
<td>0.025000</td>
<td>0.025833</td>
<td>0.026333</td>
<td>0.028571</td>
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<td>Growth</td>
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<td>0.025000</td>
<td>0.025833</td>
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<tr>
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<td>Size</td>
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<td>0.025000</td>
<td>0.025833</td>
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<td>0.028571</td>
</tr>
<tr>
<td>Maturity</td>
<td>Mat</td>
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<td>0.025000</td>
<td>0.025833</td>
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<tr>
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<td>Adjusted R-squared</td>
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N

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<30 2895
<20

Table 7.4: Sample reduction; Ownership concentration
Table 7.6: Base-case regression: Firms paying dividends

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Description</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Pooled sample (all)</th>
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</thead>
<tbody>
<tr>
<td>Ownership concentration</td>
<td>Share of equity held by largest personal, extended family, industrial or institutional owning entity</td>
<td>-0.0000</td>
<td>-0.0000</td>
<td>-0.0000</td>
<td>-0.0000</td>
<td>-0.0000</td>
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<tr>
<td>Ceo incentives</td>
<td>Correlation between changes in Ceo salary and change in operating profit</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Profitability</td>
<td>Two year average operating profit ratio to total assets</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
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</tr>
<tr>
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<td>Yearly cash holdings to assets</td>
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<td>0.0000</td>
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<tr>
<td>Growth</td>
<td>Two year average growth rate in sales to assets</td>
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<td>0.0000</td>
<td>0.0000</td>
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<td>0.0000</td>
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<tr>
<td>Size</td>
<td>Log of sales in million NOK</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Maturity</td>
<td>Log of age (age is measured as number of years since the firm was founded)</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
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</table>

The table reports the estimates for the dividend-paying firms. The dependent variable is the classical dividend payout ratio, cash dividends to operational profit. Ownership concentration is the share of equity held by the largest personal, extended family, industrial or institutional owning entity. Extended family includes relation by blood or marriage.

R-squared: 0.074506, Adjusted R-squared: 0.071335
N: 2344

The sample is of both public and private limited liability firms where the ownership concentration defined above is less than 50%, consistent accounting figures and positive sales and assets.
Preliminary Thesis Report

BI Norwegian Business School

Do public firms exposed to the first agency problem adjust dividends for management benefits or long-term sustainability?

Date of submission:
16.01.2012

Name of supervisor:
Bogdan Stacescu

Study Program:
Master of Science in Business and Economics
Major in Finance

Campus:
BI Nydalen
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Introduction

We want to extend the framework of Berzins, Bøhren and Stacescu (2009) to investigate the relationship between owner concentration and dividend policy in Norwegian public firms during 2006 – 2010. As public firms often encompass more dispersed ownership concentration than private firms, the first agency problem will dominate our focus, and the seriousness of potential conflict will be measured by the implied lack of incentive for shareholders to monitor management.

Due to related legislation concerning investor protection in Norway and US, we expect to find similar results as Knyazeva (2007), where dividends were found to substitute for weak corporate governance.

The preliminary paper starts by describing the economic problem that provides the basis for our thesis. Second, we present our research question and objective of the thesis prior to a comprehensive literature review accounting for earlier work related to our topic. Furthermore, we explain our choice of method and present the applied model before a short description of our data. Finally, we present our intentional progress plan.

Economic Problem

The separation of ownership from control is one of the basic tenets of a free-market society because it allows for specialization. However, when ownership and control are separated, agency costs arise through monitoring, losses due to different objective of interests and information asymmetries.

Agency conflicts arise in firms because corporate decisions are made by managers (agents) on behalf of the firm’s owners (principals). Jensen and Smith (1985) describe three main sources of conflict between managers and claimholders. The first is the choice of effort by managers and the structure of the management compensation contract. Management action is not always observable and the best action for the agent is not necessarily the best action for maximizing the wealth of capital suppliers. The second stems from the diversification of risk. Since the investment in firm-specific human capital represents a significant portion of the manager’s wealth, the manager is concerned about the idiosyncratic risk of the
firm even though shareholders are able to diversify away that risk. As a result, a manager may make investment decisions that help diversify the firm which may not be in the interest of the shareholders. At last, the third source of conflict arises from the different time-horizons of managers and claimholders. A manager’s claim on the firm is limited although a firm’s lifetime is infinite. Hence a manager may put less emphasize on cash flows occurring after their horizon in their decision making.

How should the possible seriousness of conflict between management and shareholders be measured? According to a recent working paper by Berzins, Bøhren and Stacescu (2009) the potential conflict between majority and minority shareholders are measured by the ownership concentration of the firm. In the same way, we argue that the higher owner concentration in a firm, the higher incentives for monitoring management and thus the potential for inefficient managerial investments decrease. As a result the possible conflict between managers and shareholders decrease with ownership concentration.

How does this relate to dividends? If we measure the potential agency conflict according to the ownership structure, is there a positive link to dividends? Can ownership structure in fact help explaining the classical dividend payout ratio? A study by Knyazeva (2007) show that dividends act as a valuable tool in reducing agency conflicts in the way that dividends limit flexibility and inefficient managerial investment. The lack of monitoring incentives should be replaced by dividends. Hence we expect to find dividends negative linked to ownership concentration.

**Research question and objectives of the thesis**

Our paper focuses on the first agency problem and the relation to dividend policy in Norwegian public firms during 2006 – 2010. By excluding companies with more than 50 % ownership owned by one individual, family or institution, we assume through increased incentives for monitoring management, that the familiar management-shareholders agency problem is substituted with the second agency problem (Villalonga and Amit 2006) concerning conflict of interest between majority and minority shareholders already accounted for by Berzins, Bøhren and Stacescu (2009). By focusing on public firms, the first agency problem dominates
due to the increased dispersed ownership. Further, we investigate how dividend policy is utilized as a tool for reducing the first agency problem.

In the framework of Berzins, Bøhren and Stacescu (2009), the potential intensity of the conflict is measured as the fraction of shares held by the largest owner. We will concentrate on the first agency problem and thus the ownership concentration between 0 and 50% of the total shares. The closer the owner concentration is to 0% the lower incentives for monitoring management and thus higher potential for company management to influence owners to retain earnings in the company for increased flexibility and private benefits. We argue that the conflict between management and shareholders are more intense the lower the owner concentration is. Given the ownership concentration and the implied level of conflict, next step is to analyze the related dividend policy. Consequently,

*Can ownership concentration explain dividend policy in Norwegian public firms?*

Hence we obtain the following two hypotheses:

- **H1:** Low ownership concentration result in high dividend payments
- **H2:** Low ownership concentration result in low dividend payments

Further we want to examine if debt can substitute for dividend payments as described by Knyazeva (2007). A debt contract requires the manager to make regular interest payments and imposes the threat of bankruptcy in case of deviations. Because both debt and dividends are costly and fulfill a similar reduction in conflict between management and shareholders, they are expected to act as partial substitutes in the dynamic context. We examine the following hypothesis:

- **H3:** Dividends and debt are negatively correlated
Literature Review

Several studies concentrate on ownership structure and the relation to dividend policy. We have divided the literature in two main topics, Ownership structure and General dividend policy, in order to cover previous work in a systematic manner.

Ownership structure

Knyazeva (2007) examines the effects of corporate governance on dynamic dividend behavior on a sample of U.S. firms from Compustat Industrial Annual for 1993-2004. Weakly governed managers face a tradeoff between flexibility gains and expected shareholder reaction to the dividend decisions. In the absence of strong corporate governance, dividends can limit inefficient managerial investment thus reducing the first agency problem. She finds that weakly governed managers face more shareholder pressure to sustain the dividend commitment and make fewer dividend cuts and engage in more dividend smoothing. She also finds that debt can be a partial substitute for dividends under the same dynamic context. A debt contract requires the manager to make regular interest payments and imposes the threat of bankruptcy in case of deviations. She notes that both constraints (interest payments and dividends) on managerial behavior involve distribution of a pre-specified amount on the firm’s free cash flow to external claim holders.

Villalonga and Amit (2006) address how family ownership, control and management affect firm value using detailed data from the proxy filings of all Fortune 500 firms between 1994 and 2000. They explain that the classical agency problem between shareholders and management introduced by Berle and Means (1932) or Jensen and Meckling (1976), in various situations concerning large family ownership, are substituted with a second agency problem between minority shareholders and majority shareholders. In corporations with one large shareholder and a fringe of small shareholders the first agency problem is substituted with the second agency problem. Which of these two agency problems is more detrimental to shareholder value? Their findings suggest that the classical conflict between management and shareholders is more costly than the conflict between family and nonfamily shareholders in founder-CEO firms. However the reverse becomes true when the CEO is a descendant.
Michaely and Roberts (2011) compare dividend policies of private and publicly-held firms to determine what influences corporate dividends and the agency conflicts involved concerning different concentrations of blockholders. The paper tests how smoothing is related to whether firms are publicly held or privately held and how private firms distribute dividends. Since public firms provide market price to the market, it is much easier to attract new investors than what private firms are able to. This in turn makes private firms less able to distribute dividends. Their finding include that public firms also do a great deal of smoothing, which make public firms pay lower dividends than what minority shareholders would prefer. This can be seen as agency conflict, where management try to protect their interests and pay less dividend. In general though, private firms pay less dividend overall.

La Porta, Lopez-de-Silanes, Shleifer and Vishney (2000) tries to identify the basic elements of the agency approach to dividends. They test two agency models of dividends. The “outcome model” is defined as minority shareholders pressuring insiders to make payouts. In the “Substitute model” dividends are fairly paid out to investors by the insiders to build or maintain a good reputation such that on later occasions equity is more easily raised. The outcome model predicts stronger minority shareholder rights associated with high dividend, the substitute model predicts the opposite. The legal system plays a part in predicting dividends, in countries where minority shareholders enjoy good legal protection, firms pay higher dividends. In these countries fast growing companies pay less dividends. Because of good protection, minority investors are willing to wait for dividend when investment opportunities are good. As a consequence poorly protected investors get more dividends because they take what they can get. They also include tax effects on dividend to their model, but find no conclusive evidence that taxes effects payout policies. One reason for this may be that firms must pay dividend sooner or later, which according to King (1977) and Auerbach (1979) does not affect the shareholders. Furthermore, they find evidence that in countries with high legal protection, dividends are high because firms are limited by law to steal or benefit themselves otherwise and because shareholders have enough power to extract it. Dividends play a vital role in dealing with agency cost. By paying dividends insiders cannot benefit themselves from retained earnings. “Dividends (a bird in the hand) are better than retained earnings (a bird in the
bush) because the latter might never materialize as future dividends (can fly away)

Thomsen (2005) explore the association between blockholder ownership, dividend policy and firm value in the largest US and EU companies during 1988-1998 using a non-technical procedure. Through simple correlation analysis he tries to identify which of either the conflict of interests hypothesis or the incentive alignment hypothesis that gain support according to the data. In short, the benefit of close monitoring of company management and thus reduced agency costs is weighted against the disadvantage of the perceived risk of expropriation when ownership is concentrated. His results indicate that in continental Europe, a negative association is found between blockholder ownership and firm value, meaning that blockholder ownership is excessive from a minority shareholder viewpoint. In the US/UK, higher blockholder ownership is generally associated with lower dividends, which are again negatively correlated with firm value. These results support the conflict of interest hypothesis.

Short, Zhang and Keasey (2002) examine the potential relationship between ownership structures and dividend policy in the UK extending well-established dividend payout models (Litner, Waud and Fama and Babiak). He uncovers strong support for the hypothesis that a positive association exists between dividend payout policy and institutional ownership. Furthermore, the results from an earnings trend model suggests that the influence of institutional ownership may go beyond increasing the dividend payout ratio and also produce a significant and positive earnings trend component. Further he finds some evidence in support of the hypothesis that there exist a negative relationship between managerial ownership and dividend payout ratio. The latter result is in accordance with Jensen’s (1986) free cash flow theory; where managers prefer to retain resources under their control instead of distribute cash to the shareholders.

Renneboog and Trojanowski (2005) examine the dividend policies of UK firms listed on the London Stock Exchange in the 1990s. They concentrate much of their study on existing literature by analyzing trends of dividends and total payouts. Dividend decisions are a consequence of profitability in UK companies, but the presence of strong blockholders or a coalition of blockholders weakens the
relationship between dividend and profitability. Further, they find that the relationship between the voting power of major (block) shareholders (or coalitions) and dividend payouts to be always negative, the magnitude differ across the categories of blockholders (i.e. industrial firms, outside individuals, directors, financial institutions). There have been a number of studies on this subject, and results vary somewhat due to different approaches and countries in question. Strong blockholders mitigate the agency conflict between management and shareholders to render internal sources of financing attractive. At the same time, blockholders seems to be aware of the consequences of paying high dividends that may result in a liquidity constraint for the company and thus hinder optimal investments. The results of the studies indicate pecking order.

Like Short et. al, Kahn (2006) investigates the relationship between dividends and ownership structure for a panel of 330 large quoted UK firms. However, controlling for unobserved firm-specific effects, results indicate a negative relationship between dividends and ownership concentration in contradiction to findings made by Short et. al. Ownership composition also matters, with a positive relationship observed between dividends and shareholding by insurance companies, and a negative one for individuals. These results are consistent with agency models in which dividends substitute for poor monitoring by a firm’s shareholders. In this regard, it is argued that insurance companies are less likely to monitor a company management based on the fraction they represent due to diversified ownership across a great number of companies, while powerful individual blockholders would be more likely to monitor management more closely and dictate dividend policy according to their preferences.

**General dividend theory**

Litner (1956) found that managers were reluctant to change the dividend rates that might have to be reversed within a year or so. Hence managers would only increase dividend if they were confident that the earnings of the company would remain higher on a permanent basis in the future. He also concluded that investment requirements generally had little effect on modifying the pattern of dividend behavior. His research suggests that firms gradually move toward a target dividend payout. He finally developed a model for a firms’ dividend behavior later confirmed by Fama and Babiak (1968) to be one of the most
prominent. One might say that his model is constructed as a tool for measuring the impact of asymmetric information between informed and uninformed.

To support Litner, Ross (1977) suggests that implicit in the Dividend Irrelevance Proposition of Miller and Modigliani (1961), is the assumption that the market “knows” the random return stream of the firm and values this stream in order to value the firm. What is actually valued in the marketplace, however, is founded on investors’ perceptions, and these can easily be altered due to changes in capital structure or dividend payout. As insiders, managers has access to more accurate information about the firms expected future cash flows and may use this knowledge to establish unambiguous signals about the firms’ future if it is in their interest. An increase/decrease in dividend may signal improved/poorer prospects of the firm. Empirical evidence seems to confirm the theories of Litner and Ross (Healy and Palepu, 1988, and Ofer and Siegel, 1987).

Bhattacharya (1979) developed a model that can be used to explain why firms may pay dividends despite the tax disadvantage of doing so. He argues that the only way a firm will commit to a high level of dividends, is if the firm possess high quality projects securing a high and stable future cash flow. Hence, high level of dividends signals the manager’s optimism regarding the ongoing projects of the firm. Further, if investors associate higher dividends with higher firm value, then an unexpected dividend increase will be perceived as a favorable signal. Presumably dividends is a credible way of conveying information about the value of the firm that cannot be fully communicated by other means such as annual reports, earnings forecasts or investor presentations. In addition, to mimic the signal, less successful firms incur extra costs associated with raising external funds in order to pay the dividend.

Brav, Graham, Harvey and Michaely (2003) find that managers have a strong desire not to cut dividends. As a result, for firms that pay dividends, they tend to be smoothed from year to year and linked to sustainable long-run changes in profitability. This support Litners’ findings. They also find that managers view repurchase decisions as more flexible and tend to repurchase out of temporary earnings after investment and liquidity needs are met and when good investments are hard to find. Not surprisingly, managers like to repurchase their stock when
they believe their stock price is low, and they are very conscious of the effect of repurchases on EPS.

**Methodology**

We want to extend the framework of Berzins, Bøhren and Stacescu (2009) to investigate the relationship between owner concentration and dividend policy in Norwegian public firms during 2006 – 2010.

As public firms often encompass more dispersed ownership concentration than private firms, the first agency problem will dominate our focus, and the seriousness of potential conflict will be measured by the implied lack of incentive for shareholders to monitor management.

**The model**

\[
DIV_{it} = \alpha + \beta_1 Con_{it} + \beta_2 DIV_{it-1} + \beta_3 Profitability_{it} + \beta_4 Growth_{it} + \beta_5 Liquidity_{it} + \beta_6 Maturity_{it} + \beta_7 Size_{it} + \epsilon
\]

Where;

- \(DIV_{it}\) is the classical dividend payout ratio measured by cash dividends to operating profits.
- \(Con_{it}\) is the ownership concentration which will reflect the potential for conflicts between management and shareholders. The higher the ownership concentration is, the lower the type 1 agency costs are expected to be and thus higher type 2 agency costs is introduced. A negative beta will support the H1 and thus an opposite result will support H2. \(Con_{it}\) is measured as the fraction of shares that is held by the largest personal, family or institutional owning entities.
- \(DIV_{it-1}\) is the lagged value of dividends (measuring last years cash dividends).

Since Litner (1956) first introduced his findings on Dividend policy, there is a wide acceptance amongst researchers that a change in expected Dividends yields several signals. Litner (1956) found that managers were reluctant to change the dividend rates that might have to be reversed within a year or so because of the significant negative impact reduction or omission of dividends influence the stock
price (Brav, Graham, Harvey and Michaely 2003). Related theory thus suggests that managers will only increase dividends if they know they will be able to commit to the new dividend payout level continually through time. Applying this variable, however, may create problems due to a decrease in our sample size by approximately 20-25 %.

Profitability\textsubscript{lt} is a measure of company profitability and is measured by the average return on assets for the last 3 years. Firms that do well are expected to pay out a larger share of their earnings as dividends.

Growth\textsubscript{lt} is related to the growth prospects of the firm and is measured by the reported revenue growth the last five years. High growth opportunities would result in increased need for capital investments and hence reduced resources to pay dividends.

Liquidty\textsubscript{lt} is a measure of the liquid assets of the company. Highly liquid assets yield lower transaction costs for financing dividends. Hence a positive relationship is expected.

Maturity\textsubscript{lt} is a measure of the maturity of the company. According to Grullon, Michaely and Swaminthan (2002), operations mature as the firms gain experience. This result in more stable cash flows and thus less risk attached to operations. We expect that dividends will be positive affected. Maturity\textsubscript{lt} is measured by the log of company age.

Size\textsubscript{lt} is the size of the company and is measured as the log of sales. Fama and French (2001) find that large firms are more likely to pay dividends. Hence, we expect to find a positive relationship between size and dividends.

We intend to use the Ordinary Least Squares (OLS) estimation technique for the main topic in our thesis.

Further we want to analyze the relationship between the classical dividend ratio and the debt to equity ratio in a non-technical way using simple correlation analysis. By correlation, we can only measure the degree of linear association between the two ratios. In a regression, where one of the variables is assumed to
be stochastic and underlying a probability distribution while the other variable is assumed to have non-stochastic values in repeated samples. Thus regression is more flexible and a more powerful tool than correlation.

**Data Collection**

Through Centre for Corporate Governance Research (CCGR) we have gained access to a database with highly detailed accounting information and ownership concentration data on both public and private Norwegian firms. Further the data is on yearly basis from 1994-2010. A list of variables can be found in the appendix.

The data will be analyzed in the EViews software.

**Progress Plan**

A graphical illustration of our progressplan can be found in the appendix.
References


