Shareholder Conflicts and Dividends

by*

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Abstract

We examine how dividend policy is used to mitigate potential conflicts of interest between majority and minority shareholders in private Norwegian firms. Average payout is almost 50% higher if the majority shareholder's stake is 55% (high conflict potential) rather than 95% (low conflict potential). Such minority-friendly payout is also associated with higher subsequent minority investment. These relationships are robust to many alternative specifications. Our findings contrast with earlier suggestions that controlling shareholders opportunistically reduce dividends to finance private benefits unless regulation prevents it. Rather, it seems higher payout is voluntarily used to reduce conflicts and build trust.

November 3, 2015

Keywords: corporate governance; ownership; minority shareholders; dividends

JEL classification codes: G32; G35.

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1. Introduction

Shareholder conflicts may reduce investment returns. In particular, opportunistic majority shareholders may use their control rights to capture private benefits and finance them with reduced dividends (Holderness and Sheehan, 1988; Barclay and Holderness, 1989). This “opportunistic model” may be rationalized by the fact that while majority shareholders consume the private benefits in their entirety, dividends must be shared proportionally with minority shareholders (La Porta et al., 2000; Cheffins, 2006). In contrast, the “conflict-reducing model” suggests that majority shareholders pay high dividends in order to mitigate conflicts and build reputation for fairness, thereby ensuring high minority investment in the future (Jensen, 1988; Gomes, 2000). Hence, dividends will be lower the more serious the potential shareholder conflict in the opportunistic model, but not in the conflict-reducing model.

Analyzing majority-controlled firms where agency conflicts between shareholders and managers can be ignored, we measure potential conflicts between the shareholders by the equity percentage owned by the majority shareholder. Because majority shareholders capture all the private benefits, but receive a lower share of the dividends the less of the equity they own, the conflict potential is larger the closer the controlling stake is to 50%. Therefore, majority shareholders who behave according to the opportunistic model will pay higher dividends the higher their controlling stake. If they instead behave according to the conflict-reducing model, dividends will stay constant or decrease as the controlling stake increases.

Unlike findings in the existing literature (La Porta et al., 2000; Faccio et al., 2001), we find that the larger the potential shareholder conflict, the higher the dividend. This evidence is consistent with the notion that dividends are used to mitigate shareholder conflicts, supporting the conflict-reducing model and refuting the opportunistic model. The average payout ratio is about 50% higher when the majority stake is 55% (high conflict potential) rather than 95% (low conflict potential). Moreover, firms seem to succeed in building trust, as minority shareholders who have received high dividends from a high-conflict firm invest more in the firm later on. While 10% of the firms with high conflict potential and high payout receive subsequent minority investment, this happens in only 7% of the firms with low conflict potential and low payout. When minority investment occurs, the additional equity is twice the average dividend received by minority shareholders in preceding years. Hence, the firm seems better off paying out the cash as dividends than retaining it for future investment. The concern for low conflict and high trust is confirmed when we control for numerous determinants of

dividends that could also be correlated with ownership. Our conclusion is robust to how we measure both payout and conflict potential.

We find that dividends are less common and lower in single-owner firms, where shareholder conflicts do not exist. Similarly, dividends are lower and unrelated to ownership in firms without majority owners. Hence, the higher payout and the inverse relationship between payout and ownership concentration are unique features of multiple-owner firms with controlling owners.

Overall, this evidence suggests that higher dividends may reduce the cost of capital by mitigating shareholder conflicts. Majority-controlled firms that need equity for profitable investments in the future do not just save internally generated funds in the meantime. The reason is that the majority shareholder cannot credibly promise not to expropriate these funds before the profitable investment emerges. Due to this fact, the majority shareholder pays out the funds now and asks the minority shareholders for new funding later (Easterbrook, 1984). Hence, it is in the majority shareholder's best interest to abstain from opportunism and instead to adopt a minority-friendly, non-myopic dividend policy.

These findings cast new light on the role of dividends in shareholder conflicts. They also challenge the very limited existing literature, which reports evidence supporting the opportunistic model. La Porta et al. (2000) find that dividends are lower in legal regimes with weak shareholder protection. Faccio et al. (2001) find that low dividends may be used to expropriate minority shareholders in East Asian business groups. Certainly, the difference between this evidence and ours may be partly due to our regulatory setting in Norway, where minority shareholders are well protected by the law (Spamann, 2010) and private benefits are low (Nenova, 2003; Dyck and Zingales, 2004; Holmén and Knopf, 2004). However, we find that even with strong, mandatory minority protection, majority shareholders voluntarily choose minority-friendly payout and are subsequently rewarded with higher minority investment. This evidence may have implications beyond the regulatory setting we study. In particular, our findings suggest that, regardless of legal regime, reducing agency costs by market mechanisms and voluntary action rather than by institutions and mandatory law is an important and underresearched perspective on how dividend decisions are made.

The majority shareholder in our sample firms has strong incentives and power to monitor management (Shleifer and Vishny, 1986). Moreover, the majority shareholder is a family in more than 80% of the firms, the family has the CEO in 73%, the chairperson in 74%, and both positions in 55%. Accordingly, we can abstract from the so-called vertical agency problem between shareholders and managers (Roe, 1994). In contrast, the so-called horizontal agency

problem between majority and minority shareholders is very relevant in our sample, since the majority shareholder can single-handedly make investment and financing decisions (Demsetz and Lehn, 1985; Shleifer and Vishny, 1997).

The horizontal agency problem we study has received much less attention in the empirical literature than the vertical agency problem has. The reason is not that theorists have ignored the potential for private benefit extraction by large blockholders (Gomes, 2000; Edmans, 2014). A more likely reason is the difficulty of obtaining good data on firms exposed to the horizontal agency problem, which are mainly private firms. Unlike in public firms, ownership in private firms is predominately concentrated, making the horizontal agency problem the more pressing one (Demsetz and Villalonga, 2001). To illustrate, the average equity stake of the largest shareholder is 30% in Norwegian public firms and 78% in private firms of similar size. There is a majority shareholder in 15% of the large public firms and in 69% of the large private firms. Moreover, private firms account for three times more of aggregate economic activity than public firms do. This dominance of private firms in the economy is also typical internationally (Kobe, 2012; Michaely and Roberts, 2012).

Starting from the universe of all limited-liability firms, we select the multiple-owner private firms where the largest owner has more than half the equity and hence controls the dividend decision.¹ This sample, which represents 20% of aggregate sales, earnings, and dividends in the economy, is particularly well suited for testing our predictions. First, because all firms must submit standardized accounting statements certified by a public auditor, the data quality is high. Second, because our database includes every firm in Norway, we can measure ultimate (direct plus indirect) ownership. Third, because we know the family relationships between all owners, we can construct owner coalitions by grouping individuals into families. Fourth, because we know the controlling owner's wealth and income, we can account for possible determinants of ownership. Finally, because dividends and capital gains are taxed identically and at a flat rate, no firm faces tax distortions in its dividend decisions.

The possible endogeneity of ownership could challenge our results. This challenge may seem difficult, given the lack of valid instruments for ownership (Edmans, 2014). We analyze both reverse causality and omitted variables as possible sources of endogeneity. Our analysis of reverse causality concludes that ownership is not likely to be driven by dividends. First, as just mentioned, the firm's dividend policy cannot attract a tax-based investor clientele in our sample (Elton and Gruber, 1970). Second, ownership concentration as measured by the largest

¹ Adding the very few public firms that pass the majority-control filter makes no difference to the results.

stake is very stable over time. It is identical from one year to the next in 80% of the firms, and the average coefficient of variation over time is just 0.1. Third, our sample period followed a large increase in the taxation of dividends and capital gains and a subsequent drop in the average payout ratio from 58% to 20%. However, ownership concentration remained stable. In fact, the estimated relationship between ownership and dividends is insensitive to using pre-tax-reform ownership to explain post-tax-reform dividends. Fourth, panel vector autoregressions (Holtz-Eakin et al., 1988) and Granger causality tests show that dividends follow ownership structure, while ownership structure does not follow dividends.

The second source of possible endogeneity bias is omitted variables that influence both dividends and ownership. In particular, personal financial constraints may force controlling owners both to hold fewer shares (producing low ownership concentration) and to pay themselves higher dividends (producing high payout). Also, firms with lower ownership concentration may have more minority shareholders, making it more likely that some of them will want dividends for liquidity reasons (Banerjee et al., 2007). Both cases would produce the inverse relationship between ownership concentration and dividends that we observe. However, our main findings are unaffected when we account for the majority shareholder's wealth and income, and also for the heterogeneity of the other shareholders.

There may be two alternative explanations of our results. First, majority-controlled firms with lower ownership concentration may need more minority investment. Hence, they may be more likely to signal their quality with higher dividends. However, we find that dividend increases are followed by lower rather than higher profitability, suggesting that dividend changes are not used as signals. Second, low-concentration family firms may be more likely to hire an outside CEO and use high dividends to reduce conflicts between owners and managers (the vertical agency problem). However, we find the inverse relationship between ownership concentration and dividends even in firms with an outside CEO.

Our findings are consistent with those of Ostergaard and Smith (2011), who analyze the use of private contracts before Norway had a corporate law. They find that missing legal protection is associated with high dividends and other voluntary ways of protecting minority owners. Similarly, Norwegian banks voluntarily pay higher dividends when their owners have weak control rights (Bøhren et al., 2012). We identify a link between agency problems, dividends, and equity investment even in a legal regime with strong shareholder protection. Hence, the use of dividends to voluntarily invest in trust among potentially conflicted shareholders is a possible reason why the business community pays so much attention to dividend policy (Lintner, 1956; Black, 1976; Brav et al., 2005; DeAngelo et al., 2008).

Denis and Osobov (2008) find that dividends are mostly paid by large, mature firms, arguing that such firms typically have high free cash flow and little need to preserve it in order to avoid costly equity issues. Hence, dividends are apparently high because the need for new equity is low. However, we find that firms with high potential shareholder conflicts both pay higher dividends and issue more equity. Therefore, consistently high dividends may reduce the cost of capital even if this policy forces the firm more often to the issue market.

Finally, we contribute to the very limited literature on dividends in private firms. Comparing private and public firms in the United Kingdom, Michaely and Roberts (2012) give a broad overview of the main issues. Similarly, we study a country with strong legal investor rights, and our results support the intuition that agency conflicts matter for dividends. Unlike Michaely and Roberts, however, we consider a specific and underexplored agency conflict, analyze two competing views on how this conflict interacts with dividend policy, and find evidence consistent with conflict reduction rather than opportunism.

Section 2 describes the sample selection and the data set, whereas Section 3 establishes the baseline model, defines empirical proxies, and reports summary statistics. We present statistical tests of the baseline model in Section 4 and examine the evidence on the reputation effect of dividends in Section 5, while Section 6 analyzes robustness and alternative explanations. We conclude in Section 7.

2. Data and sample selection

Our data set is based on the population of Norwegian firms with limited liability. The law mandates standardized accounting statements certified by a public auditor regardless of the firm's listing status, size, and industry. Failure to submit this information within 17 months from the end of the fiscal year triggers automatic liquidation by the court. We collect every ultimate ownership stake and every family relationship by blood or marriage between all the owners.² To obtain a sample that suits our purpose, we add the following filters:

1. We exclude financial firms to avoid the impact of their capital requirements, ownership restrictions, and accounting rules. This filter is common in the dividend literature (Grullon and Michaely, 2002; Allen and Michaely, 2003; DeAngelo et al., 2006).

² Accounting, ownership, and board data are delivered by Experian (www.experian.no). Data on family relationships are from Skattedirektoratet (www.skatteetaten.no), which is a state agency. The data are organized as one integrated database by the Centre for Corporate Governance Research (www.bi.edu/ccgr).

2. We ignore subsidiaries, which may have peculiar reasons for paying dividends, such as the management of cash and risk for the group as a whole (Michaely and Roberts, 2012).³
3. We require positive sales, assets, and employment in order to avoid non-operative firms.
4. We include only firms where more than half the equity is owned by a family, financial institution, or foreign entity. We use ultimate ownership in this majority filter, and we measure the ultimate dividend, which captures the total payout the shareholder receives from the firm, whether paid directly or indirectly through intermediaries.⁴
5. We exclude single-owner firms because they have no shareholder conflicts. For similar reasons, we ignore the smallest 5% of the firms by assets, sales, and employment.

A firm's dividend policy may reflect other concerns than agency costs, such as financial constraints, growth opportunities, profitability, and taxes. Our regression models account for most such determinants by a series of control variables. One exception is tax concerns, which we handle by the sampling procedure. In particular, we focus on the period 2006–2013, which is after a tax reform that closed the gap between labor income taxes and capital income taxes by increasing the latter.⁵

These filters produce a sample of 8,696–10,621 firms per year. Table 1 shows the details.

[Insert Table 1 here.]

Our tests keep the control over the firm constant (majority owner) while exploiting the variation in the largest equity stake (ownership concentration), which determines how residual cash flow rights are split between majority and minority owners (conflict potential). This approach avoids the complex analysis of possible blockholder coalitions (Eckbo and Verma, 1994; Laeven and Levine, 2008). Instead, we group socially related investors into families.

The dividend is proposed by the board, and dividend decisions are made by majority vote in the shareholder meeting. Shareholders can decide to reduce the proposed dividend, but not to increase it. Dividends are based on the preceding year's accounts and normally paid once a

³ Unlike in countries like Sweden, multiple-class stock is rare in Norway (Ødegaard, 2007; Eklund, 2009; Ikäheimo et al., 2011). Hence, we do not distinguish between share classes.

⁴ Because the identity of foreign investors is unknown, we can neither trace their ultimate ownership nor assign them to families. The ultimate owners are often individuals related by blood or marriage. We will show that using only the subsample of family-controlled firms produces results that are very close to those we report. Our main results also hold in the subsample of firms controlled by financial institutions or foreigners (not reported).

⁵ The tax reform in 2005 was designed to ensure the after-tax equivalence of all cash flows to ultimate owners, regardless of whether they come as dividends, capital gains, salary, or interest (Sørensen, 2005; 2007). Prior to the reform the effective tax on dividends and capital gains was zero. The tax reform had its first effect on dividends for the accounting year 2005, which were paid in 2006. We exclude the accounting year 2005, since we are concerned with the post-reform equilibrium rather than temporary tax-reform effects. However, adding 2005 to our sample does not change any key relationship.

year. The payout can be based on the year's earnings, retained earnings from earlier years, and on other equity except share capital. There is no regulation mandating a minimum payout.

3. Model, empirical proxies, and summary statistics

The fundamental question we explore is whether higher cash flow rights for the controlling shareholder induce higher or lower dividends. Our baseline model is the following:

$$Div_{it} = \alpha + \beta_1 Con_{it} + \beta_2 Liq_{it} + \beta_3 Pro_{it} + \beta_4 Growth_{it} + \beta_5 Risk_{it} + \beta_6 Size_{it} + \beta_7 Age_{it} + \psi_{it} \quad (1)$$

The payout measure, *Div*, is the ratio of cash dividends to after-tax operating earnings.⁶ Ownership concentration, *Con*, is the equity share held by the controlling shareholder. This is the key independent variable, reflecting the potential seriousness of the shareholder conflict. The shareholder may be a family, a native financial institution, or a foreign investor of any type. We use three alternative family definitions and hence three alternative versions of *Con*. Our baseline measure uses a wide definition, where a family includes individuals related by blood or marriage up to the fourth degree of kinship. A second, narrower definition includes only parents and underage children (nuclear family). The third measure uses investor holdings separately without grouping them based on family relationships.

Because the conflict potential decreases with increasing *Con*, the predicted β_1 in (1) is positive in the opportunistic model and negative or zero in the conflict-reducing model. Additional tests expand the baseline model by ownership characteristics beyond *Con* that may capture other properties of the shareholder conflict. In particular, we examine the cases where the majority shareholder is a single individual rather than an extended family, financial institution, or a foreigner (higher potential for private benefit extraction), where the majority shareholder is not the CEO (less shareholder conflict, but more conflict between managers and shareholders), and where a minority shareholder is institutional (better skills at monitoring shareholder conflicts).

The remaining determinants in (1) are control variables. Firms with more liquid assets, *Liq*, may pay higher dividends due to lower transaction costs. Liquid firms may also have more cash than needed for operations and investment (DeAngelo et al., 2006). Correspondingly,

⁶ Lintner (1956) analyzes how the dividend depends on last period's dividend and a target dividend. In contrast, we focus on how dividends vary in the cross section, using firm characteristics to endogenize what is the exogenous target dividend in the Lintner model. Because we have annual dividends, only eight years of data, and very persistent ownership, we cannot reliably estimate a Lintner model augmented by governance characteristics.

firms with higher profitability, *Pro*, may be more likely to pay out a larger share of their earnings. We predict a positive coefficient for both *Liq* and *Pro*, which we measure by the cash-to-assets ratio and by the operating return on assets, respectively.

Firms with higher growth opportunities may need to invest more and therefore make lower payout. We measure *Growth* by the percentage increase in sales during the past three years and predict a negative relationship with dividends. *Risk* is measured by sales volatility during the past three years, expecting risk and dividends to be negatively related. The reason is that if dividends are paid from what is considered permanent earnings (Lintner, 1956), firms with risky earnings may be less likely to pay high dividends. This idea is also consistent with the maturity hypothesis of Grullon et al. (2002) that dividends increase as risk drops.

Larger and older firms have lower financial constraints (Hadlock and Pierce, 2010), and less-constrained firms are more likely to pay dividends (Fazzari et al., 1988; Kaplan and Zingales, 1997; Whited and Wu, 2006). Grullon et al. (2002) argue that operations mature and risk decreases as the firm becomes larger and older. These changes may induce higher dividends. Along the same lines, Fama and French (2001) find that large firms are more likely to pay dividends. Thus, we expect that dividends relate positively to the firm's size and age, measuring *Size* and *Age* by the log of sales and by the log of the number of years since the firm was founded, respectively. Finally, we control for industry effects by dummy variables that reflect whether the firm is in agriculture, manufacturing, construction, retail, transport, real estate, or services. This classification is based on the official Norwegian industry codes.

We estimate (1) in the sample of all majority-controlled firms regardless of their dividend behavior. In addition, we estimate a payout propensity model where the dependent variable is whether the firm pays a dividend. The independent variables are identical to those used in (1).

Table 2 reports summary statistics. On average, 27% of the firms pay dividends in a given year. The mean payout ratio is 20%, and when dividends are paid, they represent on average 77% of the annual earnings. As in recent samples of public firms in the United States (Fama and French, 2001), the median Norwegian firm does not pay dividends. The controlling equity holding is on average 60% when every owner is counted as a separate unit, 62% if persons are assigned to nuclear families, and 72% under the wide family definition. One family member holds the majority stake in about three out of four cases. Every variable in Table 2 is stable over time.⁷

⁷ The mean and median sales are 18.5 and 6.5 mill. Norwegian kroner (NOK), respectively. Five percent of the firms have sales below 0.6 mill. NOK, while 5% have sales of more than 71 mill. NOK. The highest sales figure

[Insert Table 2 here.]

4. Statistical tests of the baseline model

The two key variables in our tests are the dividend and the size of the controlling block. As an initial check, we compare the payout ratios for two groups of firms classified by the largest equity stake. The first group contains firms where the largest stake is above 50%, but below 60%. The second group contains firms where the largest stake is above 90%, but below 99%. These two groups contain the firms with the largest and the smallest potential for shareholder conflicts, respectively.

Panel A of Table 3 compares the payout ratios of the two groups year by year, in the pooled sample (All years), and in the pooled subsample of firms with positive dividends (Payers). Low-concentration firms (Group 1) have consistently higher payout than high-concentration firms (Group 2), the payout ratio being about 50% higher on average (0.23 vs. 0.16). The annual difference is stable at around 8 percentage points. For dividend payers, the difference is 11 percentage points. These univariate results are consistent with the conflict-reducing model and inconsistent with the opportunistic model.

[Insert Table 3 here.]

There is still the possibility that the payout difference between the two groups is driven by dividend determinants that are independent of the shareholder conflict. Panel B presents tests for the difference in control variables across the two ownership groups. The estimates show that compared to high-concentration firms, low-concentration firms are on average more liquid, more profitable, faster growing, and younger, although the difference in profitability is small economically. These results suggest that we should control for other dividend determinants than ownership when studying how shareholder conflicts and dividends interact.

Table 4 shows that, except for some proxies for potential shareholder conflicts, the correlation between the independent variables in (1) is low. Thus, multicollinearity will not be a problem in the regressions. Notice also that the correlation is only 0.52 between the share of the largest family under the wide and the narrow definition. Therefore, it is important to examine whether the results are sensitive to how we measure shareholder conflicts.

[Insert Table 4 here.]

is 8.4 billion NOK in the unwinsorized sample and 468 mill. NOK in the winsorized sample. The average exchange rate during our sample period is 5.94 NOK per USD (Source: Norges Bank).

The baseline regressions in Table 5 control for the dividend determinants outlined in Section 2, including industry dummies. We report the findings year by year, for the Fama–MacBeth approach based on the year-by-year estimates with standard errors clustered at the firm level (Fama and MacBeth, 1973; Petersen, 2009), and for the pooled sample estimated with fixed year effects and standard errors clustered at the firm level.

[Insert Table 5 here.]

The year-by-year estimates reflect a very stable relationship between the dividend and its determinants. The estimates are also consistent with those under the Fama–MacBeth approach and the pooled approach. Because this stability and consistency prevail in every subsequent analysis, we report only the results for the pooled approach in the following.

Table 5 documents an inverse relationship between dividends and ownership concentration. As the largest stake increases from just above 50% (low concentration) to above 99% (high concentration), the expected payout ratio decreases by about 5 percentage points. The univariate results in Table 3 show that the average payout ratio drops by about 8 percentage points when going from low-concentration to high-concentration firms. However, the table also shows that several control variables differ between the two groups. Accounting for these control variables in Table 5, the payout difference decreases, but remains statistically significant and economically large at about one quarter of the average payout ratio.

This result shows that minority shareholders are likely to receive a higher share of the earnings when majority shareholders have stronger incentives to divert the earnings. This finding refutes the opportunistic model, but supports the conflict-reducing model. Such minority-friendly behavior may be rationalized by the majority shareholder’s desire to build trust. The next section provides evidence on possible economic rewards for this payout policy.

The estimated relationship between dividends and the control variables is largely as predicted. For a given ownership structure, higher dividends per unit of earnings are paid by larger firms and by older firms with higher cash holdings, higher profitability, lower growth opportunities, and lower risk.

Overall, estimates of the baseline model in (1) document an inverse relationship between dividends and the controlling shareholder’s cash flow rights. This result supports the prediction of the conflict-reducing model that the more serious the potential shareholder conflict, the more the majority shareholder tries to reduce the conflict by paying out more of the free cash flow to minority shareholders.

5. Reputation

Controlling shareholders who anticipate the need for sustained equity investment may find it in their best interest to establish a record for treating minority shareholders fairly. Easterbrook (1984) makes a similar argument for how regular payment of dividends and occasional issuance of equity may mitigate agency conflicts between managers and dispersed shareholders. The role of reputation in attracting minority investment has been analyzed theoretically by Gomes (2000). He predicts that stronger incentives for opportunistic diversion of free cash flow induce majority shareholders to send costly signals by holding more of the firm's equity and hence carrying more diversifiable risk. It is only when a good reputation has been established that majority shareholders can attract additional minority investment. In our case, majority shareholders can also pay higher dividends to signal such a commitment to not exploit minority shareholders. This payout policy increases the expected price at which the majority shareholder can eventually sell existing stock to diversify (Gomes, 2000) or issue new stock to finance growth (Leland and Pyle, 1977).

If reputation concerns matter, we expect more minority-friendly payout in firms that anticipate stronger needs for new minority investment. We use a two-step procedure to examine this possibility, starting by regressing the firm's payout ratio on the control variables from the baseline model in (1):

$$Div_{it} = \alpha + \beta_1 Liq_{it} + \beta_2 Pro_{it} + \beta_3 Growth_{it} + \beta_4 Risk_{it} + \beta_5 Size_{it} + \beta_6 Age_{it} + \varepsilon_{it} \quad (2)$$

We run cross-sectional regressions of (2) for the first five years (2006–2010) of the eight-year sample period (2006–2013). We then average the residuals from (2) for each firm over the five years. This average residual reflects high or low payout relative to determinants that are unrelated to ownership.

The second step relates the firm's average residual payout and ownership concentration in 2006–2010 to its subsequent equity issues in 2011–2013, using four measures of minority investment and one measure of majority investment in these issues.⁸ The first measure is a 0/1 dummy variable that is 1 if minority investors own more of the paid-in capital in 2013 than in 2010 (Minority invests more). The second measure is the change in minority-owned paid-in capital from 2010 to 2013 divided by total paid-in capital in 2010 (Growth in minority investment). Our third measure is the growth in minority investment when this growth exceeds

⁸ Changing the cutoff from 2010 to later years produces similar results. The estimates are also robust to replacing the dividends-to-earnings ratio by dividends-to-sales, dividends-to-cash flow, or dividends-to-assets.

zero (Positive growth in minority investment). The fourth measure is a 0/1 dummy variable that is 1 if the minority-owned paid-in capital increases from 2010 to 2013 and at least one new minority owner invests in 2013 (New minority invests). Finally, we examine the majority shareholder's investment behavior by a 0/1 dummy variable that is 1 if the majority-owned paid-in capital is higher in 2013 than in 2010 (Majority invests).

The initial univariate tests in Panel A of Table 6 compare the five measures of investor behavior across the lowest and highest quintiles of average residual payout. The estimates show that firms in the highest quintile are more likely to receive additional minority investment (measure 1), and that average equity investment growth is larger (measure 2). The growth is also larger in firms with increasing minority investment (measure 3), and the probability of observing new minority investors is higher (measure 4).⁹ The majority shareholder's subscription to new equity does not differ across the two dividend quintiles (measure 5).

[Insert Table 6 here.]

These univariate relationships suggest that above-average historical payout is associated with more frequent and larger new minority investment, and is unrelated to investment by the majority shareholder. To determine whether this behavior can be explained by potential agency conflicts, we regress equity investment in 2011–2013 (*Inv*) on the average residual payout ($\bar{\epsilon}$) from (2) and the majority shareholder's average equity stake in 2006–2010 (*Con*):

$$Inv_i = \gamma + \theta_1 \bar{\epsilon}_i + \theta_2 Con_i + \vartheta_i \quad (3)$$

Panel B in Table 6 reports the estimates of (3) using three alternative measures of minority investment from Panel A. As expected from the reputation logic, the residual payout in the past is positively associated with increases in minority equity capital (I, II) and with the likelihood of attracting new minority investors (III). Consistent with the same idea, past ownership concentration relates inversely to the likelihood of more minority investment and to the magnitude of the increase.

Summarizing, this evidence is consistent with the notion that majority shareholders choose large dividends to maintain high and renewed investment from minority shareholders. We find evidence of a trust-building mechanism in the spirit of Gomes (2000). Concerns for a reputation as minority-friendly make sustained dividends coexist with new equity investment as predicted by Easterbrook (1984).

⁹ In firms where minority investors increase their paid-in capital in 2011–2013, their average annual contribution is 1.0 mill. NOK, while the average dividend paid to them in 2006–2010 is 0.5 mill. NOK.

6. Robustness and alternative explanations

Our evidence so far supports the notion of a conflict-reducing dividend policy. This section explores whether this result depends on how we measure conflict potential (6.A), dividends (6.B), and how we account for investor taxes, financial constraints, and growth opportunities (6.C). We also explore whether dividends are used to signal firm quality rather than to build trust (6.D). Finally, we analyze possible endogeneity between dividends and ownership (6.E).

6.A. Conflict potential

The baseline estimates in Table 5 measure potential shareholder conflicts by the largest equity fraction held by an extended family, an institution, or a foreigner. Because our data set allows for a considerably deeper analysis of how ownership and dividends interact, and because the family is the most common majority owner in our sample, Panel A of Table 7 estimates the baseline model using seven alternative measures of family control (models I–VII).

[Insert Table 7 here.]

The baseline family definition is quite wide, allowing for relationships by blood or marriage up to the fourth degree of kinship. A narrower definition is the nuclear family, which includes parents and underage children. While the nuclear family abstracts from possibly strong social ties in the wider family, the wide definition may overestimate the strength of distant ties.

Table 4 shows that the narrow and wide family measures are not strongly correlated. Nevertheless, model I of Table 7 documents that the narrow measure produces estimates very close to those of the wide measure in Table 5. Thus, the tightness of the family definition is not driving our results. Similarly, model II shows that the baseline results prevail if we abstract from family connections and consider only individual shareholders. Moreover, estimating the baseline model just on the subsample of family firms (model III) produces results very similar to those for the full sample.

The ability to extract private benefits may be greater when the family does not just control the shareholder meeting, but also recruits the CEO from the family (Anderson and Reeb, 2003). Hence, the conflict-reducing model predicts that firms with a family CEO will pay higher dividends in order to reduce minority shareholders' fear of being expropriated. However, concerns for potential agency conflicts between managers and shareholders should be fewer with a family CEO. This is an argument for lower dividends. Models IV and V estimate the net effect on dividends of these two opposing forces in firms that do not have a family CEO (model IV) and firms that do (model V). The estimates show that the sensitivity of dividends to

ownership concentration is very similar in the two samples and also consistent with the conflict-reducing model. Thus, concerns for shareholder conflicts dominate concerns for manager–shareholder conflicts when majority shareholders make dividend decisions.

The ability to extract private benefits may be weaker if the controlling coalition is more fragmented. Consistent with a conflict-reducing dividend policy, models VI and VII show that a higher number of owners in the controlling family is associated with lower payout, while the payout is higher if one individual in the controlling family owns more than 50%.

Many sample firms have just a few owners. Hence, the opportunistic model may lack empirical support because the firm is owned by a few investors who are not in the same family, but who still have personal ties. Such personal ties may discipline the majority shareholder (Franks et al., 2009) and make the dividend mechanism redundant. To explore this possibility, model VIII excludes all firms with less than three owners. Inconsistent with the opportunistic model, the baseline results persist.

Institutional owners may be better monitors and hence more powerful investors (Allen et al., 2000; Hartzell and Starks, 2003; Grinstein and Michaely, 2005). Model IX shows that the existence of institutional minority investors correlates inversely with payout. This finding that a stronger minority tends to receive lower payout supports the conflict-reducing model.

Single-owner firms can be seen as a benchmark, since they have no shareholder conflicts. We compare our baseline firms to single-owner firms and find that single-owner firms pay lower dividends (model X). The average payout ratio is 17% in single-owner firms and 20% in multiple-owner firms with a majority owner (not reported).

To check whether the inverse relationship between ownership concentration and payout is specific to firms with controlling blockholders, we estimate the baseline model on firms where no shareholder controls more than 50% of the shares (model XI). We find that the relationship between ownership concentration and payout is reversed in such widely held firms, supporting the view that the dividend policy of majority-held firms is unique.¹⁰

Summing up, the baseline results persist when we account for potential shareholder conflicts by the structure of the controlling family, by the family’s role in management, when we ignore family relationships, and when we consider the minority shareholders’ identity. The tendency to pay higher dividends increases when just one family member holds the majority

¹⁰ A large wedge between cash flow rights and control rights in pyramids may give stronger incentives to expropriate minority shareholders. We explore this possibility by estimating the baseline model for subsamples where control is achieved by direct ownership or by at least one level of indirect ownership. The estimates do not differ materially across the two subsamples. This is also the case when we use the small subsample (1.8% of the firms) where control requires at least two levels of indirect ownership.

stake. Finally, single-owner firms pay lower dividends than firms with minority shareholders, and the inverse relationship between ownership and dividends is observed only in majority-controlled firms. These results support the notion that dividends mitigate potential shareholder conflicts that are inherent in the firm's ownership structure.

6.B. The payout measure

Controlling shareholders who divert a jointly owned cash flow for private benefits may underreport earnings in order to inflate the classic payout ratio we have used so far (La Porta et al., 2000; Faccio et al., 2001). Because this behavior would bias our test toward erroneously accepting the conflict-reducing model, we alternatively normalize dividends by cash flow, sales, and assets. The estimates of models A–C in Panel B of Table 7 show that the inverse relationship between ownership concentration and dividends persists. Thus, possible attempts by majority shareholders to hide private benefits by inflating the classic payout ratio cannot explain our results.

Stock repurchases have become an important payout channel for large firms in the United States (Grullon and Michaely, 2002). Repurchases were illegal in Norway until 1999, however, and they are still rare in private firms. We construct a repurchase measure from the firm's equity account and re-estimate (1) in the subsample of firms with no repurchase activity. This restriction reduces sample size only slightly, reflecting the low repurchase propensity. The results in model D are almost identical to those for the full sample, confirming the secondary role of repurchases as a payout mechanism in our case.

Not paying dividends is as relevant as paying is for the relationship between dividends and agency costs. Hence, we have so far included both payers and non-payers. However, Table 2 shows that the median firm does not pay dividends, and that the relationship between shareholder conflicts and dividends may differ across payers and non-payers. Model E uses the subsample of dividend payers, once more finding that dividends relate inversely to ownership concentration. The same result is obtained in the logit model F, where the dependent variable measures whether the firm pays a dividend. The inverse relationship between dividends and ownership concentration is also present in the Tobit model G, which accounts econometrically for the fact that dividends cannot be negative.

DeAngelo et al. (2006) show that dividends correlate with the ratio of total retained earnings to total equity. Their idea is that the more mature, profitable firms with low growth opportunities should make high cash distributions to their owners. We add their measure of

payout capacity to the baseline specification in model H. The estimates show that payout capacity has the anticipated positive sign, and that payout capacity does not alter the role of the other dividend determinants.

Overall, we conclude that our baseline results are insensitive to how payout is measured.

6.C. Taxes, financial constraints, and growth

We have so far ignored the tax consequences of dividends for the investor, and we have measured financial constraints and growth opportunities in just one way. We next consider whether the baseline results are robust to this choice.

Dividends and capital gains are taxed identically for a given investor type, but this common tax rate differs across types. Personal investors receive taxable dividends, while intercorporate dividends are tax free until they are paid out to persons. This asymmetry may induce lower payout from firms with more of their shares held directly by persons. Model I in Panel B of Table 7 accounts for the proportion of the firm's personal shareholders who own equity directly. The estimates document that the inverse relationship between payout and potential shareholder conflicts persists.

We have measured financial constraints by size and age. Since these variables may also reflect other characteristics, such as scale and scope, we use interest coverage as a possibly more direct measure in Model J. Low earnings relative to interest could prevent the firm from paying high dividends because of covenants or lack of cash. The estimates show that higher interest coverage is indeed associated with higher dividends. However, the role of the other independent variables remains unaltered.

Growth opportunities may be measured in other ways than by the percentage increase in sales. Model K uses sales to assets (asset turnover), which may be higher the closer the firm is to its maximum capacity. The estimates show that the baseline relationship persists. Unreported regressions produce the same result when we use sales growth or sales to assets relative to the industry median.

Overall, we conclude that the relationship between shareholder conflicts and dividends is independent of how we account for taxes, financial constraints, and growth.

6.D. Signaling

An alternative interpretation of the findings in Table 5 is that dividends are paid to signal quality, particularly when the firm needs investment from minority shareholders. Hence,

paying out free cash flow may reflect concerns for shareholder conflicts, information asymmetry, or both. However, several control variables in the baseline model (1) may already account for information asymmetry, such as the firm's size, age, risk, growth, and industry. Also, the low number of minority shareholders suggests that signaling may be a less important concern in dividend policy than the mitigation of shareholder conflicts is. Nevertheless, we conduct two tests in order to explicitly analyze the role of dividends as a signaling device.

The first test follows Grullon et al. (2002), examining whether higher dividends signal higher future profitability. The findings are reported in Panel A of Table 8, where we distinguish between firms that increase vs. decrease dividends from 2009 to 2010. The three columns of results measure profitability growth in the future (2011–2013), in the future compared to the past (2006–2008), and in the future compared to the present (2009–2010).

The estimates show that dividend-increasing firms actually perform worse in the future than dividend-decreasing firms do. This evidence, which is in line with Benartzi et al. (1997) and Grullon et al. (2002), does not support the idea that dividends signal future earnings.

[Insert Table 8 here.]

The second test augments the baseline model (1) by the firm's auditing fee. This fee may compensate auditors not just for their effort stemming from the firm's size, but also for the risk of litigation stemming from the firm's opaqueness. Consistent with this view, Danielsen et al. (2007) find that the auditing fee relates positively to market-based measures of information asymmetry, such as the bid–ask spread. Hence, firms that trade as though they were informationally opaque tend to have more costly auditing. Applying this logic to our dividend-signaling setting, we expect that more information asymmetry as measured by higher auditing fees will be associated with higher dividends.

Panel B of Table 8 reports our findings. The estimates show that adding the information asymmetry measure to the baseline model does not influence the interaction between ownership concentration and dividends. Hence, this fundamental relationship seems to be beyond the realm of dividend signaling. Moreover, and just as in Panel A, the data do not tell a convincing signaling story, because dividends decrease rather than increase with growing information asymmetry.¹¹

¹¹ We have also estimated the model of Grullon et al. (2005) based on Fama and French (2000). Unreported results show that we once again find no consistent relationship between dividends and future earnings.

6.E. Endogeneity

Ideally, we would want ownership concentration to be randomly assigned to firms, followed by the majority shareholder's dividend decision. Since this is not possible, observed dividends may influence ownership (reverse causality), and variables we ignore may drive both dividends and ownership (omitted variables). Because a good instrument for ownership is not available in the literature, the instrumental variables approach is less useful for reducing endogeneity bias in our case (Edmans, 2014). Therefore, we analyze our results in light of possible reverse causality below, followed by omitted variables.

The first reason why reverse causality seems a minor problem in our setting is that ownership concentration is very persistent. For instance, the largest ownership stake is identical from one year to the next in 80% of the firms, and the average coefficient of variation at the firm level is 0.1. Second, a large dividend tax increase from 0% to 28% in 2005 had hardly any effect on ownership concentration. In contrast, average payout dropped from 58% in 2000–2004 to 20% in 2006–2013, which is our sample period. Unreported regressions show that the baseline results are insensitive to whether we use ownership concentration before or after the tax reform to measure conflict potential after the tax reform.

Third, our sample firms do not face a tax system where clientele effects may drive ownership, because a given investor's tax rate is flat and also identical for dividends and capital gains. Hence, firms with high dividends do not end up with low ownership concentration because they attract small investors in low tax brackets (Becker et al., 2011).

Finally, following what Grinstein and Michaely (2005) did to address the endogeneity of institutional ownership and dividends, we run panel vector autoregressions to test for Granger causality (Holtz-Eakin et al., 1988), using the code of Love and Zicchino (2006). The results are reported in Panel A of Table 9, where we test the relationship both with and without the control variables from the baseline model. The estimates show that dividends follow ownership concentration, whereas ownership concentration does not follow dividends.

[Insert Table 9 here.]

Turning next to possible omitted variables, four features of our analysis so far address this issue. First, the baseline model explicitly accounts for a series of firm characteristics beyond ownership. These control variables (liquidity, profitability, growth opportunities, risk, size, age, and industry) are motivated by the theory, the existing empirical literature, and by the finding in Table 3 that dividends vary systematically with these variables after we have

accounted for potential shareholder conflicts. We also use time dummies to capture time-varying macro factors, such as the recent financial crisis.

Second, high dividends may mitigate not just conflicts between majority and minority owners, but also conflicts between owners and managers. However, all sample firms have controlling owners, who have strong incentives and power to monitor management. Moreover, Table 7 shows that our baseline results also hold in family-controlled firms with an outside CEO. Thus, the potential conflict between managers and shareholders is not an important omitted variable.

Third, Table 6 documents that firms with high dividends and low ownership concentration are more likely to receive future minority investment. These firms may pay high dividends not to build trust, but to signal quality. However, because firms with lower ownership concentration have more minority owners, they may need to signal less rather than more because they can collect financing from a wider investor base. Also, the estimates in Table 8 are inconsistent with signaling.

Finally, opportunistic majority owners in low-concentration firms may try to attract minority investors by inflating the denominator rather than increasing the numerator of the dividends-to-earnings ratio. However, Table 7 shows that the baseline results survive when we use payout ratios that are harder to manipulate, such as dividends to sales.

Financial constraints at the investor level are a possible determinant of ownership and dividends that we have ignored so far. Majority owners who are financially constrained may not just be forced to hold lower stakes, but may also need higher dividends to finance their consumption. Hence, the inverse relationship we observe between ownership concentration and dividends may be due to personal financial constraints rather than mitigation of agency conflicts. Notice, however, that this argument can be used to defend rather than to question our findings. Lower ownership concentration means that more shares are held by minority shareholders, increasing the free float and making the shares more liquid. This greater liquidity means majority owners can more easily finance consumption by selling shares, which reduces the need for dividends. Accordingly, the role of personal financial constraints seems unsupported by our data. Nevertheless, we next explore whether dividends vary with the investor's financial constraints. We accomplish this by augmenting the baseline model by characteristics that reflect the majority shareholder's wealth and income.

Models I–III in Panel B of Table 9 include independent variables that reflect the majority shareholder's financial constraints. We alternatively use the controlling family's wealth (I), wealth relative to the median equity of firms in the industry (II), and the controlling family's

income excluding the dividend (III). The correlation between ownership concentration and these three measures is practically zero, suggesting that endogeneity is a minor problem.¹² The estimates show that lower wealth is associated with higher payout, reflecting that firms controlled by less wealthy owners do tend to pay out more. Nevertheless, the inverse relationship between ownership concentration and dividends persists.

The controlling owner may be less dependent on dividends from the firm if the owner has equity in other firms as well. Hence, having investments in several firms may decrease the need to take out dividends from any firm. Model IV augments the baseline model by the number of investments belonging to the controlling family. The estimates support the idea that having investments elsewhere is associated with lower dividends from the firm. Again, however, the inverse relationship between ownership concentration and dividends persists.

Firms with lower ownership concentration have significantly more shareholders, the correlation coefficient being -0.11. Having more shareholders increases the probability that some of them will need cash from the firm, and such asymmetric liquidity shocks may increase payout. However, Model V controls for the number of owners, finding a negative rather than a positive relationship with dividends. As in models I–IV, this result supports the idea of a conflict-reducing dividend policy.

In spite of our attempts to account for a wide array of observable dividend determinants, there may still be unobservable differences between firms with high and low ownership concentration that matter for dividends. One way to account for such determinants is by adding firm fixed effects. Unfortunately, this approach is problematic in our setting. First, several variables, particularly ownership concentration, are highly persistent. Second, changes in ownership concentration are not just rare, but are also often small when they happen. Both characteristics produce large standard errors and reduce the value of adding firm fixed effects (Zhou, 2001; Hsiao, 2003). Therefore, not surprisingly, model VI shows that when we introduce firm fixed effects, the coefficient becomes insignificant for ownership concentration, growth, and risk, which are all very persistent. Notice, however, that an insignificant coefficient for ownership concentration is still consistent with the conflict-reducing model, and that the opportunistic model is consistent only with a positive coefficient, which we never find. For instance, suppose all majority-controlled firms paid out all their free cash as dividends. This is

¹² Ownership concentration has a correlation coefficient of -0.004 with family wealth, 0.001 with relative family wealth, and 0.004 with family income.

clearly a conflict-reducing dividend policy, and it would produce an insignificant coefficient for ownership concentration.

Summing up on endogeneity, the likelihood of reverse causality is reduced by a very persistent ownership structure, a neutral tax system, and by the fact that dividends respond to past ownership concentration, but not vice versa. We reduce the omitted variables problem by including a wide range of dividend determinants in the baseline model, and by ensuring that our key result is not driven by agency conflicts between owners and managers, by dividend signaling, earnings management, and by the investor's personal financial constraints.

7. Conclusions

We have found that the dividend payout relates inversely to the majority shareholder's ownership percentage in the firm. This finding is inconsistent with the idea that controlling shareholders reduce dividends in order to extract private benefits. Instead, our evidence suggests that such shareholders take action to mitigate the potential conflict of interest. In particular, controlling shareholders seem to pay high dividends in order to build a reputation for not expropriating minority shareholders. Firms that pay high dividends benefit from this enhanced trust by being able to attract greater minority investment later on. Hence, it is in the majority shareholder's best interest to voluntarily abstain from opportunism and instead adopt a minority-friendly and less myopic dividend policy.

This result differs from results in earlier studies that compare dividend payout across legal regimes, finding that shareholders tend to behave more opportunistically the more the law allows for it. In contrast, our evidence suggests that the reputation incentive for the individual firm complements rather than substitutes minority-friendly regulation for all firms. This is true even in legal regimes with strong protection of minority shareholder rights. Minority shareholders will naturally compare firms within a given legal regime when choosing where to invest. Regardless of legal regime, this comparison puts pressure on firms with higher potential agency conflicts to pay higher dividends. Hence, reducing agency conflicts via market mechanisms and voluntary action rather than via institutions and mandatory law is an important and underresearched perspective on how dividend decisions are made.

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Table 1
Population, filters, and sample

This table shows the effect on the sample of applying successive sampling filters to the population. At the left are all private firms in Norway with limited liability (Population) We impose successive filters moving towards the right by excluding financials (Excluding financial firms), firms that are majority held by another firm in a business group (Excluding subsidiaries), and firms with zero sales, assets, or employment (Excluding passive firms). We filter out the smallest 5% of firms in terms of assets, sales, and employees (Excluding very small firms), and we include only firms with a controlling shareholder (Excluding firms without majority). We ignore firms with just one shareholder (Excluding single-owner firms), even when this shareholder is a family with several owning members. These filters jointly produce our sample (Sample, all). Finally, we present the number of firms that pay dividends in each year (Sample, payers).

Year	Population	Excluding financial firms	Excluding subsidiaries	Excluding passive firms	Excluding very small firms	Excluding firms without majority	Excluding single-owner firms	Sample, all	Sample, payers
2006	180 543	158 516	116 292	71 217	65 631	42 325	10 621	10 621	2 545
2007	191 827	168 078	126 181	68 711	64 319	41 089	10 184	10 184	3 067
2008	197 813	172 480	128 345	69 411	64 904	41 523	9 895	9 895	2 519
2009	200 038	173 982	129 235	70 667	65 796	42 332	9 698	9 698	2 427
2010	203 158	176 476	130 131	71 629	66 587	43 205	9 250	9 250	2 393
2011	208 159	181 411	133 747	72 281	66 832	43 300	8 991	8 991	2 437
2012	221 720	195 698	143 241	75 261	69 276	41 815	9 121	9 121	2 641
2013	235 614	210 198	154 150	78 064	71 094	40 172	8 696	8 696	2 460

Table 2
Summary statistics

This table shows the mean and median (in parentheses) of variables used in the empirical analysis. Dividends is cash dividends paid to shareholders, and Dividend propensity is the fraction of firms paying dividends. Earnings is operating profits after taxes, Sales is total sales revenue, Cash flow is cash flow from operations after taxes, and Assets is the sum of balance-sheet assets. Holding of largest owner is the equity fraction held by the largest shareholder, which may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage in the following ways: Extended family is a unit based on blood or marriage up to the fourth degree of kinship; Nuclear family is a unit where kinship is limited to spouses and underage children; Separate owner is the case where no personal owner is assigned to a family. Majority owner in largest family is 1 if the largest family by ownership has an owner with a share above 50%, and 0 otherwise. Liquidity is cash holdings divided by assets, Profitability is operating profit after taxes divided by assets (ROA), and Growth is average percentage sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is sales in mill. of NOK, and Age is the number of years since the firm was founded. The sample is all private firms with a majority shareholder and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. The payout ratio is winsorized at the 98% tail, while Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails.

Characteristic	2006	2007	2008	2009	2010	2011	2012	2013	All	Payers
Dividend propensity	0,239 (0.000)	0,299 (0.000)	0,252 (0.000)	0,247 (0.000)	0,256 (0.000)	0,269 (0.000)	0,288 (0.000)	0,281 (0.000)	0,266 (0.000)	1.000 (1.000)
Dividends to earnings	0,179 (0.000)	0,219 (0.000)	0,182 (0.000)	0,189 (0.000)	0,202 (0.000)	0,211 (0.000)	0,231 (0.000)	0,229 (0.000)	0,204 (0.000)	0.770 (0.784)
Dividends to sales	0,021 (0.000)	0,024 (0.000)	0,019 (0.000)	0,019 (0.000)	0,020 (0.000)	0,021 (0.000)	0,023 (0.000)	0,023 (0.000)	0,021 (0.000)	0,078 (0.053)
Dividends to cash flow	0,260 (0.000)	0,328 (0.000)	0,263 (0.000)	0,233 (0.000)	0,263 (0.000)	0,308 (0.000)	0,321 (0.000)	0,333 (0.000)	0,288 (0.000)	1,264 (0.918)
Dividends to assets	0,036 (0.000)	0,044 (0.000)	0,035 (0.000)	0,033 (0.000)	0,034 (0.000)	0,036 (0.000)	0,039 (0.000)	0,038 (0.000)	0,037 (0.000)	0,138 (0.109)
Holding of largest owner, incl. extended family	0,715 (0.670)	0,723 (0.688)	0,726 (0.700)	0,726 (0.700)	0,730 (0.700)	0,731 (0.700)	0,715 (0.700)	0,717 (0.700)	0,723 (0.700)	0,738 (0.700)
Holding of largest owner, incl. nuclear family	0,624 (0.640)	0,627 (0.636)	0,628 (0.630)	0,629 (0.625)	0,625 (0.618)	0,625 (0.617)	0,620 (0.607)	0,606 (0.600)	0,623 (0.620)	0,613 (0.600)
Holdings of largest owner, incl. separate owners	0,602 (0.600)	0,605 (0.600)	0,605 (0.600)	0,606 (0.600)	0,604 (0.600)	0,604 (0.600)	0,602 (0.600)	0,606 (0.600)	0,604 (0.600)	0,596 (0.600)
Majority owner in largest family	0,749 (1.000)	0,75 (1.000)	0,744 (1.000)	0,742 (1.000)	0,732 (1.000)	0,729 (1.000)	0,739 (1.000)	0,747 (1.000)	0,742 (1.000)	0,738 (1.000)
Liquidity	0,260 (0.187)	0,265 (0.201)	0,264 (0.195)	0,266 (0.196)	0,264 (0.194)	0,268 (0.200)	0,272 (0.206)	0,275 (0.209)	0,267 (0.199)	0,356 -0,328
Profitability	0,092 (0.087)	0,099 (0.099)	0,075 (0.080)	0,059 (0.065)	0,053 (0.061)	0,064 (0.067)	0,074 (0.072)	0,068 (0.069)	0,074 (0.075)	0,188 (0.165)
Growth	0,079 (0.063)	0,093 (0.079)	0,087 (0.074)	0,043 (0.041)	0,015 (0.016)	0,022 (0.020)	0,052 (0.038)	0,051 (0.039)	0,057 (0.046)	0,089 (0.069)
Risk	0,353 (0.249)	0,337 (0.234)	0,333 (0.229)	0,333 (0.233)	0,331 (0.229)	0,319 (0.223)	0,306 (0.212)	0,298 (0.207)	0,327 (0.227)	0,259 (0.186)
Size	14,387 (4,879)	18,060 (6,272)	18,665 (6,588)	17,893 (6,443)	18,716 (6,638)	20,031 (7,121)	20,778 (7,200)	19,948 (7,294)	18,464 (6,522)	26,102 (11,364)
Age	15,880 (13,000)	16,280 (13,000)	16,828 (14,000)	17,213 (14,000)	17,546 (14,000)	17,293 (15,000)	18,534 (16,000)	18,919 (16,000)	17,333 (14,000)	18,557 (16,000)
n	10 621	10 184	9 895	9 698	9 250	8 991	9 121	8 696	76 456	20 450

Table 3
Characteristics of firms with low and high ownership concentration

This table shows differences in summary statistics between firms with high and low ownership concentration. Panel A shows the average dividends-to-earnings ratio for two ownership concentration groups (Group I and Group II). The largest shareholder in Group I owns between 50% and 60% of the firm's equity, while the largest shareholder in Group II owns between 90% and 99%. The controlling shareholder may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage up to the fourth degree of kinship. We report the means for the two groups year by year, for the pooled sample (All years), and for the pooled subsample of firms with positive dividends (Payers). We also show the difference between the averages, and we test for their equality using the t test and the Wilcoxon–Mann–Whitney (W–M–W) test. The p -values are shown in parentheses. Panel B shows the corresponding statistics for our control variables in the pooled sample. Liquidity is cash holdings to assets, Profitability is operating profit after taxes over total assets, and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is the sales in mill. of NOK, and Age is the number of years since the firm was founded. The sample is all private firms with a majority shareholder and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. The payout ratio is winsorized at the 98% tail. Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails.

Panel A: The payout ratio					
Year	I: Largest owner 50%–60%	II: Largest owner 90%–99%	I - II	t test	W–M–W test
2006	0,206	0,139	0,067	(0.000)	(0.000)
2007	0,248	0,183	0,065	(0.000)	(0.000)
2008	0.220	0.143	0,077	(0.000)	(0.000)
2009	0.236	0.140	0,096	(0.000)	(0.000)
2010	0.228	0.148	0,08	(0.000)	(0.000)
2011	0.249	0.160	0,089	(0.000)	(0.001)
2012	0.252	0.179	0,073	(0.000)	(0.001)
2013	0.230	0.172	0,058	(0.003)	(0.007)
All years	0,234	0,158	0,076	(0.000)	(0.000)
Payers	0,783	0,669	0,114	(0.000)	(0.000)

Table 3—*Continued*

Panel B: Control variables					
Control variable	I: Largest owner 50%–60%	II: Largest owner 90%–99%	I - II	<i>t</i> test	W–M–W test
Liquidity	0,259	0,239	0,020	(0.000)	(0.000)
Profitability	0,075	0,066	0,009	(0.000)	(0.000)
Growth	0.075	0.035	0.040	(0.000)	(0.000)
Risk	0.325	0.321	0,004	(0.331)	(0.000)
Size	21.066	19.918	1,148	(0.039)	(0.000)
Age	16.478	21.194	-4,716	(0.000)	(0.000)

Table 4
Correlations

This table shows the Pearson correlation coefficient for pairs of key independent variables used in the empirical analysis. Holding of largest owner is the equity fraction held by the largest shareholder, which may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage in the following ways: Extended family is a unit based on blood or marriage up to the fourth degree of kinship; Nuclear family is a unit where kinship is limited to spouses and underage children; Separate owner is the case where no personal owner is assigned to a family. Majority owner in largest family is 1 if the largest family by ownership has an owner with a share above 50%, and 0 otherwise. Liquidity is cash holdings divided by assets, Profitability is operating profit after taxes divided by assets (ROA), and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is sales in mill. of NOK, and Age is the number of years since the firm was founded. Dividends is cash dividends paid to shareholders, and Earnings is operating profits after taxes. The sample is all private firms with a majority shareholder and positive sales, employment, and assets from 2006 to 2013. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. The payout ratio is winsorized at the 98% tail, while Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails.

	Dividends to earnings	I	II	III	IV	V	VI	VII	VIII	IX
I. Holding of largest owner, incl. extended family	-0,050									
II. Holding of largest owner, incl. nuclear family	-0,040	0,520								
III. Holding of largest owner, separate owners	-0,030	0,470	0,920							
IV. Majority owner in largest family	0,009	0,010	0,640	0,740						
V. Liquidity	0,220	-0,040	0,030	0,030	0,060					
VI. Profitability	0,330	-0,010	-0,010	-0,010	0,010	0,220				
VII. Growth	0,050	-0,050	-0,020	-0,020	0,001	-0,010	0,230			
VIII. Risk	-0,120	-0,010	0,020	0,020	0,020	0,010	-0,120	0,080		
IX. Size	0,160	-0,020	-0,100	-0,070	-0,070	-0,180	0,190	0,290	-0,300	
X. Age	0,050	0,130	-0,030	-0,030	-0,070	-0,030	0,020	-0,220	-0,220	0,110

Table 5
The baseline regressions

This table reports the estimates for the regressions of the baseline model (1) in the main text. The p -values are shown in parentheses. The dependent variable is cash dividends divided by operating earnings after taxes. Ownership concentration is the largest ultimate equity stake in the firm held by a financial firm, a foreigner, or a family with owning members related by blood or marriage up to the fourth degree of kinship. Liquidity is cash holdings to assets, Profitability is operating profit after taxes over total assets, and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is the log of sales in mill. of NOK, and Age is the log of the number of years since the firm was founded. The sample is all private firms with a majority shareholder and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. The payout ratio is winsorized at the 98% tail. Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails. All models control for fixed industry effects. The table shows the estimates from the year-by-year OLS regressions, the Fama–MacBeth approach based on the year-by-year estimates, and the pooled approach with fixed year effects. Standard errors are clustered at the firm level in the Fama–MacBeth approach and the pooled approach.

Independent variable	2006	2007	2008	2009	2010	2011	2012	2013	Fama–MacBeth	Pooled
Ownership concentration	-0.169 (0.000)	-0.188 (0.000)	-0.180 (0.000)	-0.224 (0.000)	-0.183 (0.000)	-0.234 (0.000)	-0.194 (0.000)	-0.173 (0.000)	-0.193 (0.000)	-0.101 (0.000)
Liquidity	0.170 (0.000)	0.204 (0.000)	0.226 (0.000)	0.271 (0.000)	0.297 (0.000)	0.311 (0.000)	0.301 (0.000)	0.288 (0.000)	0.259 (0.000)	0.302 (0.000)
Profitability	0.454 (0.000)	0.547 (0.000)	0.451 (0.000)	0.520 (0.000)	0.504 (0.000)	0.574 (0.000)	0.660 (0.000)	0.661 (0.000)	0.546 (0.000)	0.499 (0.000)
Growth	-0.008 (0.625)	-0.026 (0.175)	-0.029 (0.119)	-0.018 (0.358)	-0.060 (0.005)	-0.063 (0.052)	-0.090 (0.002)	-0.100 (0.001)	-0.049 (0.019)	-0.087 (0.000)
Risk	-0.117 (0.000)	-0.130 (0.000)	-0.100 (0.000)	-0.092 (0.000)	-0.116 (0.000)	-0.110 (0.000)	-0.151 (0.000)	0.123 (0.000)	-0.117 (0.000)	-0.061 (0.000)
Size	0.021 (0.000)	0.023 (0.000)	0.018 (0.000)	0.018 (0.000)	0.017 (0.000)	0.016 (0.000)	0.016 (0.000)	0.014 (0.000)	0.018 (0.001)	0.047 (0.000)
Age	-0.026 (0.000)	-0.025 (0.000)	-0.013 (0.032)	-0.001 (0.866)	0.002 (0.742)	0.021 (0.031)	0.012 (0.096)	0.015 (0.047)	-0.002 (0.845)	0.014 (0.001)
R ²	0.292	0.352	0.319	0.321	0.319	0.345	0.353	0.343	0.156	0.157
n	10 621	10 184	9 895	9 698	9 250	8 991	9 121	8 696	76 456	76 456

Table 6
Payout record and subsequent investor behavior

This table relates the payout history of the firm in 2006–2010 to the identity of the investors in the firm's new equity in 2011–2013. Panel A compares firms with low and high residual payout regarding their subsequent equity issues. Payout quintile A (B) consists of the lowest (highest) quintile of firms sorted on the average residual payout for 2006–2010 as estimated from model (2) of the main text. Minority invests more is 1 if minority investors own more equity in 2013 than in 2010, and 0 otherwise. Growth in minority investment is the change in the paid-in capital owned by minority shareholders from 2010 to 2013 divided by the total paid-in capital in 2010. Positive growth in minority investment is Growth in minority investment for firms where this measure is positive. New minority invests is 1 if the minority investors own more equity in 2013 than in 2010 and at least one new minority investor appears in 2013, and 0 otherwise. Majority invests more is 1 if the majority investor owns more equity in 2013 than in 2010, and 0 otherwise. Panel A shows the average value of these five investor characteristics for firms in dividend quintiles A and B, the difference between the two averages, and *p*-values of statistical tests for the difference (in parentheses). Panel B regresses subsequent equity investment on the average residual payout and the average ownership concentration for 2006–2010. The sample consists of private firms with positive sales, employment, and assets, and with the same majority investor throughout the sample period. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees.

Panel A: Univariate results									
Investor behavior	Payout quintile			<i>p</i> -value				n	
	A (lowest)	B (highest)	B-A	<i>t</i> test	Wilcoxon test	Chi ² test	Fisher's exact test	A	B
1. Minority invests more	0,183	0,218	0,035	(0.013)	(0.010)	(0.013)	(0.018)	739	750
2. Growth in minority investment	0,018	0,03	0,012	(0.035)	(0.017)			739	750
3. Positive growth in minority investment	0,163	0,268	0,105	(0.053)	(0.014)			141	160
4. New minority invests	0,342	0,375	0,033	(0.035)	(0.017)	(0.038)	(0.027)	739	750
5. Majority invests	0,268	0,268	0,000	(0.997)	(0.498)	(0.469)	(0.521)	739	750
Panel B: Regression results									
Independent variable	I: Minority invests more			II: Growth in minority investment			III: New minority invests		
Average residual payout	0.223 (0.001)			0.016 (0.010)			0.179 (0.002)		
Ownership concentration	-1.508 (0.009)			-0.144 (0.010)			-0.339 (0.122)		
R ²	0,110			0,080			0,050		
n	3 596			3 596			3 596		

Table 7
Alternative specifications of the baseline model

This table reports estimates for modified versions of the baseline model (1) of the main text. The p -values are shown in parentheses. The dependent variable is dividends to operating earnings after taxes except in models A, B, C, and F in Panel B. In Panel A, nuclear family is kinship limited to spouses and underage children. No family membership does not assign personal shareholders to families. Otherwise, a family is defined as a group of owning members related by blood or marriage up to the fourth degree of kinship. Models III–VII include only firms where the family holds more than half the equity (family firm). Firms with (with no) family CEO are firms where the largest family by ownership includes (does not include) the CEO. Number of owners in largest family counts the number of individual owners in the family. One family member owns more than 50% is 1 if one family member controls more than 50% of the shares, and 0 otherwise. Model VIII includes only firms with three or more shareholders. Minority institutional is 1 if there are institutional investors among the minority shareholders, and 0 otherwise. Single-owner firm is 1 if there is only one owner, and 0 otherwise. Model XI uses only firms where no shareholder controls more than 50% of the shares. In Panel B, the dependent variable in models A–C is the cash dividend divided by cash flow from operations after taxes, total sales revenue, and the sum of balance-sheet assets, respectively. No repurchases (model D) is the subsample of firms that do not buy back their stock in the sample period. Only payers (E) is the subsample of firms with positive dividends, while Pay or not pay (F) is a dummy variable that is 1 if the firm pays dividends, and 0 otherwise (dependent variable in Logit model). Model G estimates a Tobit model using our baseline variables. Payout capacity (H) augments the baseline model by the variable Retained earnings, which is Total retained earnings to total equity. Taxable dividends (I) augments the baseline model by the variable Direct personal ownership, which is the fraction of direct personal equity investment in the firm. Financial constraints (J) augments the baseline model by Interest coverage, which is earnings-to-interest. Model K uses sales to assets rather than sales growth to measure growth opportunities. Ownership concentration is the largest ultimate equity stake in the firm held by a financial firm, a foreigner, or a family with owning members related by blood or marriage up to the fourth degree of kinship. Liquidity is cash holdings to assets, Profitability is operating profit after taxes divided by total assets, and Growth in the baseline model is the average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is the log of sales in mill. of NOK, and Age is the log of the number of years since the firm was founded. The baseline sample is all private firms with a majority shareholder and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. The sample period is 2006–2013. The payout ratios are winsorized at the 98% tail, while Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails. We include industry and year fixed effects (not reported). Standard errors are clustered at the firm level.

Panel A: Ownership											
Independent variable	I: Nuclear family	II: No family membership	III: Family firm (subsample)	IV: No family CEO (subsample)	V: Family CEO (subsample)	VI: Number of owners in largest family	VII: One family member owns more than 50%	VIII: At least three owners (subsample)	IX: Minority institutional	X: Single-owner firm	XI: Widely held firm
Ownership concentration	-0.076 (0.000)	-0.078 (0.000)	-0.098 (0.000)	-0.132 (0.000)	-0.081 (0.000)	-0.090 (0.000)	-0.099 (0.000)	-0.071 (0.001)	-0.106 (0.000)		0.146 (0.000)
Number of owners in largest family						-0.005 (0.011)					
One family member owns more than 50%							0.013 (0.007)				
Minority institutional									-0.091 (0.003)		
Single-owner firm										-0.020 (0.000)	
Liquidity	0.285 (0.000)	0.283 (0.000)	0.303 (0.000)	0.366 (0.000)	0.284 (0.000)	0.303 (0.000)	0.302 (0.000)	0.306 (0.000)	0.238 (0.001)	0.258 (0.000)	0.354 (0.000)
Profitability	0.484 (0.000)	0.476 (0.000)	0.495 (0.000)	0.500 (0.000)	0.495 (0.000)	0.494 (0.000)	0.494 (0.000)	0.510 (0.001)	0.528 (0.000)	0.422 (0.000)	0.539 (0.000)
Growth	-0.100 (0.000)	-0.102 (0.000)	-0.060 (0.000)	-0.065 (0.000)	-0.101 (0.000)	-0.090 (0.000)	-0.090 (0.000)	-0.081 (0.000)	-0.043 (0.063)	-0.070 (0.000)	-0.085 (0.000)
Risk	-0.054 (0.000)	-0.054 (0.000)	-0.060 (0.000)	-0.068 (0.000)	-0.057 (0.000)	-0.059 (0.000)	-0.060 (0.000)	-0.049 (0.001)	-0.118 (0.000)	-0.055 (0.000)	-0.042 (0.000)
Size	0.049 (0.000)	0.050 (0.000)	0.050 (0.000)	0.041 (0.000)	0.053 (0.000)	0.051 (0.000)	0.050 (0.000)	0.045 (0.000)	0.021 (0.001)	0.039 (0.000)	0.039 (0.000)
Age	0.014 (0.000)	0.012 (0.001)	0.016 (0.000)	0.015 (0.028)	0.015 (0.300)	0.016 (0.000)	0.016 (0.000)	0.019 (0.000)	-0.007 (0.347)	0.012 (0.000)	0.006 (0.194)
R ²	0.151	0.148	0.159	0.172	0.156	0.159	0.159	0.155	0.162	0.159	0.180
n	88 391	88 983	70 139	19 367	55 254	70 134	70 134	43 252	65 835	306 432	52 697

Table 7—Continued

Panel B: Payout, taxes, financial constraints, and growth											
Independent variable	A: Dividends to cash flow	B: Dividends to sales	C: Dividends to assets	D: No repurchases (subsample)	E: Only payers (subsample)	F: Pay or not pay (subsample)	G: Tobit	H: Payout capacity	I: Taxable dividends	J: Financial constraints	K: Growth opportunities
Ownership concentration	-0.145 (0.000)	-0.006 (0.001)	-0.023 (0.000)	-0.103 (0.000)	-0.213 (0.000)	-0.373 (0.000)	-0.101 (0.000)	-0.192 (0.000)	-0.097 (0.001)	-0.126 (0.000)	-0.101 (0.000)
Liquidity	0.468 (0.000)	0.034 (0.000)	0.067 (0.000)	0.299 (0.000)	0.138 (0.000)	1.807 (0.000)	0.302 (0.000)	0.241 (0.000)	0.306 (0.000)	0.279 (0.000)	0.306 (0.000)
Profitability	0.937 (0.000)	0.082 (0.000)	0.155 (0.000)	0.501 (0.000)	-0.154 (0.000)	7.093 (0.000)	0.499 (0.000)	0.552 (0.000)	0.500 (0.000)	0.706 (0.000)	0.471 (0.000)
Growth	-0.078 (0.000)	-0.010 (0.009)	-0.014 (0.000)	-0.088 (0.000)	-0.358 (0.000)	-0.188 (0.004)	-0.090 (0.000)	-0.040 (0.067)	-0.078 (0.000)	-0.110 (0.000)	-0.004 (0.001)
Risk	-0.105 (0.000)	0.002 (0.209)	-0.008 (0.000)	-0.064 (0.000)	0.048 (0.004)	-1.161 (0.000)	-0.060 (0.000)	-0.113 (0.000)	-0.070 (0.000)	-0.096 (0.000)	-0.072 (0.000)
Size	0.061 (0.000)	0.002 (0.000)	0.006 (0.000)	0.047 (0.000)	-0.034 (0.000)	0.501 (0.000)	0.047 (0.000)	0.019 (0.000)	0.041 (0.000)	0.050 (0.000)	0.044 (0.000)
Age	0.015 (0.027)	0.014 (0.001)	-0.003 (0.001)	0.015 (0.000)	-0.040 (0.001)	0.248 (0.000)	0.014 (0.000)	-0.009 (0.341)	0.014 (0.002)	0.023 (0.000)	0.018 (0.000)
Retained earnings								0.002 (0.001)			
Direct personal ownership									-0.001 (0.001)		
Interest coverage										0.011 (0.000)	
R ²	0.125	0.173	0.226	0.158	0.085	0.245	0.179	0.327	0.159	0.154	0.156
n	72 935	77 154	77 154	74 990	20 450	76 456	76 456	55 461	76 456	49 055	77 075

Table 8
Dividends as signals

This table analyzes the possible signaling role of dividends. Panel A shows profitability growth measured as increased return on assets (ROA) for dividend-increasing and dividend-decreasing firms, respectively. The first group contains firms that pay higher dividends in 2010 than in 2009 (Dividends increase), while the second group contains firms that pay lower dividends in 2010 than in 2009 (Dividends decrease). Past is 2006–2008, Present is 2009–2010, and Future is 2011–2013. The numbers in parentheses are p -values, where the p -values in the two bottom rows reflect the two-way t test for equality of mean and the two-way paired Wilcoxon test for the equality of medians. Panel B adds the auditing fee as a proxy for information asymmetry to the baseline model (1) in the main text. The dependent variable is cash dividends divided by operating earnings after taxes. Ownership concentration is the largest ultimate equity stake in the firm held by a financial firm, a foreigner, or a family with owning members related by blood or marriage up to the fourth degree of kinship. Liquidity is cash holdings to assets, Profitability is operating profit after taxes over total assets, and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is the log of sales in mill. of NOK, Age is the log of the number of years since the firm was founded, and Auditing fee is the amount paid by the firm for auditing services. The sample is all private firms in 2016–2013 with a majority shareholder and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees. We include industry and year fixed effects (not reported). Standard errors are clustered at the firm level.

Panel A: Dividend change and profitability growth			
	Profitability growth		
	Future	Future-Past	Future-Present
<i>Dividends increase</i>			
Mean	-0.011 (0.000)	-0.009 (0.000)	-0.055 (0.000)
Median	-0.008 (0.000)	-0.007 (0.001)	-0.042 (0.000)
n	988	840	1 136
<i>Dividends decrease</i>			
Mean	0,001 (0.289)	-0.006 (0.000)	0.075 (0.000)
Median	0,002 (0.078)	-0.001 (0.012)	0,055 (0.000)
n	988	949	988
<i>Increase-Decrease</i>			
Mean	-0,012 (0.000)	-0,003 (0.296)	-0,130 (0.000)
Median	-0,010 (0.000)	-0,006 (0.056)	-0,097 (0.000)

Table 8—*Continued*

Panel B: Dividends and auditing fees

Independent variable

Ownership concentration	-0.101 (0.000)
Liquidity	0.303 (0.000)
Profitability	0.518 (0.000)
Growth	-0.107 (0.001)
Risk	-0.057 (0.000)
Size	0.095 (0.000)
Age	0.015 (0.000)
Auditing fee	-0.029 (0.000)
R ²	0.159
n	71 930