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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. The average payout is 50% higher if the majority shareholder's equity stake is 55% (high conflict potential) rather than 95% (low conflict potential). Such minority-friendly payout is also associated with higher subsequent minority shareholder investment. These results suggest that controlling shareholders voluntarily use dividends to reduce agency conflicts and build trust, rather than opportunistically preferring private benefits to dividends. We show that our results are unlikely to arise from liquidity or signaling motives.

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1. Introduction

Shareholder conflicts may reduce investment returns. The "opportunistic model" notes that although majority shareholders consume private benefits in their entirety, dividends must be shared proportionally with minority shareholders (La Porta et al., 2000; Cheffins, 2006). As a result, 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). 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 under the opportunistic model, but not under the conflict-reducing model.

Our evidence, from a large sample of private Norwegian firms with a majority shareholder, supports the conflict-reducing model and refutes the opportunistic model. A larger potential shareholder conflict, measured by the majority shareholder's equity percentage, is associated with higher dividends and higher subsequent subscription to new equity by the minority shareholders. This evidence suggests dividend policy is used to mitigate rather than exploit shareholder conflicts.

We analyze private firms with majority control for three reasons: shareholder conflicts are particularly serious in majority-controlled firms, majority control is much more common in private firms than in public firms, and private firms with majority control have particularly low levels of separation between ownership and management. The first two reasons ensure that at least one shareholder has strong incentives and power to monitor management, while the third reduces the need for such monitoring (Shleifer and Vishny, 1986). In fact, a family is the majority shareholder in more than 80% of our sample firms, and provides the CEO in 73%. Accordingly, we can abstract from the "vertical" agency problem between shareholders and managers (Roe, 1994). In contrast, the "horizontal" agency problem between majority and minority shareholders is very relevant in our sample, since the majority shareholder can single-handedly make the dividend decision (Demsetz and Lehn, 1985; Shleifer and Vishny, 1997). The horizontal agency problem we study has received much less attention in the empirical dividend literature than the vertical agency problem has.[1]

[1] A likely reason is the difficulty of obtaining good data for firms exposed to the horizontal agency problem, since such firms are mostly private. 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.

Majority shareholders capture all the private benefits, but receive a lower share of the dividends the less of the equity they own. Accordingly, the conflict potential in our sample firms is larger the closer the controlling equity 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, Lang, and Young, 2001), our results are consistent with the conflict-reducing model. The average payout ratio is 50% higher when the majority stake is 55% (high conflict potential) rather than 95% (low conflict potential). Firms also seem to succeed in building trust, as minority shareholders who have observed 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 now and asking the minority shareholders for new funding later when the investment opportunity emerges.

The concern for low conflict and high trust is robust to how we measure both shareholder conflicts and payout. As a falsification test, we find that dividends are less common and lower in single-owner firms, where shareholder conflicts do not exist. Also, dividends are lower and unrelated to ownership in firms without majority owners, where the horizontal agency problem is less of a concern. Hence, the higher payout and the inverse relationship between ownership concentration and dividends are unique features of multiple-owner firms with controlling owners.

In addition to shareholder conflicts, there are several alternative explanations for the results. The first is shareholder liquidity needs. Firms with lower ownership concentration have more minority shareholders, who may want dividends for liquidity reasons. In contrast, majority shareholders may be less dependent on dividends because they are more likely to receive salary from the firm – a substitute for dividends as a source of liquidity. This substitute would in turn lead to an inverse relationship between ownership concentration and dividends. However, we find that minority shareholders receive salary from the firm in 46% of the cases, that dividends and salary are complements rather than substitutes, and that our main result is robust to controlling for salary paid to shareholders (measured either by the number of shareholders receiving salary from the firm, by salary paid to all shareholders, by salary paid

to minority shareholders, or by average salary per shareholder). These results are inconsistent with the notion that shareholder liquidity needs explain our findings.

A second alternative explanation is signaling. Since majority-controlled firms with lower ownership concentration need more minority investment, 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.

While liquidity and signaling are alternative causal explanations, a third alternative explanation is that the results are not causal, but instead stem from endogeneity. We find that reverse causality is not a likely source of endogeneity. First, the firm's dividend policy cannot attract tax-based investor clienteles in our sample (Elton and Gruber, 1970). Second, ownership concentration as measured by the largest equity stake is very stable. It is identical from one year to the next in 80% of the firms, the average coefficient of variation over time being 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 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, our panel vector autoregressions (Holtz-Eakin, Newey, and Rosen, 1988) and Granger causality tests show that dividends follow ownership, whereas ownership does not follow dividends.

The second possible source of endogeneity is omitted variables that influence both dividends and ownership. Personal financial constraints may force controlling owners both to hold fewer shares (producing low ownership concentration) and to pay themselves more cash (producing high dividends). Given the lack of valid instruments for ownership (Edmans and Holderness, 2016), we use tax returns data on wealth and income to construct five measures of shareholders' financial constraints. The inverse relationship between ownership concentration and dividends remains unaltered when we include proxies for this possibly omitted variable.

These findings cast new light on the role of dividends in shareholder conflicts. First, we challenge the evidence supporting the opportunistic model. La Porta et al. (2000) find that dividends are lower in legal regimes with weak shareholder protection. Faccio, Lang, and Young (2001) find that low dividends may be used to expropriate minority shareholders in East Asian business groups. One reason for the difference may be the 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 this strong, mandatory minority protection, majority

shareholders voluntarily choose minority-friendly payout and are rewarded with higher minority investment. This evidence may have implications beyond the setting we study. It seems 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.

Second, 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.

Third, we contribute to the very limited literature on dividends in private firms, which typically account for a larger share of aggregate economic activity than public firms do (Kobe, 2012). 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 protection of 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.

Finally, our results are consistent with those of Bøhren, Josefsen, and Steen (2012), who find that Norwegian banks voluntarily pay higher dividends when owners have weaker control rights. Ostergaard and Smith (2011) 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. We go further by identifying 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-building among potentially conflicted shareholders is a new reason that might explain the business community pays so much attention to dividend policy (Lintner, 1956; Black, 1976; Brav et al., 2005; DeAngelo, DeAngelo, and Skinner, 2008).

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, examine the evidence on the reputation effect

of dividends in Section 5, consider alternative explanations of our main result in Section 6, and analyze the robustness of the baseline model in Section 7. We conclude in Section 8.

2. Data and Sample Selection

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.[2] This sample, which represents 20% of aggregate sales, earnings, and dividends in the Norwegian economy, is particularly well suited for testing our predictions. First, because all firms must submit standardized accounting statements certified by a public auditor regardless of the firm's listing status, size, and industry, the data quality is high.[3] 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 based on blood or marriage. 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 decision.[4] To obtain a sample that suits our purpose, we add the following filters:

1. We exclude financial firms to avoid the effects of their capital requirements, ownership restrictions, and accounting rules. This filter is common in the dividend literature (e.g., Grullon and Michaely, 2002; Allen and Michaely, 2003; DeAngelo, DeAngelo, and Stulz, 2006).
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).[5]
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

[2] Adding the few public firms that pass the majority-control filter makes no difference in the results.
[3] Failure to submit this information within 17 months from the end of the fiscal year triggers automatic liquidation by the court.
[4] 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). Statistics Norway (www.ssb.no/en) delivered the tax returns data on shareholder wealth and income.
[5] Unlike in countries like Sweden, multiple-class shares are rare in Norway (Ødegaard, 2007; Eklund, 2009; Ikäheimo, Puttonen, and Ratilainen, 2011). Hence, we do not distinguish between share classes.

measure the ultimate dividend, which captures the total payout the shareholder receives from the firm, whether paid directly or indirectly through intermediaries.[6]

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.

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 concerns 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.[7]

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 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:

[6] Because the identity of foreign investors is unknown, we cannot trace their ultimate ownership or assign them to families. Our main results are unchanged in the subsample of firms controlled by foreigners (not reported).

[7] The tax reform in 2005 was designed to ensure the after-tax equivalence of all cash flows to ultimate owners, regardless of whether the cash flows 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 important relationship.

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

The payout measure, *Div*, is the ratio of cash dividends to after-tax operating earnings.[8] Ownership concentration, *Con,* is the equity fraction held by the controlling shareholder. This is the crucial 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 according to 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, an institution, or a foreigner (higher potential for private benefit extraction), where the majority shareholder is not the CEO (lower shareholder conflict, but higher shareholder–manager conflict), 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 because of lower transaction costs. Liquid firms may also have more cash than needed for operations and investment (DeAngelo, DeAngelo, and Stulz, 2006). Correspondingly, 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 after-tax 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 are considered permanent earnings (Lintner, 1956), firms with risky earnings may be less likely to pay high dividends. This idea is also consistent with the

[8] 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.

maturity hypothesis of Grullon, Michaely, and Swaminathan (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, Hubbard, and Petersen, 1988; Kaplan and Zingales, 1997; Whited and Wu, 2006). Grullon, Michaely, and Swaminathan (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 earnings. As in 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.[9]

[Insert Table 2 here.]

4. Statistical Tests of the Baseline Model

The crucial variables in our tests are the dividends and the size of the controlling block. As an initial check, we compare the dividends for two groups of firms that we classify according to the largest equity stake. The first group contains firms where the largest stake is above 50%,

[9] 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 above 71 mill. NOK. The highest sales figure is 8.4 billion NOK in the unwinsorized sample and 468 mill. NOK in the winsorized sample. The average exchange rate during the sample period is 5.94 NOK per USD (Source: Norges Bank).

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 I) have consistently higher payout than high-concentration firms (Group II), 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, more fast-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 definitions. Therefore, it is important to examine whether the results are sensitive to how we measure shareholder conflicts.

[Insert Table 4 here.]

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 using 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 year fixed 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 ownership concentration and dividends. 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, Table 3 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 these 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 majority shareholders try 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 shares to diversify (Gomes, 2000) or issue new shares 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 the firm's subsequent equity issues in 2011–2013, using four measures of minority investment and one measure of majority investment in these issues.[10] The first measure is a dummy variable that is 1 if minority investors own more of the paid-in capital in 2013 than in 2010 (Minority invests more) and 0 otherwise. The second measure is the change in minority-owned paid-in capital from 2010 to 2013 divided by total minority paid-in capital in 2010 (Growth in minority investment). Our third measure is the growth in minority investment when this growth exceeds zero (Positive growth in minority investment). The fourth measure is a 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 dummy variable that is 1 if the majority-owned paid-in capital is higher in 2013 than in 2010 (Majority invests more).

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 firms with

[10] 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.

the highest residual payout also experience a larger increase in minority investment (measure 3) and a higher probability of attracting new minority investors (measure 4).[11] 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 ($\bar{\varepsilon}$) from (2) and the majority shareholder's average equity stake in 2006–2010 (*Con*):

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

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).

6. Alternative Explanations

The inverse relationship we observe between ownership concentration and dividends in majority-controlled firms is consistent with the idea that higher dividends are used to reduce shareholder conflicts and to build trust. However, the relationship may also be consistent with other explanations. This section addresses this possibility by exploring whether dividends are used to signal firm quality rather than to build trust (6.A), whether dividends are paid to meet shareholder liquidity needs rather than to reduce conflicts (6.B), whether dividends drive

[11] 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.

ownership rather than being driven by ownership (6.C), and whether both are driven by omitted variables that reflect shareholders' financial constraints (6.D) or firm characteristics (6.E).

6.A 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 also be taken as evidence of an attempt to reduce information asymmetry. However, several control variables in the baseline model (1), such as the firm's size, age, risk, growth, and industry, may already account for information asymmetry. Also, the low number of minority shareholders in our sample suggests that signaling may be a less important concern in dividend policy than is the mitigation of shareholder conflicts. Nevertheless, we conduct three tests to explicitly analyze the role of dividends as a signaling device.

The first test follows Grullon, Michaely, and Swaminathan (2002), examining whether higher dividends signal higher future profitability. The findings are reported in Panel A of Table 7, 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, Michaely, and Thaler (1997) and Grullon, Michaely, and Swaminathan (2002), does not support the idea that dividends signal future earnings.

[Insert Table 7 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, Van Ness, and Warr (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 7 shows 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.

Finally, we estimate the model of Grullon et al. (2005) based on Fama and French (2000), which links dividends and earnings. The idea of the model is that earnings are mean reverting, that the speed of reversion is nonlinear and faster following earnings declines, that the reversion can be used to predict future earnings, and that dividends may predict earnings on top of what the mean reversion can do. Their model is the following:

$$\begin{aligned}(E_t - E_{t-1}) / B_{t-1} = {} & \beta_0 + \beta_{1P} DPC_0 \cdot R\Delta DIV_0 + \beta_{1N} DPN_0 \cdot R\Delta DIV_0 \\ & + (\gamma_1 + \gamma_2 NDFED_0 + \gamma_3 NDFED_0 \cdot DFE_0 + \gamma_4 PDFED_0 \cdot DFE_0) \cdot DFE_0 \\ & + (\lambda_1 + \lambda_2 NCED_0 + \lambda_3 NCED_0 \cdot CE_0 + \lambda_4 PCED_0 \cdot CE_0) \cdot CE_0 + \varepsilon_t,\end{aligned} \tag{4}$$

where t is year ($t = 1$ or $t = 2$), E is earnings before extraordinary items, and B is book value of equity. DPC_0 (DPN_0) equals 1 for dividend increases (decreases) in year 0 and equals 0 otherwise. $R\Delta DIV_0$ is the change in dividends in year 0. DFE_0 equals $ROE_0 - E(ROE_0)$, where ROE is book return on equity and $E(ROE_0)$ is the fitted value from the cross-sectional regression of ROE_0 on the logarithm of total assets in year 1, the logarithm of the market-to-book ratio of equity in year 1, and ROE_1. $NDFED_0$ ($PDFED_0$) is 1 if DFE_0 is negative (positive) and 0 otherwise, while $NCED_0$ ($PCED_0$) is 1 if CE_0 is negative (positive) and 0 otherwise. Finally, CE_0 is $(E_0 - E_{-1})/B_{-1}$.

There is no significant relationship between dividend payments and earnings in Panel C. This result, which is in line with the finding of Grullon et al. (2005), is inconsistent with the idea that our sample firms use dividends to signal future profitability.

6.B Shareholder Liquidity Needs

The fact that our sample consists of private firms may make dividends an important source of liquidity for shareholders. First, the lack of an organized security market makes it costly to transform shares into cash through "home-made dividends" (Miller and Modigliani, 1961). Moreover, Section 5 shows that the shares of high-concentration firms are traded less frequently, which may increase the need for dividends. Second, the higher the ownership concentration, the less diversified is the majority shareholder, and so the greater the importance of receiving dividends. Hence, dividends may depend on ownership concentration not because of agency conflicts, but because shareholder liquidity needs are higher the harder it is to sell the shares. However, both these arguments predict a positive relationship between ownership concentration and dividends, in contrast to the negative relationship that we find.

An alternative liquidity channel that does predict a negative relationship is as follows. One might argue that while majority shareholders are likely to also work for the firm and thus receive a salary, minority shareholders receive liquidity only from dividends.[12] The lower the ownership concentration, the greater the number of dividend-dependent minority shareholders, potentially generating the negative relationship between ownership concentration and dividends we observe.[13]

We address this liquidity explanation in several ways. First, we find that at least one minority shareholder receives salary in 45.9% of our firm-years, contradicting the idea that minority shareholders seldom receive salary and must rely on dividends for liquidity. Second, we directly test whether shareholder liquidity needs correlate positively with ownership concentration and negatively with dividends, as the liquidity explanation would suggest. We use five alternative measures of shareholder liquidity needs based on salary payments: whether shareholders receive salary from the firm, the number of shareholders with salary from the firm, the salary paid to all the firm's shareholders, the salary paid to the firm's minority shareholders, and the average salary per shareholder.[14] A higher level of any of these measures suggests higher liquidity provision from salaries and hence lower dependence on dividends.

Panel A of Table 8 shows how the five salary-based liquidity measures (I–V) correlate with ownership and dividends. Focusing on the statistically significant relationships, the estimates show that the salary-based liquidity measures and ownership concentration are negatively correlated. Thus, higher ownership concentration is associated with lower salaries, and should therefore be associated with higher dividends under the liquidity explanation. However, the salary-based liquidity measures correlate positively rather than negatively with the payout ratio, reflecting that dividends are high when salaries are high rather than low. Accordingly, the results in Panel A provide no support to the idea that dividends substitute for salaries as a liquidity source for shareholders.

[Insert Table 8 here.]

As a further test, we add these alternative shareholder liquidity measures to our baseline model in Panel B. Two results stand out. The univariate relationships between dividends and shareholder liquidity from Panel A carry over to the multivariate setting: higher salary paid to shareholders is, if anything, associated with higher, not lower, dividends. In addition, the

[12] We are grateful to the referee for bringing up this idea.
[13] The shareholders have no tax reason to prefer salary over dividends. This is because our sample period comes after a tax reform that was designed to align the taxation of dividends, capital gains, and labor income.
[14] We normalize measures IV and V by the firm's earnings. Normalizing by assets or sales produces similar results.

coefficient on ownership concentration remains largely unchanged, and every relationship between dividends and the remaining independent variables corresponds to what we found for the baseline model in Table 5.

Notice also our earlier finding that a smaller ownership stake for the majority shareholder is associated with a higher number of minority shareholders (Panel C of Table 7) and a higher frequency of new minority shareholder investment (Table 6). Thus, it seems the ability to create "home-made dividends" by trading in the share is better when the need for it is the lowest (i.e., when both dividends and salary are the highest).

Overall, these results are inconsistent with the idea that dividends and salary are substitute liquidity sources for shareholders, and with the idea that the baseline results can be explained by shareholder liquidity needs. Rather, the data support the idea that a higher potential for shareholder conflicts is associated with a higher cash payment of any kind.

6.C Reverse Causality

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 in practice, dividends in the baseline model may influence ownership (reverse causality), and variables we ignore in the model 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 and Holderness, 2016). We address potential endogeneity due to reverse causality in this section, while addressing endogeneity due to omitted variables in Sections 6.D and 6.E.

The first reason why reverse causality seems a minor problem in our setting is that ownership concentration is very persistent. For instance, the largest equity 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. This is 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 by attracting small investors in low tax brackets (Becker, Ivkovic, and Weisbenner, 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, Newey, and Rosen, 1988), using the code of Love and Zicchino (2006). The results are reported in Panel C of Table 8, 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.[15]

6.D. Financially Constrained Shareholders

Another alternative explanation for our results is that majority shareholders who are financially constrained may not just be forced to hold lower equity stakes, but may also need higher dividends to finance their consumption, meaning that personal financial constraints drive both ownership concentration and dividends. Hence, the inverse relationship we observe between ownership concentration and dividends may be due to omitted financial constraints for the majority shareholder rather than to a concern for agency conflicts.

Panel D of Table 8 uses five alternative independent variables that may reflect the majority shareholder's financial constraints (models A–E): the controlling family's wealth, its wealth relative to the median equity of firms in the industry, its liquid assets, its income excluding the dividend, and the number of firms the family invests in. Thus, the dependence on dividends paid by the firm may be lower if the controlling family has more wealth, more liquid wealth, higher income, and more investments outside the firm in question.

The univariate correlations in Panel A using alternative measures of financial constraints (A–E) show that lower family wealth is indeed associated with a significantly lower equity share for the family. Moreover, the multivariate regression results in Panel D suggest that shareholders' financial constraints do matter for dividends: higher dividends are positively associated with lower absolute and relative wealth, with less liquid wealth, and with fewer investments in other firms. More importantly, however, these financial constraints have hardly any effect on the relationship between ownership concentration and dividends, which is the

[15] These results suggest that changes in ownership concentration predict payout policy, while changes in payout policy do not predict ownership concentration. This finding is not inconsistent with our finding in Section 5 that firms with larger payout are more likely to receive a larger amount from minority shareholders in future equity issues. The effect of the equity issue on ownership concentration, which is not addressed in Section 5, also depends on the investment behavior of the controlling owner in the new issue.

crucial relationship in our paper. The estimated coefficient for the ownership concentration variable is always very close to what we find under the baseline model in Table 5.

Lower ownership concentration is also associated with a larger number of shareholders, increasing the likelihood that one of them needs dividends for consumption. To test this alternative explanation, we add the number of shareholders in the firm to our main specification (model F). However, a larger number of shareholders is not associated with higher dividends. Hence, our main result on ownership concentration and dividends remains unchanged.

6.E Omitted Firm Characteristics

Four properties of our approach are intended to reduce potential endogeneity bias coming from omitted firm characteristics. First, the baseline model explicitly accounts for a series of firm characteristics beyond ownership. These control variables (the firm's liquidity, profitability, growth opportunities, risk, size, age, and industry) are motivated by the theory, by 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 year dummies to capture the effect of time-varying macro factors, such as the recent financial crisis.

Second, high dividends may mitigate not just conflicts of interest 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, we show in Section 7 below 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 in the baseline model.

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, the estimates in Table 7 are inconsistent with signaling. Moreover, firms with lower ownership concentration have more minority shareholders. Such firms may need to signal less rather than more because they can collect financing from a wider investor base.

Fourth, opportunistic majority shareholders 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, we show in Section 7 below that the baseline results survive when we use payout ratios that are harder to manipulate, such as dividends to sales.

In spite of these attempts to account for 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 this possibility is by adding firm fixed effects. Unfortunately, this approach is questionable 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 increase standard errors and reduce the value of adding firm fixed effects (Zhou, 2001; Hsiao, 2003). Therefore, not surprisingly, model G in Panel D of Table 8 shows that when we introduce firm fixed effects, the coefficients become 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. For instance, suppose all majority-controlled firms paid out all their free cash as dividends. Although this is clearly a conflict-reducing dividend policy, it would produce an insignificant coefficient for ownership concentration. Moreover, the opportunistic model is consistent only with a positive coefficient, which we never find.

Summing up the results on alternative explanations analyzed in this section, we find no indication that the inverse relationship between ownership concentration and dividends is due to the signaling role of dividends, shareholder liquidity needs, reverse causality, omitted financial constraints for the shareholders, or omitted firm characteristics.

7. Robustness

Our evidence supports the explanation of a conflict-reducing dividend policy. This section returns to the estimates of the baseline model in Table 5 and explores whether they depend on how we measure conflict potential (7.A) and dividends (7.B), and on how we account for investor taxes, the firm's financial constraints, and the firm's growth opportunities (7.C).

7.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 9 estimates the baseline model using seven alternative measures of family control (models I–VII).

[Insert Table 9 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 9 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 in 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 shareholder–manager conflicts when majority shareholders make the dividend decision.

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, Mayer, and Rossi, 2009) and make the dividend mechanism redundant. To explore this possibility, model VIII excludes all firms with fewer than three owners. Inconsistent with the opportunistic model, the baseline results persist.

Institutional owners may be better monitors and hence more powerful investors (Allen, Bernardo, and Welch, 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, as expected from the conflict-reducing model, single-owner firms pay lower dividends (model X).[16]

To check whether the inverse relationship between ownership concentration and payout is specific to firms with controlling owners, we estimate the baseline model in a sample of 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.[17]

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 stake. Finally, single-owner firms pay lower dividends than do 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.

7.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, Lang, and Young, 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 9 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.

[16] The average payout ratio is 20% in multiple-owner firms with a majority owner, while it is 17% in single-owner firms (not reported).

[17] 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.

Share 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 average payout ratio in the sample increases from 20% to 77% when we exclude the 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 ownership concentration and dividends is also present in the Tobit model G, which accounts econometrically for the fact that dividends cannot be negative.

DeAngelo, DeAngelo, and Stulz (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.

7.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 for the firm 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 9 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 the firm's size and age. Because 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, including ownership concentration.

Growth opportunities may be measured in other ways than by the percentage increase in sales, which we have used so far. 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, this evidence shows that the relationship between shareholder conflicts and dividends is independent of how we account for taxes, financial constraints, and growth.

8. Conclusions

We have found that the firm's dividend payout relates inversely to the majority shareholder's ownership fraction: The payout ratio is 50% higher when she owns a minimal controlling stake (55%) than when she owns close to the entire firm (95%) and thus receives almost the entire dividend. This finding is inconsistent with the idea that controlling shareholders opportunistically 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, the controlling shareholder seems to pay high dividends in order to build a reputation for not expropriating the 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.

Earlier studies 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 reduce them by paying 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. On 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 show the number of firms that pay dividends ("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 select variables used in the empirical analysis. Dividends is cash dividends paid to shareholders, 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. "Dividend propensity" is the fraction of firms paying dividends. "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 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 an equity share above 50%, and 0 otherwise. "Liquidity" is cash holdings divided by assets, "Profitability" is operating profit after taxes divided by assets, 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)
Holding 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 summary statistics for firms with low (Group I) and high (Group II) ownership concentration. 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. Panel A shows the average dividends-to-earnings ratio in the two groups. 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 (I–II), 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 has 50%–60%	II: Largest owner has 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	0.080	(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 has 50%–60%	II: Largest owner has 90%–99%	I–II	*t* 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 coefficients for pairs of key variables used in the empirical analysis. "Holding of largest owner" is the equity fraction held by the firm's largest shareholder, which may be a financial firm, a foreigner, or a family whose owning members are related 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 an equity share above 50%, and 0 otherwise. "Liquidity" is cash holdings divided by assets, "Profitability" is operating profit after taxes divided by 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 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, including extended family	–0.050									
II. Holding of largest owner, including 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 year fixed 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. Payout quintile Q1 (Q5) 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 Q1 and Q5, 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

	Payout quintile			*p*-value				n	
Investor behavior	Q1 (lowest)	Q5 (highest)	Q5–Q1	*t* 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 more	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

Dividends as signals

This table analyzes the possible signaling role of dividends. Panel A shows profitability growth measured as increased return on assets 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 and the *p* -values in the bottom two rows of Panel A reflect the two-way *t* test for equality of means 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 C presents the results of estimating model (4) in the main text, based on Grullon et al. (2005).

Panel A: Dividend change and profitability growth

	Profitability growth		
Dividend change	Future	Future–Past	Future–Present
Dividends increase			
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
Dividends decrease			
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
Increase–Decrease			
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 7—*Continued*

Panel B: Dividends and auditing fees	
Independent variable	Coefficient value
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

Panel C: Dividends and earnings		
Coefficient	t = 1	t = 2
β_0	–0.001 (0.937)	–0.027 (0.274)
β_{1P}	–0.014 (0.054)	0.001 (0.848)
β_{1N}	0.044 (0.246)	–0.107 (0.480)
γ_1	0.050 (0.452)	0.064 (0.094)
γ_2	–0.074 (0.898)	–0.223 (0.674)
γ_3	0.841 (0.708)	1.128 (0.546)
γ_4	–0.022 (0.249)	–0.025 (0.094)
λ_1	–0.180 (0.012)	–0.035 (0.341)
λ_2	–0.074 (0.485)	0.094 (0.637)
λ_3	0.097 (0.717)	0.227 (0.493)
λ_4	0.003 (0.664)	0.013 (0.243)
R^2	0.048	0.030
n	49,623	39,035

Table 8

Alternative explanations

This table analyzes whether the relationship between dividends and ownership may have other explanations than the concern for shareholder conflicts. Panel A reports Pearson correlation coefficients showing how ownership concentration and dividends correlate with the measures of shareholder liquidity needs used in Panel B (measures I–V) and the measures of shareholder financial constraints used in Panel D (measures A–F). Panel B adds control variables for shareholder liquidity needs to the baseline model (1) in the main text, where dividends to earnings is the dependent variable. "Number of shareholders with salary from the firm" is the number of shareholders in the firm who receive salary from it. "Shareholders receive salary from the firm" is a dummy variable that is 1 if a shareholder receives salary from the firm and 0 otherwise. "Salary paid to all shareholders" is the total salary paid by the firm to all its shareholders divided by the firm's operating earnings after taxes. "Salary paid to minority shareholders" is the total salary paid by the firm to its minority shareholders divided by operating earnings after taxes. "Average salary per shareholder" is the total salary paid to all the firm's shareholders divided by the number of shareholders. "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 the firm's cash holdings to assets, "Profitability" is operating profit after taxes over total assets, and "Growth" is average percentage increase in sales 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. Panel C reports panel VAR regressions with lagged dividends to earnings and lagged ownership concentration as independent variables. We estimate the models with and without the control variables from the baseline model (1) in the main text, which are liquidity, profitability, growth, risk, size, and age. We report the coefficient estimates for lagged ownership concentration and lagged dividends to earnings. Panel D adds control variables for the shareholder's financial constraints to the baseline model (1) in the main text. "Family wealth" is total assets less total debt in the controlling family. "Relative family wealth" is the ratio between the controlling family's wealth and the median equity of the firms in the same industry. "Family liquid assets" is the controlling family's cash, bank deposits, listed shares, and bonds. "Family income" is the income of the controlling family less the dividend received from the firm. "Number of family investments" is the number of firms the controlling family has invested in. "Number of owners" is the number of shareholders in the firm. 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 sample period is 2006–2010 in Panels A, B, and D and 2006–2013 in Panel C. 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 have industry and year fixed effects. Standard errors are clustered at the firm level. The p-values are shown in parentheses.

Panel A: Correlations

	I: Number of shareholders with salary from the firm	II: Shareholders receive salary from the firm	III: Salary paid to all shareholders	IV: Salary paid to minority shareholders	V: Average salary per shareholder	A: Family wealth	B: Relative family wealth	C: Family liquid assets	D: Family income	E: Number of family investments	F: Number of owners
Ownership concentration	–0.081	–0.042	–0.006	–0.147	0.006	0.091	0.012	–0.002	0.004	–0.020	–0.127
(*p* -value)	(0.000)	(0.000)	(0.175)	(0.000)	(0.175)	(0.000)	(0.013)	(0.482)	(0.365)	(0.001)	(0.000)
Payout ratio	0.109	0.057	0.019	0.045	0.199	-0.056	–0.008	–0.011	0.024	–0.052	0.004
(*p* -value)	(0.000)	(0.000)	(0.090)	(0.000)	(0.000)	(0.000)	(0.074)	(0.017)	(0.000)	(0.000)	(0.248)

Table 8—*Continued*

Panel B: Controlling for the shareholder's liquidity needs

Independent variable	I: Number of shareholders with salary from the firm	II: Shareholders receive salary from the firm	III: Salary paid to all shareholders	IV: Salary paid to minority shareholders	V: Average salary per shareholder
Ownership concentration	–0.097 (0.000)	–0.105 (0.000)	–0.112 (0.000)	–0.074 (0.000)	–0.111 (0.000)
Measures I–V	0.020 (0.000)	0.038 (0.000)	0.001 (0.820)	0.032 (0.000)	0.218 (0.000)
Liquidity	0.269 (0.000)	0.269 (0.000)	0.264 (0.000)	0.263 (0.000)	0.249 (0.000)
Profitability	0.500 (0.000)	0.500 (0.000)	0.608 (0.000)	0.711 (0.000)	0.488 (0.000)
Growth	–0.072 (0.000)	–0.072 (0.000)	–0.077 (0.000)	–0.071 (0.000)	–0.076 (0.000)
Risk	–0.058 (0.000)	–0.071 (0.000)	–0.080 (0.000)	–0.101 (0.000)	–0.055 (0.000)
Size	0.043 (0.000)	0.046 (0.000)	0.048 (0.000)	0.053 (0.000)	0.036 (0.000)
Age	0.002 (0.563)	0.002 (0.569)	0.004 (0.422)	0.003 (0.547)	0.006 (0.171)
R^2	0.150	0.148	0.149	0.159	0.156
n	48,470	48,470	45,573	41,654	44,973

Table 8—*Continued*

Panel C: Panel VAR and Granger causality		
Independent variables \ Dependent variable	Dividends to earnings	Ownership concentration
Regressions without control variables		
Lagged dividends to earnings	0.199 (0.000)	0.001 (0.531)
Lagged ownership concentration	–1.829 (0.002)	0.761 (0.000)
Regressions with control variables		
Lagged dividends to earnings	0.226 (0.000)	0.001 (0.576)
Lagged ownership concentration	–0.362 (0.017)	0.671 (0.000)

Table 8—*Continued*

Panel D: Controlling for the shareholder's financial constraints							
Independent variable	A: Family wealth	B: Relative family wealth	C: Family liquid assets	D: Family income	E: Number of family investments	F: Number of owners	G: Firm fixed effects
Ownership concentration	–0.095 (0.000)	–0.094 (0.000)	–0.101 (0.000)	–0.093 (0.000)	–0.132 (0.000)	–0.106 (0.000)	–0.026 (0.329)
Measures A–F	–0.047 (0.005)	–0.252 (0.007)	–0.079 (0.001)	0.257 (0.583)	–0.016 (0.000)	–0.002 (0.022)	
Liquidity	0.315 (0.000)	0.270 (0.000)	0.269 (0.000)	0.270 (0.000)	0.354 (0.000)	0.301 (0.000)	0.223 (0.000)
Profitability	0.511 (0.000)	0.456 (0.000)	0.458 (0.000)	0.46 (0.000)	0.546 (0.000)	0.498 (0.000)	0.131 (0.000)
Growth	–0.093 (0.000)	–0.068 (0.000)	–0.071 (0.000)	–0.068 (0.000)	–0.078 (0.000)	–0.087 (0.000)	–0.002 (0.811)
Risk	–0.060 (0.000)	–0.058 (0.000)	–0.057 (0.000)	–0.060 (0.000)	–0.063 (0.000)	–0.061 (0.000)	–0.012 (0.389)
Size	0.047 (0.000)	0.050 (0.000)	0.050 (0.000)	0.049 (0.000)	0.042 (0.000)	0.047 (0.000)	0.028 (0.000)
Age	0.018 (0.410)	0.003 (0.429)	0.003 (0.457)	0.003 (0.427)	0.018 (0.001)	0.014 (0.000)	–0.013 (0.575)
R^2	0.153	0.153	0.153	0.153	0.170	0.158	0.125
n	42,611	42,611	42,611	42,144	35,692	76,456	76,456

Table 9

Robustness of the baseline model

This table reports estimates from robustness tests of the baseline model (1) in the main text. The *p*-values are shown in parentheses. The dependent variable is cash dividends to operating earnings after taxes except in models A, B, C, and F of Panel B. In Panel A, "Nuclear family" (model I) is kinship limited to spouses and underage children. "No family membership" (II) 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" in III). "Family CEO" (IV) and "No family CEO" (V) are firms where the largest family by ownership has (does not have) the CEO. "Number of owners in largest family" (VI) counts the number of individual owners in the family. "One family member owns more than 50%" (VII) 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 ("At least three owners"). "Minority institutional" (IX) is 1 if there are institutional investors among the minority shareholders, and 0 otherwise. "Single-owner firm" (X) 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 ("Widely held firm"). 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 shares 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 9—*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 as sales to assets
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