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Stockholder Conflicts and Dividends

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by*

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Abstract

We examine how dividends depend on potential conflicts of interest between majority and minority stockholders in private Norwegian firms. The average payout ratio increases by almost 50% as the majority stake drops from 95% (low conflict potential) to 55% (high conflict potential). This relationship is even stronger when no minority stockholder is large, institutional, or on the board. Such minority-friendly payout is also associated with higher subsequent minority investment. This evidence contradicts earlier suggestions that majority stockholders opportunistically reduce dividends to finance private benefits. Rather, it seems higher payout is rationally used to reduce stockholder conflicts and to build reputation.

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Stockholder conflicts may reduce investment returns. In particular, opportunistic majority stockholders may use their control rights to capture private benefits and finance them with reduced dividends (Holderness and Sheehan, 1988; Barclay and Holderness, 1989). This opportunistic model may be rationalized by the fact that while the majority stockholder consumes the private benefits in their entirety, dividends must be shared proportionally with the minority stockholders. Alternatively, however, the majority stockholder may choose the conflict-reducing model by paying high dividends in order to build reputation for fairness and thereby to ensure further minority stockholder investment in the future (Jensen, 1988; Gomes, 2000). Hence, dividends will be smaller the more serious the potential stockholder conflict in the opportunistic model, but not in the conflict-reducing model.[1]

Unlike evidence in the existing literature, our evidence supports the conflict-reducing model and refutes the opportunistic model. We document that the larger the potential stockholder conflict, the higher the dividend. Moreover, firms appear to succeed in reducing this conflict, because higher dividends make minority stockholders insert more equity into the firm later on.

In particular, the average payout ratio is about 50% higher when the majority stake is 55% (high conflict potential) rather than 95% (low conflict potential). The payout is also higher when no minority stockholder is large, institutional, or on the board (Allen et al., 2000; Grinstein and Michaely, 2005). While 11% of the firms with high conflict potential and high payout receive subsequent minority investment in a year, this happens in only 7% of the firms with low conflict potential and low payout. Estimates from a series of multivariate tests support this notion of a reputation concern in dividend policy and refute the notion of opportunistic behavior.

This evidence suggests that high dividends may reduce the cost of capital by building favorable reputation. Firms that need equity financing for profitable investments in the future do not just leave the money on the table in the meantime. Because stockholder conflicts may tempt the majority stockholder to expropriate the money, the majority stockholder benefits from paying it out now and asking the minority stockholders for new funding later.

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[1] These two mutually exclusive dividend policies have also been called the outcome model and the substitute model, respectively (La Porta et al., 2000; Cheffins, 2006).

These findings challenge those in the existing literature. La Porta et al. (2000) find that payout is smaller in legal regimes with weak protection of minority stockholders, while Faccio et al. (2001) find that pyramids are used to expropriate minority stockholders in East Asian business groups. Both results support the opportunistic model by suggesting that the majority stockholder tends to expropriate the minority stockholders whenever the law allows. In contrast, our evidence is consistent with conflict-reducing behavior. This result may be partly due to our regulatory setting, where minority stockholders are well protected by the law.[2] However, we also find that majority stockholders with a dividend-friendly dividend record are subsequently rewarded by higher minority investment in their firms. This evidence suggests that the presence of strong institutions does not replace the role of voluntary restraints on opportunistic behavior. Rather, incentives based on reputation concerns and market mechanisms are important for the relationship between agency problems and dividends. This is true even under a strong legal framework.[3]

We base our tests on the universe of multiple-owner private firms where the largest owner has more than half the equity and hence controls the dividend decision. Because the dividend is proportional to the ownership stake, majority stockholders receive a payout that varies cross-sectionally from just above half the total dividend to almost the entire amount. Hence, the closer the controlling stake is to 50%, the larger the potential stockholder conflict. If the majority stockholder behaves opportunistically, as in the opportunistic model, payout will be larger the higher the controlling stake. If instead the majority stockholder is minority friendly as in the conflict-reducing model, payout will stay constant or decrease as the controlling stake increases.

Our dataset is particularly well suited for testing these predictions. First, because the database includes every firm in the Norwegian economy, we study a large sample of majority-controlled firms

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[2] Based on seven characteristics of stockholder rights, La Porta et al. (2000) give Norway the highest score among the Scandinavian countries on investor protection and also the highest score on the rule of law, including the maximum score on enforcement. Spamann (2010) corrects and re-estimates the La Porta et al. index, but finds that Norway's absolute and relative scores are identical under the original and the corrected indexes.

[3] Earlier research finds that private benefits of control are generally low in Scandinavia (Nenova, 2003; Dyck and Zingales, 2004; Holmén and Knopf, 2004). The fact that we find reputation concerns in the dividend policy of Norwegian firms suggests that the free-cash-flow problem does matter even in high-protection regimes, too.

representing 20% of aggregate sales, earnings, and dividends. Second, the data quality is unusually high because every firm must submit full accounting statements certified by a public auditor. Third, we know the board composition, ownership structure, and family relationships between the owners. This information allows us to determine ultimate (direct plus indirect) ownership and to group owners into families, which we use to study owner coalitions. Finally, because dividends and capital gains are taxed exactly the same way and at a flat rate, there are no tax distortions in the dividend decision.

The majority stockholder, a family in more than 80% of the sample firms, has strong incentives and power to monitor management (Shleifer and Vishny, 1986).[4] Accordingly, the so-called vertical agency problem between stockholders and managers (Roe, 1994) can be ignored in our setting.[5] In contrast, the majority stockholder can make investment and financing decisions without minority stockholders' consent. Therefore, the so-called horizontal agency problem between majority and minority stockholders (Demsetz and Lehn, 1985; Shleifer and Vishny, 1997) is highly relevant. Because the majority stockholder's controlling stake varies widely, there is large cross-sectional variation in the seriousness of the horizontal agency problem and hence in the incentive to influence it by paying dividends. This combination of no variation in control and large variation in dividend incentives across the sample firms is our key to a powerful test.

Our findings persist under a series of robustness checks. The estimated relationships are independent of whether we measure payout as dividends per unit of earnings, cash flow, sales, or assets; whether we include stock repurchases; whether we use the propensity to pay; and whether we consider just the payers. Our findings for family-controlled firms are insensitive to whether we measure conflict potential by ultimate ownership concentration at the individual, nuclear family, or extended family levels. The results are similar under pooled regressions with clustered standard errors, Fama-MacBeth regressions, and panel data techniques. We also find that the data are inconsistent with dividend signaling. Finally, dividends are less common and smaller in single-owner firms, and dividends are smaller and unrelated to ownership in firms with no majority owner. Hence, the higher

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[4] This setting differs from settings analyzed in the literature on interactions between large blockholders (Eckbo and Verma, 1994; Laeven and Levine, 2008).

[5] The relationship between ownership and control is very tight in most sample firms. Specifically, the controlling family has the CEO in 73% of the cases, the chairperson in 74%, and both positions in 55% of the cases.

payout is a unique feature of multiple-owner firms with controlling owners. Accordingly, this higher payout may be considered the cost of using dividend policy to reduce stockholder conflicts.

The possible endogeneity of ownership concentration could challenge our results. This challenge may appear difficult, given the lack of valid instruments for ownership (Edmans, 2013). However, there are several reasons why endogeneity should be a less important worry in our setting. First, dividends and capital gains are taxed at the same, flat rate. Because this property gives investors no tax reason to choose a firm because of its dividend policy, there are no tax-based dividend clienteles in our sample (Elton and Gruber, 1970). Second, ownership is very stable and much more stable than dividends are. For instance, the coefficient of variation during the six sample years is 0.1 for ownership concentration and 0.7 for the payout ratio. Also, the ownership concentration is identical from one year to the next in 77% of the firms. Hence, the ownership concentration is mostly fixed, while payout is highly variable. Third, the ownership concentration is very similar to what it used to be before a dividend tax increase in 2005 that precedes our sample period. In contrast, the average payout ratio dropped from 58% in 2000–2004 to 20% in our sample period, 2006–2011. Hence, it appears that the ownership structure persists from long before the tax shock that led many sample firms to radically change their dividend policies. Fourth, we reduce the omitted variables problem by accounting for a wide range of observable dividend determinants used in the literature, and by using panel data methods that account for unobservable dividend determinants.

The horizontal agency problem we study has received much less attention in the empirical literature than the vertical agency problem has. The reason is not that the theory has ignored the potential for private benefit extraction by large owners (Gomes, 2000; Edmans, 2013). A more likely reason is that it is difficult to obtain good data on firms exposed to the horizontal agency problem, which are mainly private firms. Unlike in public firms, ownership in private firms is predominantly concentrated, making the horizontal agency problem the more pressing (Demsetz and Lehn, 1985; Demsetz and Villalonga, 2001). To illustrate, in Norway the average equity stake of the largest stockholder is 30% in public firms and 78% in private firms of similar size. There is a majority stockholder in 15% of the large public firms and in 69% of the large private firms. These private firms account for three times more of aggregate economic activity than public firms do, but are nevertheless

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underexplored. This dominance of private firms is also the typical situation internationally (Berzins and Bøhren, 2009).

Our results are consistent those of Ostergaard and Smith (2011), who analyze the use of private contracts before 1910, when Norway had no corporate law. They find that this practically non-existent legal protection coexists with high dividends and other voluntary ways of protecting minority owners, such as voting rights per share that decrease as the block size increases. Similarly, Norwegian banks voluntarily pay more dividends when their owners have weak control rights (Bøhren et al., 2012). By identifying an empirical link between agency problems, dividends, and equity flotation, we expand this literature on voluntary protection of stockholder rights and add conflict resolution as a possible reason why the business community pays so much attention to payout (Lintner, 1956; Black, 1976; Allen and Michaely, 2003; Brav et al., 2005; DeAngelo et al., 2008).

Denis and Osobov (2008) study dividend policy in Canada, France, Germany, Japan, the UK, and the US. Finding that most dividends come from large, mature firms, they argue 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 equity funding is low. However, we find that potentially serious agency conflicts may make large dividends coexist with large rather than small equity issues. Specifically, a good record as a dividend payer can mitigate agency conflicts and thereby reduce the future cost of new equity.

Finally, we contribute to the recent and very limited literature on dividends in private firms. Comparing private and public firms in the United Kingdom, Michaely and Roberts (2012) provide a broad overview of the main issues. Along the same lines, we study dividends in a country with strong legal investor rights, and our results support the intuition of Michaely and Roberts that ownership structure and agency problems matter for dividends. Unlike them, however, we focus on one particular agency problem, use an approach that distinguishes between the opportunistic and the conflict-reducing models, and find that reputation concerns rather than opportunism drive payout policy.

Section I describes the data set and the sample selection, whereas Section II establishes the base-case model, defines empirical proxies, and reports summary statistics. We present statistical tests for

the base case in Section III, examine the evidence on the reputation effect of dividends in Section IV, and report robustness tests in Section V. We conclude in Section VI.

I. Data and sample selection

Our data set is based on the population of private Norwegian firms with limited liability.[6] The law mandates a standardized set of accounting statements certified by a public auditor for every firm regardless of its listing status, size, and industry. Failure to submit this information within 17 months from the end of the fiscal year triggers automatic liquidation by the court. We also know every ultimate ownership stake and every family relationship by blood or marriage between owners, directors, and CEOs.[7] To obtain a sample that suits our purpose, we add the following sampling filters:

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

2. We ignore subsidiaries, which may pay dividends for different reasons than those determining payout to non-parent stockholders, such as the management of cash and risk for the group as a whole (Michaely and Roberts, 2012).[8]

3. We require positive sales, assets, and employment in order to avoid non-operative firms.

4. We check for internal consistency of the accounting figures to avoid possible data registration errors. For instance, total assets must equal total liabilities plus stockholders' equity.

5. We include only firms where more than half the equity is owned by a family or by a firm whose owners cannot be identified.[9] Because our database includes all firms in the economy, we can

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[6] Listing status may matter for dividend policy, for instance via easier access to equity markets for public firms. Therefore, we exclude public firms from the sample. Adding the very few public firms with majority owners does not change our results.

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

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

[9] An unidentified owner is either a financial institution, a foreign firm, or a foreign person. Because we do not know the identity of foreign investors, we can neither trace their ultimate ownership nor assign them to families.

apply this majority filter to ultimate ownership.[10] We also use the ultimate dividend, since our concern is the total payout the stockholder receives from the firm, whether paid directly or indirectly through intermediaries.

6. We exclude single-owner firms because they have no stockholder conflicts. For similar reasons, we ignore the smallest 5% of the firms by assets, sales, and employment.

A firm's dividend policy may reflect other concerns than agency costs, such as financial constraints, growth opportunities, profitability, and taxes. Our regression models account for such determinants by a series of control variables. The exception is tax concerns, which are better handled by the sampling procedure. In particular, we focus on the dividend payments based on accounting statements for 2006–2011. This period comes after a tax reform that closed the gap between labor income taxation and capital income taxation by increasing the latter.[11]

These filters produce a sample of 8,818–10,652 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 how residual cash-flow rights are split between majority and minority owners (conflict potential).[12] We maintain this focus by requiring the largest owner to hold an unquestionable majority stake. This approach avoids the complex analysis of potential blockholder coalitions, in the spirit of Laeven and Levine (2008). Instead, we group related investors into family blocks in our main specification.

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[10] The ultimate owners are very often individuals related by blood or marriage. We show below that using only the subsample of family-controlled firms produces results that are very close to those we report. Our main results also hold in the subsample of firms controlled by financial institutions or foreigners (not reported).

[11] The tax reform in 2005 was designed to ensure the after-tax equivalence of all cash flows to ultimate owners, regardless of whether they come as dividends, capital gains, salary, or interest (Sørensen, 2005; 2007). Considering the sum of taxes paid at the firm and the investor levels, the tax reform produced the same effective tax rate on this sum regardless of whether it is made up of dividend income, capital gains, or interest income. This tax rate is also very close to the tax rate on labor income. Hence, differences in dividend policy across our sample firms cannot be driven by taxes. The tax reform had its first effect on dividends for the accounting year 2005, and dividends for that year were paid in 2006. Nevertheless, we exclude the accounting year 2005, since we are interested in the post-reform equilibrium rather than temporary tax-reform effects. Dividend payments are on average quite high in the year prior to the tax reform and quite low the year after. This pattern indicates a shift of cash outflows to preempt the tax increase inherent in the reform. However, adding 2005 to our sample does not significantly change the results. This evidence suggests that even strong tax incentives do not wipe out the effect of agency conflicts on dividend payout.

[12] Given our filters, control is achieved by owning stock directly and/or through an investment company with no other economic activity than holding financial assets.

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The dividend of Norwegian firms is proposed by the board, and the dividend decision is made by majority vote in the stockholder meeting. The stockholders can decide to reduce the proposed dividend, but not to increase it. Dividends are typically paid in the spring, based on the preceding year's accounts. The payout can be based on the year's earnings, retained earnings from earlier years, and on other equity that is not share capital. There is no regulation mandating a minimum payout.

II. Model, empirical proxies, and summary statistics

The fundamental question we explore is whether higher cash-flow rights for the controlling stockholder induce higher or lower dividends. Our base-case model is the following:

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

The payout measure, *Div*, is the ratio of cash dividends to after-tax operating earnings.[13] Ownership concentration, *Con,* is the key independent variable in our model. *Con* reflects the potential seriousness of the stockholder conflict, and we measure *Con* in the base case as the equity share held by the largest owning entity. This entity may be a family, a native financial institution, or a foreign investor of any type. We use three alternative definitions of a family 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 on the basis of family relationships.

Because the conflict potential decreases with increasing *Con* in our sample, the predicted coefficient β_1 in (1) is positive under the opportunistic model. According to the conflict-reducing model (minority-friendly behavior), β_1 is negative or zero. Additional tests expand the base-case model in (1) by ownership characteristics beyond *Con*. In particular, we account for minority power as reflected in the concentration of the minority stakes, in the minority owners' presence on the board,

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[13] Lintner (1956) addresses dividend behavior over time by analyzing how the dividend depends on last period's dividend and the target dividend. In contrast, we consider how the dividend varies in the cross section, using firm characteristics to endogenize the exogenously given target dividend in the Lintner model. Also, the fact that we have annual dividends, only six years of data, and very persistent ownership at the firm level means we cannot reliably estimate a Lintner model augmented by corporate governance characteristics.

and in whether the minority includes an institutional investor. Minority power relates positively to dividend payout under the opportunistic model and negatively under the conflict-reducing model.

The remaining determinants in (1) are control variables. Firms with more liquid assets, *Liq*, may be more likely to pay higher dividends because such firms can pay at lower transaction costs than other firms can. Firms with more liquid assets may also have more cash than what is needed for operations and investment (DeAngelo et al., 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 operating return on assets, respectively.

Firms with higher growth opportunities may need to invest more and therefore may make lower payouts. We measure *Growth* by the relative sales increase during the past three years. Furthermore, dividends may be paid from what the firm considers its permanent earnings (Lintner, 1956). Therefore, firms with risky earnings may be less likely to pay high dividends. This logic is consistent with the maturity hypothesis of Grullon et al. (2002) that dividends increase as risk drops. We predict a negative relationship between dividends and risk, *Risk*, which we measure by sales volatility during the past three years.

Larger and older firms have lower financial constraints (Hadlock and Pierce, 2010), and less-constrained firms are more likely to pay dividends (Fazzari et al., 1988; Kaplan and Zingales, 1997; Whited and Wu, 2006). Grullon et al. (2002) argue that operations mature and risk decreases as the firm becomes larger and older. These changes may induce higher dividends. Along the same lines, Fama and French (2001) find that large firms are more likely to pay dividends. Thus, we expect that dividends relate positively to the firm's size and age. These two dividend determinants, *Size* and *Age*, are measured 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 adding 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) on the sample of all firms regardless of dividend behavior. Just like firms that pay dividends (payers), those that choose not to pay (nonpayers) represent one particular way of

handling the stockholder conflict. For instance, the more nonpayers (i.e., firms making the minimum payout) there are at 55% ownership concentration than at 95%, the more the data would support the notion of an opportunistic dividend policy. Therefore, we also estimate a payout propensity model, where the dependent variable is whether the firm pays a dividend. The independent variables in that model are identical to those used in (1).

Table 2 reports summary statistics. On average, 26% of the firms pay dividends in a given year. The mean payout ratio is 20% for the sample as a whole and 76% for the payers. As in recent samples of public firms in the United States (Fama and French, 2001), the median firm does not pay dividends. The controlling equity holding is on average 61% when every owner is counted as a separate unit, 63% if persons are assigned to nuclear families, and 72% under the wide definition of family. There is one family member holding a majority stake in three out of four cases, and the average minority concentration outside the family is high as reflected by a Herfindahl index of 0.86. Every variable in Table 2 is stable over time.[14]

[Insert Table 2 here.]

III. Statistical tests for the base case

Table 3 shows that, except for some of the proxies for potential stockholder 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 coefficient is only 0.54 between the share of the largest family under the wide and the narrow definitions. Thus, it may be important to examine whether the results are sensitive to how stockholder conflicts are measured.

[Insert Table 3 here.]

The payout ratio and the controlling equity block are the two key variables in our tests. As an initial check, we compare the payout ratios for two groups of firms. The first group holds firms in which the controlling equity block is above 50%, but below 60%. The second group holds firms in

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[14] The mean and median sales are 17.7 and 6.5 million Norwegian kroner (NOK), respectively. Five percent of the firms have sales below 0.6 million NOK, while five percent have sales of more than 70 million NOK. The highest sales figure is 386 million NOK in the winsorized sample and 4.8 billion NOK in the unwinsorized sample. The average exchange rate during our sample period is 5.96 NOK per USD (Source: Norges Bank).

which the controlling block is above 90%, but below 99%. These two groups hold the firms with the largest and the smallest potential for stockholder conflicts, respectively.

Table 4 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). The low-concentration firms (Group 1) have consistently larger payout than the high-concentration firms do (Group 2), the payout ratio being about 50% higher on average (0.23 vs. 0.16). The annual difference between the low- and the high-concentration group is stable at around 6–9 percentage points. For the dividend payers, the average payout difference between the low- and high-concentration groups is 11 percentage points. These univariate results are consistent with the conflict-reducing model and inconsistent with the opportunistic model.

[Insert Table 4 here.]

Table 5 shows the base-case estimates. We report the findings year by year, for the pooled sample estimated with standard errors clustered at the firm level (All), and for the Fama–MacBeth (FMB) approach based on the year-by-year estimates (Fama and MacBeth, 1973).

[Insert Table 5 here.]

The year-by-year estimates reflect a very stable relationship between the dividend and its determinants. These results are also close to those from the pooled sample and from the FMB approach. Because this stability prevails in every subsequent analysis, we will report only the FMB estimates in the following except when using panel methods.

The table documents an inverse relationship between dividend payout and ownership concentration. Thus, as already indicated by Table 4, majority-held firms tend to pay higher dividends the smaller the controlling stockholder's cash-flow right. This means minority stockholders are likely to receive a higher share of earnings from firms where the majority stockholder has stronger incentives to opportunistically divert those earnings. This result refutes the opportunistic model, but supports the conflict-reducing model. Such minority-friendly behavior may be rationalized by the majority stockholder's desire to build reputation for loyalty and to thereby build trust among the minority stockholders. The next section will provide evidence on possible economic rewards for this payout policy.

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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 firms with higher cash holdings, higher profitability, lower growth opportunities, and lower risk. Age is not significantly related to payout.

The economic significance of the inverse relationship between conflict potential and dividends in the base-case model can be illustrated by assuming that ownership concentration increases by one standard deviation (14%) from its mean value of 72% to a new value of 86%. This change decreases the expected payout ratio by about 3 percentage points. Moreover, Table 4 shows that the average payout ratio drops by about 8 percentage points when going from high-concentration to low-concentration firms. Because the average payout ratio is 20%, these numbers suggest that the sensitivity of dividends to conflict potential is rather strong.

Table 6 uses panel regressions to account for unobservable firm characteristics that are not reflected by the independent variables in (1). Model I adds random firm effects, model II adds fixed industry and year effects, while model III adds fixed industry effects, fixed year effects, and random firm effects. Models II and III both assume that the unobservable firm and industry effects are time-invariant. The estimates show that the base-case results prevail regardless of what panel method we use.

[Insert Table 6 here.]

Overall, estimates of the base-case model in (1) document an inverse relationship between dividends and the controlling stockholder's cash-flow rights. This result supports the prediction of the conflict-reducing model that the stronger the potential stockholder conflict, the more the majority stockholder reduces the conflict by paying out more of the free cash flow to the minority stockholders.

IV. Reputation

Controlling stockholders who anticipate the need for sustained equity investment may find it in their best interest to establish a record for treating the minority stockholders 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 stockholders. 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 the majority stockholder to send costly signals by holding more of the firm's equity and hence carrying more diversifiable risk. In our case, the majority stockholder can also signal such a commitment to not exploit the minority stockholders by paying higher dividends. This payout policy increases the expected price at which the majority stockholder can eventually sell existing stock to diversify (Gomes, 2000) or issue new stock to finance growth (Leland and Pyle, 1977).

If reputation concerns matter, we expect more minority-friendly payout in firms anticipating 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 base-case model in (1):

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

We run cross-sectional regressions of (2) for the first five years (2006–2010) of the six-year sample period (2006–2011). Subsequently, we average the residuals per firm from (2) over the five years. This average residual (unexplained) payout reflects high or low payout relative to firm characteristics that are not related to ownership.

The second step relates the firm's average residual payout and ownership concentration in 2006–2010 to four alternative measures of minority investment in equity issues in 2011.[15] The first measure is a 0/1 dummy variable which is 1 if minority investors own more of the firm's paid-in capital in 2011 than in 2010 (Minority invests more). The second measure is the change in minority-owned paid-in capital from 2010 to 2011 divided by total paid-in capital in 2010 (Growth in minority investment). Our third measure is the growth in minority investment where this growth exceeds zero (Positive growth in minority investment). The fourth measure is a 0/1 dummy variable which is 1 if the minority-owned paid-in capital increases from 2010 to 2011 and at least one new minority owner invests in the firm in 2011 (New minority invests).

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[15] Using the payout record over the first four sample 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.

To examine the majority stockholder's investment behavior, we use a 0/1 dummy variable which is 1 if the majority-owned paid-in capital is higher in 2011 than in 2010 (Majority invests). Along the lines of Gomes (2000), we also measure the transfer of equity from majority to minority stockholders. Specifically, we use a 0/1 dummy variable which is 1 in firms where the paid-in capital remains constant in the final sample year while the largest equity stake decreases (Majority disinvests).

We run our tests only on firms that have the same controlling owner throughout the sample period. This restriction is used because the majority stockholder may need time to establish a dividend-driven reputation. In an initial set of univariate tests, Table 7 compares the six measures of investor behavior for the lowest and highest quintiles of average residual payout.

[Insert Table 7 here.]

The estimates document that firms in the highest residual payout quintile are more likely to receive additional minority investment (measure 1), and that the average equity investment growth is three times larger (measure 2). The growth is also twice as large in the small subsample of firms with increasing minority investment (measure 3), although this relationship is significant only at 11%. Moreover, observing increased minority investment and at least one new minority stockholder's subscribing (measure 4) is twice as likely in the highest dividend quintile. In contrast, the majority stockholder's subscription to new equity does not differ across the dividend quintiles (measure 5), and the majority stockholder is twice as likely to sell stakes to a minority stockholder if the preceding residual payout has been large (measure 6).

These univariate relationships suggest that above-average historical payout goes along with more frequent and larger new minority investment, and with more frequent disinvestment by the majority stockholder. To determine whether this behavior can be explained by potential agency conflicts, we regress the measures of equity investment (*Inv*) in 2011 on the average residual payout ($\bar{\varepsilon}$) from (2) and the majority stockholder's average equity share during 2006–2010 (*Con*):

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

Table 8 reports the estimates of (3) using four of the six alternative measures of investor behavior from Table 7.[16] High residual payout in the past is positively associated with current minority investment in new equity (I–III) and with current majority stockholder disinvestment (IV).

[Insert Table 8 here.]

These findings support the idea that majority stockholders rationally use high dividends to reduce the conflict potential and thereby maintain high and renewed minority investment (I–III). Also, majority stockholders who commit by taking high ownership stakes attract larger investment from minority stockholders (II) and are more likely to subsequently decrease their share (IV). The likelihood of getting additional minority investment (I) and of attracting new minority investors (III) is unrelated to the largest stake, however, possibly because these effects are sufficiently compensated for by the higher residual payout.

Overall, the evidence in this section is consistent with the notion that majority stockholders rationally pay large dividends to maintain high and renewed investment from minority stockholders. We find evidence of a reputation-building mechanism in the spirit of Gomes (2000). The concern for reputation makes sustained dividends coexist with new equity investment as predicted by Easterbrook (1984).

V. Robustness

Our evidence so far is consistent with the conflict-reducing model. This section explores whether this conclusion depends on how we measure potential stockholder conflicts (V.a) and dividend payout (V.b), on how we account for tax consequences, financial constraints, and growth opportunities, and on whether our results are unique to majority-held firms (V.c). Finally, we explore whether dividends are used to signal firm quality rather than to build stockholder reputation (V.d).

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[16] We drop measure 3 from Table 7 because of the very small sample size. Measure 5 is dropped because Table 7 shows no significant difference across the payout percentiles.

V.a. Conflict potential

The base-case estimates in Tables 5 and 6 measure potential stockholder conflicts by the largest equity fraction held by an extended family, a financial institution, or a foreigner. Because our data set allows for a considerably deeper analysis of how ownership and dividends interact, we first consider the effect of using alternative proxies for family control. Subsequently, we analyze the dividend impact of the power exerted by minority stockholders.

Families represent the dominant majority-stockholder type in our sample. The base-case family definition is quite wide, however, because it includes relationships by blood or marriage up to the fourth degree of kinship. A more narrow definition is that of the nuclear family, which holds parents and underage children. While the nuclear family abstracts from possibly strong ties in the wider family, the wide definition may overestimate the strength of distant ties. We use the wide definition as the base case because it allows us to more clearly separate agency problems within the family from agency problems between the family and the minority stockholders.

Table 3 shows that the narrow and the wide family measures are not strongly correlated. Nevertheless, model I in Table 9 documents that the narrow measure produces estimates very close to those under the wide measure in Table 5.[17] Thus, the tightness of the family definition is not driving our results. Similarly, model II shows that the same results prevail if we hold on to the wide measure, but consider only firms controlled by families.

[Insert Table 9 here.]

The ability to extract private benefits may be greater when the family does not control just the stockholder meeting, but also recruits the CEO from the family (Anderson and Reeb, 2003). Hence, firms with family CEOs should pay higher dividends according to the conflict-reducing model. In contrast, any concern for the separation between ownership and control in majority-held firms should be even smaller with a family CEO. This is an argument for low dividends. Models III and IV allow us to compare the net dividend effect of these two opposing forces in firms that do not have a family CEO (model III) and firms that do (model IV). The estimates show that the sensitivity of dividends to

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[17] As in the base case, we consider only firms where the controlling stake is above 50% and below 99%. The narrow definition of "family" makes the upper boundary less restrictive and generates a larger sample. Using the base-case sample produces similar results.

ownership concentration is very similar and also consistent with the conflict-reducing model. This finding suggests that, as expected, the concern for stockholder conflicts dominates the concern for manager–stockholder conflicts when majority stockholders set the firm's dividend policy.

Model V ignores the family as a decision-making unit and measures ownership concentration on the basis of separate holdings per personal owner. This measure means that while a family with five owning members represents just one owner in the base case, they are five different owners in model V. Nevertheless, the base-case results persist. Thus, the data are consistent with the conflict-reducing model independently of whether and how we account for family relationships.

It may be argued that majority holdings far above the 50%-control threshold are less relevant to our setting, since such a large majority stake internalizes the bulk of any private benefit. Therefore, we have re-estimated the base-case model using the subsample of firms in which no majority stockholder owns more than 80%. Unreported results show that, as expected, the inverse relationship between ownership concentration and dividends becomes considerably steeper. Specifically, the estimated coefficient moves from -0.192 in the base case to -0.379 in the subsample with 50–80% majority stakes. Similarly, we find that dividend payments are less common in single-owner firms, where stockholder conflicts are completely irrelevant. The average payout ratio is also smaller, being 17% in single-owner firms and 20% in multiple-owner firms with majority owners. Hence, the higher dividends paid by multiple-owner firms may be considered a cost of using dividends to reduce agency conflicts.

The largest stockholder's ability to extract private benefits may depend not just on the size of the equity fraction, but also on the structure of the minority stakes. For instance, fragmented minority investments may make it harder to monitor, coordinate, and put pressure on the majority owner (Pagano and Roëll, 1998). Therefore, it may be more tempting for the majority owner to exploit the minority owners. We use six proxies of minority power to explore this possibility.

The Herfindahl index of minority holdings in model VI reflects the fragmentation among minority stockholders. The estimated coefficient of this variable is negative, suggesting that the more diffuse the minority stockholders are as a group, the more payout they receive per unit of earnings. Just as a low Herfindahl index does, a larger difference between the equity fraction of the largest and

the second-largest owner may reflect a higher power imbalance (Laeven and Levine, 2008). We include this measure of minority power in model VII, finding that a larger gap is associated with higher payout. Hence, models VI and VII both support the conflict-reducing model.

Many sample firms have just a few owners. Therefore, one may wonder whether the opportunistic model lacks empirical support because a few people with strong personal ties own a large portion of the firm. In that case, potential stockholder conflicts may be disciplined by social ties rather than by economic incentives (Franks et al., 2009). Although we lack data on personal ties outside the family, we may explore this conjecture indirectly through the dividend impact of having few vs. many owners. Model VIII controls for the number of owners, while IX uses only firms with at least three owners. The base-case results persist, although the number of owners per se is not significantly related to payout.

Minority stockholders are not on the board in about 60% of the sample firms. Such board absence may hurt the minority stockholders under the opportunistic model, where representation would have given better tools to discipline the majority stockholder toward consuming less private benefits. The dummy variable for minority directors in model X has a negative coefficient. This result is in line with the conflict-reducing model, since payout is higher the weaker the minority stockholders.[18]

The existing literature argues that institutional owners are better monitors and hence more powerful investors (Allen et al., 2000; Hartzell and Starks, 2003; Grinstein and Michaely, 2005). Model XI shows that the share of institutional minority investors correlates inversely with payout, suggesting that higher payout is indeed associated with a weaker minority.

Summing up, we find that the base-case results persist when we account for potential stockholder conflicts by the internal structure of the controlling family, by the family's role in management, when we ignore family relationships altogether, and when we consider the composition of minority stockholders. The tendency to pay higher dividends increases when the majority stockholder faces a

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[18] Large gaps between cash-flow rights and control rights in pyramids may give stronger incentives to expropriate the minority stockholders. We explore this possibility by estimating the base-case model for subsamples where control is achieved either through 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 it takes at least two levels of indirect ownership to achieve control.

minority block that is diffuse, is absent in the boardroom, or does not include institutional investors. Single-owner firms pay dividends less often and pay less when they do. These results support the notion that dividends mitigate potential conflicts that are inherent in the firm's ownership structure.

V.b. Measuring payout

Controlling stockholders who divert a jointly owned cash flow for private benefits may be tempted to underreport earnings in order to inflate the classic payout ratio we have used so far (La Porta et al., 2000; Faccio et al., 2001). Because such a practice 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 I–III in Table 10 show that the inverse relationship between ownership concentration and dividends from the base case persists under these alternative payout measures. Thus, any attempt by majority stockholders to hide private benefits by inflating the classic payout measure does not bias our results.

[Insert Table 10 here.]

Stock repurchases have become an important form of payout 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 IV are almost identical to those for the full sample, confirming the secondary role of repurchases as a payout mechanism.

Not paying dividends is as relevant as paying for the relationship between dividends and agency costs. Hence, we have so far included both payers and non-payers. However, Table 2 shows that most firms do not pay dividends, and that the relationship between stockholder conflicts and dividends may be different in the two groups. Therefore, model V uses the subsample of dividend payers, once more finding dividends relate inversely to ownership concentration. The same result turns up in the logit model VI, where the dependent variable measures whether the firm pays a dividend.[19]

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[19] The independent variables are identical to those in (1). Considering the large number of firm years with zero dividends, we also estimate a Tobit model. The results are very similar to those of model V.

DeAngelo et al. (2006) show that dividends are related to the ratio of total retained earnings to total equity. Their idea is that 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 base-case model in VII. 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.

V.c. Taxes, financial constraints, growth, and firms without majority control

Whereas dividends received by personal investors are taxable, intercorporate dividends are tax free until they are paid out to persons. This asymmetry may induce lower payout by firms having more of their stock held directly by persons. Model VIII of Table 10 accounts for the proportion of the firm's personal stockholders who own equity directly. The inverse relationship between payout and the potential seriousness of stockholder conflicts persists.

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

Growth opportunities may be measured in other ways than by sales growth. Model X uses sales growth relative to the industry median, while model XI uses sales to assets (asset turnover), which may be higher the closer the firm is to its maximum capacity. The estimates show that the base-case relationship is insensitive to how growth is measured.

Finally, one may wonder whether the relationship between ownership concentration and dividends holds for any firm and not just for those having potential majority-minority conflicts. If this is the case, our findings are not necessarily evidence that dividends are used to influence stockholder conflicts. In fact, unreported results show that firms with and without majority owners have the same average payout, and that dividends relate to the non-ownership determinants independently of whether the firm is majority controlled. However, we find that ownership concentration and dividends are

unrelated when there is no majority owner. Therefore, the inverse relationship between ownership concentration and dividends is a unique feature of majority-held firms.[20]

V.d. Signaling

An alternative interpretation of the findings in Table 8 is that dividends are paid to signal quality, particularly when the firm needs investment from minority stockholders. Hence, paying out free cash flow regularly may reflect concerns for stockholder conflicts, information asymmetry, or both.

Certainly, several of the variables used as controls in the base-case model (1) may already account for information asymmetry, such as the firm's size, age, risk, growth, and industry. Also, the low number of minority stockholders suggests that signaling may be a less important concern than is reducing agency costs in most sample firms' dividend policy. Nevertheless, we make two tests to explicitly analyze the role of dividends as a signaling mechanism in our sample firms.

The first test follows Grullon et al. (2002), examining whether higher dividends signal higher future profitability. The findings are reported in Panel A of Table 11, where we distinguish between firms that increase vs. firms that decrease dividends from 2008 to 2009. The three columns of results measure the growth of return on assets (ROA) in the future (2009–2011), in the future compared to the past (2006–2008), and in the future compared to the present (2008–2009).

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

[Insert Table 11 here.]

The second test augments the base-case model (1) by the firm's auditing fee. This fee may compensate auditors not just for their effort stemming from the firm's size, but also for the risk of litigation stemming from the firm's opaqueness. Consistent with this view, Danielsen et al. (2007) find that the auditing fee relates positively to market-based measures of information asymmetry, such as

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[20] Majority-held firms are somewhat smaller than widely held firms. Average sales are 17 and 23 million NOK, while the medians are 6.4 and 6.9 million, respectively. When estimating the base-case model in each size quintile of multiple-owner firms, we find that ownership concentration and dividends are inversely related in every size quintile, although the relationship is not statistically different from zero in the smallest quintile.

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 11 reports our findings. The estimates show that adding the information asymmetry measure to the base-case model does not influence the interaction between ownership concentration and payout. 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.

Overall, this section has shown that the inverse relationship between ownership concentration and dividends exists only in majority-held firms, where the relationship persists regardless of how stockholder conflicts are measured. The relationship is insensitive to how we normalize dividend payout, how we account for non-payers and stock repurchases, whether we predict the propensity to pay or the amount paid, whether the payout triggers stockholder taxes, how we measure growth opportunities and financial constraints, and whether we control for the use of dividend policy as a signaling mechanism.

VI. Conclusions

This paper finds that dividends are inversely related to the equity stake of the majority stockholder. The relationship is particularly strong when minority stockholders are fragmented, not institutional, or not on the board. This finding is inconsistent with standard arguments that powerful stockholders reduce dividends to increase their ability to extract private benefits. Instead, our finding suggests that majority stockholders take actions to mitigate the perceived conflict of interest. In particular, they pay high dividends to obtain a reputation for not expropriating minority stockholders. Firms that pay high dividends benefit from this enhanced reputation by being able to attract greater minority investment later on.

This result differs strongly from results of earlier studies that compare dividend policy across different legal regimes, finding that stockholders tend to behave opportunistically when the law allows. In contrast, our more optimistic evidence shows that even in legal regimes with strong minority stockholder protection, the reputation incentive for each individual firm complements rather than substitutes a minority-friendly regulation for all firms. Hence, the reduction of agency conflicts based on market mechanisms rather than institutions is an important perspective on how dividend decisions are made.

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Table 1: Population, filters, and sample

Year	Population	Excluding financial firms	Excluding subsidiaries	Excluding passive firms	Excluding firms with inconsistent data	Excluding very small firms	Excluding firms without majority owner	Excluding single-owner firms	Sample, all	Sample, payers
2006	180,543	158,624	116,383	69,728	68,228	64,206	40,473	8,818	8,818	3,420
2007	191,827	168,236	126,342	68,758	67,312	64,303	39,693	10,652	10,652	3,177
2008	197,813	172,690	128,585	69,482	67,967	64,899	40,375	10,465	10,465	2,671
2009	200,038	174,207	129,563	70,771	69,300	65,829	41,113	10,243	10,243	2,572
2010	203,158	176,734	130,528	71,460	69,959	66,357	41,542	9,602	9,602	2,516
2011	208,159	181,761	134,259	70,212	68,389	64,917	40,303	9,048	9,048	2,535

This table shows the effect on the sample of applying successive sampling filters to the population. We start with all private firms in Norway with limited liability at the left in the table (Population). We then 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), firms with zero sales, assets, or employment (Excluding passive firms), and firms with suspect accounting figures (Excluding firms with inconsistent data). 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 stockholder (Excluding firms without a majority owner). We ignore firms with just one stockholder (Excluding single-owner firms), also when this stockholder is a family with several owning members. These filters jointly produce our sample (Sample, all). Finally, we exclude the firms that pay no dividends and show the number of firms with positive dividends (Sample, payers).

Table 2: Descriptive statistics

Characteristic	2006	2007	2008	2009	2010	2011	All	Payers
Dividend propensity	0.243 (0.000)	0.301 (0.000)	0.253 (0.000)	0.250 (0.000)	0.260 (0.000)	0.272 (0.000)	0.264 (0.000)	1.000 (1.000)
Dividends to earnings	0.181 (0.000)	0.220 (0.000)	0.182 (0.000)	0.192 (0.000)	0.208 (0.000)	0.218 (0.000)	0.200 (0.000)	0.758 (0.778)
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)	0.021 (0.000)	0.077 (0.053)
Dividends to cash flow	0.262 (0.000)	0.330 (0.000)	0.262 (0.000)	0.242 (0.000)	0.268 (0.000)	0.324 (0.000)	0.281 (0.000)	1.246 (0.910)
Dividends to assets	0.035 (0.000)	0.045 (0.000)	0.036 (0.000)	0.034 (0.000)	0.035 (0.000)	0.037 (0.000)	0.037 (0.000)	0.139 (0.110)
Holding of largest owner, incl. extended family	0.703 (0.660)	0.723 (0.687)	0.726 (0.700)	0.726 (0.700)	0.730 (0.700)	0.731 (0.700)	0.724 (0.700)	0.727 (0.700)
Holding of largest owner, incl. nuclear family	0.650 (0.650)	0.629 (0.640)	0.631 (0.638)	0.631 (0.630)	0.629 (0.625)	0.628 (0.621)	0.633 (0.640)	0.622 (0.610)
Holdings of largest owner, incl. separate owners	0.638 (0.650)	0.608 (0.600)	0.609 (0.600)	0.609 (0.600)	0.608 (0.600)	0.608 (0.600)	0.613 (0.600)	0.603 (0.600)
Majority owner in largest family	0.844 (1.000)	0.756 (1.000)	0.750 (1.000)	0.748 (1.000)	0.737 (1.000)	0.736 (1.000)	0.761 (1.000)	0.757 (1.000)
Minority concentration	0.873 (1.000)	0.861 (1.000)	0.856 (1.000)	0.847 (1.000)	0.853 (1.000)	0.851 (1.000)	0.857 (1.000)	0.841 (1.000)
Minority on board	0.348 (0.000)	0.409 (0.000)	0.403 (0.000)	0.405 (0.000)	0.410 (0.000)	0.413 (0.000)	0.399 (0.000)	0.422 (0.000)
Liquidity	0.262 (0.190)	0.265 (0.202)	0.265 (0.197)	0.266 (0.197)	0.265 (0.197)	0.268 (0.204)	0.265 (0.198)	0.350 (0.323)
Profitability	0.097 (0.089)	0.100 (0.099)	0.077 (0.080)	0.061 (0.066)	0.056 (0.062)	0.068 (0.068)	0.077 (0.077)	0.192 (0.169)
Growth	0.057 (0.052)	0.089 (0.077)	0.086 (0.074)	0.044 (0.041)	0.084 (0.041)	0.086 (0.042)	0.055 (0.048)	0.091 (0.072)
Risk	0.334 (0.233)	0.327 (0.230)	0.339 (0.230)	0.323 (0.230)	0.321 (0.226)	0.319 (0.223)	0.322 (0.227)	0.258 (0.187)
Size	13.290 (4.873)	17.863 (6.446)	18.417 (6.713)	17.675 (6.500)	18.702 (6.794)	20.211 (7.374)	17.717 (6.451)	24.923 (11.141)
Age	17.022 (14.000)	16.455 (13.000)	16.945 (14.000)	17.289 (14.000)	17.357 (14.000)	18.022 (15.000)	17.200 (14.000)	18.182 (15.000)
Sample size	8,818	10,138	9,948	9,753	9,159	8,622	56,438	14,786

This table shows the mean and median (in parentheses) of variables used in the empirical analysis. Dividends is cash dividends paid to stockholders, and Dividend propensity is the fraction of firms paying dividends. Earnings is operating profits after taxes, Sales is total sales revenue, Cash flow is cash flow from operations after taxes, and Assets is the sum of balance-sheet assets. Holding of largest owner is the equity fraction held by the largest stockholder, which may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage in the following ways: Extended family is a unit based on blood or marriage up to the fourth degree of kinship; Nuclear family is a unit where kinship is limited to spouses and underage children; Separate owner is the case where no personal owner is assigned to a family. Majority owner in largest family is 1 if the largest family by ownership has an owner with a share above 50%, and 0 otherwise. Minority concentration is the Herfindahl index for all but the largest owner, where a family counts as one owner. Minority on board is 1 if minority stockholders are represented on the board and 0 otherwise. Liquidity is cash holdings divided by assets, Profitability is operating profit after taxes divided by assets (ROA), and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is sales in million NOK, and Age is the number of years since the firm was founded. The sample is all private firms with a majority stockholder, consistent accounting figures, 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.

Table 3: Correlations

	Dividends to earnings	Holding of largest owner, incl. extended family	Holding of largest owner, incl. nuclear family	Holding of largest owner, incl. separate owners	Majority owner in largest family	Minority concen-tration	Minority on board	Liquidity	Profitability	Growth	Risk	Size
Holding of largest owner, incl. extended family	-0.05											
Holding of largest owner, incl. nuclear family	-0.04	0.54										
Holding of largest owner, incl. separate owners	-0.03	0.48	0.92									
Majority owner in largest family	-0.01	-0.01	0.61	0.73								
Minority concentration	-0.04	0.27	0.14	0.12	-0.002							
Minority on board	0.03	-0.26	-0.06	-0.03	0.09	-0.07						
Liquidity	0.21	-0.04	0.02	0.02	0.06	0.05	0.06					
Profitability	0.37	-0.01	-0.01	-0.01	0.01	0.02	0.01	0.23				
Growth	0.11	-0.02	-0.03	-0.04	0.002	-0.05	0.05	-0.01	0.23			
Risk	-0.13	-0.02	0.02	0.02	0.03	-0.01	-0.03	0.01	-0.11	0.05		
Size	0.24	-0.01	-0.10	-0.08	-0.08	-0.15	-0.07	-0.19	0.16	0.13	-0.29	
Age	0.06	0.13	-0.02	-0.02	-0.07	0.03	-0.13	-0.04	0.02	-0.21	-0.22	0.10

This table shows the Pearson bivariate coefficient of correlation for pairs of key independent variables used in the empirical analysis. Holding of largest owner is the equity fraction held by the largest stockholder, which may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage in the following ways: Extended family is a unit based on blood or marriage up to the fourth degree of kinship; Nuclear family is a unit where kinship is limited to spouses and underage children; Separate owner is the case where no personal owner is assigned to a family. Majority owner in largest family is 1 if the largest family by ownership has an owner with a share above 50%, and zero otherwise. Minority concentration is the Herfindahl index for all but the largest owner, where a family counts as one owner. Minority on board is 1 if minority stockholders are represented on the board and 0 otherwise. Liquidity is cash holdings divided by assets, Profitability is operating profit after taxes divided by assets (ROA), and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is sales in millions of NOK, and Age is the number of years since the firm was founded. Dividends is cash dividends paid to stockholders, and Earnings is operating profits after taxes. The sample is all private firms with a majority stockholder, consistent accounting figures, 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.

Table 4: Ownership concentration and the average dividends-to-earnings ratio

Year	Group 1: Largest owner has 50% – 60%	Group 2: Largest owner has 90% – 99%	Group 1 less Group 2	p-value, t test	p-value, W–M–W test
2006	0.206	0.146	0.060	(0.000)	(0.000)
2007	0.248	0.184	0.064	(0.000)	(0.000)
2008	0.216	0.141	0.075	(0.000)	(0.000)
2009	0.237	0.144	0.093	(0.000)	(0.000)
2010	0.231	0.152	0.079	(0.000)	(0.000)
2011	0.250	0.163	0.087	(0.000)	(0.001)
All years	0.232	0.156	0.076	(0.000)	(0.000)
Payers	0.775	0.663	0.112	(0.000)	(0.000)

This table shows the average dividends-to-earnings ratio for two ownership concentration groups (Group 1 and Group 2). The controlling stockholder in Group 1 owns between 50% and 60% of the firm's stock, while the largest stockholder in Group 2 owns between 90% and 99%. The controlling stockholder may be a financial firm, a foreigner, or a family whose owning members are related by blood or marriage up to the fourth degree of kinship. We report the mean payout ratio for the two groups year by year, for the pooled sample (All years), and for the subsample of firms with positive dividends (Payers). We also show the difference between the averages, and we test for their equality using the t test and the Wilcoxon-Mann-Whitney (W–M–W) test. The p- values are shown in parentheses. The sample is all private firms with a majority stockholder, consistent accounting figures, and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the the smallest 5% of firms by assets, sales, and employees. Every distribution of payout ratios is winsorized at the 98% tail.

Table 5: The base-case regressions

Independent variable	2006	2007	2008	2009	2010	2011	All	FMB
Ownership concentration	-0.159 (0.000)	-0.185 (0.000)	-0.166 (0.000)	-0.219 (0.000)	-0.180 (0.000)	-0.235 (0.000)	-0.106 (0.000)	-0.192 (0.000)
Liquidity	0.154 (0.000)	0.203 (0.000)	0.232 (0.000)	0.270 (0.000)	0.294 (0.000)	0.299 (0.000)	0.283 (0.000)	0.241 (0.000)
Profitability	0.454 (0.000)	0.584 (0.000)	0.466 (0.000)	0.555 (0.000)	0.553 (0.000)	0.677 (0.000)	0.513 (0.000)	0.552 (0.000)
Growth	0.005 (0.846)	-0.023 (0.250)	-0.008 (0.512)	-0.005 (0.801)	-0.084 (0.000)	-0.102 (0.000)	-0.083 (0.000)	-0.005 (0.067)
Risk	-0.138 (0.000)	-0.132 (0.000)	-0.101 (0.000)	-0.089 (0.000)	-0.112 (0.000)	-0.110 (0.000)	-0.066 (0.000)	-0.113 (0.000)
Size	0.023 (0.000)	0.023 (0.000)	0.017 (0.000)	0.017 (0.000)	0.017 (0.000)	0.015 (0.000)	0.046 (0.000)	0.019 (0.001)
Age	-0.036 (0.001)	-0.023 (0.000)	-0.014 (0.014)	-0.001 (0.895)	-0.001 (0.960)	0.023 (0.002)	-0.006 (0.136)	-0.009 (0.346)
R^2	0.290	0.357	0.324	0.325	0.321	0.355	0.154	0.326
Sample size	8,726	10,002	9,759	9,550	8,972	8,469	55,478	55,478

This table reports the estimates for the base-case regressions of 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 millions 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 stockholder, consistent accounting figures, 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. We control for the firm's industry (not reported). The table shows the estimates of the year-by-year OLS regressions, the pooled sample OLS regression with standard errors clustered at the firm level (All), and the Fama–MacBeth (FMB) regressions with the adjusted R^2 values and the sample size from the pooled regression.

Table 6: Panel regressions for the base-case model

Independent variable	I	II	III
Ownership concentration	-0.091	-0.093	-0.071
	(0.000)	(0.000)	(0.000)
Liquidity	0.279	0.268	0.270
	(0.000)	(0.000)	(0.000)
Profitability	0.318	0.319	0.285
	(0.000)	(0.000)	(0.000)
Growth	-0.041	-0.040	-0.011
	(0.000)	(0.000)	(0.075)
Risk	-0.051	-0.054	-0.063
	(0.000)	(0.000)	(0.000)
Size	0.039	0.042	0.041
	(0.000)	(0.000)	(0.000)
Age	0.015	0.015	0.014
	(0.000)	(0.000)	(0.000)
Random firm effect	Yes	No	Yes
Fixed industry effect	No	Yes	Yes
Fixed year effect	No	Yes	Yes
R^2	0.143	0.146	0.153
Sample size	54,492	54,492	54,492

This table reports the coefficient estimates of model (1) from the main text using panel data techniques. The *p-* values are shown in parentheses. The dependent variable is cash dividends divided by operating earnings after taxes. Ownership concentration is the largest 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 to assets (ROA), and Growth is average sales growth during the past three years. Risk is the standard deviation of sales growth during the past three years. Size is the log of sales in million 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 stockholder, consistent accounting figures, and positive sales, employment, and assets over the period 2006–2011. 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.

Table 7: Payout record and subsequent investor behavior

Investor behavior	Payout quintile			p-value				Number of observations	
	A (lowest)	B (highest)	B-A	t test	Wilcoxon test	Chi^2 test	Fisher's exact test	Quintile A	Quintile B
1. Minority invests more	0.071	0.111	0.040	(0.020)		(0.012)	(0.013)	525	522
2. Growth in minority investment	0.006	0.019	0.013	(0.035)	(0.077)			525	522
3. Positive growth in minority investment	0.114	0.236	0.122	(0.107)	(0.202)			37	58
4. New minority invests	0.019	0.039	0.020	(0.034)		(0.025)	(0.025)	525	522
5. Majority invests more	0.103	0.094	-0.009	(0.401)		(0.469)	(0.521)	525	522
6. Majority disinvests	0.056	0.098	0.042	(0.005)		(0.006)	(0.005)	513	454

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. Payout quintile A (B) consists of the lowest (highest) quintile of firms sorted on the average residual payout for 2006-2010 as estimated from model (2) of the main text. Minority invests more is a 0/1 dummy variable that is 1 if minority investors own more equity in 2011 than in 2010. Growth in minority investment is the change in the paid-in capital owned by minority stockholders from 2010 to 2011 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 a 0/1 dummy variable that is 1 if the minority investors own more equity in 2011 than in 2010 and at least one new minority investor appears in 2011. Majority invests more is a 0/1 dummy variable that is 1 if the majority investors own more equity in 2011 than in 2010. Majority disinvests reflects the sitation when the paid-in capital remains constant in 2011 while the share of the majority investor decreases. The table shows the average for these six investor characteristics in quintiles A and B, the difference between the two, and *p*-values of statistical tests for difference in means (in parentheses). The sample consists of private limited liability firms with consistent accounting figures, 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.

Table 8: Dividend payout and new equity investment

Independent variable	I: Minority invests more	II: Growth in minority investment	III: New minority invests	IV: Majority disinvests
Average residual payout	0.082	0.007	0.281	0.037
	(0.001)	(0.012)	(0.006)	(0.013)
Ownership concentration	1.086	0.044	-0.551	1.918
	(0.856)	(0.004)	(0.496)	(0.034)
R^2	0.05	0.01	0.06	0.16
Sample size	2,456	2,456	2,456	2,369

This table reports regression estimates for model (3) in the main text. The *p*- values are shown in parentheses. Average residual payout is the average residual per firm from model (2) in the main text, which regresses dividends on the firm's liquidity, profitability, growth, risk, size, age, and industry in 2006–2010. Ownership concentration is the average largest equity stake in the firm during 2006–2010 held by a financial firm, a foreigner, or a family where individual owners are related by blood or marriage up to the fourth degree of kinship. Minority invests more is a 0/1 dummy variable which is 1 if minority investors own more equity in 2011 than in 2010. Growth in minority investment is the change in the equity (paid-in capital) owned by minority shareholders from 2010 to 2011 divided by the total paid-in capital in 2010. New minority invests is a 0/1 dummy variable which is 1 if the minority investors own more equity in 2011 than in 2010 and at least one new minority investor appears in 2011. Majority disinvests is the situation when the paid-in capital remains constant in 2011 while the share of the majority investors decreases. The sample consists of private limited liability firms with consistent accounting figures, 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.

Table 9: Using alternative measures of potential stockholder conflicts

Independent variable	Ownership concentration					Minority power					
	I: Nuclear family	II: Family firm (subsample)	III: No family CEO (subsample)	IV: Family CEO (subsample)	V: No family membership	VI: Minority concentration	VII: Largest less second-largest	VIII: Number of owners	IX: At least three owners (subsample)	X: Minority director	XI: Minority institutional
Ownership concentration	-0.177 (0.000)	-0.198 (0.000)	-0.227 (0.000)	-0.177 (0.000)	-0.178 (0.000)	-0.164 (0.000)	-0.213 (0.000)	-0.189 (0.000)	-0.191 (0.001)	-0.193 (0.000)	-0.148 (0.000)
Minority concentration						-0.039 (0.008)					
Largest less second–largest							0.002 (0.046)				
Number of owners								0.001 (0.546)			
Minority director										-0.003 (0.089)	
Minority institutional											-0.091 (0.003)
Liquidity	0.224 (0.000)	0.235 (0.000)	0.298 (0.000)	0.218 (0.000)	0.225 (0.000)	0.245 (0.000)	0.242 (0.000)	0.242 (0.000)	0.247 (0.000)	0.242 (0.001)	0.238 (0.001)
Profitability	0.544 (0.000)	0.556 (0.000)	0.567 (0.000)	0.553 (0.000)	0.538 (0.000)	0.577 (0.000)	0.552 (0.000)	0.552 (0.000)	0.567 (0.001)	0.552 (0.000)	0.528 (0.000)
Growth	-0.050 (0.044)	-0.039 (0.082)	-0.027 (0.236)	-0.044 (0.067)	-0.051 (0.048)	-0.044 (0.058)	-0.041 (0.061)	-0.040 (0.067)	-0.038 (0.040)	-0.040 (0.065)	-0.043 (0.063)
Risk	-0.112 (0.000)	-0.121 (0.000)	-0.126 (0.000)	-0.120 (0.000)	-0.114 (0.000)	-0.116 (0.000)	-0.113 (0.000)	-0.114 (0.000)	-0.095 (0.001)	-0.110 (0.000)	-0.118 (0.000)
Size	0.018 (0.000)	0.019 (0.000)	0.020 (0.000)	0.019 (0.000)	0.018 (0.001)	0.020 (0.000)	0.019 (0.001)	0.019 (0.000)	0.018 (0.001)	0.019 (0.001)	0.021 (0.001)
Age	-0.011 (0.170)	-0.008 (0.354)	-0.005 (0.643)	-0.009 (0.300)	-0.013 (0.104)	-0.011 (0.216)	-0.008 (0.363)	-0.009 (0.338)	0.001 (0.796)	-0.009 (0.347)	-0.007 (0.347)
R^2	0.310	0.329	0.360	0.321	0.304	0.337	0.327	0.327	0.334	0.326	0.314
Sample size	64,698	48,400	11,374	37,026	68,176	48,849	55,478	55,478	28,957	55,478	40,403

This table reports the OLS regression estimates for model (1) in the main text under a wider set of ownership characteristics. 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. Minority concentration is the sum of squared minority ownership fractions in the firm (Herfindahl index). Largest less second-largest is the difference between the two largest equity stakes. Number of owners is the number of stockholders in the firm. Minority director is a 0/1 dummy variable that is 1 if and only if a minority stockholder holds a seat on the board. Minority institutional is a 0/1 dummy variable that is 1 if and only if there are institutional investors among the minority stockholders. Liquidity is cash holdings to assets, Profitability is operating profit after taxes over total assets, and Growth is average sales growth during the past seven but minimum three years. Risk is the standard deviation of sales growth during the past three years, Size is the log of sales in millions of NOK, and Age is the log of the number of years since the firm was founded. Nuclear family is kinship limited to spouses and underage children. Otherwise, a family is defined as a group of owning members related by blood or marriage up to the fourth degree of kinship. Family firm is a firm in which the family holds more than half the equity. Firms with (with no) family CEO are firms in which the largest family by ownership has (does not have) the CEO. No family membership does not assign personal stockholders to families. At least three owners is a firm that has three stockholders or more. We control for industry effects (not reported). The sample is all private firms with a majority stockholder, consistent accounting figures, 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. We report Fama–MacBeth regressions for 2006–2011 with the adjusted R^2 and sample size from the pooled regression.

Table 10: Alternative measures of payout, financial constraints, and growth

Independent variable	Payout ratio			Subsamples			VII: Payout capacity	Taxable dividends	IX: Financial constraints	Growth	
	I: Dividends to cash flow	II: Dividends to sales	III: Dividends to assets	IV: No repurchases	V: Only payers	VI: Pay or not pay				X: Sales to assets	XI: Sales growth relative to industry
Ownership concentration	-0.276	-0.010	-0.034	-0.192	-0.112	-0.407	-0.192	-0.157	-0.226	-0.189	-0.194
	(0.000)	(0.001)	(0.000)	(0.000)	(0.035)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Liquidity	0.380	0.031	0.060	0.240	0.120	1.733	0.241	0.262	0.218	0.246	0.239
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Profitability	1.016	0.087	0.165	0.553	-0.130	6.985	0.552	0.542	0.71	0.533	0.552
	(0.000)	(0.000)	(0.000)	(0.000)	(0.080)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth	-0.011	-0.008	-0.014	-0.041	-0.374	-0.114	-0.040	-0.040	-0.056	-0.003	-0.037
	(0.655)	(0.009)	(0.026)	(0.062)	(0.000)	(0.136)	(0.067)	(0.050)	(0.092)	(0.144)	(0.091)
Risk	-0.172	-0.001	-0.009	-0.116	0.051	-1.205	-0.113	-0.108	-0.146	-0.117	-0.111
	(0.001)	(0.743)	(0.039)	(0.000)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Size	0.026	0.001	0.003	0.019	-0.034	0.503	0.019	0.019	0.018	0.019	0.018
	(0.000)	(0.013)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age	-0.016	0.002	-0.006	-0.008	-0.051	0.208	-0.009	-0.004	0.001	-0.007	-0.006
	(0.359)	(0.029)	(0.015)	(0.389)	(0.100)	(0.000)	(0.341)	(0.635)	-0.997	(0.474)	(0.435)
Retained earnings to total equity							0.002				
							(0.001)				
Direct personal ownership								-0.001			
								(0.011)			
Interest coverage									0.014		
									(0.001)		
R^2	0.232	0.295	0.015	0.327	0.082	0.325	0.327	0.331	0.348	0.325	0.325
Sample size	52,840	55,922	55,922	54,495	14,756	55,478	55,461	55,478	34,981	55,903	54,492

This table reports the estimates for modified versions of the base-case sample or the base-case model (1) of the main text. The *p-* values are shown in parentheses. The dependent variable is dividends to operating earnings after taxes except in models I-VI. No repurchases (model IV) is the subsample of firms that do not buy back their stock in the sample period, Only payers (V) is the subsample of firms with positive dividends, while Pay or not pay (VI) is a dummy variable that is 1 if the firm pays dividends and 0 otherwise (dependent variable in logit model). Payout capacity (VII) augments the base-case model by the ratio of Total retained earnings to total equity. Taxable dividends (VIII) augments the base-case model by the variable Direct personal ownership, which is the fraction of direct personal equity investment in the firm. Financial constraints (IX) augments the base-case model by Interest coverage, which is earnings-to-interest payments. Sales growth relative to industry (XI) is the firm's sales growth minus the median industry sales growth during the past three years. 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 base-case 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 million NOK, and Age is the log of the number of years since the firm was founded. The base-case sample is all private firms with a majority stockholder, consistent accounting figures, 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 ratios are winsorized at the 98% tail, while Liquidity, Profitability, Growth, and Risk are winsorized at the 0.5% and 99.5% tails. We control for industry effects (not reported). The table shows Fama–MacBeth regression estimates for 2006 to 2011 with the adjusted R^2 and sample size from the pooled regression.

Table 11: Dividends as a signal

Panel A. Dividend changes and profitability growth

	Profitability growth		
Dividend change	Future (p value)	Future-Past (p value)	Future-Present (p value)
Dividends increase			
Mean	-0.016	-0.028	-0.054 (0.000)
Median	-0.012	-0.020	-0.039 (0.000)
Number of observations	1,718	932	1,156
Dividends decrease			
Mean	0.003	-0.017	0.097
Median	0.001	-0.012	0.073
Number of observations	1,225	1,011	1,225
Increase-Decrease			
Mean	-0.019 (0.000)	-0.011 (0.443)	-0.151 (0.000)
Median	-0.013 (0.000)	-0.007 (0.027)	-0.112 (0.000)
Number of observations	1,225	932	1,156

Panel B. Dividends and auditing fees

Independent variable	Coefficient (p value)
Ownership concentration	-0.096 (0.007)
Liquidity	0.262 (0.000)
Profitability	0.632 (0.000)
Growth	-0.107 (0.001)
Risk	-0.062 (0.000)
Size	0.051 (0.000)
Age	0.009 (0.426)
Auditing fee	-0.299 (0.013)
R^2	0.168
Number of observations	46,952

Panel A shows the profitability growth measured as increased return on assets (ROA) for dividend-increasing and dividend-decreasing firms. The first group holds firms that pay higher dividends in 2009 than in 2008 (Dividends increase), while the second group holds firms that pay lower dividends in 2009 than in 2008 (Dividends decrease). Past is 2006–2008, Present is 2008–2009, and Future is 2009–2011. The numbers in parentheses are the p-values of the two-way *t*-test for equality of means, and the *p*-value of 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 base-case 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 millions 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 limited liability firms with a majority stockholder, consistent accounting figures, and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, and the smallest 5% of firms by assets, sales, and employees.

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